IDENTIFYING THE CONDITIONS UNDERLYING THE SUCCESS OF COMMUNITY-BASED COASTAL RESOURCE MANAGEMENT INITIATIVES CASE STUDY: ATLANTIC COASTAL ACTION PROGRAM (ACAP)

JESSICA P. WINKLER

Identifying the Conditions Underlying the Success of Community-Based Coastal Resource Management Initiatives

Case Study: Atlantic Coastal Action Program (ACAP)

by

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A Thesis Submitted to the
School of Graduate Studies
In partial fulfillment of the
Requirements for the degree of
Masters of Arts
Geography
Memorial University of Newfoundland
September, 2005

St. John's Newfoundland

Abstract

Coastal resource management in Canada has historically been characterized by institutional arrangements in which responsibilities are allocated among the various levels and sectors within government. Since the mid 1960s, there has been a marked shift toward the direct involvement of the general public in resource and environmental management; however, only recently has such public involvement emerged in coastal resource management issues. One example illustrating this involvement is the Atlantic Coastal Action Program (ACAP). Despite greater efforts to involve the public in the management of the coastal environment, very little effort has been invested in evaluating how successful this has been. Such evaluative research has more widely been applied to the fields of social policy, medicine, and education; in contrast few research few research papers have been written on evaluating community involvement in natural resource management programs. ACAP is used as the case study in the following research to identify the organizational conditions underlying success for community-based environmental initiatives. Specifically, this research developed an evaluative framework comprised of criteria, indicators, and measurable variables incorporated from resource management and program evaluation literature, Environment Canada, and ACAP Coordinators. The present research found that the most significant conditions underlying the success of community-based initiatives were organizational networks, community involvement, technical expertise, and enthusiastic/devoted coordinator, and organization. This was contrary to the conditions cited most frequently in the resource management literature including funding, community-involvement, organizational networks, and technical expertise. The evaluation indicated that Bluenose, Bedeque Bay, Humber Arm, St. John's, Southeast Environmental, and Miramichi achieved the highest scores through displaying the greatest degree of significant conditions underlying success. This evaluative research provides resource managers with an understanding of whether their community-based initiative has the necessary conditions and how to implement more successful community-based initiatives in the future.

Acknowledgments

I would like to thank a number of people who have helped me to see this thesis to completion. First, my sincere appreciation is extended to my family and friends both at home in Guelph Ontario and in St. John's Newfoundland. A special thank-you to my husband Marc Koechl. Their continued support and encouragement has made it possible for me to finish this thesis while traveling back and forth between Ontario and Newfoundland.

I am grateful to my thesis advisors Dr. Keith Storey, Norm Catto, and Alistair Bath from the Department of Geography at Memorial University of Newfoundland. Their continued encouragement, patience, and expert advice provided to me (via both regular and electronic mail) and telephone have been very valuable as I completed my research in my home province of Ontario. I would also like to thank the external reviewers for their contributions to improving the document.

My sincere thanks are also extended to the staff members at Environment Canada who provided me with the information and insight on the Atlantic Coastal Action Program, as well as an office to work from during my field research. Special thanks to Lawrence Hildebrand, Karen Swan, Colleen McNeil, Suzie Dech and Allan Kindervater. The input from each of the ACAP site coordinators and the focus group participants is greatly appreciated. There are no words which can express my gratitude towards the site coordinators for taking the time to help me organize each focus group session and review the evaluative framework results.

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List of Abbreviations

ACAP - Atlantic Coastal Action Program

BBEMA - Bedeque Bay Environmental Management Association

CARP - Clean Annapolis River Project

CBACAP - Cape Breton Atlantic Coastal Action Program

CEMP - Comprehensive Environmental Management Plan

EC - Environment Canada

ECW - Eastern Charlotte Waterways

GIS - Geographic Information System

MREAC - Miramichi River Environmental Assessment Committee

PHEPP - Pictou Harbour Environmental Protection Project

SARMLT - Société d'amenagement de la Riviere Madawaska et du lac Temiscouata

SEA - Southeast Environmental Association

SIPT - Sable Island Preservation Trust

SJACAP - St. John's Harbour Atlantic Coastal Action Project

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Chapter 1: Defining the Study

1.0 Introduction

Coastal resource management in Canada has historically been characterized by institutional arrangements in which responsibilities are allocated among the various levels and sectors within government. Since the mid 1960s there has been a marked shift toward a greater integration of government responsibilities and the direct involvement of the general public in resource and environmental management. However, only recently has public involvement emerged in coastal resource management issues. One example illustrating this involvement is the Atlantic Coastal Action Program (ACAP). In 1991 Environment Canada established ACAP to empower local communities to address the numerous environmental issues and concerns regarding the condition of the coastal environment. Despite great attempts to involve the public in the management of the coastal environment, little effort has been invested into identifying the organizational conditions under which community-based initiatives are most likely to succeed.

1.1 Research Statement and Objectives

The purpose of this research is to identify the organizational conditions under which community-based initiatives are most likely to succeed. Determining whether an activity has succeeded or not is often problematic. Such a determination is fundamentally dependent on how success is defined and how one determines or measures whether success has been achieved according to that definition (Schwetzer et al. 1998). For the purpose of this research, success refers to the ability of each of the ACAP sites to address the five pre-established goals of ACAP and demonstrate the six necessary aspects (conditions) of natural resource program evaluations. The five pre-established goals of ACAP include i) Sustainable Livelihoods, ii) Natural Heritage, iii) Water Quality, iv) Responsible Stewardship, and v) Ecosystem Planning. The six aspects of natural resource program evaluations, as identified

in the literature, include i) Identifying, Defining, and Documenting, ii) Types of Media Involvement, iii) Communication Enhancers, iv) Training, Monitoring, Evaluation, and Results, v) Policies, Procedures, and Bylaws, and Physical/Monetary Assistance. A process evaluation was conducted to identify the organizational conditions present in the development of the ACAP initiative and the implementation of the program at each of the fourteen sites. Specifically, this research problem is applied to the ACAP case study. This research is guided by two key objectives:

- The first objective is to identify the documented conditions under which community-based initiatives are most likely to succeed. This objective consists of the following elements:

i) Examine evaluation and resource management literature to gain an understanding of the organizational conditions that have been documented, to encourage community-based initiatives to succeed. A representative framework will be drafted based upon the conditions identified from the literature.

ii) Examine ACAP resources and literature to gain an understanding of the ACAP Model and the overarching goals of the ACAP initiative. A representative framework will be drafted.

iii) Draft an evaluative framework by combining the frameworks created in i and ii.

- The second objective is to apply the conditions underlying a successful program identified in the literature and ACAP resources to the ACAP initiative to firstly determine if the organizational conditions identified are present in the ACAP case study; and secondly to identify any additional conditions evident in the ACAP initiative which have not been documented in the literature. This objective consists of the following elements:

i) Examine the organizational conditions that exist within each of the fourteen ACAP sites.

ii) Explore trends and patterns of organizational conditions that exist within and across the fourteen ACAP sites.

iii) Identify obstacles experienced at each of the sites and the solutions adopted at each of the sites to increase the likelihood of success.

iv) Identify any additional conditions, not previously documented in the literature, which have encouraged success within the ACAP initiative.

1.2 The Case Study

A contemporary example of community-based coastal resource management is the Atlantic Coastal Action Program (ACAP). In 1991, the federal government established ACAP to empower local communities to address the numerous issues and concerns surrounding the condition of the coastal environment and to address a growing demand for the public to be involved in decision-making related to their environment. The purpose of ACAP is to plan for the sustainable restoration and conservation of selected, severely degraded harbours and coastal areas in Atlantic Canada (refer to Figure 1). The ACAP initiative was launched by Environment Canada as part of the federal government's Green Plan. The Green Plan was a seven year, three billion dollar, national sustainable development action plan introduced in 1990 which, in part, promised greater commitment and support for local level environmental initiatives (Ellsworth 1994, Donaldson 1994). Though ACAP no longer receives funding from the Green Plan initiative, Environment Canada has provided subsequent funding.

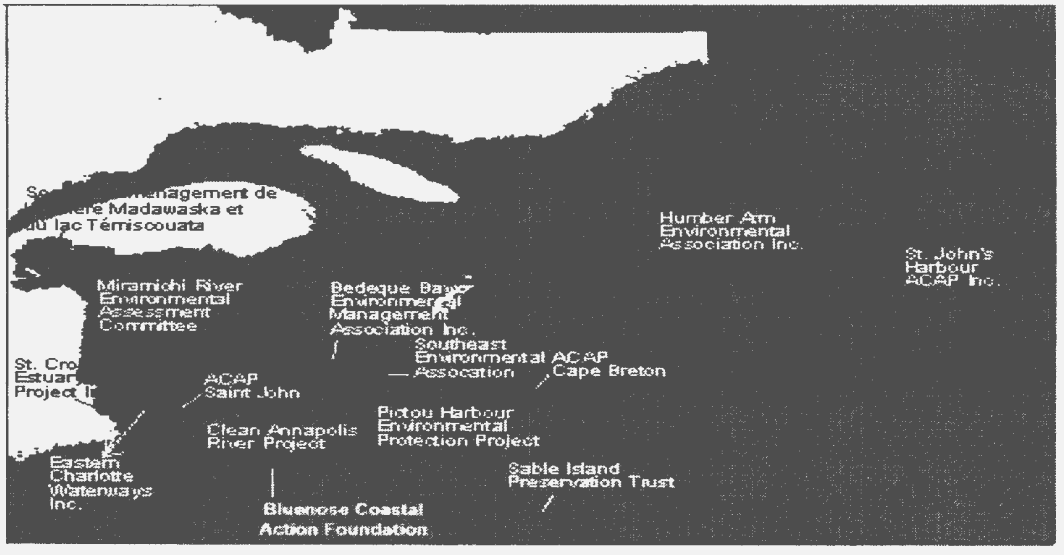


Figure 1: A Map of the Fourteen ACAP Sites

Jessica Winkler, 2001, PCGlobe

Thirteen (later fourteen) coastal communities in Atlantic Canada were identified by

Environment Canada as sites for the implementation of the ACAP initiative. The main objective of the program was to involve the communities, alongside government, in developing restoration and maintenance plans and actions for the fourteen identified riverine environments, drainage basins, estuaries, and shorelines in Atlantic Canada. The process involved the development of remedial action plans, local action/demonstration projects, and environmental awareness activities to enhance and maintain the integrity of coastal communities (Environment Canada 1993a).

The program originally focused on water quality issues but was subsequently broadened to address many resource management issues including agriculture, forestry, and fisheries. The ACAP process was developed to create a co-operative and joint management approach in which the major stakeholders would identify the biophysical, social, and to some extent economic problems of their areas, and find ways of remediating such problems. While such initiatives are not new to resource management issues, trying to understand the effect of such an initiative and applying evaluative research to do so is a relatively new interest for Environment Canada.

1.3 Research Rationale and Significance

1.3.1 Applied Perspective

In physical terms, coastal areas are transition zones between land and sea. This zone incorporates a 50 km (or less) distance inland from the shoreline, and the distance seaward may be greater than 300 km (e.g. the Grand Banks). Ecologically, mixing and/or adjustment, where the terrestrial environment influences the marine or lacustrine environment and vice versa, characterize the coastal zone. Hence, it is an ecotone or transition area where two or more ecological communities meet (Turner et al. 1999, Sorenson 1997, Clark 1997). Coastal zones provide habitat for large populations of a wide variety of seabirds, shorebirds, marine mammals and commercially important finfish and shellfish (Environment Canada 1991).

The combination of freshwater and saltwater in coastal estuaries creates some of the most productive and richest habitat on earth.

The Atlantic region contains a wide variety of terrestrial, freshwater, and marine environments that are the habitats for a broad variety of wildlife and support the human activities of 2.35 million people (based on 2004 census, www.statscan.ca). The Atlantic Canada climate is a modified continental climate which is heavily influenced by the ocean, with a cool spring and summer and a relatively mild fall and winter. The region has approximately 40,000 km of coastline. Many of the Region's settlements are on or near the coast as they depend on the coastal waters for transportation, food, and recreation. In physical terms, the coastal zone varies from tidal mudflats, to sand and cobble beaches, to rocky shoreline.

Despite the region's abundance of coastal and ecological holdings, the coastal environment is increasingly threatened by human activity. According to the 1995 State of the Environment Report for the Atlantic Region, some of the more significant environmental stresses affecting the region arise from activities such as agriculture and forestry, the development of transportation corridors, the alteration of rivers and coastal lands for energy exploration and production, and domestic, industrial, and recreation development (Environment Canada 1995). These activities have changed fish and wildlife habitat, and altered the suitability of certain lands for other uses. In some cases, options for other uses have been permanently lost along with the loss of environmental quality. The Sydney steel plant in Nova Scotia is one example of this, where operation of the plant for over 80 years has resulted in the creation of what are known as the "Sydney Tar Ponds", one of the most hazardous chemical waste sites in Atlantic Canada, and the largest chemical waste site in Canada. The Ponds contain an estimated 3.5 million kg of Polycyclic Aromatic Hydrocarbons (PAHs) largely from the coke operations on the site. Discharges from the

Ponds have resulted in contamination of sediments and biota in the adjacent harbour (Environment Canada 1995.)

These conditions have fostered growing concern over the management of Canada's coasts. To help manage its significant coastal and marine interests, Canada declared a twelve nautical-mile Territorial Sea in 1970 and a 200 mile Exclusive Fishing Zone in 1977. On December 19, 1996, Canada's Parliament passed the Canada Oceans Act establishing a 200 nautical-mile Exclusive Economic Zone and a 24 nautical-mile contiguous zone in accordance with customary international law and the United Nations Convention on the Law of the Sea (Kay and Alder 1999, Sorenson 1997, DFO 1996). However, a unified coastal zone act that addresses issues of land and water is still lacking. Coastal resources remain managed by various organizations and Acts such as Fisheries and Oceans Canada (DFO) and the Fisheries Act. Canada's fundamental problems in coastal management are associated with the jurisdictional issues involving the federal and provincial governments (Sorenson 1997, Hildebrand and Norrena 1992).

There is no shortage of departments and agencies at all levels of government with a mandate in the coastal zone. A broad range of institutional arrangements, policy instruments, and management strategies exist to help allocate coastal resources among competing and conflicting interests. One problem is that the coastal zone is the shared responsibility of many agencies and interests but the sole responsibility of none. Moreover, while many separate laws and regulations concerning activities in coastal areas can be identified, there are often no explicit management policies for coastal resources at the national level (Cicin-Sain and Knecht 1998, El-Sabh et al. 1998, Hildebrand and Norrena 1992).

With the increasing severity of degradation in the coastal environment, the Canadian government has seen a greater need to coordinate and manage coastal activities among

federal, provincial and local governments, and among coastal user groups (Dronkers and Devries 1999, Turner et al. 1999, and Hildebrand 1996). The size and diversity of the Atlantic Canadian coastline, however, makes such coordination and management of the coastal environment challenging. One response has been to foster management at the community level; ACAP is an example of this community-based coastal management approach.

Since the early 1990s, there has been a marked increase in the number of community-based initiatives within the field of applied resource management (Litke and Day 1998, Ellsworth et al. 1997, White 1994). The ultimate goal of these initiatives has been to establish sustainable development; a term generated out of the publication of Our Common Future produced by the World Commission on Environment and Development in 1987, meaning development that meets the needs of the present without compromising the needs of future generations (NTFEE 1987). Given that a community can be defined as an interacting population living in a common location (Woolveridge 1995), a community-based approach is one that focuses on the community as a spatial and organizational unit. Spatially, community-based approaches are situated in the community in which they are trying to improve. In organizational terms, a community-based project implies that the community is involved in the project and/or has some degree of input or the management of the project. Community-based initiatives can provide multiple benefits including:

- Enhancing the credibility and legitimacy of the effort through an open, accessible process;
- Minimizing adverse situations, promoting consensus and avoiding conflict;
- Acting as an educational process lending to informed decision making;
- Developing beneficial and long term relationships amongst all stakeholders; and
- Possibility for significant project cost savings and efficiencies (through local participation, etc...)

(Robinson 1997, Murray and Dunn 1996, Bryant 1993, Cicin-Sain 1993)

Some notable examples of past and present community-based initiatives within the field of

applied resource management include IPM: Integrated Pest Management in Victoria (1990)[1], AIR Calgary: Air Improvement Resolution (1990)[2], the Bicycle Network Master Plan in Montreal (1994)[3], the Halifax Waste Recycling Program (1990)[4], the Don Valley Task Force (1996)[5], and the Atlantic Coastal Action Program (1991). However, due to a variety of factors not all of these initiatives (e.g. AIR Calgary) remain active. Unfortunately, there has not been any evaluation completed to identify the factors, which led to the demise of some of these initiatives.

Research in the area of resource management, by its nature, can lead to practical results that aid in the decision-making process. In Atlantic Canada, where such community-based initiatives are relatively new, there is a need to understand factors which stimulate better solutions and thus provide coastal communities with an increased likelihood of success in project implementation (Donaldson 1994, Hawboldt 1994). It is only after insight is gained pertaining to these factors that both current and future community-based coastal resource management initiatives can be implemented more effectively and efficiently within each of the fourteen ACAP coastal communities, and across community-based organizations in general.

1 The IPM program for weeds involves upgrading fertilization, watering and aeration programs on sports fields using weed and feed only on newly grassed areas, introducing public awareness programs and discontinuing the use of herbicide sprays containing 2,4-D, mecoprop and dicamba. The IPM program for insect control includes training park staff to become more knowledgeable about pants, introducing new plant varieties and using them when existing plants have reached the end of their maturity, immediately removing infected plants and using chemicals only on plants that are deemed to be economically beyond using labour maintenance procedures (Maclaren 1998).

2 The AIR Calgary program requested the cooperation of the residents of Calgary in leaving their car home twice a month on weekends and using alternative transportation. A number corresponding to the last number in the car's license plate was publicized in the media indicating which car owners should voluntarily leave their cars home on a given day (Maclaren 1998).

3The Master Plan identified means of implementing the city's policy on bicycles and will integrate the bicycle network with the city's open space and transportation network. The objectives of the Plan are to: encourage the use of bicycles for recreation and transportation purposes to promote bicycle safety and extend the existing network (Maclaren 1998).

4The city's recycling programs include curbside Christmas tree collection, office paper recycling in City Hall and leaf composting program for leaves from city property. In April 1991, the city, in cooperation with numerous community organizations, launched its "Blue Bag" multi-material recycling program for households (Maclaren 1998).

5The Task Force to Bring Back the Don has a mandate to undertake initiatives that will contribute to the ultimate restoration of the watershed by focusing on rehabilitation efforts within the jurisdiction of the City of Toronto. The Task Force promotes clean water, restoration of open space, education and community involvement in its decision making process (Maclaren 1998).

The utility of the evaluation conducted in this thesis is directed both internally and externally. For example, identifying the program-specific and site-specific conditions under which community-based initiatives are most likely to succeed will allow the ACAP management team at Environment Canada and each of the ACAP site coordinators (internal players) to recognize the conditions that encourage their initiative to succeed. The evaluation also provides a forum for the ACAP sites to learn from one another. Externally, this evaluation allows managers of community-based initiatives to recognize and implement the suitable conditions within their own community-based initiative.

1.3.2 Methodological and Theoretical Contributions

> "All social institutions or subsystems, whether medical, educational, religious, economic, or political, are required to provide proof of their legitimacy and effectiveness in order to justify society's continued support"
>
> (Suchman 1967, 2)

Within the field of applied resource management, significant levels of funding are invested in community-based environmental initiatives, whereas minimal amounts of money are devoted to exploring what actually happened after the plans are implemented. For a number of years there has been a growing recognition that evaluations are needed for policies, programs, and even specific projects (Rossi and Berk 1999, Kelly and Vlaenderen 1995). Parallel to this growth, appreciation has also been developing with regard to the variety of resource management situations for which evaluations may be helpful. Over the years evaluations have been completed in such diverse fields as agricultural and rural land allocation (Lowry et al. 1999, Gezon 1997, Murray and Dunn 1996, Dahl 1993, Ameyah 1992, Rogers 1987), water management (Fiske and June 1995, Kreutzwiser and Slatts 1994, Mitchell 1990, Mitchell 1989), fisheries management (Newkirk 1996), energy management (Chiasson 1999, Woolveridge 1995), and forestry (Brand 1997).

Evaluation research touches upon all of the major research traditions within geography in

that resource decisions influenced by ecological, spatial or regional analysis are amenable to evaluation. It also serves several functions in resource management. There are two main types of evaluation research, process evaluation and outcome evaluation. Process evaluations relate to the operations through which policy, program, and/or project goals are to be met. Outcome evaluations refer to the measurable changes in society, the economy, or the environment that can be attributed to a particular initiative. The focus of program evaluation has been expanded from an original concern with the very late stages of a program/project such as evaluating program outcomes or impacts. The original idea was to provide program managers with information on the effectiveness of the program in order to eliminate those programs deemed ineffective (Rossi and Berk 1999). However, after finding that many programs have little or no impact and that many failures are the result of faulty implementation, evaluators have expanded their focus in order to evaluate implementation processes. Outcome evaluations cannot resolve the expenditure already spent on programs. Process evaluation has the benefit of providing timely information to help identify any potential problems in the implementation process in time for improvement (Kelly and Vlaenderen 1995, Ellis et al. 1990).

A number of conditions under which community-based initiatives are most likely to succeed have been identified in resource management literature. These conditions include: funding, technical expertise, organizational networks, and community involvement (Litke and Day 1998, Kellogg 1998,Gezon 1997, Sinclair and Smith 1996, Hartig et al. 1995, Harrald and Mazzuchi 1993). Each of these conditions will be defined and explored in Chapter 4.This research paper uncovers the extent to which the conditions documented in the literature are consistent with the outcomes of the evaluation and further identifies key additional conditions not cited regularly in the literature. Specifically, the case study was evaluated against the ACAP Model (a seven-point program developed by Environment Canada for the ACAP sites), the five pre-established goals of ACAP (Sustainable Livelihoods, Natural

Heritage, Water Quality, Responsible Stewardship, and Ecosystem Planning), and the conditions underlying success identified in the literature (compatibility, funding, technical expertise, organizational networks, and community involvement).

Despite the number of benefits that evaluative research has to offer, it remains an infrequently used research method in the field of applied resource management (Bonneau and Amegan 1999, Yin and Kaftarian 1997, Kelly and Vlaenderen 1995). The amount of evaluative research literature surrounding the field of natural resource policy and community-based initiatives is limited (Kreutzwiser and Slaats 1994, Syme and Sadler 1994). With the use of an evaluative framework, this research applied a methodology, typically used in educational and health research to a natural resource management problem. A detailed discussion of evaluation techniques and evaluative research is presented in Chapter 3 of this thesis. This discussion provides a necessary background to the methodology used and the selection of appropriate techniques to address the two research objectives.

This study is based on a distinct tradition in social sciences research, which advocates the use of more than one method. This form of research strategy is most often described as one of convergent methodology, multi-method/multi-trait, convergent validation, and triangulation (Tashakkori and Teddlie 1998, Jick 1983). All of these various methods capture the idea that quantitative and qualitative methods should be used together to complement each other in research and that incorporating multiple methods adds credibility as it may help to capture a more complete, holistic and contextual portrayal of the study (Jick 1983).

1.4 Thesis Format

This thesis consists of six chapters. Chapter 2 describes the case study chosen to illustrate the evaluative research problem. The Chapter highlights the ACAP model, key players and the program's mission and goals. It reviews the fundamental characteristics of the ACAP process such as community-based planning, a multi-stakeholder approach and decision making by consensus. Chapter 2 also provides a brief description of each of the fourteen ACAP sites.

Chapter 3 provides the literature review and identifies the methodology used to conduct the research. The evaluative research theme includes topics such as historical context, significance, challenges, and evaluative research within the field of resource management. Chapter 3 also describes the multi-method/triangulation research strategy and how it is used to help obtain research data and validate the findings of the research. It describes the case study approach and focus group study techniques used. Details of the mix of data sources chosen, obtaining the primary and secondary information, and how the information was assessed and incorporated into the thesis are provided.

Chapter 4 presents the analysis and summary pertaining to objective one. This Chapter first explores all of the organizational conditions, which encourage the success of community-based initiatives that have been documented in the literature, and a representative evaluative framework is developed. Chapter 4 also examines the ACAP initiative, focusing specifically on the ACAP Model and the five pre-established goals of ACAP. A second evaluative framework is developed which contains program-specific evaluative criteria. By the end of Chapter 4, the two frameworks are combined and expanded upon to create the evaluative framework that is applied to each of the fourteen ACAP sites.

Chapter 5 presents the analysis and results pertaining to objective two. The evaluative

framework is applied to each of the fourteen ACAP sites. The organizational conditions that exist at each of the ACAP sites are identified. The trends and patterns of organizational conditions within and across all of the sites are explored. The organizational conditions identified within the ACAP initiative are compared to the conditions identified in the literature. Chapter 5 highlights any additional organizational conditions that were prevalent within the ACAP initiative though not documented in the literature.

Chapter 6 presents the overall conclusions of the thesis. The Chapter highlights key findings and provides future research directions. Chapter 6 also discusses how the research findings of the evaluation compare to the necessary organizational conditions identified in the literature.

Chapter 2: A Case Study of the Atlantic Coastal Action Program

2.0 Introduction

This Chapter begins with a discussion of the background and evolution of ACAP since the inception of the program in 1991. A brief overview of the three key characteristics of the ACAP process is provided: i) multi-stakeholder approach, ii) consensus-based decision making, and iii) community-based decision making. The second section of Chapter 2 provides insight into the ACAP vision, goals, and model. The final section of Chapter 2 profiles each ACAP community.

2.1 The Atlantic Coastal Action Program

2.1.1 Background

For a number of years prior to the launch of ACAP, Environment Canada identified the need to restore polluted harbours and coastal areas. ACAP was one of the five regional ecosystem-based initiatives under the auspices of Environment Canada (Robinson 1997). Through these initiatives, Environment Canada has been attempting to provide examples of how sustainable development may be achieved through an ecosystem approach in which planning and decision-making combines environmental, economic, and community-based elements, including the ecosystem approach, partnerships, science, leadership, and community involvement (Robinson 1997). These initiatives are components of a national action strategy for sustainable development launched by Environment Canada with the goal to secure a safe and healthy environment and a sound and prosperous economy for current and future generations.

Human-induced stresses such as pollution, habitat degradation, and resource depletion continue to compromise the productivity, sustainability, and biodiversity of the coastal communities resulting in the loss of potential income and ecological integrity of the region

(Ellsworth et al. 1997). Environment Canada (1991) outlined three main stresses facing the Atlantic region: pollution, resource utilization, and significant alterations to the natural environment. Many of the degraded areas throughout the Atlantic region are no longer able to support various human uses such as recreation and commercial fishing in the way they had in the past. For example, there are approximately 20 pulp and paper mills in the region that discharge a large quantity of effluent containing BOD and suspended solids to fresh and coastal waterways. Effluents from the seven plants that use chlorine bleaching also contain a variety of toxic organo-chlorine compounds, including dioxins and furans (Environment Canada 1991). An example of the toxicity of mill waste is the 1991 fish kill resulting from the malfunction of the boat harbor treatment plant for the Scott Maritimes plant in Pictou, Nova Scotia (Environment Canada 1995). Some of the causes of deterioration were known, such as the discharge of industrial effluents and the disposal of untreated sewage, while others were unknown (Environment Canada 1991). Communities and governments within the region realized that action was needed to restore the environmental quality of these areas.

In response to the increasing concern about the condition of the coastal ecosystems and the growing demand for the public to be involved in decision-making related to their environment, ACAP was created under the Federal Government's Green Plan of 1990. The initiative was implemented to address the urgent need to restore damaged coastal environments through empowering local communities to address their own environmental and developmental challenges (Environment Canada 1993a). ACAP is a network of fourteen sustainable ecosystem initiatives in Atlantic Canada (four sites in New Brunswick, five sites in Nova Scotia, two in Prince Edward Island, two in Newfoundland, and one site extends from Québec to New Brunswick). The spatial diversity of the fourteen designated areas means that their environmental scope includes riverine environments, drainage basins, estuaries, and shorelines.

2.1.2 The Role of Environment Canada and Organizational Structure of ACAP

Since ACAP was first established, the role of Environment Canada has evolved from directing and determining the program's character to providing information, advising, and guiding (S.B. Moir Consulting 1997). Fourteen Environment Canada staff members provide formal links or "windows" between the sites and the staff at Environment Canada and other government departments. ACAP sites gained information, manuals, and guidance from Environment Canada and details of increased media provided Environment Canada with constant updates on the growth in the communities, and environmental awareness through increased media. The key responsibilities of the ACAP windows include:

- Assisting communities in identifying and meeting needs for professional assistance and project development;
- Ongoing evaluation of site progress and overall ACAP progress; and
- Collectively, with the ACAP windows and the ACAP manager, making strategic operational and financial decisions.

Many of the staff serving as windows have been recognized by the ACAP communities as being truly committed to the community-based concept (S.B. Moir Consulting 1997).

Environment Canada administers the program from the regional office in Dartmouth, Nova Scotia. Most of the windows, however, are located in branch offices geographically closer to their assigned ACAP site (S. B. Moir Consulting 1997). Environment Canada's Director General for the Atlantic Region, regional director of the Environmental Branch, and the manager of Environmental Conservation Strategies Division all oversee the operation of ACAP. The ACAP program manager, who reports to the manager of Environmental Conservation Strategies Division, oversees the daily operation and administration of ACAP. The ACAP program manager also works closely with the fourteen sites.

Each ACAP community annually received $50,000 from Environment Canada for the first five years of the ACAP initiative. This core funding was for the hiring of a coordinator for

each of the fourteen sites (Environment Canada 1993a). However, additional project-based funding has been allocated at the discretion of Environment Canada depending on the characteristics of the specific projects. Project-based funding has caused significant concern among the ACAP sites (and is a major obstacle for community-based initiatives in general) as government policy is frequently based on doing something physical, quickly, rather than supporting long-term, archival, or monitoring functions (e.g. providing money for the instruments to test water). There is often minimal money available to carry over the organization when there is no specific, short-term project being undertaken. Within community-based initiatives volunteers frequently undertake the drafting of project outlines, budgets, and funding proposals, therefore Environment Canada has hosted a number of workshops, training sessions, and conferences to build the skills of volunteers/employees at each of the sites.

2.1.3 ACAP Characteristics

A Multi-Stakeholder Approach

The ACAP initiative was intended to include those individuals most affected in the decision-making. The first step in ACAP was the development of community, multi-stakeholder committees (Board of Directors) at each site, incorporating a broad range of interests and sectors from within the community (e.g. farmers, fishers, industry, government, education, interest groups, and citizens). A stakeholder in this case is defined as an individual or an organization that has a direct or indirect interest in the environmentally impaired area (Environment Canada 1993a). The stakeholder make-up of each of the committees depends on the issues and characteristics of the community. Thus, the stakeholder committee is comprised of those people who have the most to gain (and conversely the most to lose) from the outcome of the ACAP process. The main tasks of the community stakeholder committees include: establishing a vision for the community, defining an ideal future to identify the environmental problem issues to be dealt with, and developing a CEMP for their

region (Robinson 1997).

Decision-Making by Consensus

The community multi-stakeholder committee makes decisions based on consensus. Working by consensus means that there are no votes and that a solution is reached only if it is agreeable to all of the parties involved (Environment Canada 1993a). Every stakeholder has the opportunity to put forward ideas and suggestions, allowing open debate, sharing of information, dispelling of myths, all of which is suppose to build understanding and respect for other interests (Environment Canada 1993a). Consensus will not always be achieved but ACAP requires that it be considered as the first option for making decisions within the committee.

Community-Based Initiatives

The theory and practice of socio-economic development has increasingly placed emphasis upon community as the fundamental building block for turning policy into action. In part, this emphasis derived initially from negative experiences with development projects in developing countries in the 1950s and 1960s. These projects were dominated by a 'top-down' central government approach determined by national government and non-governmental organizations such as the World Bank and characterized by narrow economic principles that neglected local self-determined objectives (Robinson 1997). One alternative that has been applied to rural development programs in both developing and developed countries is to maximize the mobilization of a target area's natural human and institutional resources with policies that are motivated and controlled initially from the bottom, that is with a community base.

A community is a group that has unity through some common elements (Robinson 1997). These sometimes overlapping elements can be geographic location, ethnic identification, or

an affiliation or place of work. With respect to the ACAP initiative, community is defined by watershed boundaries. All but one site, which chose to use municipal boundaries, operate within watershed boundaries. However, some sites felt that issues went beyond the watershed and boundaries were defined accordingly. For example, in examining air quality issues, CARP found that much of the air quality problems in the Annapolis Valley were resulting from heavy industrial air pollution drifting across the Bay of Fundy from Saint John, New Brunswick. In this case CARP had to consider an airshed which extended well beyond its own watershed boundaries. Within the ACAP communities, citizens collaborate with government and non-government organizations on an ecosystem basis to identify and pursue sustainability goals.

2.2 ACAP Vision, Goals, and Model

2.2.1 ACAP Vision

ACAP envisions Atlantic Canada as a prosperous diversified region of healthy, vibrant, sustainable coastal communities that will maintain their lives and livelihoods for future generations. Its mission is to help communities to define common objectives and develop plans and strategies towards achieving environmentally appropriate use of their resources through sustainable restoration and conservation. Each group was statutorily required to produce a Comprehensive Environmental Management Plan (CEMP) by the end of the first five-year funding period, tying together information from environmental quality assessments, the objectives of the project and an assessment of remedial measures to derive a long-term strategy (Environment Canada 1993b). This is to include implementation of environmental protection and rehabilitation measures. Four strategic objectives are applicable to each ACAP site including:

- Creation of a Comprehensive Environmental Management Plan (CEMP) and an implementation strategy developed for each ACAP site;

- Development of strong partnerships at the local, provincial, regional, and federal levels to implement ACAP goals and objectives;
- Achievement of a high level of environmental citizenship, thus enabling stakeholders to develop and carry out Comprehensive Environmental Management Plans; and
- Introduction of appropriate technologies and economic tools to implement the Comprehensive Environmental Management Plan at each site.

ACAP supports each initiative in three broad areas: knowledge generation, capacity building, and direct action which were incorporated into the evaluative framework. Knowledge generation produces a common perspective and informed decision-making through various activities such as the integration and dissemination of scientific, local and traditional knowledge, monitoring to identify trends, and evaluating the progress and provision of a common, accessible information base (Environment Canada 1993a).

Within capacity building, citizens, governments, and non-government organizations must develop a common sense of identity, establish common goals, and create a sense of a common environment (Environment Canada 1993a). Thus, capacity building relies on recognizing interdependencies, developing networks and learning to trust the community or common process. Emphasis here is placed on teamwork, including consensus-based decision-making and collaborative problem solving.

Direct action refers to the resolution of social, economic, environmental issues, and the ability to protect and respond to new issues and conflicts through community identification of solutions that are socially acceptable, economically feasible, and environmentally sound (Ellsworth 1994). Direct action could refer to both process-oriented measurable variables (e.g. development of the CEMP, provision of seminars/training, provision of physical/monetary aid), and outcome-oriented measurable variables such as the

improvement of water quality and the creation of more jobs. For the purpose of this research, the evaluation focuses entirely on process-oriented measurable variables.

2.2.2 ACAP Goals

Environment Canada identified five broad areas (often referred to as goals) of the ACAP initiative which include:

- Sustainable Livelihoods – Ensuring a sustainable quality of life through the diversification and sustainability of livelihoods;
- Natural Heritage – Ensuring that all natural resources are recognized and respected as heritage resource for the benefit of present and future generations;
- Water Quality – Ensuring that water quality in the coastal areas and adjacent waters supports the needs of humans, fish, and other wildlife and can support and sustain commercial and recreational activities;
- Responsible Stewardship – Ensuring citizens are empowered to take responsibility for their part of the ecosystem and that they have the information and skills required to carry out that responsibility; and
- Ecosystem Planning – Ensuring there are strategies in place for the restoration and sustainable development of ecosystems;

These five goals are utilized as the key categories in the evaluative framework and will therefore be explored in greater depth in Chapter 4. Although the specific focus and priority issues for each community differ, these goals represent a wider perspective of sustainability, which ultimately provides the foundation for the program.

2.2.3 The ACAP Model

Environment Canada developed an ACAP Model (seven-point program) for each ACAP group and site:

1. Appointment of a full time community Coordinator and office for each site;
2. Assessments of environmental quality, identification of all environmental problems;
3. Development of a long term vision with clear objectives to obtain long term goals;

4. Identification and assessment of necessary remedial actions and conservation efforts;
5. Development of a Comprehensive Environmental Management Plan;
6. Promotion of environmental stewardship through education and awareness activities; and
7. Implementation of pilot projects that would demonstrate the importance and effectiveness of low cost, innovative solutions to environmental issues and watersheds.

(Robinson 1997)

The ACAP Model is made up of planning, education/awareness, and local action (Environment Canada 1993b). These three pillars were identified at the beginning of the initiative in order to gain public interest and involvement in decision-making and hands-on environmental improvement activities. Achieving these objectives would involve a process that is centered on the hard work and determination of both governments and communities in developing new relationships and in working together within a new governance structure which is intended to continue long after ACAP has ended.

Planning

The primary focus of the planning stage is the development of a Comprehensive Environmental Management Plan (CEMP) to restore and maintain the coastal ecosystems that sustain local social and economic activity (Ellsworth et al. 1997). As stated earlier, the CEMP is a major document that is required by the ACAP staff at Environment Canada. Within the CEMP, each of the fourteen sites must identify its mission, vision and an action plan that outlines areas of emphasis, goals, activities and tasks, responsibilities, approximate time lines, together with potential funding sources to implement this plan. However, it is important to note that although not all of the ACAP sites have completed a CEMP (Southeast Environmental, Cape Breton, Pictou, Sable Island, and Annapolis) there have not been any negative repercussions for these sites.

The CEMP is intended to be a shared vision for the surrounding watershed community, as well as a means of presenting detailed strategies to make the vision a reality. The CEMP defines the most appropriate remediation and conservation approaches for the revitalization of the surrounding environment. In order to be considered a viable option, the strategies identified must be publicly supported, as well as economically and technically feasible. This requires that environmental, social and economic goals are addressed and integrated. The CEMP outlines the specific sequential steps necessary to address issues and achieve goals. Most of the issues identified in the CEMPs arise from non-point sources of pollution and are not solvable with simple solutions. Although a range of issues has been identified in the CEMPs, some of the more commonly cited issues relate to natural habitat, domestic sewage, toxics and atmospheric emissions.

The result of each CEMP is a hierarchy of goals that communities strive for and for which they are building capacity to measure their progress. While there is no single prescribed methodology that all sites have to follow, four components generally describe the process of developing a CEMP:

1. Establishment of a multi-stakeholder organization representative of the community;

2. Reaching consensus on an integrated community-based environmental, social, and economic vision and well defined use objectives;

3. Conducting an Environmental Quality Assessment that includes gathering relevant data to determine present environmental conditions and issues affecting quality; and

4. Identification of remedial options to close the gap between existing and desired levels of environmental quality.

Education and Awareness

Many environmental issues exist because of lack of knowledge and awareness. The focus of education and awareness is to provide local people with the knowledge and skills required

for the development and implementation of the initiative (Ellsworth et al. 1997). Although it is difficult to attribute greater environmental awareness solely to ACAP, thousands of residents have been reached through activities such as workshops, school presentations, environmental programs, surveys, and media coverage of ACAP initiatives.

Local Action

Concurrent with the planning and development of CEMPs, education, and awareness, ACAP sites undertake numerous local action/demonstration projects. The focus of local action projects is to demonstrate remedial action techniques, build momentum; and enable communities to gain confidence in their abilities. Local action is required to maintain public interest and involvement and to provide a complement to planning and education activities. The results of projects are to represent tangible, direct improvements in the local ecosystems. Action projects normally require ACAP groups to seek external (i.e. outside of Environment Canada's ACAP budget) sources of funding to complete them. In doing so, many linkages and additional partnerships are developed within the communities.

2.3 ACAP Communities

The selection of the ACAP communities arose from Environment Canada's identification of fourteen environmental "hot spots" that needed or could benefit from a community-based approach to managing the coastal environment. A key factor in the selection of the fourteen sites was the ability to obtain strong participation by local residents in the development of Environmental Management Plans (Environment Canada 1993a). While Environment Canada provides funding and organizational support, each multi-stakeholder group is allowed to set their own objectives, choose the means by which to try to achieve those objectives, and establish their own timetable for action (Ellsworth 1994). ACAP was initially focused on protecting and restoring water resources. This focus was later broadened to include all coastal resource issues (not just water).

Diversity of the characteristics among the fourteen ACAP sites has featured prominently in the program from its onset. Some groups already had a community-based organization in existence such as the Clean Annapolis River Project (CARP) and Madawaska. ACAP sites range from being urban settings with heavily polluted harbours (e.g. St. John's Harbour and Saint John), to areas with traditional industries associated with pollution (e.g. Pictou Harbour, Cape Breton, parts of Humber Arm); to areas with runoff from heavily fertilized and chemically treated farmland (e.g. Bedeque Bay Environmental Management Association, Southeast Environmental Association, and Clean Annapolis River Project); to areas with no local industries (Sable Island Preservation Trust); and to one inland area (Madawaska) centered on Lac Temiscouata and the Madawaska River. The diversity amongst the various project areas has been reflected in the different foci and approaches pursued by the fourteen management committees. Although the specific focus may vary, all groups are concerned with sources of point and non-source point pollution (Ellsworth 1994). The diversity of the fourteen sites is briefly outlined in the following Table. A more detailed description of each of the fourteen sites is provided in the following section.

Table 1: Key Issues of the Fourteen ACAP Sites

	Surface Water Quality/Quantity	Groundwater Management	Waste Management	Marine Resource Issues	Freshwater Resource Issues	Land Use Issues	Navigation	Air Quality
St. John's Harbour	*		*	*	*			
Humber Arm	*	*	*	*	*	*		
Southeast Environmental Assoc.	*	*	*	*	*	*	*	
Bedeque Bay Environmental Management Ass.	*	*	*	*	*	*		
Cape Breton	*		*	*				*
Pictou Harbour	*	*	*	*	*	*		*

	Surface Water Quality/Quantity	Groundwater Management	Waste Management	Marine Resource Issues	Freshwater Resource Issues	Land Use Issues	Navigation	Air Quality
Sable Island Preservation Trust		*		*			*	
Bluenose	*		*	*				
Clean Annapolis River Project	*	*	*	*	*	*		
Saint John	*			*	*			
Miramichi River Environmental Assessment Committee	*	*	*	*	*	*		
St. Croix Estuary Project	*			*	*	*		
Eastern Charlotte	*			*				
Madawaska	*		*	*	*	*		

2.3.1 Newfoundland Sites

In Newfoundland there are two ACAP sites: St. John's Harbour on the eastern side and Humber Arm on the western side of the Island. The project area defined under the St. John's Harbour ACAP incorporates those areas of land which naturally or artificially drain into St. John's Harbour or Quidi Vidi Harbour, the waters of both harbours and the waters of St. John's Bay, including its constituent bays and coves. This area includes portions of the cities of St. John's, Mount Pearl, and the town of Paradise.

St. John's Harbour ACAP was founded in early 1993. The vision for this site, as identified within the CEMP, is to implement a community-directed, consensus-based Comprehensive Environmental Management Plan (CEMP) for the Harbour and its related environs. To meet the vision, the St. John's Harbour ACAP group developed seven goals focusing on the topics of Harbour clean-up and community involvement. The CEMP defines the most

appropriate remediation and conservation approaches for re-establishing environmental quality of the Harbour water. The scope of the CEMP focuses on the treatment of raw sewage entering the Harbour on a daily basis (St. John's Harbour ACAP 1997). Some of the projects undertaken by this ACAP group include: baseline water/sediment quality monitoring, surface runoff studies and ecosystem workshops. The biggest challenge facing this site is to obtain full sewage treatment for Paradise, Mount Pearl, and St. John's.

Humber Arm ACAP was initiated in 1991. The vision for this site is to have an improved quality of life in the Humber Arm watershed by i) re-establishing a healthy ecosystem, ii) improving the potential for more extensive recreation uses, and iii) maintaining the Humber Arm's essential economic function, keeping in mind sustainable development principles. All of the goals for the initiative fall under three main categories: recreation and tourism, industrial/commercial and institutional and ecological (ACAP Humber Arm 1997). The CEMP includes 113 remedial actions for the Humber Arm, which can be divided into five separate categories: sustainable livelihoods, natural heritage, water conservation, responsible stewardship, and planning/decision making (ACAP Humber Arm September 1999). Humber Arm ACAP and their partners are involved in a wide range of projects and initiatives including water quality monitoring, environmental quality assessments, water conservation programs and environmental outreach/education. The biggest challenge facing the Humber Arm ACAP is to attain full sewage treatment for the city of Corner Brook.

2.3.2 Prince Edward Island Sites

In Prince Edward Island there are two ACAP sites: Southeast Environmental Association (SEA) and Bedeque Bay Environmental Management Association (BBEMA). The Southeast Environmental Association was established in 1992 and manages the Southeast corner of Prince Edward Island. It is a community stakeholder group in southern Kings and Queens Counties that focuses on the marine environment, the bays and estuaries, and the watersheds

that flow into them (approximately 700 square kilometers). The vision for SEA is to protect, maintain, and enhance the ecology of this area for the environmental, social, and economic well being of the area residents. To address this vision, SEA has four key goals:

- To implement a Comprehensive Environmental Management Plan;
- To work with the area communities and stakeholders on their vision for a better environment;
- To promote environmental stewardship through public education and awareness programs; and
- To create pilot projects involving communities and stakeholders demonstrating solutions to environmental problems.

(Southeast Environmental Association 1997)

The CEMP for the Southeast Environmental Association is organized into five distinct activity areas: agriculture, surface water, forestry, ground water, and waste management. The majority of the projects undertaken by this site focus on water quality and waste management. Since agriculture is one of the main industries in the region, a significant challenge for SEA is to maintain water quality levels.

In 1992, Bedeque Bay Environmental Management Association was established as a formal ACAP site. The watershed encompasses 450 km^2 and is located on the south shore of P.E.I., primarily in East Prince County. It includes the watersheds of the Dunk, Wilmont and Bradshaw rivers and the coastal area around Bedeque Bay, from Union Corner to Seacow Head, including Summerside and its Harbour (Bedeque Bay Environmental Association 1997). It is a unique site as this watershed, in conjunction with the Malpeque Bay Watershed, comprises the P.E.I. Ecological Science Cooperative (ESC), which, in form, is part of the Ecological Monitoring and Assessment Network (EMAN). The vision for BBEMA is to achieve sustainable development so that the environment is conserved, the culture of the area is preserved and the economic growth indigenous to the community is

promoted (Bedeque Bay Environmental Association 1997). All of the goals outlined for Bedeque Bay address the four most important environmental issues facing the Bedeque Bay watershed: soil erosion, water quality, natural habitats and public awareness. The CEMP identifies BBEMA's vision and goals and includes an action plan that outlines areas of emphasis, goals, activities, tasks, responsibilities, and an approximate time-line. Some of the projects undertaken at BBEMA include Green Home Visits, the establishment of an environmental resource center, environmental camps and demonstration projects. The biggest challenges facing BBEMA are reducing soil loss and maintaining clean water.

2.3.3 Nova Scotia Sites

In Nova Scotia there are five ACAP sites: Cape Breton, Bluenose, Pictou Harbour, Sable Island Preservation Trust, and the Clean Annapolis River Project. The Cape Breton ACAP site was initiated in 1992 with the mission to develop a CEMP for the watershed area of industrial Cape Breton. The Environmental Management Plan for this site focuses on the watershed area surrounding the Sydney and Glace Bay Harbours (Cape Breton ACAP 1994). The vision for this site is the restoration and protection of the watershed area for the long-term benefit of all stakeholders: this would mean a clean and healthy environment, a prosperous economy, and a population that is empowered to make responsible choices (Cape Breton ACAP 1998). The goals established for this site are organized into eight divisions: recreation, fisheries, access and aesthetics, industrial and commercial users, wastewater receiving bodies, tourism, education, and a waste management strategy. ACAP Cape Breton has conducted a number of projects to define the current state of the local watershed and encourage the community to better understand the complexity of issues facing the Cape Breton area. Some of these projects include developing a community profile, coastal zone mapping, detailed stream assessments and a computerized desk-top mapping project. One of the biggest challenges facing ACAP Cape Breton is the remediation of the Sydney Tar Ponds (White and McNeil 1998). ACAP Cape Breton also assists other environmental group

such as the Joint Action Group (comprised of government and non-government representatives) in their efforts to clean up the Sydney Tar Ponds.

Pictou Harbour was recognized as an official ACAP site in 1991. By 1994, 72 organizations, groups, and individuals had been identified as stakeholders in the Pictou Harbour ACAP initiative (Pictou Harbour ACAP 1999). Although Pictou Harbour ACAP does not have an articulated vision, it does have five main goals:

- To bring together data and information on past and current environmental quality factors in the Pictou Harbour Watershed;
- To describe the state of the watershed's environment in non-scientific terms;
- To increase public awareness concerning environmental conditions and trends in the Pictou Harbour watershed;
- To help readers understand the relationship between everyday activities and environmental quality; and
- To point out linkages between health and the sustainability of human development

(Pictou Harbour ACAP 1997)

Sable Island is a 41 kilometer-long island composed of sand. It is located approximately 290 kilometers southeast of Halifax, Nova Scotia. The perimeter of the Island is stabilized primarily by its vegetation cover and the ocean currents. The biggest threat to the Island is the preservation of its physical integrity and biological diversity. The Sable Island Preservation Trust is the most recent site to become a member of the ACAP initiative, joining the program in March 2000. The Sable Island site is quite different from the other thirteen ACAP sites in that it is a community-based initiative that does not have an actual community within its site boundaries. For this site the "community" is made up of government officials, environmentalists, historians and biologists who live some 290 km away.

The Sable Island ACAP site is important for government, university, and industrial research and the Island acts as an emergency response and search and rescue base for offshore industry. The vision for the initiative is to ensure the long-term conservation of Sable Island (Sable Island 2000). There are three goals established to address this vision: maintain on-going supervisory human presence, establish educational and interpretational programs and coordinate core services and activities (Beson 1998). Though a formal CEMP has not yet been developed, a conservation strategy is currently in place that outlines the various conservation interests for the island, both biological and physical, and therefore provides the basis for the establishment of long term development principles. Some of the projects undertaken at this ACAP site include: a study on Tern breeding colonies, horse-terrain interactions, and atmospheric research projects.

The Bluenose ACAP site was formed in 1993 to address environmental issues in the 325 km^2 watershed area in Lunenburg County, Nova Scotia. The watershed area is defined by the coastline between Red Head (south of Lunenburg) and Indian Point (east of Mahone Bay) and the watershed which drains through this section of the coastline. Both the towns of Mahone Bay and Lunenburg fall within the watershed, in which the Mushamush River, Earnst Brook and Martins Brook are the main freshwater systems. The community vision is to facilitate the necessary action to protect and enhance the environmental quality of the watershed and coastal areas in full collaboration with and in support of, a healthy and prosperous community. This will be accomplished through awareness, active listening, and response to community concerns, with a commitment to enforce consensual partnerships (Bluenose ACAP 1998).

The goal for the Bluenose ACAP initiative is to work with members of the community to maintain the natural environment while benefiting from its ability to provide for the area's social and economic well being (Bluenose ACAP 1998). Since the inception of the Bluenose

ACAP, a variety of projects have been undertaken. Most of these projects have arisen from concerns of the community expressed through the Community Attitude Survey, or directly to staff or Board Members. Some examples of these projects include the development of the Bluenose ACAP Times Newsletter, an Ecological Monitoring and Evaluation Project, Water Quality Monitoring, and the Lunenburg Healthy Harbour Project.

The Clean Annapolis River Project (CARP) was initiated under ACAP in 1991. The inception of CARP was brought about by two separate developments. The first development was the unsuccessful application by the Annapolis Valley Affiliated Boards of Trade to have the Annapolis River registered as the first heritage river in Canada. The second development was the launching of the Atlantic Estuaries Co-operative Venture by scientists concerned about declines in environmental quality of the waterways in the Atlantic Region (Clean Annapolis River Project 1996). The vision statement for the Clean Annapolis River Project is founded on the strengthening commitment of the stakeholders in the watershed to build an environmentally and economically sustainable future for the community. Though this site does not have any specific, articulated goals, CARP has been involved in numerous local, regional, national, and international initiatives as well as over 100 projects related to volunteer water quality monitoring, fish habitat restoration, public education, coastal zone management, and private stewardship (Clean Annapolis River Project 1998).

2.3.4 New Brunswick Sites

In New Brunswick there are five ACAP sites: Saint John, Miramichi River, St. Croix Estuary, Eastern Charlotte Waterways, and Madawaska. The Saint John ACAP was initiated in 1991. Its boundaries surround the city of Saint John and include the coastal area from Cape Spencer to Musquash and several smaller communities and tributaries around both the Saint John and the Kennebecasis rivers (ACAP Saint John 1994). The vision for this site depicts a community residing in an environmentally healthy estuary, evolving within the

aesthetic, cultural, social, industrial, and ecological realities of the area. The goal for the initiative is to improve the environmental health and integrity of the Saint John River Estuary by developing a CEMP for the area (ACAP Saint John 1997). To achieve this goal, Saint John ACAP attempts to firstly, improve the environmental health and integrity of the Saint John harbour and estuary, and secondly, respond to the growing demand from the public to be more involved in environmental decision-making (ACAP Saint John 1998). ACAP Saint John is currently involved in many projects including the Marsh Creek Beautification and Restoration, Beach Sweeps, Creek Sweeps, Urban Stream Recovery, Paint Swaps, and Biological Assessments.

In 1993, the Miramichi River Environmental Assessment Committee (MREAC) became an official ACAP site. This site's original scope focused on assessing the health of the Miramichi River (ADI Nolan Davis Inc. 1994). Although this site has not identified a vision/set of goals in their CEMP, an Environmental Action Plan was completed in 1995. The Action Plan includes plans for a wide variety of activities such as River Watch, Swim Watch, Public Awareness Initiatives, Fish Habitat Protection, and Watershed Mapping, as well as community and land use planning (Miramichi River Environmental Assessment Committee 1997).

The St. Croix Estuary ACAP initiative (SCEP), formalized in 1992, is located in St. Andrews. SCEP is unique among the other ACAP sites because it is located on an international boundary, thus the Board of Directors represents both the residents of Washington County, Maine and Charlotte County, New Brunswick. The waters of the estuary provide income for fishermen using the shellfish beds and inshore fisheries; the area is also known for its scenic beauty and as an integral part of the tourist trade centered on the resort and retirement town of St. Andrews-on-the-Sea (St. Croix Estuary Project 1993). The vision for St. Croix Estuary is for society as a whole to see environmental well-being and

economic policy as integrated, based on the truth that economic systems function within ecological systems; and for society to support sustainable development, recognizing that environmental well-being and economic health are tied together. The goals for SCEP have focused on monitoring water quality and the assessment of resources in the area. There are concerns about the daily disposal of domestic sewage into the waterway and the industrial effluent from paper mills and other industries around the border towns of Calais and St. Stephen situated in the northern part of the ACAP area (St. Croix Estuary Project 1997).

The Eastern Charlotte ACAP was originally established in 1993 to assess environmental concern surrounding the L'Etang Estuary. The concerns of those involved with the site have gradually expanded to address the environmental issues within the entire Fundy composite watershed. The vision for Eastern Charlotte ACAP is for the surrounding community to value, foster, and protect their diverse traditional and historic resources through awareness and participation which promotes safe, accountable management and development of the environment (Eastern Charlotte Waterways Inc. 1996). The goals established to address this vision include the enhancement and maintenance of coastal and fresh waters, enhancement and conservation, of natural resources habitat, land-based activity management such as forestry, aquatic-based activity management such as aquaculture, and most importantly environmental education and awareness. Eastern Charlotte has undertaken a number of projects to address these goals such as shellfish and intertidal assessments, beach sweeps, water classification pilot projects, and local environmental newsletter publications (Eastern Charlotte Waterways Inc.1997).

Madawaska was incorporated as an ACAP site in 1992. Though the formal name for this site is La Societe d'Amengement de la Riviere Madawaska et du Lac Temiscouata, it will commonly be referred to throughout this thesis as Madawaska ACAP. The study area encompasses the Lac Temiscouata-Madawaska River Drainage Basin (3000 km^2) which

empties into the Saint John River. The vision for this site depicts a society of people with respect for the environment, a clean community with clean water, safe recreation, and continuation of scientific research (SARMLT July 1997). To achieve this vision, those involved with the Madawaska ACAP site identified four specific goals: improve knowledge of the environment, encourage optimal use of resources, enhance the environment, and encourage the community to take responsibility for environmental management and protection. There have been numerous projects implemented by Madawaska ACAP including: tree planting, stream clean-up, shoreline stabilization, and the creation of a linear park between Cabano and Edmundston (SARMLT May 1998).

Chapter 3: Evaluative Research Literature and Methodological Framework

3.0 Introduction

The central theme and methodological framework for this research is evaluation. In Chapter 1, evaluation was defined as a method of determining how adequately resource policies, programs and projects are implemented and what variables account for their success (Yin and Kaftarian 1997, Mitchell 1989). The research method used in this thesis identifies the conditions documented in the literature under which community-based initiatives are most likely to succeed and then formulates a framework which is used to evaluate community-based initiatives. Chapter 3 discusses the nature of the methodology chosen for this research and details the focus group process followed. The first section of this Chapter explores the topic of evaluation and examines the notion of evaluation in the context of the present research problem. The second section of Chapter 3 describes the research plans and methods in accordance with the two research objectives.

3.1 Defining Evaluative Research

Numerous books (Boulmetis and Dutwin 2000, Smith and Glass 1987, Fink and Kosecoff 1978, Caro 1971, Suchman 1967) and journal articles (Greene 1998, Jacobson and McDuff 1997, Kelly and Vlaenderen 1995, Chen 1994) describe the characteristics of evaluation and evaluative research. Although numerous terms ranging from hindsight reviews, evaluation, assessment, post-mortem analysis, to ex-post facto analyses have been given to the work, general agreement exists concerning its focus. The classic work by Suchman (1967) entitled "Evaluative Research" defines the intent of evaluation as:

> "The determination (whether based on opinions, records, subjective or objective data) of the results (whether desirable or undesirable, transient or permanent, immediate or delayed) attained by some activity (whether a program or part of a program, an ongoing or one-shot approach) designed to accomplish some valued goal or objective (whether ultimate, immediate, effort, performance, long or short range)."
>
> (Suchman 1967, 69)

Such assessments note weaknesses in existing policies, programs and/or projects that can thereby be resolved or avoided in future decisions. Evaluation and evaluative research can be defined most accurately as a process. The process is guided by the reason for doing the evaluation in the first place. There are numerous types of evaluations such as efficiency, effectiveness, and goal attainment. Two overarching types of evaluation are process-oriented and outcome-oriented evaluations. To know what type of evaluation to use, the reasons behind the evaluation must first be understood. The research problem in this thesis is based on a process-oriented evaluation. Process evaluations are focused on understanding how a program works. The evaluation is centered on the planning and implementation phases of the program as opposed to outcome or impact of the program. There are numerous questions that might be addressed in a process-oriented evaluation including:

- Does the program have clearly defined goals and objectives?
- How is funding obtained for the program, is the funding constant?
- Do employees have access to training? or
- Have program managers developed partners within the local community?

Process-oriented evaluations conducted on programs allow researchers to identify whether the foundation of the program and the organization conditions present are likely to promote the success of the program.

Evaluative research has been widely applied to social policy research to explore the effects of policies and variables that can account for their success or failure (Bellamy et al. 1998, Scott 1998, Syme and Sadler 1994). Extensive literature also documents evaluations of health care (Kooker et al. 2000, King and Hood 1999), and education (Murphy-Berman et al. 2000, Jacobson and McDuff 1997, Glodenberg and Frideres 1986). In contrast, there is little published on evaluating natural resource management programs, including community initiatives addressing coastal resource management (Otter and Capobianco 2000, Kreutzwiser and Slaats 1994). For a number of years, resource management initiatives have

had an evaluative component built into them. Frequently, the evaluative component within natural resource management programs is not taken as seriously as the planning and implementation phases. Once the initiative has been planned and implemented, there are often only minimal funds and expertise available to carry out an evaluation.

For the purpose of this research, evaluation focuses on uncovering the principles/conditions underlying a successful program. This involves evaluating how well each of the fourteen sites addressed the seven-point ACAP model, the initial five goals of ACAP (sustainable livelihoods, natural heritage, water quality, responsible stewardship, and ecosystem planning), and the conditions underlying success documented in the literature. Identifying the obstacles experienced by the sites can provide insight into the conditions present (and lack of) which the literature suggests underlie successful programs. Exploring the solutions adopted by each of the sites, to encourage greater success, allows additional conditions (which have not been documented in the literature) to be identified.

3.1.1 History of Evaluation

The recent efforts to institutionalize evaluation in government agencies are the latest in a long series of attempts to use data and evidence in search for a better understanding of social behavior and 'wiser' social policy (Weiss 1998, Rutman 1977). Evaluation is rooted in the empirical study of social problems in Britain in the 1660s. The seventeenth century saw the beginning of a search for laws comparable to those developing in the physical sciences (Rossi and Berk 1999, Chadwick et al. 1989). The first study that can be labeled "evaluative" was carried out approximately two centuries later when A.M. Guerry published a statistical study in 1833 that attempted to show that education did not reduce crime (Weiss 1998). Other statisticians marshaled different data in attempts to refute his findings (Bonneau and Amegan 1997, Chelimsky and Shadish 1997). In a counterpoint that has remained a continuing feature of evaluation history, these statisticians not only cited

different evidence but also criticized Guerry's methods in their attempt to establish that education did in fact lead to a reduction in crime.

Early policies to improve social conditions did not include provisions for evaluation. When reformers in the late 19th and early 20th centuries used social science research procedures, it was to conduct surveys in order to document the extent of problems and locate people in need. They took for granted the remedies they provided would solve the problems and locate people in need. For example, when the United States passed laws in the second decade of the 20th century prohibiting child labour, the outcome was not evaluated; it was assumed that child labour would end and results would be intrinsically good (Rossi and Berk 1999, Chadwick et al. 1984).

People working in the fields of education and health were among the first to do systematic studies of the outcome of their work. In 1913 R.C. Cabot examined 3000 autopsy reports, compared the diagnoses that had been made of each case and wrote an article in the Journal of the American Medical Association evaluating the quality of medical diagnoses. The war on poverty in the mid-1960s marked the beginning of large-scale government-funded evaluation (Weiss 1998, Kelly and Vlaenderen 1995, Smith and Glass 1987). The U.S. federal government began funding an array of programs to help the poor and started to require systematic evaluation of the results of the money spent. The Elementary and Secondary Education Act in 1965 included a requirement for evaluation in the law. Other programs on the War of Poverty were also evaluated, including programs that provided legal services, community health services, job training, nutrition supplements for pregnant women and infants, food stamps, housing vouchers, and preschool education (Weiss 1995, Kelly and Vlaenderen 1995, Smith and Glass 1987). Evaluators developed new methods and tools to fit the varied content and settings of the programs.

Until the 1960s, formal qualitative methods were given little attention in evaluation. At this time, the key evaluation challenge was the 'black box' task of generating unbiased, precise estimates of the causal consequences of programs or their major constituent parts. The preferred designs for doing this were experimental and the preferred analytical techniques were quantitative (Chelimsky and Shadish 1997). The quantitative preference was so strong that non-experimental quantitative strategies were preferred over non-experimental qualitative ones under the assumptions that i) statistical controls are adequate substitutes for the design controls that experimenters emphasize, such as comparison groups, pretests and longitudinal pretests and ii) qualitative methods provide neither the design nor statistical controls needed for ruling out alternatives to the notion that the program under study is responsible for any observed relationships between the program and outcome changes (Weiss 1998).

Evaluation branched out into other areas such as environmental protection, energy conservation, military recruiting and control of immigration in the 1970s. A high point in evaluation history came in the 1970s with the inauguration of a series of social experiments to test policy and program ideas prior to their enactment. Examples of these experiments include the Negative Income Tax experiment, housing allowances, health insurance, performance contracting in education and other smaller experiments (Bonneau and Amegan 1997, Johnson 1970). In these experiments, pilot programs were implemented at a large enough scale to stimulate actual operating conditions. Experimental results were expected to help policy makers decide whether to move ahead with the policies throughout the U.S.

In the 1970s and 1980s, the dominance of quantitative methods came under attack in evaluation as in all other social sciences, except economics (Chelimsky and Shadish 1997). The struggle to legitimate qualitative methods within evaluation was the product of two influences. One was the long-standing debate, especially in sociology, about the utility of

qualitative methods and the limitations of quantitative methods. Sociologists (Rossi and Berk 1999, Greene 1998, Bonneau and Amegan 1997, Rutman 1977) generated numerous debates concerning qualitative versus quantitative methods in the 1970s, feeling slighted when they detected that inferior status was deliberately or inadvertently assigned to qualitative work. The second influence was from scholars trained in quantitative methods, particularly in education, which rejected their formal training and expressed qualitative preference. The debate between qualitative and quantitative methods has been the prime intellectual agenda in evaluation for the past fifteen years (Rossi and Berk 1999, Greene 1998). In order to harness the advantages of both qualitative and quantitative methods, the current research adopts both approaches.

3.1.2 Identifying Features within Evaluative Research

Evaluation and Values

One of the key identifying features within the definition of evaluative research is value. A precondition to an evaluation study is the presence of some activity whose objectives are assumed to have value. This represents a major distinction between evaluative research and basic research aimed at hypothesis testing. "Value" may be defined as an aspect of a situation, event, or object that is invested with a preferential interest as being "good", "bad", "desirable", or "undesirable" (Greene 1998, Suchman 1967). Such values, on the part of both professionals and the public, play an integral role in determining the objectives of public service programs, the kinds of program operations that may be established and the degree of success achieved by these programs (Rossi and Berk 1999, Suchman 1967).

Values are modes of organizing human activity which determine both the goals of public service and social action programs and the acceptable means of attaining these goals. Such values may be inherent in the object or activity itself, or they may be conceived as being present whether they really are or not. The evaluation process is circular, stemming from

and returning to the formation of values, as shown in Figure 2.

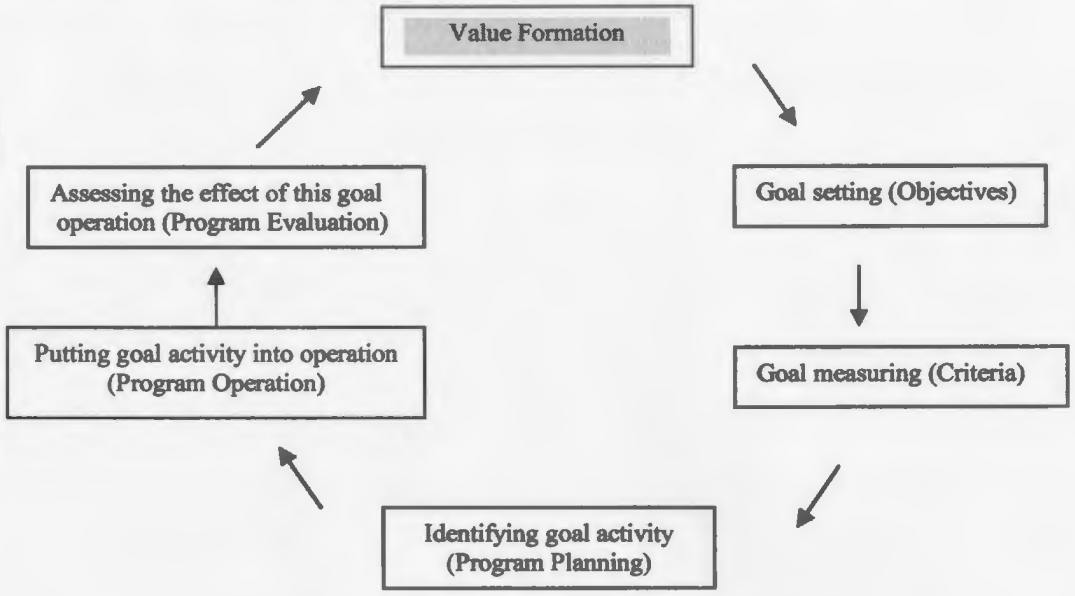


Figure 2: The Circular Evaluation Process

(Suchman 1967)

Evaluation always starts with some value, either explicit or implicit. For example, if it is good to live a long time, then a goal is formulated from this value. The selection of goals is usually preceded by, or concurrent with, "value formation". An example of "goal setting" would be the statement that fewer people should develop coronary disease, or that fewer people should die of cancer. Goal setting forces are always in competition with each other for money, resources, and effort. The current research starts with the value that it is good for community-based organizations to experience success in their initiatives.

The next step involves measuring goal attainment. If a goal is set that fewer people should die from cancer, then it is imperative to know how many people are presently dying from cancer. The nature of the evaluation will depend largely on the type of measure that is available to determine the attainment of the objective. With respect to the ACAP initiative, this step involves understanding the process and conditions surrounding the implementation of the initiative.

The next step in the process is the identification of some kind of "goal-attaining activity". In the case of cancer, for example, a program of cancer detecting activities aimed at early detection and treatment might be considered. Then the goal-attaining activity is put into operation. Diagnostic centers are set up and people are urged to come in for check-ups. At some point there is an assessment of the "goal-directed" operation. This stage includes the evaluation of the degree to which the operating program has achieved the predetermined objectives. This assessment may be carried out quantitatively or qualitatively, or with the aid of a mixed methodology research design. Within this research, the third stage in the evaluation process consists of the design and implementation of the evaluative framework. This will allow identification of conditions present within the ACAP initiative which underlie success, while also identifying the areas in need of improvement. The program review for ACAP that occurs once every five years is an example of a goal-attaining activity. The program is reviewed to assess whether the program deliverables have been achieved. The results of ACAP's goal-attaining activity dictate whether funding will be extended for five more years.

On the basis of assessment, a judgement is made as to whether the goal-directed activity was worthwhile. This brings the process back to value formation. It may be considered "good" to have cancer diagnostic centers. At the end of the evaluation process one may arrive at a new value, or the old value may be reaffirmed, reassessed and/or redefined. For example, if the old value was "it is good to live a long time", the new value might be "it is good to live until the age of 100 if you remain healthy, but if you cannot remain healthy it is better not to live past 80". With respect to the ACAP initiative, the evaluation is reassessed and redefined through a focus group exercise that examines the various obstacles experienced and solutions that have been adopted within the implementation of the initiative. The conditions underlying success indicated in the evaluation may be redefined if, for example, a site with many conditions underlying success present had numerous obstacles and more significant

obstacles than a site with few conditions present.

Evaluation and Objectives

The most identifying feature of evaluative research is the presence of an objective of which the measure of attainment constitutes the main focus of the research problem. Given the basic importance of a clear statement of the program objectives to be evaluated, it is not difficult to understand why so many evaluation studies, which fail to define these objectives, prove unproductive. The clear-cut definition of program objectives and the identification of the responsible program activities are challenging (Chadwick et al. 1984). There are six key considerations that deal with basic questions that need to be answered in formulating the objectives of a program for the sake of evaluation.

The first consideration involves questioning the nature of the content for the objective. Thus, a content, which is focused on changing knowledge, attitudes and/or behavior, is quite different than one aimed at producing exposure, awareness, interest and/or skill (Boulmetis and Dutwin 2000). There are also different levels of content. For example, public service programs may operate on different levels of an objective, ranging from the ultimate one of preventing a problem from developing to a more immediate one of distributing information on the problem.

The second consideration involves identifying the target of the program. This helps to identify the present and potential clients for a public service program and serves to define the population to be studied. Thus, programs which are aimed at the undifferentiated general population, such as Humber Arm, Bedeque Bay Environmental Management Association, Bluenose, and Madawaska can be differentiated from programs aimed at discrete target groups viewed as the direct objects of change such as Cape Breton ACAP and to a lesser extent St. John's Harbour which focus their efforts on politicians and decision

makers rather than the community (Boulmetis and Dutwin 2000, Greene 1998). Thus, if program targets are differentiated, the program will then have differential effects among various segments of the population and success and failure can only be measured in terms of whom the initiative is attempting to reach.

Evaluative research must also identify when the desired change is to take place. Thus, it must be made clear whether the program is seeking an immediate effect or gradually building on some postponed effect. In general, there are short-term, discrete programs of a single, one-shot nature; cyclical or repetitive programs that are continuously renewed, and; long-term developmental programs that build towards long-range goals (Boulmetis and Dutwin 2000, Greene 1998). The ACAP initiative falls into this last category. Some objectives take longer than others to attain and the evaluation must take into account the length of time that the program has been in effect. For example, many evaluation studies show immediate signs of success only to have these disappear as the novelty and enthusiasm for a new program wear off.

A fourth consideration involves identifying whether the objectives are unitary or multiple (Rossi and Berk 1999, Greene 1998). It is rare that any program will have only one purpose or one effect. This means that the evaluator must usually provide for the measurement of multiple effects requiring the allocation of priorities for the study. It also means careful attention to "unanticipated" or "undesirable" side effects, which represents the fifth consideration.

Within evaluative research it is important to understand the desired magnitude of the effect. It is therefore necessary to ask certain questions surrounding the types of results the program is seeking, standards the program must meet and the criteria surrounding program effectiveness and success. The final consideration within evaluative research involves

understanding how the objective is to be attained. Thus, the means, which are used to implement the program, must be fully understood.

Evaluation and Assumptions

Many of the responses to the considerations raised above will require an examination of the underlying assumptions of stated objectives. The process of seeking to understand the underlying assumptions of an objective is akin to that of questioning the validity of one's hypothesis. This involves the concerns with the theoretical basis of a belief that activity "A" will produce effect "B". As argued by Suchman (1967), evaluation is primarily a critical point of view. It becomes a question of proving to colleagues how it is known that our efforts have been successful, what assumptions were required in order to establish this proof and what degree of confidence is demanded for these assumptions.

Assumptions may be classified into two types: value assumptions and validity assumptions. Value assumptions pertain to the system of beliefs concerning what is "good" within a society or a subgroup of that society (Chelimsky and Shadish 1997). One may say that the main objectives of Canada's Social Welfare movement itself are based on the value assumption that the government "owes" its people protection from undesirable social conditions. Such value assumptions may vary from group to group and result in value conflicts that create public controversy over goals and means of public service programs. These conflicts are implied in the evaluative question; "success from whose point of view?"

Validity assumptions are much more specifically related to program objectives. Such assumptions underlying mass chronic disease detection programs are, for example, that those people who are found to have a chronic disease are "better off" than they would have been had the disease not been detected (Chelimsky and Shadish 1997). All programs designed to produce change must make validity assumptions concerning the worthwhileness of their services. It is impossible to secure proof of the effectiveness of everything one

wishes to do. Operating personnel must proceed on the basis of the best available knowledge at the time.

The stability of program objectives rests largely on the reliability of the assumptions made, if reliability is viewed as the consistency or dependability of these assumptions. Where the underlying assumptions of a program are constantly changing, it is impossible to formulate valid objectives. This is most likely to be the case in problem areas lacking in established theory or factual knowledge. Evaluations of many of the newer programs of social welfare, such as worker safety, suffer from a high degree of inconsistency or disagreement concerning underlying assumptions. It is difficult to compare the relative success of different approaches if these are based on conflicting assumptions. Programs based on assumptions with low reliability must necessarily have low validity. Since high validity assumes high reliability, evaluative research usually concerns itself mainly with problems of the validity of the assumptions.

3.1.3 Evaluation and the Current Research

There are four key mixed method designs, which can be used in evaluation: sequential studies, parallel/simultaneous studies, equivalent status designs, and dominant-less-dominant studies (Tashakkori and Teddlie 1998). Sequential studies exist when the researcher first conducts quantitative and then qualitative research, or vice versa. Thus, the two phases of research are kept separate. Parallel/simultaneous studies exist when researchers conduct quantitative and qualitative research at the same time. Equivalent status designs use quantitative and qualitative research in equal amounts to understand the phenomena.

The research undertaken in this evaluative study of ACAP most closely resembles the dominant-less-dominant mixed method design. Dominant-less-dominant studies refers to

research which is primarily, as in this example, qualitative research but which also relies on quantitative research in some small manner (and vice versa). In this study, research will rely on qualitative methods to draft the evaluative framework, qualitative methods for the focus group sessions, quantitative methods to categorize and rank the results, and finally qualitative methods to analyze results and explore trends.

Mixed methodology research often relies on triangulation for the assessment of the data. Triangulation refers to the combination of methodologies in the study of the same phenomenon. The triangulation metaphor comes from navigation strategy that uses multiple reference points to locate an object's exact position (Jick 1983). Similarly, social science researchers can improve the accuracy of judgements by collecting different kinds of data about the same phenomenon. By using several sources of information, triangulation is used to cross check results in attempts to provide convergence or agreement between two or more methods. Thus, the conclusions made from one source of information are validated when similar results are found from another.

The effectiveness of triangulation rests on the premise that the weakness in any one method is compensated by the counter-balancing strengths of another (Jick 1983). The use of multiple measures may also uncover some unique variance which otherwise might have been neglected by single methods (Creswell 1994). These combined methods might be drawn from 'within methods' approaches, such as different types of quantitative data collection strategies (e.g. a survey and an experiment). Alternatively, it may involve 'between methods', drawing on qualitative and quantitative data collection procedures (Brannen 1992). There are four key triangulation designs:

i) Data triangulation: when the research involves the use of a variety of data sources;

ii) Investigator triangulation: applicable when several different researchers are involved;

iii) Theory triangulation: useful when multiple perspectives are used to interpret results; and

iv) Methodological triangulation: applicable when multiple research methods (quantitative and qualitative) are involved.

(Tashakkori and Teddlie 1998)

This research will rely on two triangulation designs: data triangulation and methodological triangulation. This thesis involves the use of a variety of primary (Environment Canada files, focus group session) and secondary data sources (books, journal articles, published reports, and the World Wide Web). Methodological triangulation is also an integral part of this research, as both qualitative and quantitative research methods are used. Since the current research involves evaluating a community-based coastal initiative. Thus, it is imperative that there is an initial understanding of what community-based initiatives are. It is also important that the researcher is aware of the inherent challenges of evaluating community-based initiatives.

Defining Community Initiatives

The essence of the community is the idea of having something in common. It is recognized that community can refer to the population of a particular geographic area, the territorial community, or to people who share in common something other than physical proximity in the same place (Willmott 1989). The territorial community in question can vary widely in scale: it can be as small as a few streets or as large as a nation (or even a group of nations such as the European Union). In the case of this research, the geographic area for each of the sites is coastal in nature and located within Atlantic Canada.

For the second usage, the term 'interest community' recognizes that what is shared in such a grouping of people is more than interest as the word is normally understood: it can also cover characteristics as varied as ethnic origin, religion, politics, occupation and leisure pursuit. In terms of the second usage of the word community, each of the fourteen ACAP sites have similar origins in that they were all identified by Environment Canada as

environmentally sensitive, threatened coastal areas in need of an environmental protection initiative.

In following the example of ACAP, it is evident that territorial communities and interest communities are not mutually exclusive. They can overlap in the sense that although interest communities are often geographically dispersed, they can even exist within quite small areas (e.g. at the district, town or hamlet level). A local territorial community might contain several communities such as communities of religious origin, a community of business people and a community of Asian residents. There is also a distinction between local and non-local communities. Local communities are territorial but contain localized interest communities. Non-local communities (communities at a larger territorial scale) also contain interest communities, which are geographically dispersed. Thus, there is a hierarchy of local communities from the immediate area (e.g. a street or a block of flats, to a district or a town).

Each ACAP community is both a community of interest and a territorial community since they were all identified by Environment Canada as environmentally sensitive, threatened coastal areas and each site consists of individuals who actively support the various initiatives. Each ACAP community is also a territorial community, since each site is addressing ACAP goals within an identifiable coastal area. For example, St. John's Harbour ACAP is focusing its initiatives in the geographic areas of Paradise, Mount Pearl, and St. John's.

Willmott (1989) employs a useful distinction in exploring central government led initiatives versus initiatives led by local residents as, what are sometimes referred, top-down activities and bottom-up categories. Community care, for example, is a top-down policy usually originating with central government, as is community policing. However, a group of

interested residents may, for example, launch a residents' association, a campaign against drinking and driving or a closure of a school, while groups of people with particular illnesses or problems may get together to create self-help groups. In practice, there is considerable interdependence and interaction between top-down and bottom-up schemes (Willmott 1989). Not only may a top-down initiative be dependent on the involvement of local citizens, but it may also be part of official policy to encourage the development of indigenous activity so that community groups and informal social networks can make their contribution. For example, although the official initiative for the implementation of the Atlantic Coastal Action Program originated within Environment Canada, in order to be effective it not only requires the collaboration of local authorities (e.g. the municipality and a core funded executive environmental group) but also voluntary organizations and community groups (e.g. eco-friendly farmers and environmental organizations).

Public Participation and Environmental Issues

One reason for the public's growing interest in environmental initiatives is that society has become much more aware of the effect that people have on the environment both directly and indirectly through everyday actions and consumption (Chiasson 1999, Tomalty and Pell 1994, and Sadler 1990). As well, given recent trends of budget cutbacks and deregulation, many citizens feel that environmental protection and related concerns are being ignored or pushed aside by government and industry. They mistrust environmental information produced by these organizations and become frustrated in their attempts to understand environmental matters (Chiasson 1999, Tomalty and Pell 1994). In many instances members of the public take personal action to protect their environment.

Challenges in Evaluating Community Initiatives

There are a number of inherent difficulties in evaluating community-based initiatives. When individuals are the unit of analysis, 'groups' of individuals can be assigned to different

experimental conditions, preferably in random fashion (Yin and Kaftarian 1997). Random assignment of people outside a highly controlled laboratory setting is very difficult, but becomes nearly impossible when the community is the unit of analysis. The sample size is limited to N=1 when studying a single community. Such a sample size limitation severely restricts the analytical options. Moreover, the open systems nature of community partnerships makes it extremely difficult to establish complex or even simple causal connections (e.g. between the existence of the partnership and the occurrence of outcomes). Initially, evaluations of community partnerships present multiple options regarding the unit of measurement. The unit of measurement may be at the individual, family peer group, school performance, public policy, and systems change level. This challenge must be viewed as a limitation in the present research.

3.2 The Case Study Approach

The information gained through the mixed methodology design is organized and assessed through the use of a case study approach. As a research method, the case study can contribute uniquely to the knowledge of individual, organizational, social, and political studies (Yin 1984). This approach aids in the collection of comprehensive, in-depth information regarding the case study of interest (Patton 1980). Yin (1984) defines the case study as an empirical inquiry that investigates a contemporary phenomenon. The case study provides as a real life context, with the boundaries between phenomenon and context not clearly evident, and in which multiple sources of evidence are used. Case studies are useful in answering "how" and "why" questions that pertain to a contemporary set of events over which the researcher has minimal or no control.

The most important part of identifying an appropriate case study is defining the research question (Yin 1984). The review of literature within this thesis provided the theoretical framework which helped to define evaluative research and identify an appropriate strategy

for addressing the research problem. The case study approach lends itself to combining both quantitative and qualitative data. The current research applied a case study approach and relied on a set of data sources including literature research and focus groups. The data sources are used in combination to complement one another and to add credibility through capturing a more complete portrayal of the case study of interest.

Despite the numerous benefits of the case study approach, researchers (Yin 1984, Guba and Lincoln 1981) have also criticized it. One weakness can occur by allowing unrepresentative views to influence the direction of the findings and conclusions. This problem is minimized in this thesis by encouraging as many Boards of Directors members to participate in the focus group as possible through scheduling the sessions either preceding, during, or following Board meetings.

The greatest challenge of the case study research in this thesis was to gather enough data and insight to illustrate the conditions present within the initiative under which community-based initiatives are most likely to succeed. Time, financial, and geographic constraints presented by the dispersed nature of the fourteen ACAP sites placed restrictions on both when and for how long data were gathered at each site. Similarly, the overall examination of success at each site allows for a broad understanding of the extent to which the site achieved conditions underlying success, but will provide only minimal indication of the milestones under which conditions were achieved (e.g. conditions present since the inception of the site versus conditions adopted by the site) that the sites experienced. Although not comprehensive, the data collected and presented do illustrate the conditions, under which community-based initiatives are most likely to succeed, that are present within the community-based coastal resource management initiative.

3.2.1 Research Plans and Methods

The fourteen ACAP sites each followed a similar set of steps to implement their respective initiatives. There were six steps in total: establish a formal committee structure; establish a vision, set of goals and objectives; develop a Comprehensive Environmental Management Plan (CEMP); describe the current environmental conditions; identify the preferred approach; and implement the CEMP. In an attempt to understand why certain sites have a greater number of necessary conditions present, a combination of research methods and techniques were used. In the investigation of ACAP, information was collected from web sites, Environment Canada project files, written documents, site visits, and the focus groups.

An evaluative framework was developed and included measurable variables covering all of the conditions underlying success identified in the literature. The framework was then applied to each of the fourteen ACAP sites. The relative importance of each of the conditions was identified during the focus group sessions. When the focus groups cited the conditions of success that were identified in the literature, there was a high level of confidence that these conditions do in fact underlie success. When the focus groups did not cite certain conditions, or cited them as a secondary condition, then the case study did not support the literature review. Reasons why these divergent results occurred were explored.

In addition, a research trip to the Atlantic Region Environment Canada headquarters in Dartmouth, Nova Scotia offered the opportunity to meet with the ACAP management committee at Environment Canada: Director, Lawrence Hildebrand, as well as Karen Swan, Allan Kindervater, Colleen McNeil and Suzie Dech and to learn about the overall program direction. Meeting with the ACAP staff in Dartmouth provided an in-depth, integral understanding of the initiative as a whole and afforded a better understanding of the program goals, objectives, and progress that the fourteen sites have made over the last thirteen years.

Objective One: Identify Documented Conditions Underlying Program Success

Resource management evaluations within the literature were reviewed to identify how evaluations are organized, key categories within evaluation, and to understand the difference between process and outcome-oriented evaluations. Specifically, the literature review provided insight into the main categories used in resource management evaluation including:

- Identifying, defining, and documenting;
- Types of media involvement;
- Communication enhancers;
- Training, monitoring, evaluation, and results;
- Policies; procedures, and by-laws; and
- Physical/monetary assistance.

These six categories are used as the main categories in the literature-based evaluative framework. The literature review also allowed identification of the most commonly cited conditions under which community-based initiatives are most likely to succeed including:

- Funding;
- Community participation;
- Organizational networks; and
- Technical expertise.

These four conditions become the set of four criteria in the literature-based evaluative framework. Measurable variables were created for each of the corresponding categories and criteria. These measurable variables were developed to provide greater insight into both the category and the criterion. For example, criterion 2 (Community Participation) and category 1 (Identifying, Defining, and Documenting) has a corresponding measurable variable that examines whether the sites formally recognized volunteers.

The ACAP resources and literature were explored to gain a better understanding of the ACAP initiative. Specifically, the review provided insight into the ACAP Model, which

consists of a seven-point program for the ACAP sites including:

1. Appointment of a full time community Coordinator and office for each site;

2. Assessments of environmental quality through base data collection on the areas' natural resources, identification of environmental problems through public input and scientific research;

3. Development of a long term vision with clear objectives to obtain long term goals;

4. Identification and assessment of necessary remedial actions and conservation efforts through public involvement/opinion;

5. Development of a Comprehensive Environmental Management Plan;

6. Promotion of environmental stewardship through education and awareness activities; and

7. Implementation of pilot projects that would demonstrate the importance and effectiveness of low cost, innovative solutions to environmental issues and watersheds.

(Robinson 1997)

The ACAP review also allowed for the identification of the five pre-established goals of ACAP including Sustainable Livelihoods, Natural Heritage, Water Quality, Responsible Stewardship, and Ecosystem Planning. An evaluative framework was developed which included characteristics from the ACAP Model and the program goals. An ACAP resources-based framework was then created using the five goals of the ACAP program (these represent the five criteria in the framework). The first three indicators under each criterion were derived from the ACAP literature as a means for Environment Canada to verify each of the five goals. Though these indicators were never formally used by Environment Canada in an evaluative manner, they provide a better understanding of the five goals. A fourth indicator was created for each criterion to capture information from the seven-point ACAP model in the evaluation.

The literature-based framework and the ACAP resource-based framework were amalgamated to create the evaluative framework used in this research. To achieve this, the

most appropriate qualities were selected from each of the frameworks. Thus the six categories from the literature-based framework and the five criteria from the ACAP resource-based framework formed the shell of the evaluative framework. The measurable variables from the first two frameworks were combined to produce the measurable variables for the evaluative framework. Additional variables were included in the framework that were identified in the literature. The purpose of the measurable variables is systematically verify which steps/processes each site has followed to carry out their initiative and which were not followed. Prior to the use of the framework, it was mailed electronically to each of the fourteen ACAP coordinators. It was also shown to employees at Environment Canada. The researcher encouraged questions and feedback concerning the evaluative framework. From the feedback, the framework was minimally revised and then applied to each of the fourteen ACAP sites.

Objective Two: Apply the Evaluative Framework to Each ACAP Site

The evaluative framework was applied to the ACAP case study to identify the conditions underlying success present within each site, and understand how these conditions varied between the fourteen sites. The evaluative framework was applied to each site independently. The information to apply the framework was obtained through review of each site's files at Environment Canada and the websites of each of the fourteen ACAP areas. After the evaluative frameworks were completed, they were sent back to the corresponding site coordinator to in-fill any information, which may not have been addressed or covered in the framework. The coordinators were permitted to question any of the information and could add any information to the framework that had not been included. After all fourteen evaluative frameworks were returned, objective two was complete.

The collection of information was kept organized through the use of the evaluative framework. Each site's strengths can be identified by looking at the information recorded

within each measurable variable and looking at the breadth and magnitude of measurable variables that are filled out with site-specific information. Areas within the framework which are left blank indicate that certain criteria or indicators have not been fully met or that data were not available on the variables.

Insight into the results of the evaluation was gained from the results of the focus group sessions. The various responses to the focus group session questions provided insight into why the site achieved the number of conditions underlying success that it did as well as the patterns of conditions achieved across various groups of sites (e.g. rural sites versus urban sites). The focus group study is most frequently defined as a carefully planned discussion designated to obtain perceptions on a defined area of interest, in a permissive, non-threatening environment (Edmunds 1999, Duffy 1993).

The basic philosophy behind the focus group methodology is that the dynamics of the group process will result in the generation of more useful information, on a cost-efficient basis, than would otherwise be available (Krueger 1994, Greenbaum 1988). During World War II, increased attention was placed on focused interviewing groups, particularly as a means of increasing military morale (Krueger 1994). Many of the procedures that have come to be accepted as common practice in focus group sessions were outlined in the classic work by Robert Merton, Marjorie Fiske and Patricia Kendall, The Focused Interview (1990/1956) (Krueger 1994).

Focus group sessions typically have six characteristics or features: i) consist of a group of people, ii) conducted in series (Quible 1998, Greenbaum 1988), iii) reasonably homogeneous participants (Edmunds 1999, Duffy 1993), iv) a data collection procedure, v) make use of qualitative data (Mitra 1994 and Greenbaum 1988) and, vi) have a controlled discussion within a specified topic (Quible 1998, Greenbaum 1988). Focus groups are

typically composed of seven to ten people, but the size may range from as few as four to as many as twelve. The size is conditioned by two factors: it must be small enough for everyone to have an opportunity to share insights and yet large enough to provide a diversity of perceptions. When a group exceeds a dozen participants there is a tendency for the group to fragment. Participants want to talk but are unable to do so because there is not a sufficient pause in the conversation. In these situations, participants often resort to sharing of information through whispering to the people next to them. Small groups of four or five participants afford a greater opportunity to share ideas, but the restricted size also results in a smaller pool of total ideas.

Focus groups are composed of people who are similar to each other. The nature of this homogeneity is determined by the purpose of the study and is a basis for recruitment into the focus group. This homogeneity can be broadly or narrowly defined. For example, suppose an adult community education program wants to know more about reaching people who are currently not participating in their services. In this case, homogeneity is broadly defined as adults who live in the community who have not yet attended community education sessions. The group might vary by age, gender, occupation, and interests but members have the commonality of being adult, residents of the community, and nonusers. If, however, the community education programs are targeted for certain occupations, residents in defined geographic areas, or only during certain times, then the researcher would use a narrower definition of homogeneity in selecting participants.

Focus groups produce qualitative data that provide insight into the attitudes, perceptions, and opinions of the participants. These results are solicited through open-ended questions, a procedure in which respondents are able to choose the manner in which they respond, as well as from the observation of the respondents in a group discussion. The focus group represents a more natural environment than that of a personal individual interview because

participants are influencing and influenced by others, similar to real life. Peer pressure is somewhat limited because depending on the topic, the focus groups are made up of a homogeneous group of people. Therefore, if the research topic was to understand what makes a successful manager, the researcher will not likely have employees and management in the same focus group session.

The topics of discussion in a focus group are carefully predetermined and sequenced, based on an analysis of the situation (Duffy 1993). The questions are placed in an environment that is understandable and logical to the respondent. The moderator uses predetermined open-ended questions. As primary sources of data, a focus group session was conducted with each of the fourteen ACAP sites in the months of August and October 2001. The average time that the focus group sessions lasted was 1.5 hours, with the shortest session lasting 1 hour and the longest session lasting 2.5 hours. The average number of participants within the focus group sessions was 5. The least number of participants was 2 and the greatest number of participants was 10.

There are a number of stages in the focus group study. The first stage of the focus group study commenced by explaining why the researcher intended to carry out the research. This stage involves the development of the moderator guide. This is a general outline of the issues to cover during the discussion including specific questions to be asked, as well as potential probes the moderator might use to stimulate additional discussion in a given area (Edmunds 1999). The moderator guide used in this research described three things in particular: who the researcher is, what the purpose of the study is and the three issues to be discussed in the focus group (why the site is unique, obstacles experienced and solutions adopted). The moderator guide was shown to each of the site coordinators prior to the focus group session and handed out to each focus group participant (refer to Appendix 1).

In the second stage of the focus group process, participants were identified based on who would best be able to answer the questions on the particular subjects during the sessions. For this research, the recruitment of focus group participants was restricted to who was available from within the Board of Directors, the network of volunteers with the site and paid staff of each site. Because the sites are community organizations, most of the active participants are volunteers, therefore arriving at a time that suited most of them was challenging. Due to the temporal constraints of the research project, one focus group session per ACAP site was deemed sufficient for the purpose of the study. Appendix 2 provides a complete listing of focus group participants.

The screen questionnaire is the third stage of the focus group process and represents a telephone interview between the researcher and the potential participant. During the interview the researcher asks the respondent a series of brief questions to determine whether or not they qualify to participate based on the researcher's pre-established recruiting profile (Krueger 1994). Participants in the focus group sessions included ACAP coordinators, interest groups, business leaders, volunteers, and scientists. Incorporating diverse participants allowed a more balanced perspective into the notion of success. Since time and monetary constraints made it impossible to sample all participants involved in ACAP, the focus group participants were selected as key informants based on their experience, background, and involvement. For the present research, the researcher talked with each of the fourteen ACAP coordinators to verify that each of the focus group participants was either presently, or previously actively involved with the site.

Within the fourth stage of the focus group session participants were asked if they felt that their site was unique from the other sites and, if so, what was unique. Focus group participants were then asked to brainstorm the various obstacles that have hindered the initiative and solutions that have mitigated the obstacles and then to identify the most

significant/influential obstacles and solutions. This allowed the most significant obstacles and solutions to be identified and differentiated from those of lesser significance. It is only after the weighting of the obstacles and solutions is completed that the evaluation procedure and results can truly be understood. The focus group sessions were tape-recorded and notes were taken on participants' responses. The responses were then typed and handed back to the site coordinators to verify the contents of the session. In this research, analysis was restricted to the obstacles identified during the focus group session (Appendix 6).

The focus group interview offers several advantages. First, it is a socially oriented procedure. Attitudes and perceptions relating to concepts, products, services, or programs are developed in part by the interaction with other people. A deficiency of mail and telephone surveys and even face-to-face interviews is that those methods assume that individuals really do know how they feel, and that they form opinions in isolation (Krueger 1994). Both of these assumptions have presented problems for researchers. Evidence from focus group interviews suggests that people do influence each other with their comments, and in the course of a discussion the opinions of an individual may shift. Focus groups place people in natural, real-life situations as opposed to the controlled experimental situations typical of quantitative studies (Edmunds 1999, Quible 1998).

A disadvantage of the focus group process is that participants may be concerned about voicing their opinion in front of their peers. For example, if an executive director of an organization and a summer student are both involved in a focus group, the summer student may not feel comfortable voicing their concern or criticism regarding the management of the organization. Another disadvantage of the focus group process is the influence that the moderator might have on the responses of the focus group participants. If, for example, the respondent feels that the moderator may 'mis-use' the information obtained, then the respondent may not answer honestly.

Chapter 4: Identifying Conditions Underlying Program Success

4.0 Introduction

The following Chapter identifies and explores results in pursuit of the first research objective. Three frameworks are presented. The first framework drafted was based on the characteristics of evaluation and the conditions underlying success that were identified in resource management and program evaluation literature. The second framework reflects the ACAP Model and program goals within the ACAP resources. A third framework was drafted by combining the preceding frameworks and incorporating input from ACAP coordinators and key staff at Environment Canada. This third evaluative framework was applied to fulfill the second research objective.

4.1 Drafting an Evaluative Framework

The first research objective involved identifying key elements in program evaluation and conditions underlying program success that have been documented, both within resource management/program evaluation literature and within ACAP resources. The methodology developed in Section 3.2.1 was applied to complete objective one. All of the information on the conditions underlying success, obtained through literature and ACAP resources, was organized into evaluative frameworks.

4.1.1 A Literature-Based Evaluative Framework

The search for the conditions underlying program success is not limited to the field of environmental management, but extends into many areas such as education and health care. Planners have long been searching to identify the factors contributing to program success (Knapp and Kim 1998, Western and Wright 1994, Ameyaw 1992, Binnenedijik 1989, Reid 1989). This search is driven by past project failures. When projects fail, understanding the reasons behind their shortcomings is critical in order to avoid similar shortcomings in the future. Likewise, effective programs provide an opportunity to understand the variables that contribute to success.

Within resource management literature, the most commonly cited conditions, under which community-based programs are most likely to succeed were: funding, community involvement, organizational networks, and technical expertise (Murphy-Berman et al. 2000, Beierle 1999, House 1999, Bellamy et al. 1998, Kellogg 1998, Schweitzer et al. 1998, Sinclair and Smith 1996, Woolveridge 1995, Western and Wright 1994, Ameyaw 1992). In the following paragraphs each of these conditions are explored as they pertain to the ACAP initiative. Additional conditions underlying program success that were mentioned less frequently in the literature include:

- Extensive media presence (Bellamy et al. 1998)
- Trusted organization (Schweitzer et al. 1998)
- Organization extends great effort into understanding the concerns of the community (House 1999, Schweitzer et al. 1998)
- Continuity of management (Woolveridge 1995)
- Effective marketing strategy (Woolveridge 1995)
- Support from politicians and industry leaders (Bellamy et al. 1998)
- Skilled implementing staff (Bellamy et al. 1998)
- Clear and consistent objectives (Bellamy et al. 1998)
- Coordination (Bellamy et al. 1998)
- Accountability (Sinclair and Smith 1996)
- Time (Sinclair and Smith 1996)
- Clear, specific, measurable goals (Weiss 1992)
- Community-based membership system (House 1999, Schweitzer et al. 1998)

The evaluative framework is comprised of many of these conditions, along with the most commonly cited conditions underlying program success. As outlined in Chapter 1, for the purpose

of this research, success refers to the ability of each of the ACAP sites to address the five pre-established goals of ACAP and demonstrate the six necessary aspects (conditions) of natural resource program evaluations.

Funding Source and Continuity of Funding

Funding is a critical factor identified in the literature which affects the fate of programs, projects, and community-based initiatives. The initial establishment of any initiative requires a certain level of funding to cover the necessary capital such as office space, computers, telephones, fax machines, desks, and photocopiers. Additional funding sources are necessary for the operational costs of the initiative such as monthly rent, phone bill, office supplies, project coordinator and staff, utilities, and maintenance (Kellogg 1998, Western and Wright 1994). In order for a community-based organization to operate, it requires project-based funding for the planning and implementation of various projects that will be undertaken within the initiative. Project-based funding is the most common type of funding provided to organizations since funders provide money for the completion of a specific project which they deem important. For example, foundations that fund organizations often have a mandate, and therefore do not want to provide financial assistance to projects which do not match their mandate. If core funding is provided to an organization, it tends to be a nominal amount (e.g. $500.00 - $5,000.00). Environment Canada provided a significant amount of core funding ($50,000.00), yet this just covers the salary of the coordinator for one year. In order to obtain project-based funding, the individual undertaking the project must draft a project outline and budget and then submit it to various funding organizations.

Obtaining funding is a constant challenge, and in many cases, an obstacle for community-based initiatives. Project-based funding is available only within the time-line of the project and rarely exceeds three years (Kellogg 1998, Western and Wright 1994). The time that it takes to develop the project outline and budget and to draft a funding proposal must come out of the overhead

funds for the operation. This can put a significant financial strain on the organization since funding proposals can take several weeks and even months to develop, depending on the nature of the project. Each funding proposal must include letters of support, a list of partnerships for in-kind resources (e.g. expertise, free advertising), and other funding sources. The biggest challenge with the funding proposal is the ability to match the funds requested of the funding agency to the funds that must be obtained elsewhere. Drafting funding proposals is an integral part of community-based coastal resource management initiatives and can put a serious strain on the organization's finances.

In the case of ACAP, core funding in the amount of $50,000.00 is provided annually by Environment Canada to the ACAP sites. This funding finances the salary of a full time coordinator at each of the fourteen sites. Each site must then seek additional funds to cover the operational costs of the initiative (e.g. additional staff wages, utilities, and supplies). Within the ACAP sites, these additional funds are generated from a wide variety of sources such as municipalities, corporations (e.g. Irving Oil) and through public donations and membership fees.

A number of authors (House 1999, Kellogg 1998, Western and Wright 1998, Woolveridge 1995) have noted that top down funding (e.g. receiving funding from the federal government) can be detrimental to the progress of the initiative if the organization does not continually write funding proposals and fundraise. Reliance on government funds encourages dependence and allows the community to take a passive role which consequently threatens the sustainability of the project. Though the federal government may see a need for the project, the community may not see the project as a high priority and therefore will have little involvement with the daily undertakings of the project. Moreover, when a community-based organization receives a significant amount of funds from the government, the project and/or organization may suffer from a credibility

standpoint with some community members. The project is not likely to succeed if it does not have the support of the community. It is important that the funding for the project is closely connected to the marketing of the project (House 1999, Kellogg 1998, Western and Wright 1998). Thus, if not much interest and enthusiasm is generated within the public from the marketing of the project, it is a good indicator that the project is not likely going to succeed. In some cases the project may be seen as counter to the interest of some components of the community, especially if it is federally driven, although this depends on the individual communities.

Commitment to Citizen Participation and Community Support

Since the mid 1990's, a trend in many Western countries has been for government at various levels to promote the use of human and financial resources in schemes where greater control of the development process is vested in the hands of the local community (Murphy-Berman et al. 2000, Beierle 1999, House 1999, Sinclair and Smith 1996). The ultimate goal of this type of planning has been to establish a sustainable community largely reliant on local skills and capital. In 1989, the National Round Table on the Environment and the Economy (NRTEE) was created to provide advice to the Prime Minister on sustainable development issues. This represents Canada's institutional response to the challenge of sustainable development and has involved the creation of multi-stakeholder organizations to develop consensus-based decision making in promoting the principles and practices of sustainable development (Bellamy et al. 1998, Robinson 1997). A series of recent Canadian initiatives, of which ACAP is one, have attempted to extend bottom-up planning in a number of sectors fostering the establishment of strong participation by local residents in the development of Comprehensive Environmental Management Plans.

It has been noted by a number of individuals in the resource management field (Beierle 1999, Schweitzer et al. 1998, Ameyaw 1992, Mitchell 1990) that recognizing and addressing all relevant

stakeholder values and interests provides a basis for crafting creative solutions that are likely to be sustainable. If the program/project staff are open to involving stakeholders in decision making, one would expect to see a greater incorporation of citizen values, suggestions, and support in the decision making process. Environmental programs are assumed to require a large degree of community support. Through working with the public an organization can identify concerns and values within the community, and work with this information to avoid major problems in the future. It can enhance trust between area residents and the project proponent (Beierle 1999). From the public's perspective, being consulted can help to generate commitment to an issue, while increasing confidence in, and lending credibility to, an organization that is open about their plans. Public consultation and participation can help avert confrontation and conflict between organizations and affected groups and can achieve a higher level of local support for the decisions reached during all stages of planning, development, and implementation (Beierle 1999, Ameyaw 1992).

It is also quite helpful in the development of an organization to obtain information from those living and working in the area. House (1999) noted that the planning and management process fostered research on the personal experiences of the property owners adjacent to the stream. Since the property owners lived close to the stream they had a wealth of knowledge surrounding the condition of the stream, and how it has changed over the years. These landowners were committed to the initiatives since they felt like they were an important part of the project. House found that encouraging public participation early in the planning and management process led to a greater public acceptance of new water/wastewater regulations and policies. Local and/or Traditional Ecological Knowledge can help in the planning and management of projects, as those individuals living in close proximity to the natural resource may have new and/or alternative insight into the environment.

Organizational Networks

Organizational Networks refer to well-developed, informal networks within and between organizations that enable more rapid communication of new ideas. Some examples of organizational networks within an organization include frequent staff meetings, staff emails and telephone directory, and a database containing names of both volunteers and members. There are a number of benefits that result from encouraging communication between staff at an organization. Firstly, other staff may be a valuable source of feedback and constructive criticism which, in turn, can save both money and time. For example, if a funding proposal is passed around to various staff members then an opportunity is provided for any errors or areas in need of improvement to be identified before the proposal gets sent to the funding agency. Secondly, if all staff are kept aware of what others are doing, then when staff are undertaking their own project they may come across resources and information that are relevant to other projects and/or employees. Resources such as expertise, partnerships, information, and skills can be pooled among all staff members.

Some examples of external organizational networks include: emailing partners and organizations undertaking similar projects and initiatives, hosting regular open houses to keep individuals within the community aware of the projects that the organization is undertaking, developing and regularly updating the organization's webpage, setting up information booths at large community events and attractions such as the market, and regularly using local media (e.g. newspapers, cable stations, radio) to inform the community of the organization's undertakings. Encouraging communication outside of the organization is advantageous for a number of reasons with the greatest advantage being the awareness of the organization that it generates within the community. Maintaining networks with other organizations and businesses within the community is beneficial because it keeps both parties aware of what the other is doing. There are times when other organizations provide great assistance to one another, and other times when they are not as useful to one another. When networks are maintained the times when they will be of greatest benefit to one another can be more easily and efficiently identified.

Networking mediums such as a weekly column in the newspaper or a segment of time on the local cable station can generate a greater sense of credibility within the community towards the organization. Regular media and press releases increase credibility on a number of levels. An organization with weekly articles or interviews demonstrates to a community that it is actively undertaking projects and views itself as an integral part of its community. Moreover, this creates a forum to regularly update the community on the results of its efforts and initiatives. It also provides as a forum for older generations or individuals who are not computer literate and/or do not have access to the World Wide Web to keep informed of what the organization is doing. Weekly press releases act as an efficient method of forming new partnerships. Individuals within organizations who were previously unaware of the organizations may become aware of the organization through an article or cable television broadcast and may consequently be interested in forming a partnership.

Hosting open houses and/or attending large community events allows the organization to gather information on what issues local citizens have concerns about. One disadvantage of many community-based initiatives is that projects are often determined by the funding agency's objectives as opposed to the key concerns of the community. Thus, problems associated with low public participation are generated. It also allows the community to see first hand how the organization listens and interacts with the community. This method of networking allows the organizations to meet individuals in the community who may be able to provide necessary services either as donated expertise or volunteer time and labour.

Process Skills and Technical Expertise

The technical knowledge base (e.g. scientific, disciplinary, local expert) within natural resource issues of concern, and willingness of the community to take action, is a key factor in the successful implementation of an initiative (Bellamy et al. 1998, Kellogg 1998, Knapp and Kim 1998, Woolveridge 1995). Process skills and technical expertise can represent both a benefit and

disadvantage within a community-based initiative. If an organization has staff or volunteers with process skills or technical expertise, many of the organization's tasks become easier and less costly. For example, an organization that has a volunteer who is an avid webpage designer can invest less money into advertising by frequently updating the webpage on a weekly basis. The organization also saves the time and cost of hiring a professional webpage designer.

Technology can also convey information in an easy to understand manner. An example of this is the use of a Geographic Information System (GIS). Information from the initiative (e.g. the kilometers of stream buffered, area of restored harbour, geographic distribution of stewardship agreements signed) can be displayed in a visual, easy to understand manner. The map created can be displayed on the organization's webpage.

On the other hand, if the level of process skills and technical expertise required to carry out various projects is too high, this will create unnecessary time delays in the implementation of the project. If the methods of taking water samples, or monitoring of a newly planted stand of trees are too complex, the adoption will be delayed. Technological/process complexity is generally more time consuming and more costly. For example, the more complex that a project is, the greater the time requirement for staff involved in training the volunteers. When relatively inexperienced individuals use technologically complex instruments in the field, there is a greater likelihood that the instrument will break or that data will not be collected properly. The repairing and purchasing of new instruments, or having to re-sample and collect new field data, can be quite costly for the organization.

Table 2 summarizes the information gained through the resource management and program evaluation literature review.

Table 2: Resource Management and Program Evaluation Literature-Based Framework

	Criteria and Indicators to Evaluate Program Success			
	Criterion # 1 **Funding**	**Criterion # 2** **Community Participation**	**Criterion # 3** **Organizational Networks**	**Criterion # 4** **Technical Expertise**
CATEGORY 1 Identifying, Defining, and Documenting	* Has there been a formal membership system implemented to identify and recognize those involved	* Is there a volunteer recognition ceremony to assure that helpers realize their importance	* Is the media always informed of upcoming projects	* Has all of the information gained through this indicator been input into a database * Have the heritage resources for the ACAP community been identified and included in the sensitivity mapping * Is literature and journal research carried out to understand successes of previous community projects
CATEGORY 2 Types of Media Involvement	* Does the organization actively seek funding all year round	* Are upcoming projects and activities advertised in the local media to encourage more volunteers	* Is regular contact maintained between similar sites * Are electronic networks established to ensure that lessons learned and accomplishments can be communicated on a real time basis	* Is a web site or form of media advertisement updated regularly
CATEGORY 3 Communication Enhancers	* Is there a comprehensive list of names and contact numbers for frequent volunteers * Is the ACAP site committed to the involvement of local knowledge in aspect of the initiative other than the resource inventory	* Is there a public feedback process for education initiatives/ open houses * Has there been provision of alternative forums to allow community members to exchange information and views on contentious issues * Does the ACAP community centre provide access to the world wide web * Is there a feedback icon or place in the web site for the public to provide feedback	* Has there been provision of science linkage programs to bring scientists and communities together to conduct research and generate the information necessary for decision making * Are electronic networks established between the sites to ensure that communities are able to communicate information, successes, and lessons learned on a real time basis * Is contact made with Environment Canada at least once a week * Is regular contact maintained between all of the larger industries in the area	* Has technical / information assistance been provided for the restoration and protection of fish habitat * Have open houses and/or seminars been hosted on how to enhance sustainability * Is there adequate and fair access to all relevant information and expertise * Do ACAP member frequent pertinent seminars at local educational institutions * Does the site submit a formal, scholarly, write-up concerning their site
CATEGORY 4 Training, Monitoring, Evaluation, and Results	* Has there been educational; upgrading and/or seminars offered	* Is there an established community-based monitoring program to help communities track trends, identify relationships between human activities and the state of the environment, and evaluate their actions * Are community gatherings organized to relay the initiative successes and accomplishments	* Are community gatherings organized to relay the initiative accomplishments	*Has there been educational upgrading and/or seminars offered to people in traditional industry * Is there training on the consensus process and negotiating/mediation skills
CATEGORY 5 Policies, Procedures, and By-laws	* Have agreements been with other levels of government to invest more money in certain issues	*Are decisions made through both a multi-stakeholder process and decision making by consensus * Are letters/phone calls of concern addressed at the Board of Directors meetings	* Are decisions made through both a multi stakeholder process and decision making by consensus	* Are yearly reports made available to the public
CATEGORY 6 Physical/ Monetary Assistance	* Has physical works time been directed at restoring and/or maintaining traditional industries * Has financial assistance been invested in restoring and/or maintaining traditional industries *Does the site actively seek funding all year long	* Are open Board of Director Meetings scheduled at a time which is likely to include more public * Is monetary assistance offered should meetings be scheduled during the day to offset loss of work	* Are rain dates pre-established for all outdoor projects in case physical assistance cannot be provided due to inclement weather * Is money invested in advertising when meetings will be held	* Has the ACAP site provided assistance to school children/university students on projects

(Murphy-Berman et al. 2000, Beierle 1999, House 1999, Bellamy et al. 1998, Kellogg 1998, Schweitzer et al. 1998, Sinclair and Smith 1996, Woolveridge 1995, Western and Wright 1994, Ameyaw 1992)

4.1.2 An ACAP Resources-Based Framework

To further address objective one, ACAP and Environment Canada literature surrounding the initiative was examined to identify the overarching goals of the community-based initiative. The ACAP Model (a seven-point plan developed by Environment Canada) was also explored to gain an understanding of the ACAP process. A draft representative framework was then created. At the onset of the ACAP initiative, Environment Canada identified five broad areas (often referred to as goals), including Sustainable Livelihoods, Natural Heritage, Water Quality, Responsible Stewardship, and Ecosystem Planning. These five areas are used as the five criteria in the evaluative framework. Although, the specific focus and priority issues for each community differ, these goals represent the wider perspective of sustainability which provides the foundation for the program. The indicators and/or measurable variables under these goals focus on the process/means that each of the sites follow to address their goals.

Sustainable Livelihoods

The lack of diverse livelihoods and sustainability within these livelihoods presents a major threat to Atlantic Canadians and the communities that they live in (Ellsworth et al. 1997). Environmental stability will only be achieved once economies and communities are balanced. Sustainable Livelihoods, the first ACAP goal, focuses on ensuring a greater quality of life through the diversification and sustainability of livelihoods. To address this concern, ACAP sites have established specific targets and initiated diverse projects which include: restoring traditional livelihoods (e.g. the restoration of shellfish harvesting through the construction of artificial wetlands for sewage treatment), sustaining existing livelihoods (e.g. assisting farmers with the development and implementation of Environmental Farm Plans and fencing cattle out of waterways), and the introduction of new, sustainable livelihoods (e.g. assisting in the development and marketing of ecotourism excursions).

Natural Heritage

Ellsworth et al. (1997) noted that within the Atlantic coastal zone, natural and cultural heritage resources are being depleted because of indiscriminate development and the incremental impacts of numerous decisions that fail to take heritage resources into consideration. Natural Heritage refers to ensuring that all natural resources are recognized and respected as heritage resources for the benefit of present and future generations. This involves resource inventory and analysis (e.g. using G.I.S. for sensitivity mapping), the restoration and protection of fish and wildlife habitat (e.g. the enactment of policies, regulations and/or by-laws to protect fish and wildlife habitat), and the enhancement of biodiversity (e.g. identification of native and non-native animal and plant species within the area).

Water Quality

Degradation of water quality and the impairment and/or loss of beneficial uses to both wildlife and society are a major concern throughout the Atlantic coastal zone. Water Quality, the third ACAP goal, attempts to ensure that the quality of water in coastal areas and adjacent watersheds supports the needs of humans, fish and other wildlife and can sustain commercial and recreational activities for present and future generations. To address this concern, ACAP sites have identified specific indicators and initiated diverse projects which include: citizen-based water quality monitoring, pre-established contingency plans to handle water quality results below certain levels, pollution prevention within homes and industry (e.g. establishment of a green team or stewardship team for pollution prevention site visits), and full value water pricing (e.g. the investment in water saving devices such as roof catchments and re-use systems for grey water, low-flow toilets and facet aerators).

Responsible Stewardship

Increasingly, it has become recognized that government alone cannot bring about the changes

necessary to sustain ecosystems. Thus, it is useful to empower citizens to take responsibility for their part of the ecosystem and possess the information and skills required to carry out those responsibilities. Stewardship has been promoted through environmental education activities (e.g. creation of pamphlets and brochures on a wide assortment of environmental issues facing the area), creation of opportunities for meaningful citizen participation (e.g. advertisement of upcoming events, and volunteer opportunities in the local media and communicating ACAP's accomplishments and best practices (e.g. by establishing electronic networks among the sites).

Ecosystem Planning

Environmental initiatives demand that ecosystem stakeholders maintain a common purpose and a common strategy to weave together their energies and resources. Ecosystem planning ensures that there are strategies put in place for the restoration and sustainable development of ecosystems. This has entailed securing commitments to the implementation of plans (e.g. enactment of policies to ensure the implementation of the initiative), securing a role for ACAP groups in implementation and evaluation (e.g. actively seeking and applying for funding all year round), and championing informed decision making (e.g. keeping all of the minutes from the Board of Directors meeting on file so that they can be reviewed by both staff and the public).

At the onset of the Program, Environment Canada developed an ACAP Model (a seven-point program) for the ACAP sites. The ACAP Model incorporates the following points:

1. Appointment of a full time community coordinator and office for each site;
2. Assessments of environmental quality, identification of all environmental problems;
3. Development of a long term vision with clear objectives to obtain long term goals;
4. Identification and assessment of necessary remedial actions and conservation efforts;
5. Development of a Comprehensive Environmental Management Plan;
6. Promotion of environmental stewardship through education and awareness activities; and

7. Implementation of pilot projects that would demonstrate the importance and effectiveness of low cost, innovative solutions to environmental issues and watersheds.

(Robinson 1997)

Each of these seven points was incorporated into the ACAP resources-based framework (Table 3) in addition to the five pre-established goals. As stated in Chapter 3, the first three indicators under each criterion were derived from the ACAP literature as a means for Environment Canada to verify each of the five goals. Though Environment Canada did not use these indicators to evaluate the program, it did help many of the sites to organize their CEMP.

Table 3: ACAP Resource-Based Framework

Criteria and Indicators to Evaluate Program Success				
Criterion # 1 Sustainable Livelihoods	**Criterion # 2 Natural Heritage**	**Criterion # 3 Water Quality**	**Criterion # 4 Responsible Stewardship**	**Criterion # 5 Ecosystem Planning**
Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
Indicator # 2 Assisting existing livelihoods in becoming sustainable	**Indicator # 2 Restoring and protecting fish and wildlife habitat**	**Indicator # 2 pollution prevention within homes and industry**	**Indicator # 2 Creating opportunities for meaningful citizen involvement**	**Indicator # 2 Securing a role in implementation and evaluation**
Indicator # 3 Introducing new sustainable industries	**Indicator # 3 Enhancing Biodiversity**	**Indicator # 3 Full Value Water Pricing**	**Indicator # 3 Communicating Successes and best practices**	**Indicator # 3 Championing informed decision making**
Indicator # 4 Appointment of a full-time coordinator	**Indicator # 4 Promotion of Environmental Stewardship through education and awareness activities**	**Indicator # 4 Assessment of environmental quality and identification of necessary remedial actions**	**Indicator # 4 Implementation of pilot projects to demonstrate innovative solutions to environmental issues**	**Indicator # 4 Development of a CEMP which includes a long-term vision and clear objectives**

4.1.3 The Evaluative Framework

A preliminary evaluative framework was drafted through combining the literature framework and the ACAP resources framework. After the evaluative framework was created, it was distributed to the ACAP coordinators to identify concerns and suggestions. The preliminary evaluative framework was then revised. The following framework (Table 4) is the evaluative framework

used in this research.

Table 4: Evaluative Framework

	Criteria and Indicators to Evaluate Program Success				
	Criterion # 1 Sustainable Livelihoods	**Criterion # 2** Natural Heritage	**Criterion # 3** Water Quality	**Criterion # 4** Responsible Stewardship	**Criterion # 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
Category 1 Identifying, Defining, and Documenting	* Have traditional industries been identified in the Comprehensive Environmental Management Plan	* Has all of the information gained through this indicator been input into a database * Have the heritage resources for the ACAP community been identified and included in the sensitivity mapping	* Are the water quality levels recorded in a database * Is there evidence of analysis of water quality trends/patterns * Have contingency plans been identified and documented to handle lower water quality levels	* Has there been establishment of eco-action centres to serve as an access point for social, economic, and environmental information	* Has the site developed a CEMP
Category 2 Types of Media Involvement	* Has media attention been directed at restoring and/or maintaining tradition industries *Have pamphlets / brochures been distributed to inform the public of traditional industries within the community and efforts to preserve and restore them	* Is the sensitivity mapping made available on the ACAP community web site	*Have pamphlets been created indicating the importance of water quality and ways to reduce water pollution	* Are pamphlets and brochures made available on a wide assortment of environmental issues facing the areas	* Is the media always informed of upcoming projects
Category 3 Communication Enhancers	* Is there a contact number or information on the web site to inform people of what exactly the initiative is	* Does the ACAP community actively use a GIS system to enable communities to integrate, store, and present information * Is local knowledge/ Traditional Ecological Knowledge involved in the resource inventory analysis	* Are the water quality results posted where the community can see/or has access to see	* Has there been provision of alternative forums to allow community members to exchange information and views on contentious issues * Has there been provision of science linkage programs to bring scientists and communities together to conduct research and generate the information necessary for decision making	*Is there a volunteer recognition ceremony to assure that helpers realize their importance * Has there been a formal membership system implemented to identify and recognize those involved
Category 4 Training, Monitoring, Evaluation, and Results	* Have traditional industries which were no longer existent in the ACAP community been restored *Have traditional industries which were restored been monitored	* Has the resource inventory been modified/updated since it was first established	* Is water quality monitored on a regular basis * Is water quality monitored at both point and non-point sources *Has water quality improved at the ACAP site	** Has there been any indication that the level of environmental knowledge has increased	* Have all of the plans identified by the ACAP site been followed through or given a time frame in which they will be addressed
Category 5 Policies, Procedures, and By-laws	* Have agreements been made with other levels of government to invest more money in traditional and/or sustainable industries	* Have any new by-laws or policies been enacted to reflect new insight gained from the sensitivity mapping and/or resource inventory analysis	* Have agreements or policies been drafted to invest more money in waste water treatment centres	* Have agreements been made with local schools for annual visits/ presentations at the eco-action centres	*Have policies been enacted to encourage implementation of the initiative
Category 6 Physical/ Monetary Assistance	* Has physical assistance been directed at restoring and/or maintaining traditional industries * Has financial assistance been invested in restoring and/or maintaining traditional industries	* Have individuals been hired by the ACAP organization to maintain an accurate resource inventory and keep the sensitivity map up to date	* Has the ACAP community provided both physical and monetary assistance to projects which concern water quality (i.e.cattle fencing, buffer zones...)	* Has the ACAP site provided assistance to school children/university students on projects	Are rain dates pre-established for all outdoor projects in case physical assistance cannot be provided due to inclement weather *Have pilot projects been implemented to demonstrate innovative solutions to environmental issues

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
Category 1 Identifying, Defining, and Documenting	* Have site visits been conducted to assess the level of sustainability of existing livelihoods and suggest ways of attaining greater sustainability	* Have fish and wildlife areas in need of restoration/protection been identified	* Have sources of high pollution within homes/industries been identified	* Have emergency response procedures been established to ensure that communities have the capacity to respond to such emergencies as oil spills	* Is a new set of goals and deliverables identified each year
Category 2 Types of Media Involvement	* Have pamphlets and/or brochures on sustainability (economic, social and environmental) been distributed	*Have pamphlets / brochures indicating the importance of restoring fish and wildlife habitat been distributed	* Has the media (newspaper, radio, television) been involved in pollution prevention within homes and industry * Have eco-friendly/eco efficiency pamphlets been designed for home and industry	*Are upcoming projects and activities advertised in the local media to encourage more volunteers	* Are all of the ACAP projects listed and described on the site's web page
Category 3 Communication Enhancers	* Have open houses and/or seminars been hosted on how to enhance sustainability (i.e. no till farming)	* Has technical information assistance been provided for the restoration and protection of fish habitat	* Has a green team or stewardship team been established for pollution prevention site visits * Have outreach projects (i.e. an open house of eco-friendly home) been undertaken to prevent pollution in houses and industry	* Is there a comprehensive list of names and contact numbers for frequent volunteers * Is the ACAP site committed to the involvement of local knowledge in aspect of the initiative other than the resource inventory	* Is there a public feedback process for education initiatives open houses
Category 4 Training, Monitoring, Evaluation, and Results	*Has there been educational upgrading and/or seminars offered to people in traditional industry	** Have increases in fish and wildlife population been identified due to habitat enhancement	* Have initial levels of home and industry pollution and or waste been estimated and monitored over the years	* Is there an established community based monitoring program to help communities tract trends, identify relationships between human activities and the state of the environment, and evaluate their actions	* Has the site evaluated the outcome of the projects it has undertaken * Have modifications been made to the CEMP to ensure that it is a living document * Has the site formally compared resources invested to deliverables
Category 5 Policies, Procedures, and By-laws	*Have pollution prevention pacts or agreements been made with manufacturing industries	* Have policies, regulations, and/or by-laws been enacted to protect fish and wildlife habitat	* Have policies regulations been devised to encourage composting or recycling and reduce waste	*Are decisions made through both a multi-stakeholder process and decision making by consensus	* Can the sites note any procedural changes since the document entitled "Lessons Learned" was produced
Category 6 Physical/ Monetary Assistance	* Has monetary assistance been provided * Has tax relief been provided for those livelihoods which demonstrate sustainability to assist existing livelihoods	* Has physical assistance been provided for restoring and protecting fish and wildlife habitat * Has financial assistance been provided for the restoration/protection of fish habitat	* Have efforts been made to encourage composting/ recycling and reduce waste * Have tax/monetary rebates been provided to homes with lower utilities or through the purchase of efficient products (i.e. lower watt light bulbs)	* Are open Board of Director Meetings scheduled at a time which is likely to include more public * Is monetary assistance offered should meetings be scheduled during the day to offset loss of work	* Does the site actively seek funding all year round

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
Category 1 Identifying, Defining, and Documenting	* Has an operational definition of sustainable industries been provided	* Have native animal and plant species been identified in the ACAP area	* Has a full value water pricing scheme been identified, documented and available to the public	* Is literature and journal research carried out to understand successes of previous community projects	*Has the site coordinator been in place for at least five years
Category 2 Types of Media Involvement	* Has media attention been directed at the new sustainable industries introduced	* Has there been pamphlets or brochures made which indicate native and non-native plant and animal species in the area	* Have pamphlets/ brochures been made to encourage low water usage	* Are the results of initiatives and best practices summarized in the local newspaper media	* Is the ACAP community web site updated at least twice a year
Category 3 Communication Enhancers	* Does the ACAP community centre provide access to the world wide web	* Is there a feedback icon or place in the web site for the public to provide feedback on non-native plant and animal sightings	* Is the established water pricing system agreeable throughout different municipalities within the watershed	* Are electronic networks established between the sites to ensure that communities are able to communicate information, accomplishments and lessons learned on a real time basis * Is contact made with Environment Canada at least once a week * Is regular contact maintained between all of the larger industries in the area	* Is there adequate and fair access to all relevant information and expertise * Do ACAP member frequent pertinent seminars at local educational institutions * Does the site submit a formal scholarly write-up concerning their site
Category 4 Training, Monitoring, Evaluation, and Results	* Do the new sustainable industries complement existing traditional industries or compete * Have the new, sustainable industries which were introduced been monitored to ensure sustainability	* Has information on enhancing the biodiversity of the area been promoted through education and awareness activities	* Have water treatment centres been audited for performance	* Are community gatherings organized to relay the initiative successes and accomplishments	* Is there training on the consensus process and negotiating/mediation skills
Category 5 Policies, Procedures, and By-laws	* Have agreements been made to ensure that the newly introduced industries are diverse	* Have policies been made to protect the habitat of threatened or endangered species	*Has watering been restricted between certain hours * Has an alternative watering day system been established	* Are yearly reports made available to the public	* Are letters/phone calls of concern addressed at the Board of Directors meetings * Are all of the minutes from the Board of Directors meetings maintained on file and made available upon request
Category 6 Physical/ Monetary Assistance	* Has assistance been provided to encourage environmental management plans /strategies for new sustainable industry	* Has there been physical or monetary resources invested in the restoration of habitat to encourage native species	* Have rebates/awards been offered for water users below a certain level * Is there a sur-charge added if a household uses more than average * Has the area invested in water saving devises such as roof catchments and re-use systems for grey water	* Has physical monetary assistance provided annually to enhance the ACAP community resource centre	* Is money invested in advertising when meetings will be held

The six categories in the evaluative framework (Identifying, Defining, and Documenting, Types of Media Involvement, Communication Enhancers, Training, Monitoring, Evaluation, and Results, Policies, Procedures and By-laws, and Physical and Monetary Assistance) were obtained from the first framework based on resource management literature. The five criteria used in the evaluative framework (Sustainable Livelihoods, Natural Heritage, Water Quality, Responsible Stewardship, and Ecosystem Planning) were obtained from the second framework based on

ACAP resources. Indicators 1,2, and 3 from the ACAP resources framework were applied to the evaluative framework, whereas the fourth line of indicators was transformed into measurable variables since they were more specific than the first three lines of indicators. Each of the cells within the framework is referred to as measurable variable. It is the measurable variables that each of the fourteen sites was evaluated against.

4.1.4 Analyzing the Development of the Evaluative Framework

There are a number of differences between the three evaluative frameworks. These differences centre on the framework components, organization, and level of detail. The framework was modified from being moderately detailed, but with very little organization (the literature-based framework), to being organized, but with very little detail (the ACAP resources-based framework), to finally being organized with a high level of detail (the evaluative framework). The greatest strength of the first framework is that all of the conditions underlying success obtained from the literature are organized and characterized into: i) Identifying, Defining, and Documenting, ii) Types of Media Involvement, iii) Communication Enhancers, iv) Training, Monitoring, Evaluation, and Results, v) Policies, Procedures, and Bylaws, and vi) Physical/ Monetary Assistance. These categories proved valuable in organizing the measurable variables within the evaluative framework.

The level of detail increased from the initial literature-based framework to the evaluative framework. The literature-based framework is made up of four criteria with five categories for each criterion to arrive at a total of 24 measurable variables. The evaluative framework is made up of a set of criteria, categories, and measurable variables. There are six categories for each of the 3 sets of indicators to total 90 measurable variables.

The evaluative framework was also modified with respect to the criteria chosen. Within the literature-based framework, the four criteria were: funding, community participation,

organizational networks, and technical expertise. The evaluative framework addressed these four topics at the indicator and category level and selected a broader set of five criteria associated with the initial goals of the initiative (Sustainable Livelihoods, Natural Heritage, Water Quality, Responsible Stewardship, and Ecosystem Planning). Similarly, the seven steps in the ACAP Model were addressed at the indicator and measurable variable level. The following Chapter (Chapter 5) applies the evaluative framework to each of the fourteen ACAP sites.

Chapter 5: Applying the Evaluative Framework

5.0 Introduction

The following Chapter applies the evaluative framework to each of the fourteen ACAP sites. The conditions underlying success of community-based initiatives present within each of the ACAP sites are identified. Based on the type and number of conditions present within each of the fourteen initiatives, each site attained an overall score and ranking. Additional conditions underlying success highlighted in the current research, and not identified frequently in the resource management literature, are explored. The final section of Chapter 5 explores the various obstacles experienced by the ACAP sites.

5.1 Applying the Evaluative Framework

The second research objective is to apply the conditions underlying a successful community-based program, most frequently identified in the literature and ACAP resources, to the ACAP initiative. The purpose of this objective is twofold; to determine if the organizational conditions identified exist in each ACAP case study and to identify any additional conditions evident in the ACAP case study which have not been documented in the literature. The methodology described in section 4.2 was applied to all fourteen sites (refer to Appendix 5a-5n for the complete set of evaluative frameworks). The data used were from site files, site webpages, and through discussions with each site coordinator. To minimize research error, the fourteen completed evaluative frameworks were submitted to each of the coordinators for review and comment. If a site had not addressed a measurable variable, the corresponding space was left blank on the framework.

The performance of the sites is reported by province and biophysical groupings: urban sites (St. John's, Cape Breton, and Saint John), rural sites (Southeast Environmental, Bedeque Bay, and Annapolis), river basin sites (Bluenose, Miramichi, Eastern Charlotte, and Madawaska), and

estuary sites (Humber Arm, Pictou, and St. Croix). A fifth category was created for Sable Island because it is the only ACAP site that does not have permanent residents living within the site boundaries. The results are reported under four headings: conditions present underlying success within the six categories, within the five criteria, the overall conditions (and additional conditions) present within the ACAP initiative, and the obstacles experienced by all fourteen ACAP sites.

In total, there are 90 measurable variables. Some are more technical and/or program delivery specific (e.g. has watering been restricted between certain hours? Does the site submit a formal, scholarly write-up concerning their site? Has an operational definition of sustainable livelihoods been provided?) Though technical/program delivery specific measurable variables may affect the delivery of the initiative, these measurable variables ultimately have no bearing on the development or implementation of the program. This type of measurable variable was given a score of 1 and left without shading on the evaluative framework (Table 4). Other measurable variables are more fundamental to the implementation and delivery of the program (e.g. Has the site developed a CEMP? Does site staff have access to necessary training? Are community gatherings organised to relay the initiative successes and accomplishments?) Since these measurable variables have more of an impact on the development and implementation of the initiative, they are categorised as fundamental. For example, if community gatherings are not organised to relay initiative successes and accomplishments, then the necessary steps are not being followed to ensure that the community is involved at every step of the initiative. These fundamental measurable variables were given a score of 2 and are shaded on the evaluative framework (Table 5).

Table 5 – Evaluative Framework with Weighted Measurable Variables

	Criteria and Indicators to Evaluate Program Success				
	Criterion # 1 Sustainable Livelihoods	**Criterion # 2** Natural Heritage	**Criterion # 3** Water Quality	**Criterion # 4** Responsible Stewardship	**Criterion # 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
Category 1 Identifying, Defining, and Documenting	* Have traditional industries been identified in the Comprehensive Environmental Management Plan * Is local knowledge/ Traditional Ecological Knowledge involved in the resource inventory analysis	* Has all of the information gained through this indicator been input into a database * Have the heritage resources for the ACAP community been identified and included in the sensitivity mapping	* Are the water quality levels recorded in a database * Is there evidence of analysis of water quality trends/patterns * Have contingency plans been identified and documented to handle lower water quality levels	* Has there been establishment of eco-action centres to serve as an access point for social, economic, and environmental information	*Has the site developed a CEMP
Category 2 Types of Media Involvement	* Has media attention been directed at restoring and/or maintaining tradition industries *Have pamphlets / brochures been distributed to inform the public of traditional industries within the community and efforts to preserve and restore them	* Is the sensitivity mapping made available on the ACAP community website	*Have pamphlets been created indicating the importance of water quality and ways to reduce water pollution	* Are pamphlets, brochures, and fact sheets made available on a wide assortment of environmental issues facing the areas	*Does the site have a regular presence in the media (weekly, monthly)
Category 3 Communication Enhancers	* Is there a contact number/ email address, or information on the website to inform people of what exactly the initiative is and where to find out more information	* Does the ACAP community actively use a GIS system to enable communities to integrate, store, and present information	* Are the water quality results posted where the community can see/or has access to see	* Has there been provision of alternative forums to allow community members to exchange information and views on contentious issues * Has there been provision of science linkage programs to bring scientists and communities together to conduct research and generate the information necessary for decision making	*Has there been a formal membership system implemented to identify and recognize those involved *Is there a volunteer recognition ceremony to assure that helpers realize their importance
Category 4 Training, Monitoring, Evaluation, and Results	* Have traditional industries which were no longer existent in the ACAP community been restored *Have traditional industries which were restored been monitored	* Has the resource inventory been modified/updated since it was first established	* Is water quality monitored on a regular basis * Is water quality monitored at both point and non-point sources *Has water quality improved at the ACAP site	*Has there been any indication that the level of environmental knowledge has increased	* Have all of the plans identified by the ACAP site been followed through or given a time frame in which they will be addressed
Category 5 Policies, Procedures, and By-laws	* Have agreements been made with other levels of government to invest more money in traditional and/or sustainable industries	* Have any new by-laws, policies, or management plans been enacted to reflect new insight gained from the sensitivity mapping and/or resource inventory analysis	* Have agreements or policies been drafted to invest more money in waste water treatment	* Have agreements been made with local schools for annual visits/ presentations at the eco-action centres	*Have policies been enacted to encourage implementation of the initiative
Category 6 Physical/ Monetary Assistance	* Has physical assistance been directed at restoring and/or maintaining traditional industries * Has financial assistance been invested in restoring and/or maintaining traditional industries	* Have individuals been hired by the ACAP organization to maintain an accurate resource inventory and keep the sensitivity map up to date	* Has the ACAP community provided both physical and monetary assistance to projects which concern water quality (e.g. cattle fencing, buffer zones...)	* Has the ACAP site provided assistance to school children/university students on projects	*Are rain dates pre-established for all outdoor projects in case physical assistance cannot be provided due to inclement weather *Have pilot projects been implemented to demonstrate innovative solutions to environmental issues

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
Category 1 Identifying, Defining, and Documenting	* Have site visits been conducted to assess the level of sustainability of existing livelihoods and suggest ways of attaining greater sustainability	* Have fish and wildlife areas in need of restoration/protection been identified	* Have sources of high pollution within homes/industries been identified	* Have emergency response procedures been established to ensure that communities have the capacity to respond to such emergencies as oil spills	* Is a new set of goals and deliverables identified each year
Category 2 Types of Media Involvement	* Have pamphlets and/or brochures on sustainability (economic, social and environmental) been distributed	*Have pamphlets / brochures indicating the importance of restoring fish and wildlife habitat been distributed	*Has the media (newspaper, radio, television) been involved in pollution prevention within homes and industry *Have eco-friendly/efficiency pamphlets been designed for home and industry	*Are upcoming projects and activities advertised in the local media to encourage more community involvement	* Are all of the ACAP projects listed and described on the site's webpage
Category 3 Communication Enhancers	* Have open houses and/or seminars been hosted on how to enhance sustainability (e.g. no till farming)	* Has technical / information assistance been provided for the restoration and protection of fish habitat	* Has a green team or stewardship team been established for pollution prevention site visits *Have outreach projects (e.g. an open house of eco-friendly home) been undertaken to prevent pollution in houses and industry	* Is there a comprehensive list of names and contact numbers for frequent volunteers * Is the ACAP site committed to the involvement of local knowledge in aspect of the initiative other than the resource inventory	* Is there a public feedback process for education initiatives/ open houses
Category 4 Training, Monitoring, Evaluation, and Results	*Has there been educational upgrading and/or seminars offered to people in traditional industry	* Have increases in fish and wildlife population been identified due to habitat enhancement	* Have initial levels of home and industry pollution and/or waste been estimated and monitored over the years	* Is there an established community based monitoring program to help communities tract trends, identify relationships between human activities and the state of the environment, and evaluate their actions	* Has the site evaluated the outcome of the projects it has undertaken * Have modifications been made to the CEMP to ensure that it is a living document *Has the site formally compared resources invested to deliverables
Category 5 Policies, Procedures, and By-laws	*Have pollution prevention pacts or agreements been made with manufacturing industries	* Have policies, regulations, by-laws and/or management plans been enacted to protect fish and wildlife habitat	* Have policies / regulations been devised to encourage composting or recycling and reduce waste	*Are decisions made through both a multi-stakeholder process and decision making by consensus	* Can the sites note any procedural changes since the document entitled "Lessons Learned" was produced
Category 6 Physical/ Monetary Assistance	* Has monetary assistance been provided * Has tax relief been provided for those livelihoods which demonstrate sustainability to assist existing livelihoods	* Has physical assistance been provided for restoring and protecting fish and wildlife habitat * Has financial assistance been provided for the restoration/protection of fish habitat	* Have efforts been made to encourage composting/ recycling and reduce waste * Have tax/monetary rebates been provided to homes with lower utilities or through the purchase of efficient products (e.g. lower watt light bulbs)	* Are open Board of Director Meetings scheduled at a time which is likely to include more public * Is monetary assistance offered should meetings be scheduled during the day to offset loss of work	* Does the site actively seek funding all year round

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
Category 1 Identifying, Defining, and Documenting	* Has an operational definition of sustainable industries been provided	* Have native animal and plant species been identified in the ACAP area	* Has a full value water pricing scheme been identified, documented and available to the public	* Is literature and journal research carried out to understand successes of previous community projects	*Has the site coordinator been there 5 years or more
Category 2 Types of Media Involvement	* Has media attention been directed at the new sustainable industries introduced	* Has there been pamphlets or brochures made which indicate native and non-native plant and animal species in the area	* Have pamphlets/ brochures been made to encourage low water usage	* Are the results of initiatives and best practices summarized in the local newspaper/media	* Is the ACAP community web site updated at least twice a year
Category 3 Communication Enhancers	* Does the ACAP community centre provide access to the world wide web	* Is there a feedback icon or place in the web site for the public to provide feedback on non-native plant and animal sightings	* Is the established water pricing system agreeable throughout different municipalities within the watershed	* Are electronic networks established between the sites to ensure that communities are able to communicate information, accomplishments and lessons learned on a real time basis * Is contact made with Environment Canada at least once a week * Is regular contact maintained between all of the larger industries in the area	* Is there adequate and fair access to all relevant information and expertise * Do ACAP member frequent pertinent seminars at local educational institutions * Does the site submit a formal scholarly write-up concerning their site
Category 4 Training, Monitoring, Evaluation, and Results	* Do the new sustainable industries complement existing traditional industries or compete * Have the new, sustainable industries which were introduced been monitored to ensure sustainability	*Has information on enhancing biodiversity been promoted through education and awareness	* Have water treatment centres been audited for performance	* Are community gatherings organized to relay the initiative successes and accomplishments	* Is there training on the consensus process and negotiating/mediation skills * Does the site have access to necessary training (e.g. computer, water quality sampling)
Category 5 Policies, Procedures, and By-laws	* Have agreements been made to ensure that the newly introduced industries are diverse	* Have policies/ management plans been made to protect the habitat of threatened or endangered species	* Has watering been restricted between certain hours * Has an alternative watering day system been established	* Are yearly reports made available to the public	* Are letters/phone calls of concern addressed at the Board of Directors meetings * Are all of the minutes from the Board of Directors meetings maintained on file and made available upon request
Category 6 Physical/ Monetary Assistance	* Has assistance been provided to encourage environmental management plans /strategies for new sustainable industry	* Has there been physical or monetary resources invested in the restoration of habitat to encourage native species	* Have rebates/awards been offered for water users below a certain level * Is there a sur-charge added if a household uses more than average * Has the area invested in water saving devises such as roof catchments and re-use systems for grey water	* Has physical/ monetary assistance provided annually to enhance the ACAP community resource centre	* Is money invested in advertising when meetings will be held

5.2 Conditions Underlying Success within the Six Categories

The following section explores the ability of each of the sites to address the measurable variables within the six categories of the framework: i) Identifying, Defining, and Documenting, ii) Types of Media Involvement, iii) Communication, iv) Training, Monitoring,

Evaluation, and Results, v) Policies, Procedures, and Bylaws, and vi) Physical and Monetary Assistance. The distribution of variables within the six categories is provided in Tables 6a and 6b and depicted in Graphs 1a and 1b. Table 6a (and Graph 1a) present the results in a provincial context, whereas Table 6b (and Graph 1b) present the results in a biophysical context. Category 1 was the most highly addressed category with an average score (as a percentage) of 72%. Category 2 and 3 fell closely behind with an average score of 69%. Categories 4, 5, and 6 were poorly addressed with average scores (as percentages) being 54%, 43%, and 56% respectively.

Within the evaluative framework there are three rows for each category, a row for each of the three indicators. Depending on the combination of variables with a value of "1" or "2", the maximum value for each category varies. Since each category row has five measurable variables, there are fifteen measurable variables for each category. Tables 6a and 6b (and Graphs 1a and 1b) depict how the measurable variables within the evaluative framework are distributed among the six categories. The maximum value for each category is identified outside of Table 6a, on the right hand side. Each category is represented by one line in both of the Tables. Thus, for all fourteen sites there is a value recorded for each category that is automatically out of the corresponding value on the right hand side of the Table. For example, in Table 6a there is a "21" indicated for site 1, category 1, this means that St. John's scored 21 out of the maximum score of 25 for category 1. For each of the following sections, the sites that achieved the greatest scores and the lowest scores are explored, whereas the remaining sites not explored achieved moderate scores.

Table 6a Distribution of Measurable Variables within 6 Key Categories of the Evaluation															
Categories	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	
Identifying, Defining and Documenting #	21	21	17	21	17	10	13	22	14	16	20	16	17	15	25
%	84	84	68	84	68	40	52	88	56	69	80	64	68	60	
Provincial Average	21		19		15.2					16.8					
72 %	84		76		61					67					
Types of Media Involvement #	15	15	14	18	9	5	8	16	9	10	9	11	10	7	18
%	83	83	77	100	50	28	44	89	50	55	50	61	55	39	
Provincial Average	15		16		9.4					9.4					
69%	83		89		52					52					
Communication Enhancers #	14	17	18	17	11	8	8	21	15	12	16	15	10	8	22
%	64	77	82	77	50	36	36	96	68	55	73	68	46	38	
Provincial Average	15.5		17.5		15.4					12.2					
69%	71		80		70					56					
Training, Monitoring, Evaluation, and Results #	13	14	12	15	8	1	5	12	9	13	11	11	8	2	20
%	65	70	60	75	40	5	25	60	45	65	55	55	40	10	
Provincial Average	13.5		13.5		7					9					
54 %	68		68		35					45					
Policies, Procedures, and Bylaws #	11	12	11	11	7	4	7	14	4	4	12	2	7	5	21
%	52	57	52	52	33	19	33	67	19	19	57	10	33	24	
Provincial Average	11.5		11		7.2					6					
43%	55		52		34					29					
Physical and Monetary Assistance #	12	10	13	12	13	8	5	17	13	11	17	10	11	13	21
%	57	48	62	57	62	38	24	81	62	52	81	48	52	62	
Provincial Average	11		12.5		11.2					12.4					
56 %	52		60		53					59					

St. John's (1), Humber Arm (2), Southeast Environmental (3), Bedeque Bay (4), Cape Breton (5), Pictou (6), Sable Island (7), Bluenose (8), Annapolis (9), Saint John (10), Miramichi (11), Eastern Charlotte (12), St. Croix (13), Madawaska(14)

Graph 1a: Distribution of Measurable Variables Within 6 Key Categories of the Evaluation

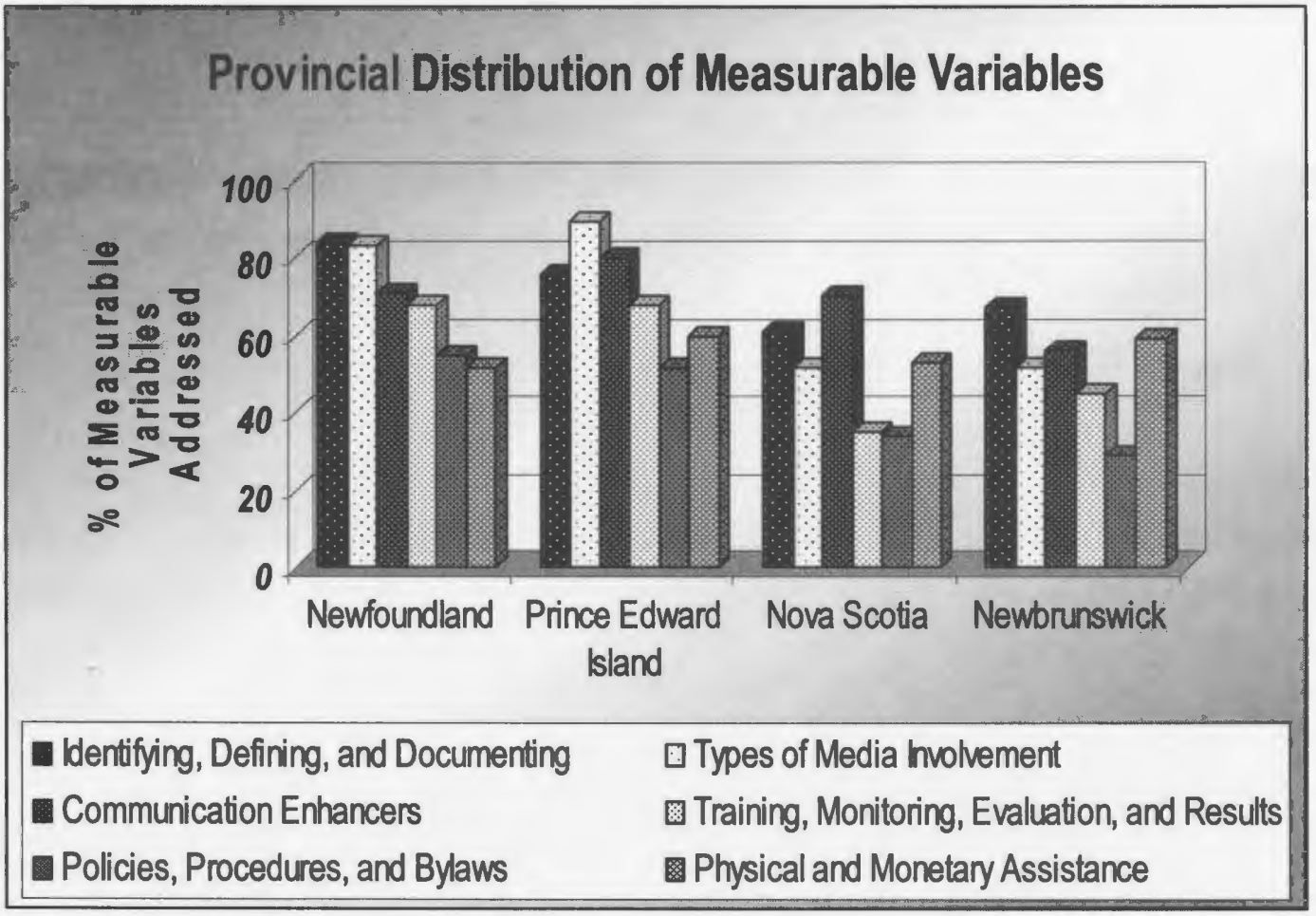
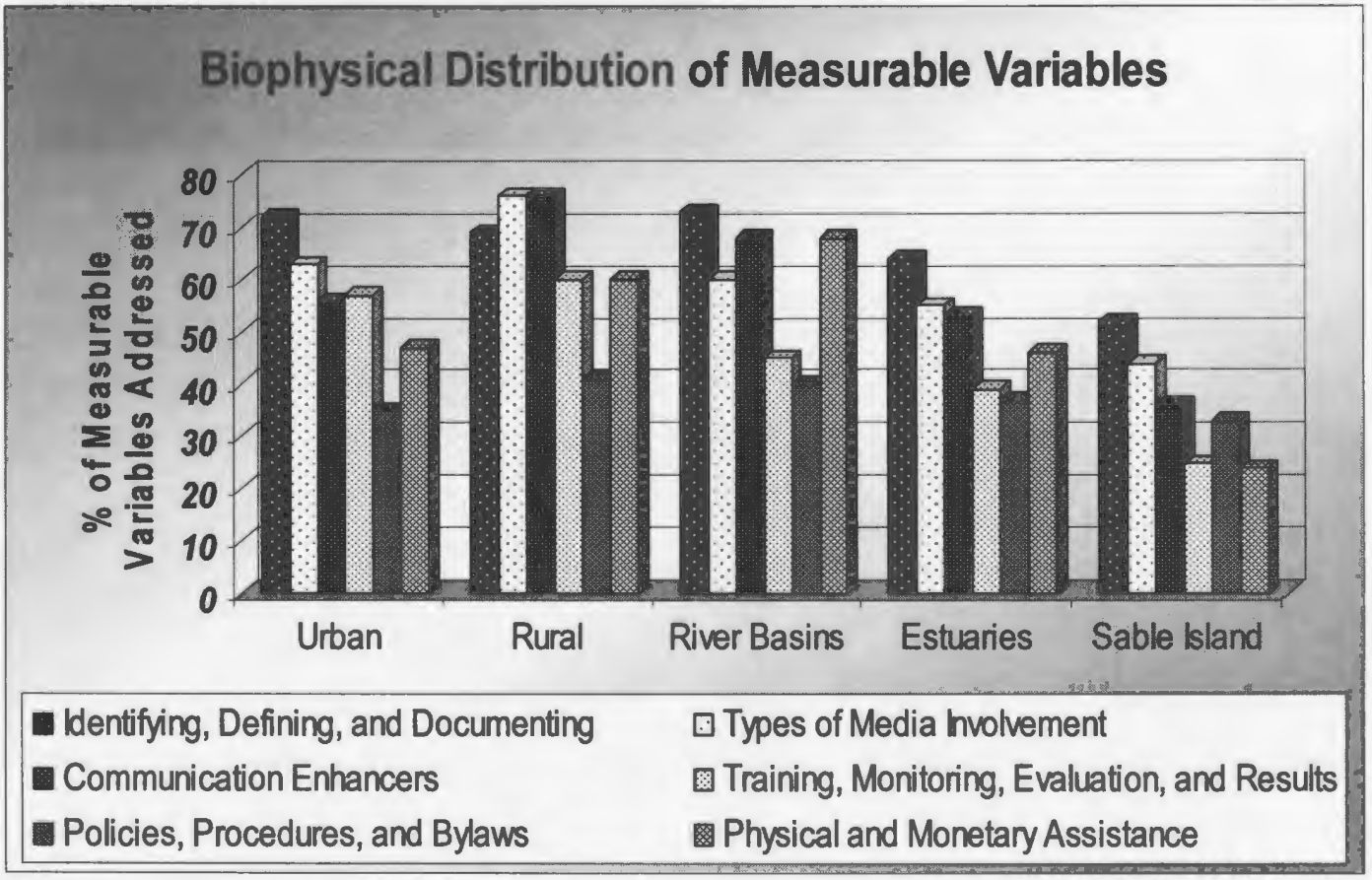


Table 6b: Biophysical Distribution of Measurable Variables within 6 Key Categories of the Evaluation														
	Urban Sites			Rural Sites			River Basins				Estuaries			Sable
Categories	**1**	**5**	**10**	**3**	**4**	**9**	**8**	**11**	**12**	**14**	**6**	**2**	**13**	**7**
Identifying, Defining and Documenting #	21	17	16	17	21	14	22	20	16	15	10	21	17	13
%	84	68	64	68	84	56	88	80	64	60	40	84	68	13
Average		18			17.3			18.3				16		13
%		72			69			73				64		13
Types of Media Involvement #	15	9	10	14	18	9	16	9	11	7	5	15	10	8
%	83	50	55	77	100	50	89	50	61	39	28	83	55	44
Average		11.3			13.7			10.8				10		8
%		63			76			60				55		44
Communication Enhancers #	14	11	12	18	17	15	21	16	15	8	8	17	10	8
%	64	50	73	82	77	68	96	73	68	36	36	77	46	36
Average		12.3			16.7			15				11.7		8
%		56			76			68				53		36
Training, Monitoring, Evaluation, and Results #	13	8	13	12	15	9	12	11	11	2	1	14	8	5
%	65	40	65	60	75	45	60	55	55	10	5	70	40	25
Average		11.3			12			9				7.7		5
%		57			60			45				39		25
Policies, Procedures, and Bylaws #	11	7	4	11	11	4	14	12	2	5	4	12	7	7
%	52	33	19	52	52	19	67	57	10	24	19	57	33	33
Average		7.3			8.7			8.3				7.7		7
%		35			41			40				37		33
Physical and Monetary Assistance #	12	13	11	13	12	13	17	17	10	13	8	10	11	5
%	57	62	52	62	57	62	81	81	48	62	38	48	52	24
Average		12			12.7			14.3				9.7		5
%		57			60			68				46		24

St. John's (1), Humber Arm (2), Southeast Environmental (3), Bedeque Bay (4), Cape Breton (5), Pictou (6), Sable Island (7), Bluenose (8), Annapolis (9), Saint John (10), Miramichi (11), Eastern Charlotte (12), St. Croix (13), Madawaska(14)

Graph 1b: Biophysical Distribution of Measurable Variables Within 6 Key Categories of the Evaluation



5.2.1 Category 1 Results – Identifying, Defining, and Documenting

Sites *with the Highest Scores for Category 1*

Tables 6a and 6b show that Bluenose (site 8), St. John's (site 1), Humber Arm (site 2), Bedeque Bay (site 4), and Miramichi (site 11) scored the highest on category 1. Each of the five sites achieved a score of at least 20 out of the possible score of 25. The five evaluation results are full of examples of Identifying, Defining, and Documenting measurable variables that have been addressed. For example, all five sites have completed a CEMP, developed

sensitivity maps and resource inventories (e.g. coastal resource inventory projects and community values mapping), instigated citizen-based water quality monitoring, and have undertaken projects related to enhancing biodiversity (e.g. the identification of aquatic habitats and indigenous species, and native animal and plant surveys.)

The extent to which Bluenose, St. John's, Humber Arm, Bedeque Bay, and Miramichi addressed this category appears to be a function of the high level of organizational networking (refer to respective evaluation results Appendix 5h, 5a, 5b, 5d, and 5k.) All five evaluation results reveal that the sites have invested a significant amount of time networking (e.g. local farmers, local elementary and secondary schools, universities, local businesses, other ACAP sites, volunteers, and collecting local/Traditional Ecological Knowledge). These partnerships provide more assistance to Identify, Define, and Document key issues of concern within the community. For example, all five sites have partnered with universities/colleges in the vicinity. This partnership provides the site with a number of benefits, including access to instruments that they may otherwise not have (GIS), and the ability to keep their labour costs down through access to human resources. Using Appendix 5a as an example, St. John's was the first site to actively use GIS to document and communicate information and research findings. The GIS is posted on the webpage for interested parties to view. St. John's has also worked closely with local fishermen to collect local knowledge on fish populations and species.

Moreover, each of these five sites has taken initiative to involve the public from the onset of any initiative. Thus, the public is involved in the 'defining the problem' stage and therefore become part of the project even before the project is defined. For example, the coastal residents living in the Bluenose site area have been visited by representatives of the site twice to discuss their main concerns with the coastal area. Therefore, these residents feel that they are truly part

of the solution. These five sites have recognized the importance of connecting their scientific partners with their residents. For example, Alistair Bath (Geography professor at Memorial University of Newfoundland) has been involved in collecting public attitudes and opinions towards issues facing both the Humber Arm and St. John's Harbour site areas.

Sites with a Low Score for Category 1

The sites which achieved the lowest scores were Annapolis (site 9), Sable Island (site 7), and Pictou (site 6). The range of scores for the three sites was from 10 to 14 out of the possible score of 25. The evaluation results for Annapolis (Appendix 5i), Sable Island (Appendix 5g), and Pictou (Appendix 5f) show that less than half of the measurable variables for Identifying, Defining, and Documenting were addressed by each of the three sites. Specifically, there were three fundamental measurable variables that were not addressed including the development of a new set of goals and deliverables each year and a literature review to understand how other community groups address and undertake similar environmental initiatives. The most significant measurable variable not addressed is the development of a CEMP for each site. This document was one of the deliverables for Environment Canada and was to be produced within the first five years of each site's establishment. Though this document is a long overdue deliverable for the sites, there has been no consequences of this failure from Environment Canada and therefore represents a larger problem with the ACAP program as a whole. Moreover, some of the less fundamental (1 point) measurable variables that the sites failed to address include defining of sustainable industries and defining a full value water pricing scheme.

In examining the three evaluation results, there are a number of factors which contributed to their low scores. Each of these sites has a very low level of networking. Aside from working with local municipalities, local public, and some local industries (specifically farmers and fishermen), there has been no extensive partnerships with universities/colleges. This limits the amount of research that can be carried out by the site since partnering with post-secondary schools provide the site access to technologies that the site may not otherwise have access to (e.g. GIS, electro-shocking equipment, remote sensing), research students/volunteers (which keeps labour costs down), and access to research libraries.

Another reason why these sites have lower scores has to do with their focus, and the fact that their goals have deviated from the initial five goals of ACAP. This is particularly evident when looking at the Sable Island case study. Sable Island is in a very different circumstance as compared to the other thirteen sites. Though the Sable Island group is small and particularly homogeneous in terms of environmental matters, the distance of this site makes it especially challenging to secure a network of volunteers when the volunteers cannot see the results of their efforts. Moreover, certain criteria covered by category 1 do not pertain to Sable Island such as restoring and maintaining traditional livelihoods, citizen-based water quality monitoring, assisting existing livelihoods in becoming sustainable, pollution prevention within the home/industry, creating opportunities for meaningful citizen involvement, introducing new sustainable industries, and full value water pricing. Therefore, Sable Island lost points in the evaluation for each of these areas even though the site did not focus on these issues. This, in turn, raises the question of why Environment Canada selected five goals that do not encompass the issues facing all fourteen sites.

Patterns of Success for Category 1

Newfoundland achieved the greatest average score of 21 out of the possible 25 points for category 1. In examining the evaluation results for Newfoundland (Appendix 5a and 5b), both sites have involved many partners in an extensive number of research projects such as the

Municipal government, Sierra Club, local businesses, area universities and colleges, and local citizens involved with traditional industries. Biophyisically (Table 6b) the river basin sites (18.3 points) and urban sites (18 points) achieved the greatest scores. Two other biophysical areas fell closely behind with rural sites having an average score of 17.3 and the estuary sites with a score of 16 for category 1. This is the only category where different biophysical areas have a similar average which is likely the result of a relatively high number of measurable variables addressed by all of the sites for category 1. Identifying, Defining, and Documenting are the necessary first steps for any project/program which is the most likely reason why it is regularly addressed by all of the sites.

5.2.2 Category 2 Results - Types of Media Involvement

Sites with the Highest Score for Category 2

Category 2 explores the various methods utilized by the sites to inform the public of the various projects and initiatives undertaken. Bedeque Bay (site 4), Bluenose (site 8), St. John's (site 1), and Humber Arm (site 2) scored the highest on category 2. Each of the four sites achieved a score of at least 15 out of the possible score of 18. The four evaluation results (refer to Appendix 5d, 5h, 5a, and 5b respectively) are full of examples of Media Involvement with the majority of fundamental variables addressed by each of these sites. Three, out of the four, fundamental variables for category 2 were addressed by all of the sites including the availability of pamphlets, brochures, and fact sheets on a variety of environmental issues facing the area, advertising all upcoming projects and activities in the local media to encourage more community involvement, and describing all of the sites' projects on the website. Examples of Media Involvement within the four sites include biweekly columns in the local newspaper, demonstration farms, billboard ads, and letters to the editor.

The higher scores for these sites appear to be a function of the four sites' creativity and marketing skills. Each of the sites used a variety of media fora from radio and newspapers to local cable television stations. To generate greater public comment and involvement in particular issues, the sites chose more innovative types of Media Involvement including billboard ads, letters to the editor, and the creation of information videos. For example, a billboard was created by the St. John's Harbour sites and was in a prominent location downtown. Bluenose distributed information packages and pamphlets door to door. Therefore, more of the public was made aware of the issues and concerns in the area than other sites (e.g. Pictou) which had pamphlets available only through their site office. The constant exposure in the community reinforces a greater involvement and support for residents in the community. Moreover, each of the four sites have a site specific newsletter which informs the public of what projects they have carried out, the results of these projects, projects commencing in the near future, and how the public can participate.

Sites with a Low Score for Category 2

The sites which achieved the lowest scores in the area of Media Involvement were Sable Island (site 7), Madawaska (site 14), and Pictou (site 6). The range of scores for these sites was from 5 to 8 out of the possible score of 18. The evaluation results for Sable Island (Appendix 5f), Madawaska (Appendix 5n), and Pictou (Appendix 5f) show that less than half of the measurable variables for Media Involvement were addressed by the sites. Specifically, not one of these sites updates their website a minimum of two times a year which is one of the fundamental variables in the framework. The website is an excellent medium for communicating the milestones and outcomes of projects. Sites which fail to regularly update their websites, and sites which do not use this medium (e.g. Pictou), significantly compromise the benefits of communicating with the greater community.

Patterns of Success for Category 2

The rural sites addressed the greatest number of measurable variables (13.7) for Media Involvement, followed by the urban sites (11.3), river basin sites (10.8), estuary sites (10), and Sable Island (8). A characteristic of rural sites is their ability to network within their rural community. In looking at the evaluation results for Southeast Environmental, Bedeque Bay, and Annapolis (Appendix 5c, 5d, and 5i respectively), the rural sites have taken advantage of networking in numerous ways (e.g. local media events such as presentations to scouts, utilizing local cable television stations, the farmers market tomato tasting event, community gardens, annual farm and garden tour, energy conservation display, and demonstration farms.)

The issue of trying to communicate with the surrounding community as effectively and efficiently as possible has always faced rural areas, by their nature and geographic isolation. This geographic circumstance has allowed rural communities to better understand and promote the involvement of media. Rural communities realize the importance of Media Involvement since they are within a sparsely populated area. Moreover, rural communities exist within a less diverse community compared to many of the estuary and river basin sites (having a much greater mix of urban, rural, manufacturing, and resource-based economy within the site boundaries), which makes it easier to deliver a media message to a more uniform audience.

5.2.3 Category 3 Results - Communication

Sites with the Highest Score for Category 3

Category 3 consists of measurable variables that assess the sites' level of communication with the community, stakeholders, other sites, and Environment Canada. Bluenose (site 8), Southeast Environmental (site 3), Humber Arm (site 2), and Bedeque Bay (site 4) scored the highest on category 3. Each of the four sites achieved a minimum score of 17 out of the possible score of 22. The four evaluation results (refer to Appendix 5h, 5c, 5b, and 5d

respectively) are full of Communication examples. Moreover, six of the seven fundamental variables were addressed by all of the sites, including the provision of contact information on the website, community forums to allow residents to exchange information, ensuring volunteer recognition, hosting open houses/seminars to enhance sustainability, establishing green teams for pollution prevention visits, and regular communication networks with other sites/Environment Canada and/or larger industries in the area. Each of these examples demonstrates the importance of networking.

One of the most fundamental reasons for the high scores of these four sites is the active networking with other sites. Using Bluenose as an example, the site coordinator regularly networks with the other ACAP sites either by email, phone, and/or to a lesser extent travel. Bluenose site coordinator Brooke Cook stated in the focus group session that gaining insight from another site via email and phone is an effective way to learn from others, and that travelling to other sites to physically see how they operate is ideal if resources are permit.

Southeast Environmental and Bedeque Bay meet with each other in Charlottetown on a semi regular basis. Southeast Environmental also maintains regular contact with other groups having parallel goals to learn from them, help them, and cross promote one another's activities. Staff at Humber Arm regularly attends Integrated Coastal Zone Management meetings, and the coordinator attends a teleconference each month which provides an opportunity for other environmental group to learn and understand what each other is doing. These networking opportunities provide as a great learning forum and also permit these sites to share resources.

For example, Cook revealed that if Bluenose was going to undertake a project that was similar to another site, she would often use their funding proposals and work plans as a resource which consequently saves Bluenose a considerable amount of resources.

Sites with a Low Score for Category 3

The sites which achieved the lowest scores in the area of Communication Enhancers were Cape Breton (site 5), St. Croix (site 13), Pictou (site 6), Madawaska (site 14), and Sable Island (site 7). The range of scores for these five sites was from 8 to 11 out of the possible score of 22. The evaluation results for the sites (refer to Appendix 5e, 5m, 5f, 5n, and 5g respectively) show that less than half of the measurable variables for category 3 were addressed by the five sites. Only one of the fundamental variables for Communication Enhancers (establishing a green team for pollution prevention visits) was addressed by all of the sites. Moreover, only three out of the five sites addressed four out of the seven fundamental variables.

Three fundamental variables were poorly addressed by the five sites including recognising volunteers, hosting seminars on how to enhance sustainability, and establishing networks between sites/Environment Canada, and/or other environmental organizations. Recognising volunteers in an important way to maintain volunteers and thank the community for supporting the organization. Other sites that addressed this variable thanked volunteers and members by hosting barbecues, awards ceremonies, appreciation picnics, or through formally recognising volunteers in the media. The five low scoring sites would also benefit from networking beyond the public and encouraging two-way communication with other sites/similar organizations.

Patterns of Success for Category 3

Provincially, Prince Edward Island achieved the highest average score (17) for category 3. Agriculture-based communities, which comprise the majority of communities on the Island, have a significant number of associations (e.g. Christian Farmers Association), groups (e.g. 4-H), events (e.g. organic farming forums, fall fairs, ploughing matches), and newsletters which make the communication of upcoming events or the results of previous events relatively easy. Communication tends to be easiest among individuals already involved in the farming industry since they are the ones that will suffer the most from excessive erosion and poor water quality.

The rural sites achieved the greatest score (16.7) for Communication Enhancers, followed by river basin sites (15), urban sites (12.3), estuary sites (11.7), and Sable Island (site 8). Rural sites have a number of intrinsic benefits when it comes to communicating with the community. The social networks within a rural community are more cohesive than in any other setting. Citizens make more of an effort to get to know one another. The three rural ACAP sites (Bedeque, Southeast, and Annapolis) are primarily agriculture-based sites.

5.2.4 Category 4 Results - Training, Monitoring, Evaluation, and Results

Sites with the Highest Score for Category 4

Category 4 consists of measurable variables that address the areas of Training, Monitoring, Evaluation, and Results. Bedeque Bay (site 4), Humber Arm (site 2), Bluenose (site 8), St. John's (site 1), and Saint John (site 10) scored the highest on category 4. Each of the five sites achieved a score of at least 13 out of the possible score of 20. The five evaluation results (refer to Appendix 5d, 5b, 5h, 5a, and 5j respectively) are full of examples of Training, Monitoring, Evaluation, and Results including ecological monitoring, measuring water use in 141 homes, attendance at conferences/workshops, training volunteers in water quality monitoring, and GIS

training for staff. Since the average score (as a percentage) was only 48% the measurable variables were not addressed as regularly as categories 1 through 3. The two fundamental variables that were addressed by at least four out of the five sites include the provision of educational upgrading/seminars to people in traditional industries, and the monitoring of new sustainable industries/ensuring new sustainable industries complement existing traditional industries.

In examining the evaluation results for the five sites, one of the biggest factors contributing to the high scores was, again, the ability of the sites to form partnerships that enable them to carry out Training, Monitoring, Evaluation, and Results. This can be demonstrated by examining the evaluation results for Bedeque Bay (refer to Appendix 5d). Bedeque Bay has addressed a number of measurable variables for category 4 in training (training Holland College students, GIS training sessions for staff and volunteers, co-ordinator training on income management), monitoring (continue to build on inventory, nitrate monitoring project, levels of home pollution recorded), evaluation (report on baseline data collected, 40 residents developed environmental indicators for the watershed, informal evaluation carried out on all projects), and results (more sustainable farming projects accepted, over the years the amount of debris collected in streams has decreased.)

Bedeque Bay has partnered extensively with Holland College in a number of monitoring projects such as the inventory of stream course buffers in the watershed, biodiversity monitoring, nitrate monitoring, and water/soil quality analysis. This partnership has provided Bedeque Bay with a very skilled network of volunteers and co-op students who are familiar with the technologies and instruments used to monitor. It also provides the site with access to technologies such as GIS software, which would otherwise be too expensive for the site to

purchase. It is also important to note that Bedeque Bay has involved the public in many aspects of Training, Monitoring, Evaluation, and Results. In examining Appendix 5d, the public was involved in developing environmental indicators, GIS training for volunteers, educating the public on drought tolerant gardening, vehicle emission testing, and the collection of Traditional Knowledge. The site is able to work on more initiatives by having more involvement/participation from the public.

Sites with a Low Score for Category 4

The sites which achieved the lowest scores for category 4 were Sable Island (site 7), Madawaska (site 14), and Pictou (site 6). Their range of scores was from 1 to 5 out of a possible score of 20. The evaluation results for Pictou (Appendix 5f), Madawaska (Appendix 5a), and Sable Island (Appendix 5g) show that well less than half of the measurable variables for category 4 were addressed by each of the sites. In general, all of the fundamental variables were addressed very poorly, if they were addressed at all.

The reasons behind Sable Island's low score are likely very different than for Pictou and Madawaska. The Island is located approximately 290 kilometres Southeast of Halifax, Nova Scotia. Thus, training must be kept to a minimum since travel to and from the site, and living expenses while on the site, are extremely expensive. Only a handful of individuals are exposed to the research and management involved in preserving the Island. Environmental initiatives on Sable Island are different from the other sites in that the results of the initiative are solely for the ecological preservation of the site as opposed to having numerous benefits such as heritage preservation, economic prosperity, increase job creation of sustainable industry, and aesthetics.

Moreover, the projects and research that the site undertakes are not financially tangible (e.g. ecological preservation as opposed to a more sustainable fishing industry or increased agricultural yields due to erosion prevention projects.) The limited focus of this site makes it challenging to obtain municipal and provincial funds. In addition, training in environmental matters is not necessary for the professional scientists and government workers, who make up the public on Sable Island.

In examining the evaluation results for Pictou, the measurable variables in the framework are considerably less addressed than many of the other sites. The site is undertaking less projects and less networking than many of the other sites. Consequently, Identifying, Defining, and Documenting key environmental issues in the area and establishing Communication Enhancers (pamphlets, information kits) has taken precedence over tasks which require greater resources such as Training, Monitoring, Evaluation, and Results.

The evaluation results for Madawaska suggest that the site's main focus is on project implementation and action as opposed to project evaluation, and the identification of results. Madawaska has undertaken a number of environmentally beneficial projects such as citizen-based water quality monitoring, sediment quality studies, development of a linear park, and an inter-provincial cycling network. Although Madawaska has provided some training to its volunteers in terms of water quality monitoring and data collection, this site lost a number of points in the evaluation for variables which addressed project evaluation and results. Though the site undertakes monitoring-related projects, program evaluation is rarely undertaken.

Patterns of Success for Category 4

Prince Edward Island and Newfoundland both achieved the greatest average score (13.5) for category 4 followed by New Brunswick sites (9) and Nova Scotia sites (7). As identified earlier, the PEI and Newfoundland sites actively networked and partnered with various organizations in the area. This provides the sites with additional support in Training, Monitoring, Evaluation, and Results. One of the most important networks that these sites made was with local universities and colleges which provided the sites access to free labour and equipment that may otherwise be too expensive to purchase or rent.

Geographically, the rural sites scored a higher number of measurable variables for category 4. All of the rural sites have a significant agriculture base. Sites 3, 4, and 9 are all economically and culturally dependent on agriculture. Farmers and hobby farmers are beginning to manage their farms with long-term management goals (e.g. practices that will make a farm sustainable) as opposed to short-term plans (e.g. monoculture, over spraying). Though this transition has been initiated by new government regulations and grant programs (e.g. PEI Agriculture Program: Eastern Habitat Joint Venture, Canadian Agriculture Rural Communities Initiative) and the loss of yields due to intensification (e.g. Potato Wart), it has also been supported by outreach initiatives undertaken by the rural ACAP sites (www.gov.pe.ca/infopei).

One example of this outreach initiative is the Maple Plains Agro-Environmental demonstration project undertaken by Bedeque Bay, which demonstrates how a farm can be profitable and environmentally sustainable. Through this demonstration, the rural population can see the relationship between certain actions such as over-spraying pesticides and leaving fields without a groundcover at the end of the growing season to detrimental environment effects such as lower soil fertility and soil erosion and the fish kills in PEI in the summer of 2002. A

sustainable agriculture industry is dependent on fertile soil and clean water. Therefore, there is an economic incentive for many of the region's citizens to monitor and evaluate environmental initiatives to ensure the future viability of the rural region.

5.2.5 Category 5 Results - Policies, Procedures, and Bylaws

Sites with the Highest Score for Category 5

Category 5, Policies, Procedures, and Bylaws explores how the site has influenced the political agenda of the region pertaining to the environment. Bluenose (site 8), Humber Arm (site 2), Miramichi (site 11), St. John's (site 1), Southeast Environmental (site 3), and Bedeque Bay (site 4) scored the highest on category 5. Each of the six sites achieved a score of at least 11 out of the possible score of 21. Though the six sites addressed category 5 better than the other eight sites, the measurable variables addressed (and scores achieved) were significantly lower than the other five categories. The six evaluation results (Appendix 5h, 5b, 5k, 5a, 5c, and 5d respectively) show that four out of the six fundamental variables were addressed by at least four of the sites. Only one of these fundamental variables (entering agreements with local schools for annual presentations) was addressed by all of the sites. Two fundamental variables that were addressed by less than half of the sites include the development of new bylaws, policies, or management plans to reflect new insight gained from sensitivity mapping/resource inventory analysis and the development of policies, regulations and/or management plans to protect fish and wildlife habitat.

In examining the evaluation results, one of the biggest factors contributing to the high scores was the enthusiasm and devotion that the coordinators invested in category 5. The coordinators

for these six sites either extensively lobbied their local government (e.g. St. John's Harbour, Humber Arm) or the coordinator partnered with their local government to assist in the delivery of government-developed programs such as the Environmental Farm Plan (e.g. Southeast Environmental, Bedeque Bay). Furthermore, each of the six sites was faced with many challenges comparable to the sites that addressed less measurable variables. For example, Annapolis has a smaller population and Humber Arm exists in a more urban area. Areas with a smaller population generally felt a greater challenge in establishing Policies, Procedures, and Bylaws because smaller municipalities typically have fewer funds to invest, and because the municipal councillors are only part-time. Urban areas generally felt a greater challenge gaining support in a single issue with such a diverse population. One common factor within the six sites was the investment of time and resources towards developing policies and/or management plans. For example, Bluenose addressed the greatest number of variables (and achieved the highest score) for category 5. As indicated in Appendix 5h, the breadth of issues that have been addressed is extensive including working with the local government to establish sustainable building practices, receiving funds from the town of Lunenberg to assist in the development of a sewage treatment management plant, and the development of a hazardous waste reduction project to help businesses and households meet the limits established by new waste bylaws.

Sites with a Low Score for Category 5

The sites which achieved the lowest scores in the area of Policies, Procedures, and Bylaws were Eastern Charlotte (site 12), Pictou (site 6), Annapolis (site 9), Saint John (site 10), and Madawaska (site 14). The range of scores for the five sites was from 2 to 5 out of a possible

score of 21. The evaluation results for the sites (Appendix 5l, 5f, 5i, 5j, and 5n respectively) suggest that again, well less than half of the measurable variables were addressed by each of the sites. Though the sites addressed the fundamental variables, not one of these variables was addressed by all of the sites. Examples of some of the fundamental variables addressed include fill regulation revisions, development of a forestry environmental management strategy, and the development of a non-point source pollution. The low scores achieved by the five sites reflect a very low effort and focus to address their key initiatives politically. Not one of these sites has lobbied their local government, nor have they tried to work with their government to carry out a joint initiative.

Patterns of Success for Category 5

Policies, Procedures, and Bylaws are very time intensive to formulate and implement. There are also many obstacles within this category that each site faces. For example, having a very diverse community (such as Saint John) makes it more difficult to reach consensus on certain issues, and thus implement a management plan accordingly. One of the major obstacles for St. Croix is the international nature of the site's environmental agenda. The body of threatened water is American as well as Canadian and therefore any Policy, Procedure, or Bylaw enacted to protect this water would have to be international in nature. Moreover, in many circumstances, the environmental issues facing the sites transcends many regional and even provincial jurisdictions (e.g. rivers) causing a more complex issue of coordination of policies.

Another obstacle, experienced by many of the sites, was trying to gain the support they needed

from politicians. In areas with smaller population (e.g. Annapolis), the municipal operating budget was quite low and therefore limited in the funding that it could provide to an organization to carry out projects. In other areas that had a greater population (e.g. St. John's) politicians have viewed ACAP initiatives as an obstacle, as opposed to progressive likely because of the high costs or enormous efforts that the project may demand. The costs associated with more extensive projects (e.g. water treatment system for St. John's Harbour) would force local taxes to rise resulting in the decreased populatity for the associated politicians. There were many instances when the provincial Newfoundland government (depending on the Premier) did not support the ACAP group through not showing up at ACAP meetings held in the government's honour, to even denying that the health of the St. John's harbour is threatened by human sewage (in conversation with D. Baird and B. Malone October 4, 2001).

Since Policies, Procedures, and Bylaws are time intensive to develop and implement, the issue then is dependent on the enthusiasm and devotion of the site coordinators. The greater the devotion that a site coordinator has on this category, the greater the likelihood that Policies, Procedures, and Bylaws will be instigated. For example, one of the obstacles identified with less populated sites was the low funds and the lack of full time councillors. This appears to be the case in a number of smaller areas such as Southeast Environmental and Cape Breton, yet in other ACAP areas with a similarly small population, sites such as Bedeque Bay and Bluenose addressed considerably more measurable variables pertaining to Policies, Procedures, and Bylaws. With all of the obstacles identified for urban areas there were still a number of sites

that persevered and established Policies, Procedures, and Bylaws such as St. John's and Humber Arm.

5.2.6 Category 6 Results - Physical and Monetary Assistance

Sites with the Highest Score for Category 6

The category entitled Physical and Monetary Assistance explores the sites' ability to generate funds, donate funds, and invest time and labour to complete environmental projects within the community. Tables 6a and 6b show that Bluenose (site 8), Miramichi (site 11), Southeast Environmental (site 13), Cape Breton (site 5), Annapolis (site 9), and Madawaska (site 14) scored the highest on category 6. Each of the six sites achieved a score of at least 13 out of the possible score of 21. The evaluation results (Appendix 5h, 5k, 5l, 5e, 5i, and 5h respectively) show that the sites addressed the majority of measurable variables. Moreover, four (out of six) fundamental variables were addressed by at least four of the sites. Examples of the fundamental variables addressed include the provision of Physical and Monetary Assistance to projects which concern water quality, restoring and/or maintaining traditional industries, fish/wildlife habitat, and financially encouraging low water usage. Each of the six sites has provided Physical and Monetary Assistance to a number of projects undertaken in cooperation with local citizens. The sites have provided physical assistance to many fisheries associations to undertake restoration projects such as the Earnst Brook and Mushamush River projects, beach sweeps, the removal of fish passage obstacles, and the restoration of spawning areas. The sites have provided free workshops for farmers and wood lot owners to enable them to implement sustainable management practices on their own property. Each of the sites has also provided monetary assistance to landowners for riparian zone development and enhancing

buffer zones. This assistance has provided area residents with greater incentive to both undertake and complete environmental projects and initiatives.

Sites with a Low Score for Category 6

The sites which achieved the lowest scores for Physical and Monetary Assistance, were Sable Island (site 7), Pictou (site 6), Humber Arm (site 2), and Eastern Charlotte (site 12). The range of scores for these four sites was from 5 to 10 out of the possible score of 21. The evaluation results (Appendix 5g, 5e, 5b, and 5l respectively) show that the sites addressed less than half of the measurable variables. Moreover, not one of the fundamental variables was addressed by all of the sites. Depending on the site, there are many different reasons why these four sites scored poorly on category 6. For example, Humber Arm achieved high scores in a number of the categories (e.g. Policies, Procedures, and Bylaws; Training, Monitoring, Evaluation, and Results). Thus, it would appear that this site did not focus on providing Physical and Monetary Assistance to key issues. This is unfortunate since other (higher scoring) sites found that the public was more willing to undertake projects when they were provided with some incentive. On the other hand, Sable Island does not have a community within its boundaries, and therefore is limited in the Physical and Monetary Assistance that it can provide. Sable Island is generally focused on carrying out its own research to enhance the preservation of the Island.

Patterns of Success for Category 6

Biophysically, the river basin sites addressed the greatest average number of measurable variables (14.3) for Physical and Monetary Assistance, followed by the rural sites (12.7), urban

sites (12), estuaries (9.7), and then Sable Island (5). The river basin sites have undertaken a number of projects to improve the riverine environment. Financially, they have purchased native plants and trees to create/enhance buffer zones. The sites have provided physical assistance to landowners and residents in the area through organizing stream clean-up days and providing free workshops to residents. The land surrounding water-courses is typically owned by residents. Though landowners may be interested in improving this buffer area they may not have the physical or monetary resources to carry out any extensive projects. Therefore, these landowners are often quite willing to work with the organization in order to receive physical and/or monetary assistance. This greater level of assistance within the River Basin sites appears to be a function of the greater number of citizens willing to improve their properties and invest time and money into their properties as well.

5.3 Conditions Underlying Success within the Five Criteria

The following section explores the ability of each of the fourteen sites to address the measurable variables across the five criteria; i) Sustainable Livelihoods, ii) Natural Heritage, iii) Water Quality, iv) Responsible Stewardship, and v) Ecosystem Planning. The distribution of measurable variables addressed by the sites, across the criteria, is provided in Tables 7a and 7b and depicted in Graphs 2a and 2b. Table 7a (and Graph 2a) present the results of the evaluation in a provincial context, whereas Table 7b (and Graph 2b) present the results in a biophysical context. The average scores, as a percentage, for each of the five criteria were similar to one another ranging from 44% to 65%.

There are three columns in the framework for each criterion, a column for each of the three indicators. Depending on the combination of variables with a value of "1" or "2", the

maximum value for each criterion varies. The value for each criterion is identified outside of Table 7a on the right hand side. Each criterion is represented by one line in both of the Tables. Thus, for each of the fourteen sites, there is a value recorded for each category that is automatically out of the corresponding value on the right hand of the Table. For example, in Table 7a there is a "10" indicated for site 1, criterion 1, which means that St. John's scored "10" out of the maximum score of 25 for criterion 1.

Table 7a: Distribution of Measurable Variables within 5 Key Criteria of the Evaluation

Criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Sustainable Livelihoods #	10	14	19	21	9	8	11	15	14	9	15	13	8	5	25
%	40	56	76	84	36	32	44	60	56	36	60	52	32	20	
Provincial Average 54 %	12 48		20 80		11.4 46					10 40					
Natural Heritage #	16	15	18	19	13	8	13	23	8	10	12	12	14	13	25
%	64	60	72	76	52	32	52	92	32	40	48	48	56	52	
Provincial Average 44 %	15.5 62		18.5 74		13 52					12.2 49					
Water Quality #	17	21	18	17	14	10	9	16	15	13	19	9	15	11	24
%	71	88	77	71	58	42	38	67	63	54	79	38	63	46	
Provincial Average 65 %	19 79		17.5 73		12.8 53					13.4 56					
Responsible Stewardship #	19	18	17	17	16	8	10	26	16	16	17	17	12	10	26
%	73	69	65	65	62	31	38	100	62	62	65	65	46	38	
Provincial Average 62 %	18.5 71		17 65		15.2 58					14.4 55					
Ecosystem Planning #	24	20	15	20	10	1	3	22	11	18	22	13	12	9	28
%	84	71	54	71	36	4	11	79	39	64	79	46	43	32	
Provincial Average 57 %	22 79		17.5 63		9.4 34					14.8 53					

St. John's (1), Humber Arm (2), Southeast Environmental (3), Bedeque Bay (4), Cape Breton (5), Pictou (6), Sable Island (7), Bluenose (8), Annapolis (9), Saint John (10), Miramichi (11), Eastern Charlotte (12), St. Croix (13), Madawaska(14)

Graph 2a: Distribution of Measurable Variables within 5 Key Criteria of the Evaluation

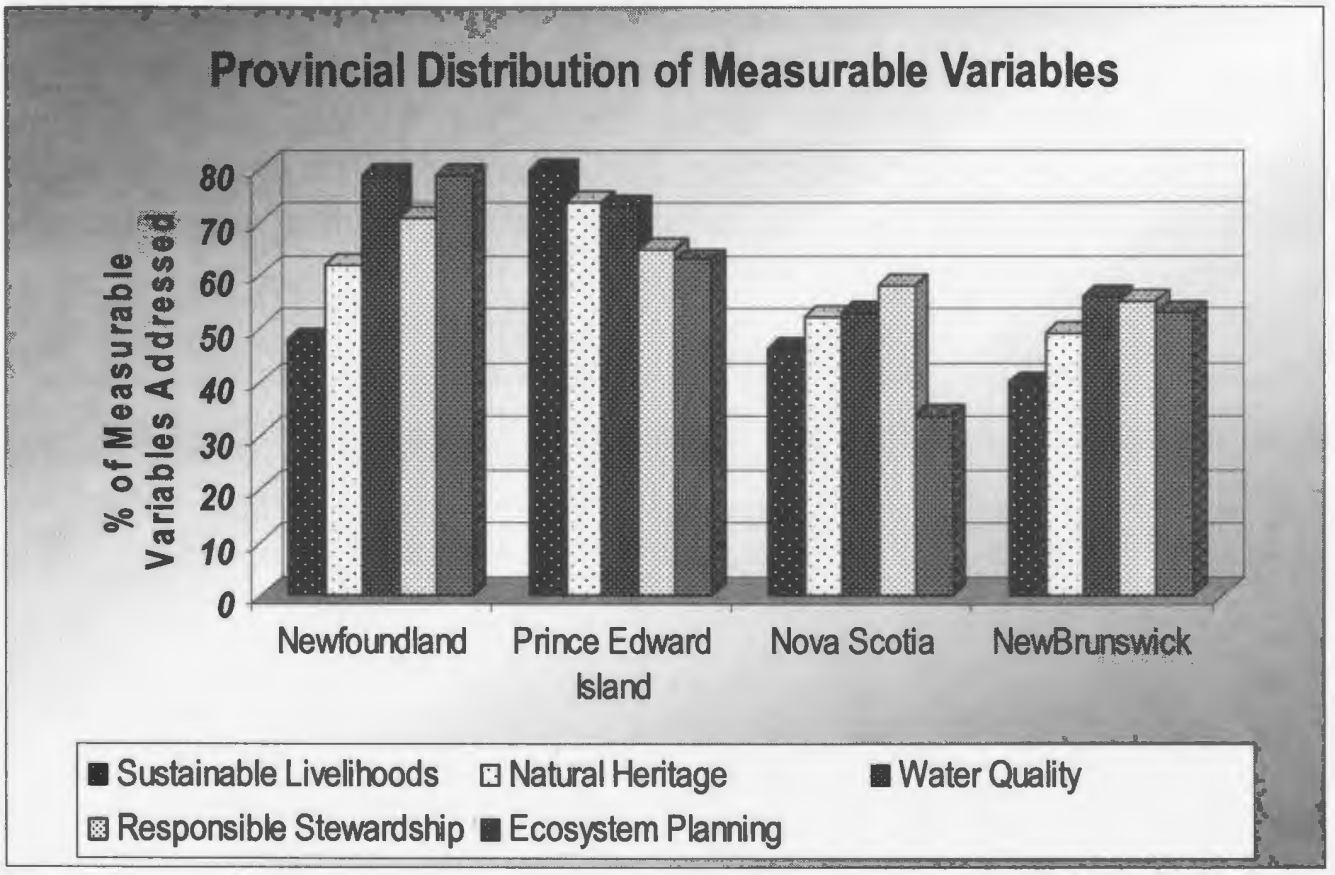
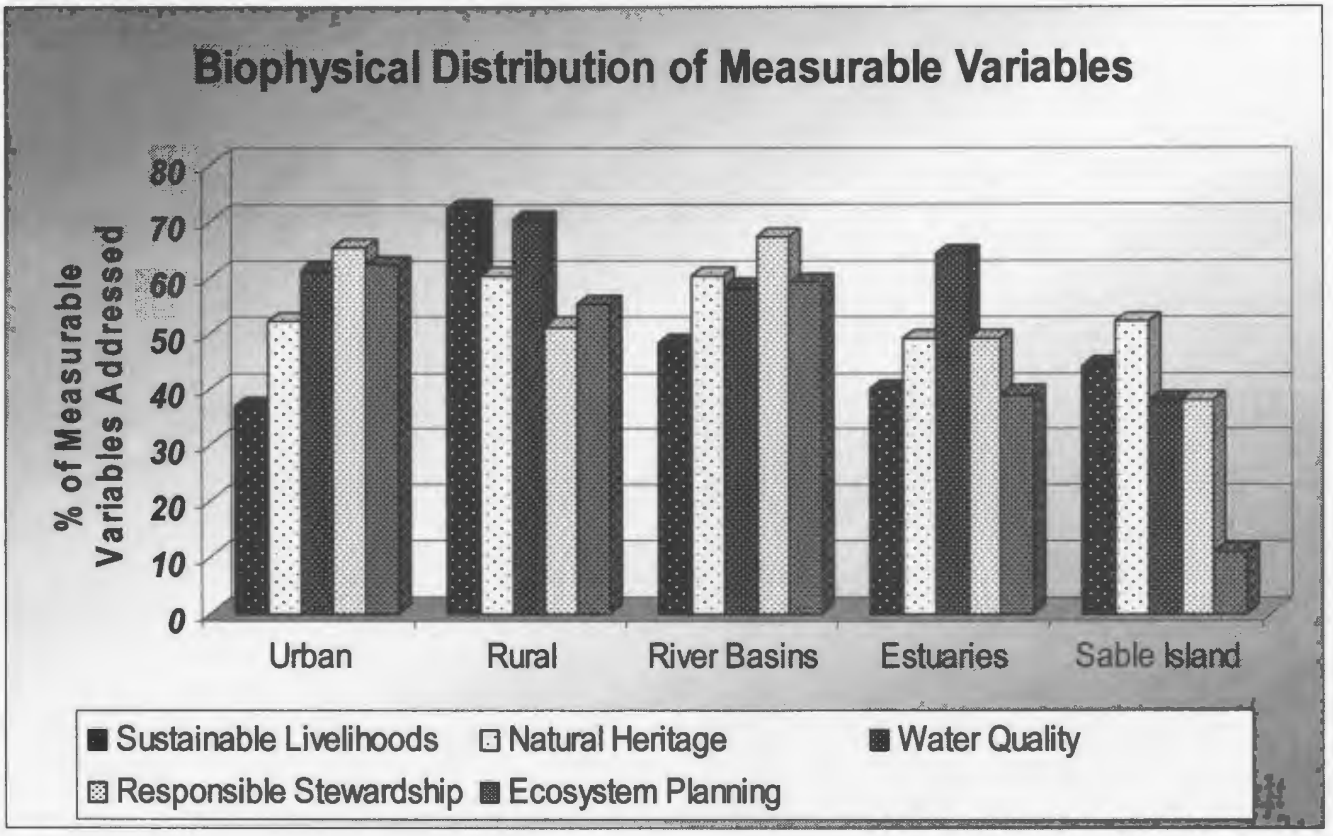


Table 7b: Distribution of Measurable Variables within 5 Key Criteria of the Evaluation														
	Urban Sites			Rural Sites			River basins				Estuaries			Sable
Criteria	**1**	**5**	**10**	**3**	**4**	**9**	**8**	**11**	**12**	**14**	**2**	**6**	**13**	**7**
Sustainable Livelihoods #	10	9	9	19	21	14	15	15	13	5	14	8	8	11
%	40	36	36	76	84	56	60	60	52	20	56	32	32	44
Average	9.3			18			12				10			11
%	37			72			48				40			44
Natural Heritage #	16	13	10	18	19	8	23	12	12	13	15	8	14	13
%	64	52	40	72	76	32	92	48	48	52	60	32	56	52
Average	13			15			15				12.3			13
%	52			60			60				49			52
Water Quality #	17	14	13	18	17	15	16	19	9	11	21	10	15	9
%	71	58	54	75	71	63	67	79	38	46	88	42	63	38
Average	14.7			16.7			13.8				15.3			9
%	61			70			58				64			38
Responsible Stewardship #	19	16	16	17	17	16	26	17	17	10	18	8	12	10
%	73	62	62	65	65	62	100	65	65	38	69	31	46	38
Average	17			13.3			17.5				12.7			10
%	65			51			67				49			38
Ecosystem Planning #	24	10	18	15	20	11	22	22	13	9	20	1	12	3
%	84	36	64	54	71	39	79	79	46	32	71	4	43	11
Average	17.3			15.3			16.5				11			3
%	62			55			59				39			11

St. John's (1), Humber Arm (2), Southeast Environmental (3), Bedeque Bay (4), Cape Breton (5), Pictou (6), Sable Island (7), Bluenose (8), Annapolis (9), Saint John (10), Miramichi (11), Eastern Charlotte (12), St. Croix (13), Madawaska(14)

Graph 2b: Biophysical Distribution of Measurable Variables within 5 Key Criteria of the Evaluation



5.3.1 Criterion 1 Results - Sustainable Livelihoods

Sites with the Highest Score for Criterion 1

Criterion 1, Sustainable Livelihoods, consists of a series of 18 measurable variables which explore the sites' ability to ensure the diversification and sustainability of livelihoods through setting specific targets and initiating diverse projects which include restoring traditional livelihoods, sustaining existing livelihoods, and the introduction of new, sustainable livelihoods. Tables 7a and 7b show that Bedeque Bay (site 4), Southeast Environmental (site 3), Bluenose (site 8), and Miramichi (site 11) scored the highest on criterion 1. The four sites

achieved a score of at least 15 out of 25. The evaluation results (Appendix 5d, 5c, 5h, 5k respectively) show that the sites addressed the majority of measurable variables for criterion 1. Examples of the variables addressed include newspaper articles directed towards island farmers and fishermen, and monitoring the impacts of aquaculture on estuaries.

Each of the four site areas is socially, economically, and environmentally dependent on Sustainable Livelihoods. Both Bedeque Bay and Southeast Environmental are located in a region with an extensive farming industry. Both site areas are particularly vulnerable to key environmental issues such as erosion, agricultural intensification, extensive application of fertilizers and pesticides, and growing water quality concerns. Thus, both sites have targeted a number of projects in these areas including establishing natural wind breaks, good farming practices, displays/tours, and an agricultural bacteria study which also involved filtering effluent from agricultural lands.

Some of the main industries within the Bluenose site area include aquaculture, fishing, agriculture, and tourism. Again, each of these industries is dependent on environmental sustainability. Thus, Bluenose has undertaken a number of related projects including an examination of the type and level of fishing activity in the area, clean boating project, development of a watershed management plan, electro-fishing, and the development of a marine education center. In the Miramichi area, there exists an extensive salmon and trout fishery. Again, this site has undertaken a number of projects (particularly related to water quality) aimed at enhancing the sustainability of the fishing industry. Examples of these

projects include open houses and seminars on rural wastewater management, pollution prevention pacts with local manufacturing industries, and aquatic biomonitoring.

Sites with a Low Score for Criterion 1

The sites which achieved the lowest scores in the area of Sustainable Livelihoods were Madawaska (site 14), Pictou (site 6), St. Croix (site 13), Cape Breton (site 5), and Saint John (site 10). The range of scores for these five sites was from 5 to 9 out of the possible score of 25. The evaluation results (Appendix 5n, 5f, 5m, 5e, and 5j respectively) show that less than half of the measurable variables were addressed by the sites.

The low scores for criterion 1 suggest that Sustainable Livelihoods were not targeted by the sites, nor was criterion 1 viewed as important as some of the other criteria. Though some of the sites have traditional industries linked to primary resources (e.g. Saint John's logging industry, Pictou's agriculture and forestry industry, and the agricultural industry and fishery that exists in the St. Croix area), they comprise a small portion of the livelihoods in the area. Saint John has one of the key seaports in New Brunswick and a major transportation industry. Pictou has an extensive mining and manufacturing industry. St. Croix is home of the Champlain Park which consists of manufacturing, transportation, and service industries compatible with marine shipping. The main industry in Cape Breton is mining and therefore many of the projects undertaken by the site focus on mapping abandoned mine sites and site remediation. Madawaska has an extensive pulp mill industry. Thus, each of the key industries within the five site areas is not directly dependent on environmental sustainability. The focus on progress and sales within these industries would make it very challenging for the sites to try to increase the environmental sustainability of the industries, since this would not likely have any impact on their progress.

Patterns of Success for Criterion 1

Provincially, Prince Edward Island achieved the greatest average score (20), followed by Newfoundland (12), Nova Scotia (11.4), and New Brunswick (10). In addition to all of the projects that have been undertaken by Prince Edward Island, the sites have supported many of the projects initiated by the provincial government aimed at enhancing sustainability such as the Environmental Farm Plan initiative and the Conservation Land Tax program. The sites have joined in the promotion and implementation of other organizations' initiatives to enhance the outcome of mutual goals. Biophysically, the rural sites achieved the highest score for criterion 1 (18) followed by the river basin sites (12), Sable Island (11), estuaries (10), and lastly the urban sites (9.3). As mentioned previously, the rural sites are reliant on a sustainable farming industry for both its economy and heritage. The rural sites have undertaken projects such as farm tours, filtering effluent from agriculture lands, natural windbreaks, and environmentally sustainable demonstration farms.

5.3.2 Criterion 2 Results - Natural Heritage

Sites with the Highest Score for Criterion 2

Criterion 2, Natural Heritage, refers to ensuring that all natural resources are recognized and respected as heritage resources for the benefit of present and future generations. Tables 7a and 7b show that Bluenose (site 8), Bedeque Bay (site 4), and Southeast Environmental (site 3) scored the highest on criterion 2. The three sites achieved a score of at least 18 out of the possible score of 25. The evaluation results (Appendix 5h, 5d, and 5c respectively) show that all three sites addressed the majority of measurable variables for criterion 2. Bluenose achieved a score of 23 out of a possible 25 points. This site area is made up of an older retired/semi-

retired population who is very concerned about the heritage of their area. The residents in the area take pride in their home town and will support any project which preserves the heritage of the area. For example, the residents of the Lunenberg and Mahone Bay area have collected the history of the area waterways through interviewing older residents along each waterway and collecting photographs. Residents have chosen the Bluenose area because of its Natural Heritage, and therefore it of high priority for these residents to ensure that the Natural Heritage is preserved.

Similarly, Southeast Environmental and Bedeque Bay are socially, economically, and culturally dependent on the agricultural industry. Thus, both sites have undertaken projects to help ensure that all natural resources are recognized and respected as heritage resources. Examples of these projects include public forums on soil erosion, hedgerow and riparian zone enhancement, and the creation of a demonstration farm. Encouraging the sustainability of the agriculture industry has positive implications on other industries such as tourism since many come to see the large potato farms and the McCain food processing plant.

Sites with a Low Score for Criterion 2

The sites which achieved the lowest scores in the area of Natural Heritage, were Pictou (site 6), Annapolis (site 9), Saint John (site 10), Miramichi (site 11), and Eastern Charlotte (site 12). The range of scores for these five sites was from 8 to 12 out of the possible score of 25. The evaluation results (Appendix 5f, 5i, 5j, 5k, and 5l respectively) show that the sites addressed less than half of the measurable variables for Natural Heritage. Instead of ensuring that all

natural resources are recognized and respected as heritage resources, these sites focused on a few distinct goals. Using Appendix 5f as an example, Pictou focused on Natural Heritage with respect to water quality, and did not cover many other natural resource issues.

These low scores also reflect the focus of each of the sites. Saint John is a highly populated, urban ACAP site area. Therefore, the site has placed less emphasis on natural heritage, and has instead focused on urban environmental restoration projects such as promoting water conservation, reducing litter, improving energy efficiency in the home/business for area residents, and improving water quality. Residents in Saint John have supported these initiatives and have encouraged the site to continue to undertake projects of the same nature. Residents can easily see the results of the projects (e.g. litter clean-up, beach sweeps) and can understand the financial benefits associated with water conservation and energy efficiency initiatives. As another example, Pictou has almost exclusively focused on the issue of water quality, therefore all of the other natural heritage issues covered by the evaluative framework (e.g. species diversity, collecting local knowledge and histories of the area) did not fall under Pictou's scope and therefore resulted in the loss of numerous points for Pictou.

Patterns of Success of Criterion 2

Provincially, Prince Edward Island achieved the greatest average score (18.5), followed by Newfoundland (15.5), Nova Scotia (15), and New Brunswick (12.2). As indicated earlier, the sites which tend to have the greatest amount of industry in the area directly related to the natural resources (e.g. agriculture, fishing) also achieved the greatest scores for criterion 2. Whereas, sites with a manufacturing/industrial/shipping focus tend to achieve a lower score for

criterion 2. Natural Heritage focuses on recognizing and respecting natural resources as heritage resources. Therefore, the greater the connection between the community and the natural resources in the area (e.g. depending on natural resources for the sustainability of livelihoods), the greater the potential to generate recognition and respect for natural resources as heritage resources. Biophysically, the rural and river basin sites achieved the greatest average score (15 points) for Natural Heritage. The urban sites, Sable Island, and estuary sites had lower scores with 13, 13, and 12.3 points respectively.

5.3.3 Criterion 3 Results - Water Quality

Sites with the Highest Score for Criterion 3

The focus of criterion 3, Water Quality, is to ensure that the quality of water in coastal areas and adjacent watersheds supports the needs of humans, aquatic life, wildlife, and can sustain commercial and recreational activities. Tables 7a and 7b show that Humber Arm (site 2), Miramichi (site 11), and Southeast Environmental (site 3) achieved the highest scores for criterion 3. All three sites achieved a minimum score of 18 out of the possible score of 24. The evaluation results for Humber Arm (Appendix 5b), Miramichi (Appendix 5k), and Southeast Environmental (Appendix 5c) show that the sites addressed the majority of measurable variables for Water Quality. Examples of measurable variables for indicator 1 (citizen-based water quality monitoring) include urban rivers water quality testing, the development of contingency plans to handle lower water quality results, and recording bacteria contamination results in a database/website. Examples of measurable variables for indicator 2 (pollution prevention within homes and industry) include free rural wastewater/septic system assessments

and pump outs and regional recycling of wastewater. Examples of measurable variables for indicator 3 (full value water pricing) include auditing water treatment centres for performance, water efficiency and conservation projects, and the installation of water saving devices such as faucet aerators.

Though it would appear that the sites with the greatest number of measurable variables for Water Quality must be faced by the most severe water quality problems, there are many other sites (e.g. Saint John and St. John's) that are faced with parallel, if not, more threatening water quality problems. Thus, the extent to which the three sites addressed criterion 3 appears to be a function of how the coordinator focused on Water Quality and the different angles that it was addressed from. Each of the sites with the highest scores addressed the issue of Water Quality from many different angles. The sites addressed Water Quality in the business sphere through the development of green plans and water audits. In the academic sphere, the sites have partnered with various schools and research associations, and developed green teams at the public and secondary school level. Each of the three sites has involved the public extensively through water quality monitoring, posting water quality results, and through various outreach activities.

Although sites such as St. John's Harbour face quite severe water quality problems, the focus that the site coordinators have taken is quite focused. St. John's Harbour, for example, has focused extensively on citizen-based water quality monitoring and developing outreach programs and information packages on water quality. Whereas, very little attention has been

invested in developing a full value water pricing scheme, restricting water use, and undertaking waste management/composting/recycling programs. Therefore the narrow focus of the site causes it to lose a number of points in the evaluation.

Sites with a Low Score for Criterion 3

The sites which achieved the lowest scores in the area of Water Quality, were Sable Island (site 7), Eastern Charlotte (site 12), Pictou (site 6), and Madawaska (site 14). The range of scores was from 9 to 11 out of the possible score of 24. The evaluation results for Sable Island (Appendix 5g), Eastern Charlotte (Appendix 5l), Pictou (Appendix 5f), and Madawaska (Appendix 5n) show that less than half of the measurable variables for criterion 3 were addressed by the sites. Very little effort has been invested in undertaking Water Quality projects outside of community-based water quality monitoring, and riparian zone enhancement. Moreover, little effort has been invested in water conservation and wastewater management. The low scores achieved by the three sites are likely due to the lack of effort invested into Water Quality issues. Using Appendix 5g as an example, Sable Island achieved the lowest score for criterion 3. As mentioned earlier, Water Quality is not an issue for Sable Island, nor is it one of their goals. Therefore the low score for this site reflects the fact that the goals identified by Environment Canada are not indicative of the key issues within each of the fourteen site areas. Thus, Sable Island tends to focus more on ensuring the preservation of flora and fauna as opposed to the area of Water Quality.

Patterns of Success for Criterion 3

Provincially, the Newfoundland sites achieved the greatest score (19 points) for criterion 3 followed by Prince Edward Island (17.5), New Brunswick, (13.4), and Nova Scotia (12.8 points). Both St. John's and Humber Arm have developed their ACAP program and related projects to address improving Water Quality. Based on the population, both of the sites have the greatest amount of raw sewage entering their coastal areas, compared to the rest of the ACAP site areas. The water quality problems are greatly exacerbated by the industries within the site boundaries such as the pulp and paper mill in the Humber Arm area. As a result, the Newfoundland sites have shaped the focus of their projects and community outreach to address the issue of Water Quality.

The rural sites achieved the greatest average score (16.7 points) for criterion 3, followed by the estuary sites (15.3), urban sites (14.7), river basin sites (13.8), and Sable Island (9 points). Rural sites have characteristically placed the waters under significant risk. Processes such as irrigation, milk house washing, manure storage, and erosion have concerned non-farm residents. To conserve and restore the water, the rural sites have undertaken numerous projects within the area of Water Quality. Moreover, both the provincial and federal governments offer funds for projects, which conserve and restore water. Thus, the governments will often cover 67% of any project to improve rural water quality such as buffering, well upgrading/ decommissioning, and fencing. Southeast Environmental and Bedeque Bay have partnered with the government to deliver the incentive program.

5.3.4 Criterion 4 Results - Responsible Stewardship

Sites with the Highest Score for Criterion 4

Responsible Stewardship, criterion 4, consists of a series of measurable variables which

explore the sites' ability to empower local citizens to take responsibility for their part of the ecosystem and possess the information and skills required to carry out these responsibilities. Bluenose (site 8), St. John's (site 1), and Humber Arm (site 2) scored the highest in the area of Responsible Stewardship. The three sites scored a minimum of 18 points out of the maximum score of 26. The evaluation results for Bluenose (Appendix 5h), St. John's (Appendix 5a), and Humber Arm (Appendix 5b) show that the sites addressed the majority of measurable variables for Responsible Stewardship. Bluenose (site 8) achieved a perfect score of 26.

Examples of Responsible Stewardship activities undertaken by Bluenose include the establishment of the Lunenberg marine education centre, environmental awareness surveys, the coordination of community gatherings organized to communicate success, and the extensive delivery of elementary, middle, and high school educational programs. The site has invested a considerable amount of time and effort involving the citizens in the areas of education, skill development, and encouraging community participation in the implementation of projects. In addition, the demographics of the Mahone Bay/Lunenberg area also support greater citizen participation. The area is both a popular retirement location and attracts a large seasonal population. Thus, because citizens have chosen to make this area their retirement location, or their summer home, the residents take pride in the area and have a great concern for the local environment.

St. John's and Humber Arm have also undertaken many projects and activities in the area of Responsible Stewardship including the establishment of a community environmental centre and resource library, researching methodologies to collect Traditional Knowledge, and extensive strategic planning workshops. Both sites have invested great efforts to empower

local citizens to take responsibility for their part of the ecosystem and possess the information and skills required to carry out these responsibilities. St. John's and Humber Arm have established environmental education activities, created opportunities for meaningful citizen participation, and communicated successes and best practices to the local community.

Sites with a Low Score for Criterion 4

The sites which achieved the lowest scores in the area of Responsible Stewardship were Pictou (site 6), Sable Island (site 7), Madawaska (site 14), and St. Croix (site 13). The range of scores for the four sites was between 8 and 12 points out of the possible score of 26. The evaluation results (Appendix 5f, 5g, 5n, and 5m respectively) show that less than half of the measurable variables for Responsible Stewardship were addressed by the sites. In examining the evaluation results for the sites, there are very few examples of how the sites provided the community with the information and skills required to undertake ecosystem initiatives. Using Appendix 5f as an example, Pictou's Responsible Stewardship initiative consisted of forest wildlife pamphlets, resources kits for teachers, and working with local fishermen and first nations. Thus, this site has failed to invest in providing citizens with training, workshops, or seminars. This consequently limits the ability to empower local citizens. Conversely, Sable Island also achieved a low score for criterion 4, yet this is understandable since Sable Island does not have a community on the site but has a 'virtual' community made up of scientists, environmentalists and historians that reside in Halifax, 290 kilometres away. Most of the Responsible Stewardship measurable variables have to do with the publishing of a newsletter, the website, and the Maritime Museum of Halifax.

Patterns of Success for Criterion 4

Provincially, Newfoundland achieved the highest average score (18.5) followed by Prince Edward Island (17 points), Nova Scotia (15.2), and New Brunswick (14.4 points). The scores achieved by the sites appear to be a function of the effort invested in Responsible Stewardship by the site and the resources available to the site. For example, St. John's has invested an enormous amount of effort into using its online GIS system to communicate the research that the site has undertaken. The site has partnered extensively with Memorial University and through this partnership is able to provide all staff and key volunteers GIS training. On the other hand, Madawaska has involved the public in only one of its main projects (the development of Linear Park) and has focused more on the development of publications and articles. Providing the public with literature on key issues is only one aspect of Responsible Stewardship, and therefore, sites such as Madawaska fail to benefit from the opportunities of physically involving the community. Biophysically, the river basin and urban sites achieved the highest scores for criterion 4 (17.5 points and 17 points respectively). These areas were followed by the rural sites (13.3 points), the estuary sites (12.7 points), and lastly Sable Island (10 points).

5.3.5 Criterion 5 Results - Ecosystem Planning

Sites with the Highest Scores for Criterion 5

Ecosystem Planning, the fifth criterion, explores whether the ACAP site has put strategies in place for the restoration and sustainable development of ecosystems. Tables 6a and 6b show that St. John's (site 1), Bluenose (site 8), Miramichi (site 11), Humber Arm (site 2), and Bedeque Bay (site 4) scored the highest on criterion 5. All five sites achieved a score of at least 20 out of the possible score of 28. The five evaluation results (Appendix 5a, 5h, 5k, 5b, and 5d respectively) show that the sites addressed well over half of the measurable variables for

Ecosystem Planning. There are a number of reasons why the sites achieved high scores for criterion 5. Using Appendix 5d as an example, Bedeque Bay achieved a score of 20 (out of the possible score of 24) for Ecosystem Planning because many of the site's main goals (especially surrounding the issues of soil erosion and water quality) have been developed and adopted by the Canadian Federation of Agriculture. This allows the site to actively inform farmers and rural residents about funds available from the government to help combat soil erosion and degrading water quality. Bedeque Bay has made considerable effort to secure their role in the implementation of projects through establishing and promoting various annual events (e.g. general meetings, annual seed swaps, environmental stewardship awards, annual farm and garden tours, workshops). Bedeque Bay also performs an informal evaluation on all of their projects to identify what worked, what did not work, and why.

Moreover, Bluenose (Appendix 5h) addressed each of the three indicators within Ecosystem Planning. Firstly, Bluenose secures commitments to the implementation of plans (e.g. Bluenose ACAP Times, organization of local oil spill response team, annual general meetings and parties, rain-dates pre-established for outdoor activities, inform public of upcoming projects, website updated at least twice a year, letters/telephone calls from concerned citizens raised at Board meetings). Bluenose secures a role for the implementation and evaluation of various projects (e.g. project history digital notes, new projects/deliverables for each field season, monitoring regularly conducted, site actively seeks funding all year round, minutes from the Board meetings kept on file). Thirdly, Bluenose champions informed decision making (e.g. received Internet training, participates in conferences and workshops, identifies new

projects and deliverables for each field season and Bluenose maintains a volunteer log book).

Sites with a Low Score for Criterion 5

The sites which achieved the lowest scores in the area of Ecosystem Planning were Pictou (site 6), Sable Island (site 7), and Madawaska (site 14). The range of scores was from 1 to 9 out of the possible score of 28. The evaluation results for Pictou (Appendix 5l), Sable Island (Appendix 5g), and Madawaska (Appendix 5n) show that less than half of the measurable variables, for criterion 5, were addressed. The three sites are faced with a high turnover rate of their coordinator, having no website (e.g. Pictou), and still no development of a CEMP. Consequently, other less fundamental variables have also been neglected such as advertising when meetings are going to be held and establishing rain dates for outdoor projects.

Patterns of Success for Criterion 5

Provincially, Newfoundland achieved the highest average score (22 points) followed by Prince Edward Island (17.5), New Brunswick (14.8), and Nova Scotia (9.4). As mentioned previously, it appears that organization was the biggest factor contributing to achieving Ecosystem Planning measurable variables. The more that the sites established a new work plan each year, documented the minutes of all of their meetings, and reviewed the processes and results of their projects, the greater the likelihood that the sites secured their commitments to the implementation of plans. Biophysically, the urban sites achieved the greatest average score (17.3 points) for criterion 5, followed by the river basin sites (16.5), rural sites (15.3), estuaries (11), and lastly Sable Island (3).

5.4 Overall Results and Additional Conditions Underlying Success

The evaluative framework was developed and applied to the fourteen sites to determine the organizational conditions underlying success that existed within each of the sites. The six categories (and corresponding variables) are related to the conditions underlying success that were identified in the literature. The five criteria tailored the measurable variables to focus on the five pre-established goals of the ACAP program. The sites that addressed the most (fundamental) variables achieved the greatest scores since they possess the most organizational conditions underlying success. Through tabulating the scores of all five criteria and all six categories, each of the sites was given an overall score and ranking (refer to Table 8.)

Table 8: Overall Site Scores and Ranking

Ranking	Site	Score
1	Bluenose	204
2	Bedeque	188
3	Humber Arm	177
4	St. John's Southeast Environmental	172
5	Miramichi	170
6	Saint John	132
7	Eastern Charlotte	129
8	Annapolis	128
9	Cape Breton	127
10	St. Croix	124
11	Madawaska	98
12	Sable Island	92

13	Pictou	71

Table 8 shows that the disparity between the highest scoring sites and the lowest scoring sites is quite large. The implications of the overall scores are explored further in Chapter 6.

The measurable variables within the evaluative framework were comprised of the conditions underlying success that are identified in the literature. The most commonly cited conditions under which community-based initiatives are most likely to succeed include

- Funding
- Community involvement
- Organizational networks
- Technical expertise

Additional conditions within the evaluative framework, yet cited less frequently in the literature, include

- Extensive media presence
- Trusted organization
- Understanding concerns within the community
- Continuity of management
- Effective marketing strategy
- Support from politicians and industry leaders
- Skilled implementing staff
- Clear and consistent objectives
- Coordination
- Accountability
- Time
- Clear, specific, measurable goals
- Community-based membership system

Within the current evaluation, the conditions underlying success that were most influential were

- Organizational networks
- Community involvement
- Technical expertise

Two additional conditions underlying success that were identified through the evaluation include

- Enthusiastic and devoted coordinator

- High level of organization

These five organizational conditions will be looked at more closely in Chapter 6.

5.5 Obstacles Experienced by the ACAP Sites

Despite all of the projects that the sites have undertaken and the efforts that have been invested by each of the sites towards the program, they have encountered a number of obstacles implementing the ACAP initiative. During the focus group sessions, each participant was asked to identify the obstacles that their site faced which impedes their programs. There were 52 obstacles identified which all fell within the areas of management, monetary, political, media involvement, and communication (Appendix 6). The following section highlights some of the most significant obstacles experienced and the obstacles experienced the most frequently.

Most Significant Obstacles

Ownership of the site and the absence of a true community were two significant obstacles experienced by Sable Island. It is generally assumed that Sable Island falls under the jurisdiction of the Canadian-Nova Scotia offshore Petroleum Board (CNSOPB). Technically, the federal government owns Sable Island, whereas Sable Island (Preservation Trust) is the managing body. Thus, the federal government must first reveal all of the project ideas and implementation strategies. This requires extra time commitments for the site and impedes the implementation of their initiative. Moreover, the site's mandate and goals must be consistent with the governments'. Though none of the ACAP sites has ownership of their area, Sable Island is much more a unique and delicate situation. There are no government offices, or law enforcement situated on the Island. Moreover, there exists a whole host of constraints placed on the trust in terms of fees, legal permission, permits, and licenses. Compared to the other sites, Sable Island has an enormous amount of fees and legal work that must be undertaken on

a regular basis in order to help the preservation of the Island.

The issue of a true community is a second significant obstacle which also makes this site unique from the others. Sable Island has more of a virtual community (term generated in conversation with Bill Crossman and John Merrick, August 16, 2001.) The people on Sable Island are those working on research stations and projects, thus the site do not have the benefit of having a local group of citizens devoted to certain issues. Moreover, minimal municipal support is a significant financial contribution loss. Sable Island tends to have a more global community because of the Internet and the uniqueness and history of Sable Island. Crossman and Merrick (August 16, 2001) noted that the absence of a local community has restricted the support of Sable Island (Preservation Trust) since citizens do not see the results of the projects and the research.

The economy of the province was identified as an obstacle by both ACAP sites in Newfoundland. Consequently, the ACAP sites have felt a greater challenge obtaining provincial funds. Similarly, they have also found it difficult to obtain funds from their local municipal governments. Though the economy of Newfoundland has improved over the years, it still has the highest unemployment rate in Canada at 17.9% as of May 2004 (www.statscan.ca) and the second lowest minimum wage in Canada at $6.00 per hour, ahead only of Alberta who pays $5.90 per hour (www.hrdc.ca). Thus, the grants that both the local and provincial government provide are generally directed towards projects which will generate more jobs as opposed to improving the environment.

Another significant obstacle experienced was that funding sources often dictate the projects that a site undertakes. This was mentioned as an obstacle by Annapolis, but is likely experienced by many more of the sites. Prior to any site receiving money from funding organizations, they must first write a funding proposal which falls within the criteria outlined

by the funder. This is a volatile source of funding since the areas that the funder contributes to may vary from year to year. For example, one year there may be an abundance of money for organizations to carry out projects to enhance water quality whereas, the next year the majority of funding is invested in air quality projects. This exact example occurred with EcoAction, a major funder for the ACAP sites. In 2002 and 2003, EcoAction invested a great deal of monies towards ground water protection. In 2004, with the signing of the Kyoto Protocol in 2003, EcoAction switched its focus to mainly funding projects that set out to improve air quality. For sites which carry out projects over a large time frame, or where one of their main on-going goals is to improve water quality in the area this poses a significant problem.

The timetable for action that was established by Environment Canada (one year commencing each April 1) was contentious in that those involved in site planning felt that the timetable must reflect the project and could not always be planned, commenced, carried out, and completed in tune with the fiscal year. The timeline under which the projects are carried out are a function of a number of characteristics including:

- Availability of volunteers;
- Volunteer turnover (depends on the nature of volunteers) e.g. volunteers from various resource industries such as agriculture, fishery, forestry all have different timetables, and therefore may not be able to volunteer on a given project;
- Executive director turnover. For some of the sites this has been a significant obstacle since the director may leave in the middle of a project creating significant delays; and
- Summer holidays. Activities of the sites face considerable delays since many of the employees, volunteers, and partners have family commitments and take holidays.

(obtained from focus group session, 2001)

Coordinator turnover was another challenged faced by a number of sites (e.g. Pictou, St. Croix, Sable Island, and Madawaska). This causes a number of disruptions in the activities of the site.

The new coordinator must be educated on the activities/vision of the site, all of the employees and volunteers, the Board of Directors, partners and funders. In many cases a new coordinator also brings a new outlook and a new set of interests and foci. Thus, the organization is forced to take a few step backs in order to accommodate for the new coordinator.

One last significant obstacle is the fear and distrust towards the site within the community. This obstacle was specifically mentioned by Bedeque Bay, but could possibly be experienced by several of the other sites. In an attempt to work with and support other initiatives in the area, Bedeque Bay has supported the provincial government through assisting in the delivery of the Environmental Farm Plan program. This collaboration has generated fear and distrust within some members of the local community. Community members are often hesitant to book green home visits, for fear that the site has the regulatory powers or legal obligation to act on anything that they see unfit on a homeowners' property. This fear and distrust would be lessened if they had greater autonomy from the government.

Obstacles Identified Most Frequently

There were six obstacles which were identified more frequently than the remaining 46 obstacles including

- Lack of regulatory powers
- Minimal funds
- Time and energy required to get funds
- Support from the municipal government
- Obtaining credibility
- Changing community actions

Each of these obstacles was identified by at least four out of the fourteen sites. Lack of regulatory powers, changing community actions, and obtaining credibility are all connected. Many of the sites feel that because they lack regulatory powers, they only have a limited ability to change public actions. Minimal funds were identified by eleven of the fourteen sites.

Obtaining funding, and the time commitments required, has caused many of the ACAP sites a number of problems. Each funding proposal has an enormous time commitment which requires a project summary, deliverables, budget, list of partners, and all of the contracts for funding received elsewhere. This proposal takes many weeks to develop and is rarely covered in the project budget. Many of the sites have felt challenged to obtain the support they need from the municipal government. This obstacle was identified by four of the sites. Common complaints included municipal government representatives not showing up to board meetings that they were invited to, receiving very little funding from the municipal government, and not being listened to by the municipal government.

Chapter 6: Implications and Future Directions of the Research

Highlights of the Key Research Findings

The most significant conditions underlying the success of community-based initiatives were organizational networks, community involvement, technical expertise, an enthusiastic/devoted coordinator, and organization. These conditions were those referenced most frequently during the evaluation process. The higher scoring sites such as Bluenose, Bedeque Bay, Humber Arm, and St. John's addressed more measurable variables because of their extensive organizational networks and partnerships. Organizational networks facilitate the developmental stage of programs through information sharing of project descriptions, budgets, and funding proposals. Networks also facilitate the implementation stage of programs in many ways, including an opportunity to cross-promote activities with other organizations, and access to field equipment, research supplies, and volunteer labour.

Community involvement was another significant condition underlying success. This involvement is especially important before the project is defined. For example, it is important for the organization to include the public in identifying areas that the site should focus on. Even though a site employee may feel that 'fighting West Nile Virus' is the most important issue facing the area, the public may feel that 'fighting invasive species' is much more important. Thus the site will be able to get a greater degree of public involvement if they choose to address the issue of invasive species. Resource management literature noted that recognizing and addressing all relevant stakeholder values and interests provides a basis for crafting creative solutions that are likely to be sustainable (Beierle 1999, Schweitzer et al. 1998, Ameyaw 1992, and Mitchell 1990.)

Using criterion 4, Responsible Stewardship, as an example, the sites that achieved the highest scores also had the greatest community involvement. For example, Bluenose invested a considerable amount of time and effort involving the citizens in the areas of education, skill development, encouraging community participation in the implementation of projects, collecting local/Traditional Ecological Knowledge, writing letters to the editor to stimulate public input and feedback, and encouraging public confidence (in the abilities of the site) through such activities as keeping their website current and reporting the results of projects. Community participation is important within all stages of community-based initiatives. Through working with the public, an organization can identify concerns and values within the community, and work with this information to try to avoid major problems/conflicts in the future. Identifying and communicating the results of monitoring and/or the milestones within a project is another stage when it is important to have community involvement. In order to instill confidence, people must be kept aware of the impacts that the project has had.

As identified in the literature, the technical knowledge base (e.g. scientific, disciplinary, local expert) within natural resource management, and the willingness of the organization/community to take action, is a key factor in the successful implementation of an initiative (Bellamy et al. 1998, Kellogg 1998, Knapp and Kim 1998, Woolveridge 1995.) Many of the projects and initiatives that the sites undertook were dependent on technical expertise. Examples of these initiatives include sensitivity mapping, water quality monitoring, and fish spawning investigation/restoration. Technical expertise was also used extensively by some of the ACAP sites to convey information and project results in an easy to understand manner. For example, Eastern Charlotte has developed a watershed GIS map that contains thematic layers on water quality, environmentally significant areas, bacteria/benthic monitoring sites, unique fish habitat areas, effluent sources, and industry locations.

On the other hand, lower scoring sites such as Pictou demonstrated a very low level of technical expertise. Pictou has undertaken very few research projects, has not developed sensitivity maps, nor has the site developed a website. Compared to many of the ACAP sites, Pictou lacks the connection with the scientific community (e.g. partnering with research institutes, universities, etc…). Pictou's lack of initiative/desire to connect with the scientific community limits the level of confidence that the public has in the site. Without undertaking a number of research projects, the site has limited knowledge of key issues. Moreover, without the development of sensitivity maps, the site has a restricted ability to integrate and store information in an organized and systematic manner. This consequently limits the utilization of any information/data collected by the site. Though this may have only minimal consequences in the short term, the inability to integrate and store information becomes a growing problem as time goes on. This shortcoming limits the site's ability to visually and numerically track progress, and therefore makes the identification of trends more challenging.

In examining the evaluation results for some of the higher scoring sites (e.g. Bedeque Bay), many of the measurable variables were addressed as a consequence of the enthusiasm and devotion of the site coordinator. Though enthusiasm and devotion was not identified within any of the resource management literature, it was referred to many times during the evaluation of the ACAP sites. Enthusiasm and devotion includes researching what makes other sites/environmental organizations succeed, visiting other organizations to observe how they operate, ensuring that each site's work plan is carried through, and evaluating the impacts and outcomes of the projects that are undertaken and then attempting to apply the lessons learned. For example, Bedeque Bay invests a considerable amount of time developing and committing to a new work plan each year, reviewing how other sites/organizations undertake similar projects, and performing an evaluation on all of the projects that were implemented. All of these activities allow

Bedeque Bay to understand how to be effective and efficient in the implementation of its initiatives.

Community-based organizations are often faced with many challenges and obstacles including obtaining the necessary funding, keeping staff motivated, and acquiring volunteers. Though an enthusiastic and devoted coordinator may not always generate better project results, they do tend to generate a more positive disposition among both staff and volunteers. Moreover, they generally have a better relationship with partners and the community. When faced with obstacles and/or failure, an enthusiastic and devoted coordinator will typically remain focused on the task and continue to pursue the obstacle at hand. This persistence will often lead to greater chances of success for the site.

Lastly, organization was another significant condition underlying success observed in the evaluation. Examples of the importance of organization from within the evaluation include identifying a new work plan each year with a new set of goals and objectives, documenting the minutes of Board meetings, and responding to all community concerns and questions. Organization is necessary to demonstrate the competency of the site to the public. Activities such as a formal membership system, a site newsletter, monitoring data, the development of policies/bylaws and management plans, and regularly updating the website all demand a tremendous amount of organization. The sites with a higher level of organization (e.g. Bluenose, Bedeque Bay) were able to implement these activities both more effectively and efficiently. Tasks such as the completion of a CEMP and keeping the media well informed helped to ensure that programs and projects are carried out in a timely manner.

Though not identified as a significant condition underlying success in the current research, funding was one of the conditions underlying success that was identified frequently in the literature. A number of authors (House 1999, Kellogg 1998, and Western and Wright 1994) noted that the initial establishment of any initiative requires a certain level of funding to cover the necessary capital costs. Moreover, additional sources of funding are necessary for the operational costs of the initiative (e.g. salaries, monthly rent, and bills). Yet this research suggested that funding is more of a secondary condition. Funding was identified as an obstacle by many of the sites, even including some of the higher scoring sites such as Bluenose and Bedeque Bay. Despite the fact that obtaining funding was a consistent challenge among most sites, it remains a secondary obstacle due to the fact that certain sites could still achieve project success.

Implications of the Research

Evaluative research in the area of resource management, by its nature, can lead to practical results that aid in the decision-making process. In Atlantic Canada, where such community-based initiatives are relatively new, there is a need to understand those factors which have the potential to stimulate better solutions, and thus provide coastal communities with an increased likelihood of success in project implementation (Donaldson 1994, Hawboldt 1994). Despite the benefits, the amount of evaluative research literature surrounding the field of natural resource management and community-based initiatives is limited (Kreutzwiser and Slatts 1994, Syme and Sadler 1994).

A key reason behind the shortcomings in evaluative research pertains to the difficulty of examining conditions that may lead to success and measuring these initiatives in non-resource management studies. There are a plethora of evaluations carried out within the fields of healthcare and education that can be found within evaluation literature. Evaluating the progress and outcome in such areas tends to be easier than evaluating

resource management projects because there are measurable indicators that can be quantified for such projects. For example, the impact of an after school math tutoring program can be measured by examining the changes in the math grades of the students. Conversely, it is more difficult to measure the impact that a community-based initiative has on coastal water quality. Though quantitatively measuring the water quality may be initially easier, attributing the results solely to the efforts of the organization is much more difficult since many factors, independent of the project in question, may have played a role (e.g. climate, industrial output within the area, new legislation).
For a number of years resource management initiatives have had an evaluative component built into them. Yet frequently, the evaluative component within natural resource management programs is not taken as seriously as the planning and implementation phases (Otter and Capobianco 2000, Bellamy et al. 1998). This point has validity in the context of the present research. The ACAP sites generally addressed the categories related to the planning (e.g. category 1) and implementation phases (e.g. category 2, 3, and 6) to a greater extent than they addressed category 4 which deals specifically with evaluation and results.

Even though it may be recognized as an essential task, the challenges associated with creating tools to quantify indicators and criteria tend to deter many organizations from undertaking evaluations. Typically, if an evaluation is carried out in the area of resource management, it tends to focus on outcomes. Thus, the framework for evaluation is focused on deliverables such as:

- Kilometers of stream buffered
- Number of participants and volunteers involved in the program
- Square kilometers of area protected

This type of evaluation is almost exclusively carried out by community-based organizations to satisfy the requirements established by the funders. Tools to quantify

indicators and criteria are much more difficult to develop for process evaluations which focus entirely on the planning and implementation phases of the program.

A key challenge in creating process evaluation tools relates to the diversity of groups/ organizations of which these tools are intended to be applied to. Looking at the diversity between the fourteen ACAP sites can highlight this point. There are a number of conditions/techniques important to the planning and implementation phases of a program. Yet, the relative importance of these conditions may vary depending on the situation of the group. For example, in the current ACAP evaluation, GIS was viewed as an important tool since each of the organizations has at least one long-term project, is involved in sensitivity mapping and resource management, and maintain a key objective of communication and keeping the public involved. GIS may be a very insignificant condition for smaller organizations, or environmental organizations which focus on public education. Thus, depending on the situation of the group certain conditions affect and influence sites in different ways.

The present research demonstrates that it is possible to carry out evaluative research in the field of natural resource management. This research could also afford numerous benefits to this field. Process-oriented evaluations (such as the evaluation carried out in the present research) have a number of benefits to offer community-based programs including:

1. Enhancing Effectiveness
    - What, if any, similar initiatives exist within the project area?
    - Has the necessary base information been collected surrounding the project area?
    - Has a communications strategy been put into place?
    - Is there a method for collecting, maintaining, and communicating information?
2. Increasing Efficiency
    - To what extent has the site partnered with other organizations who have conducted similar initiatives?

- Has the organization established a membership/volunteer system?
- Have local events in the area been identified in which the organization can participate?

3. Enhanced Community Participation and Support
   - To what extent has the public been involved?
   - Have volunteer award ceremonies/annual BBQs been planned to reward members of the community for their commitment?
   - Have all public outreach facets been explored (current website, brochures, information packages, newsletters)?

It is only after the organization reviews their process that they can better understand how to implement potentially more successful programs in the future.

Outcome evaluations also have a number of benefits to offer community organizations, including:

1. Understanding the Physical Impact They Have Had
   - To what extent have their objectives been met?
   - Have their goals been attained?
   - What objectives/goals have not been achieved? Why?

2. Understanding the Social Impact They Have Had
   - What percentage of the target group has a greater understanding/knowledge of the issue addressed through the project?
   - How many people have signed pacts/agreements related to the program?
   - To what extent have citizens changed their actions, and attitudes in light of the project?

3. Understanding How the Organization Followed Through With Their Targets (SMART)
   - S – Were the targets specific enough?
   - M – To what extent were the targets measurable?
   - A- Which of the targets were attainable? All? Few?
   - R – To what extent were the targets realistic?
   - T – Was the project carried out in a timely fashion (on schedule)?

Key Messages for the ACAP Sites

There are a number of key messages that each of the sites can take from this research. These key messages can also be applied to community-based initiatives in general.

Firstly, these sites need to work more cohesively as a group. Currently, aside from the annual ACAP conference, the ACAP sites rarely communicate with other sites (especially out of province sites). There is a plethora of insight and experience that these sites can draw upon and learn from one another. For example, this insight could include understanding what works and what does not work in terms of community outreach, how to write more effective funding proposals, and efficient ways to capture the information and results of their projects. This could take the form of establishing conference calls with all of the sites once a month, open chat rooms on a reserved internet site, or (depending on finances) establishing an annual/semi-annual meeting at alternate sites separate from the event that Environment Canada organizes. This way, time can be spent entirely on learning from other sites and sharing resources. Moreover, if the sites worked more cohesively as a group, then they would have more power/influence to encourage greater political involvement. This would help certain sites (e.g. St. John's Harbour) that have continually faced challenges in including their local/provincial governments.

Sites need to recognize what their strengths are and offer assistance to those sites that are struggling within that particular area. For example, sites which have high numbers of public involvement and volunteers should document the steps that they followed to bring about these participation numbers. Likewise, sites that tend to have more successful funding proposals should keep templates for those sites that are struggling. It is important for the network of ACAP sites (and community-based organizations in general) to make progress and milestones using the strengths of other similar sites. Moreover, it is just as important for sites to acknowledge and understand their weaknesses so that they can seek help from others.

It is also important that community-based organizations stay focused on being truly community-based. All of the sites could benefit from ensuring greater community

involvement and participation. The development and maintenance of a membership system and a logbook within which all of the volunteers are recorded are merely the stepping-stones for community involvement. The development of a membership system, hosting public open houses, and providing project-specific training to members of the community have certain financial costs associated with them. Although, in the long run community involvement and participation offers a tremendous cost-savings to any organization.

Many projects and programs can often be run and managed entirely by volunteers. This, in turn, affords various types of cost savings to an organization. Firstly, the greater involvement and responsibility placed on volunteers, the greater likelihood that these volunteers will take ownership of specific programs/projects. Thus, each volunteer will communicate the organizations' goals and projects to their own network of friends and family. This will generate greater awareness and interest within the community, and possibly more members. This 'word of mouth' communication provides as a free form of marketing for the organization.

Allowing volunteers to perform tasks that the organization would otherwise hire someone to perform permits the organization to save money (e.g. do not have to pay a salary) and re-invest this money elsewhere (e.g. more advertising, newspaper columns, research tools). Furthermore, the organization can capitalize on the various skills (e.g. webpage design, journalism, water quality testing, clerical) and resources (e.g. a vehicle, computer, digital camera) of the volunteer. Lastly, the greater the amount of volunteer labour, the higher the amount of 'in-kind support' that the organization can claim. This is particularly important for funding proposals. The amount of financial support that a funder will contribute is dictated by the amount of funding (financial contributions plus in-kind) that the organization can generate. Therefore, the greater the amount of in-kind

contributions (e.g. volunteer labour) that the organization can generate, the greater the financial contributions from potential funders.

Moreover, for any community-based initiative it is crucial to keep the public aware of what the site is doing and the progress that the site has made. People will often donate their time at a key phase in the project only to find that they are no longer aware of the project's existence and what the outcome of the project was. This phenomenon tends to frustrate people and may cause them to lose their trust in the organization. Even if the project has made very little (or no) progress, it is still important to report on this. The public generally understands that these initiatives are run on very low budgets and are often completely dependant on volunteer time. It is similarly important to document the progress and milestones that the project makes. It is only through this that a site can truly learn from their activities.

Thirdly, it is important to understand that the management of community-based organizations has a tremendous amount of influence in the outcomes of projects/programs. Specifically, this research found that high levels of organization and enthusiasm increased the likelihood of success for the organization. Managing a community-based organization with a high degree of organization allows projects/programs to be carried out in a more effective and efficient manner. It is necessary for the ACAP sites (and community-based organizations in general) to realize the importance of organization through:

- Establishing SMART targets
- Identifying a timeline and process under which the project will be carried out
- Reviewing the milestones/progress made by the organization

Organization also influences public perception in that a more organized community-based group appears more competent than one that is less organized. For example, an

organization which has a high staff turnover, does not pre-establish rain dates for planned activities, nor advertises events well in advance will tend to lose public confidence in the site.

Moreover, community-based organizations with enthusiastic and devoted leadership will tend to transfer these characteristics into the community. It is the positive disposition of site staff that demonstrates to the community that they are there for the long-term (and not just for the successes). Management that exhibits enthusiasm and devotion has a tendency to generate similar qualities among their staff. This, in turn, creates an organization that will persevere, even when faced with numerous obstacles, to achieve their goal. Therefore, it is imperative that these types of organizations invest a great deal of effort selecting these individuals. This includes identifying a set of characteristics necessary for the coordinator to work well with the dynamics of the site. It is also important that the employer invests a great deal of effort inquiring about past positions and how the applicant responded in certain circumstances (e.g. pressure, staff conflict, financial troubles, etc…)

The final key message for the ACAP sites (and other community-based organizations) pertains to the importance of technical expertise. Maintaining a certain level of technical expertise plays an important role in the collection and analysis of information/data. In order to better understand the outcome or impact of the project, an organization must first establish the base condition (base data) in the area that they are researching. Certain technologies and expertise can make this process more effective and time efficient. For example, an organization that aims to prevent the further loss of aquatic species in a lake can gather this information accurately and efficiently through the use of electro-shocking as opposed to personal observation or local accounts. Moreover, once a site stores their

information in an electronic database, it is easier to conduct higher levels of analysis with. As more information is obtained, it can simply be updated in the database.

Technical expertise is also an important element of communicating with the public. The public has a greater likelihood of understanding the implications of the project if it is visual through simulated models, maps, or an electronic/interactive GIS mapping system. This, in turn, helps to generate greater understanding of the initiative within the community, greater public confidence in the organization, and generates more public support for the organization. With the high public usage rate of the internet, it is imperative that community-based organizations establish a website and maintain this website to keep it current.

Assessing the Research Methodologies

The measurable variables in the current research were divided into two broad categories: more significant variables (given a score of 2 points) and less significant variables (given a score of 1 point). This, in turn, has a tremendous impact on the overall scores and ranking of the sites. Sites that addressed the more significant (2 points) variables obtained twice as many points as those sites that did not address the variables. These values were assigned by the researcher (e.g. the researcher felt that 'having pamphlets, brochures, and fact sheets available on a wide assortment of environmental issues' was twice as important as 'maintaining a regular presence in the media'). Moreover, the number of 'more significant' (2 point) variables was not kept consistent among the five criteria. For example, criteria 5 (Ecosystem Planning) had ten significant variables out of the 18, whereas water quality only had six 'more significant' variables. Involving site coordinators and ACAP staff at Environment Canada in the weighting of certain

measurable variables would permit a greater consensus as to which variables are truly more important than others. This, in return, would create a greater validity in the weighing of the variables.

Involving more parties in the determination of 'more significant' variables would also generate a greater range of indicators. For example, depending on the number of parties which view the variable as 'more significant' the points affiliated with the variable could range from 1 to 5. Though this would not provide a true weighted ranking of the various conditions underlying success, it would allow the more significant conditions underlying success, present within the sites, to be more easily identified. This would also allow for a concise ranking of the relative importance of each of the conditions underlying success. For example, in the present research there were five overall conditions identified as the most significant. Perhaps the same evaluation, albeit with a greater range of points attributed to the measurable variables, might demonstrate that some of the five conditions (e.g. organizational conditions and community involvement) are two or three times more important in contributing towards success than the remaining three conditions. Understanding the relative importance of each of the variables is extremely important for community-based organizations faced with limited resources. This information allows the sites to focus their resources on conditions that are less significant than others.

Furthermore, this 'more rigorous' ranking system could be further refined by streamlining the significant characteristics/conditions to specific types of sites. This ranking system for the measurable variables could highlight that one or two of the five

conditions underlying success are of greatest importance to certain types of sites, whereas the remaining three conditions are of greatest importance to the other types of sites. For example, perhaps technical expertise and organization are twice as important as the other conditions for urban and estuary sites, however organizational conditions, community involvement, and the presence of an enthusiastic and devoted coordinator may be of greatest significance for rural and river basin sites. The differences in the significance of the conditions present for the different groupings of sites would only be apparent once there is a greater range of points for the different measurable variables.

Using the five pre-established goals of the ACAP program proved to be somewhat of a limitation in the present research. Many of the sites have deviated from the five goals, either focusing their entire efforts on two or three of the goals or developing new goals which are pertinent in their local area. Consequently, the sites which deviated from the pre-established goals ended up losing points for the criteria that they had not adopted as a goal. Greater insight would have been gained in the present research if each of the sites had been evaluated against their own set of goals/criteria. The ACAP program was created with five key goals that the sites were to focus on. Therefore, the research created the evaluative framework around these five goals. In reality, the sites did not follow these goals and created their own goals based on issues/concerns in their respective communities. Therefore using their individual goals in the evaluation would make the evaluation results more useful to the fourteen sites. The areas within a site's evaluative framework that did not receive any points would automatically suggest something that the site needs to focus on, whereas in fact this might be something that the site could

disregard since it does not fall within the boundaries of any of their goals. For example, Sable Island scored very poorly in the area of community-based water quality monitoring even though this issue does not apply to this site because a) there is no community, and b) groundwater quality is not a concern for this site.

The present research was based on information obtained through researching site files, websites, newspaper clipping, and insight gained from the focus group sessions. These data might have been of higher quality had it been possible to verify them, for example through additional focus group sessions and one on one interviews. This would have provided the researcher with a greater understanding of the information obtained in the evaluative frameworks. Any further research in this area must also include 'the audience'/the communities that live within the ACAP area and who have witnessed the initiative unfold. This would provide greater insight into the process that the sites followed and how effective this was. This would have also ensured a greater level of validity in the evaluation results since each of the variables in the evaluation could have been backed up with public input. Although the information in the evaluative framework was reviewed by each of the site coordinators, the time and effort invested by each of the coordinators for this review varied drastically across the fourteen sites. Consequently, after each of the coordinators reviewed the frameworks, some of the frameworks came back with changes/modifications for more than fifty percent of the variables, whereas other frameworks did not have any modifications. This, in turn, raises a number of questions regarding the quality of data in the evaluative framework.

Furthermore, the current evaluation involved only those people directly involved with each of the ACAP sites. For example, the focus groups involved Board members, Environment Canada representatives, and volunteers/stakeholders of the organization. Only involving those people directly involved in the program would tend to produce more 'positive' results than including people outside of the program (e.g. residents in the community). For example, if members of a municipal council were asked to evaluate their progress while in term, they would all tend to have a favorable evaluation. Unless the councilors get input from people outside their sphere (public opinion poll), they may end up being evaluated negatively at election time. Therefore, an evaluation may drift from reality if there is no input from the outside. Conducting an evaluation, independent of the organization, could produce a new set of results, quite different from the results identified in this paper.

The research problem in this thesis was based on a process-oriented evaluation. In order to identify the conditions underlying success, the evaluation was focused on the planning and implementation phases of the program. The purpose of the process-oriented evaluation was to identify whether the foundation of the program and the organizational conditions present within each of the ACAP sites are likely to promote the success of the program. Logically, the next valuable evaluation to be carried out would be an outcome-oriented evaluation to see if the conditions present within each of the sites did indeed promote success. This type of evaluation would look specifically at the goals and deliverables for each site to see if the site was having positive impacts on the surrounding community. Conducting an outcome-oriented evaluation would provide validation for the

current research. This research identified the conditions underlying the success of community-based evaluations. Thus, in order to validate the present research, the sites which exhibited the greatest number of conditions would also achieve the greatest amount of impacts/successes. This type of evaluation would also show whether the projects/programs that the ACAP sites plan and implement, actually come to fruition and completion.

The current research focused on the success of the individual sites. Perhaps to gain a greater understanding of the conditions of success, more research needs to be conducted with clearer research objectives and on an individual site basis. Evaluating all fourteen sites at one time did not allow the researcher to obtain the depth of information/histories of each site that research one site would have provided. This would also allow a greater understanding of the process followed by each of the sites.

Evaluating the success of the ACAP program as a whole would allow for the assessment of Environment Canada's role in the program. The focus group sessions and evaluations in the present research provided some insight into the role of Environment Canada. For example, many of the sites revealed that they were very challenged and frustrated by Environment Canada because of the endless amounts of project reporting requirements. Moreover, Environment Canada identified a number of key requirements for the sites at the onset of the initiative. Although, these requirements (e.g. the development of a CEMP) were not followed through by all of the sites and there were no repercussions on

the sites as a result of this. This follow-up research could show how Environment Canada has helped/hindered the ACAP initiative.

Key Messages for the ACAP Program

Environment Canada established the ACAP program, yet insight obtained through the evaluation and focus group sessions suggest that Environment Canada should be providing a greater level of support to the sites. The sites are regularly faced with reporting their project outcomes and deliverables to Environment Canada, but do not receive any significant program development or implementation support in return. It appears that the government has tried to lend its support to the sites through appointing Environment Canada employees to each of the fourteen sites. Unfortunately, it would seem that the glass is often of the one-way variety as the function of these windows has shifted more towards enlightening the government in what each of the sites are working on and their progress.

Environment Canada needs to establish a program to ensure that the sites are on track. It is possible that the mandatory development of a Comprehensive Environmental Management Plan (which require the sites to establish their goals, objectives, timeline, and implementation strategy) was Environment Canada's method of ensuring that all of the sites had a formal process and methodology in place. Yet this has not been conscientiously applied, since even today (over ten years after the program was initiated) there are still sites that have not completed a CEMP.

Environment Canada would also be best suited to fund the development and maintenance of a secure chat room. This would create an easy forum for the sites to share information, experiences, and resources (e.g. successful funding proposals, project outlines, and

outreach activities). This would encourage the sites to communicate more with one another. It would also prove to save the sites time and financial resources because through the chat room they would always have access to insight/experiences of other sites and useful templates (e.g. budget templates, fact sheets).

Though greater involvement of Environment Canada would suggest more of a top-down approach, it is important to note that Environment Canada was the main impetus behind the program. Therefore, certain conditions were placed on the ACAP sites that otherwise not have existed if the sites had organized themselves. For example, the sites may not have felt that it was necessary to create a CEMP. Moreover, the sites would have developed their own set of goals which would more closely reflect site conditions. Since Environment Canada placed these conditions on the sites, it is only fair that they provide the site with additional support.

Environment Canada was not only involved in establishing the program goals and deliverables, they also selected the fourteen ACAP sites. Any program evaluation cannot ignore exploring why some sites were chosen and why others were omitted. Since the ACAP initiative was developed out of Environment Canada's Green Plan, then one would assume that the sites were chosen based on the severity of coastal environmental issues facing the area. Although, seeing that the Halifax Harbour was not chosen as one of the sites (one of the most severely polluted harbours in Atlantic Canada), and that 'coastal environmental management money' was given to a site in the interior of northern New Brunswick as opposed to other environmentally damaged coastal areas (e.g. Baie des Chaleurs, Beaubassin-Shediac) suggests that alternative political/economic factors were involved. For example, the establishment of Sable Island as the fourteenth ACAP site appears to have more of a political impetus as opposed to environmental. Sable Island is a main research area, with projects affecting a number of large agencies

including the Canadian Coastal Guard, Exxon Mobil, Encana, and the Canada-Nova Scotia Offshore Petroleum Board. Though the site has invested time and resources into a number of natural resource issues (e.g. the tern study), these issues are focused more on research as opposed to natural resource management. Since there are no permanent residents on the island, the natural resource issues are less of a sustainability issue.

The inconsistencies within the selection of ACAP sites raises a number of questions surrounding Environment Canada's agenda. Greater confidence in the process would exist if Environment Canada had established a criterion for site selection based on the degree of coastal degradation across Atlantic Canada. Moreover, Environment Canada could have worked more closely with each of the provincial governments. Perhaps if these government bodies were more involved in the site selection/program development phase, they would be more supportive of the various sites within their province (e.g. St. John's ACAP has struggled to gain support from their provincial government).

Conclusion

The Atlantic Coastal Action Program is a contemporary example of community involvement in the area of coastal resource management. This research found that the presence of five organizational conditions significantly enhanced the likelihood of success of community-based initiatives. Specifically, the more that the community-based organization demonstrated organizational networks, community involvement, technical expertise, an enthusiastic/devoted coordinator, and organizational skills, the greater the likelihood that the site will succeed. Despite the range of overall scores for the fourteen sites, they have demonstrated a number of program successes. Each of the sites has truly

adopted a multi-stakeholder approach through the inclusion of local individuals/groups/ organizations most affected in the decision-making. The Board of Directors for each site incorporates a broad range of interests and sectors within the community including farmers, industry, government, education, interest groups, private citizens, and individuals involved in the fishery. Each of the sites demonstrates decision-making by consensus. Every stakeholder has the opportunity to put forward ideas and suggestions which allows for open debate, sharing of information, dispelling of myths, and most importantly, a forum to build understanding and respect for other interests.

The ACAP sites have also empowered their local communities to address concerns surrounding the coastal environment through knowledge generation, capacity building, and direct action. Knowledge generation is apparent through the sites' incorporation of scientific, local and Traditional Ecological Knowledge, as well as monitoring to identify trends. The sites' ability to involve a broad range of interests and sectors to establish a common sense of identity, establish common goals, and create a sense of place demonstrates their capacity building abilities. Finally, direct action is evident within each of the sites through the volume and variety of projects and physical assistance which the sites provide.

Despite the progress that each of the sites have displayed, there are areas of improvements which could be made. The program must incorporate more frequent and regular process and outcome evaluations in order to ensure maximum effectiveness and efficiency. The present research could act as the initial process evaluation for the sites

since it identifies a number of key areas that must be focused on. Once the key areas are better implemented by the sites, they will be better prepared and able to meet their goals and deliverables. Once the ACAP sites, and community-based organizations in general, have a better understanding of the necessary conditions for a greater potential for success, they will eventually implement projects more easily in the future, saving both money and time. Community-based organizations have been increasingly recognized as a fundamental building block of both social and environmental issues. These organizations have demonstrated the benefits of empowering local citizens to become involved in decision-making and direct action related to their environment.

With increasing government cutbacks and spending limitations, environmental initiatives will increasingly have to be undertaken by community groups in the future. Therefore, in order to truly benefit from community-based organizations, it is imperative to undertake more extensive evaluations to better understand the organizational conditions under which community-based initiatives are most likely to succeed. Once these conditions are better understood community-based initiatives may then achieve greater success in the field of applied resource management.

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Appendix 1: Focus Group Outline

Current Research

- Research is for my M.A. Thesis at Memorial University of Newfoundland
- Research is in conjunction with Environment Canada's evaluation of the ACAP initiative as a whole
- My evaluation is site specific, examining the factors of success in implementing this community initiative at each site by

1. Applying an evaluative framework to each site made up of criteria, indicators and sub-indicators, adopted from Environment Canada's original goals of ACAP.

2. Meeting with each of the sites in a focus group setting to explore three key areas: what makes their site unique, what are the obstacles that they have experienced, and what are some of the solutions that they have adopted to enhance program success

Focus Group Process

- Focus group composition will vary at each site depending on the availability of individuals
- Three main questions will be asked during the session
  - -How do you see your site as unique from the other thirteen sites
  - -What obstacles has your site experienced since it was initiated
  - -What solutions has your site adopted to encourage success in the implementation of the initiative
- Each focus group participant will be given a letter of information outlining the intent of the research and the use of the results, and a letter of consent to be signed and dated by each participant
- An audio recording devise will be used to ensure that I retain all of the responses; there will be no transcribing of the tapes

Appendix 2

List of Focus Group Participants		
St. Johns Newfoundland	4/10/01 4:00-5:30 PM	Coffee and Co., Water Street St. John's
Participants: Diana Baird, Site Coordinator Bill Stoyles, Site President		
Humber Arm Newfoundland	10/10/01 6:00-800 PM	Glynmill Inn, Cornerbrook
Participants: Sheldon Peddle, Site Coordinator Cecil Lake, Chair Winston Childs, Director Alan Kirby, Volunteer Director G.A. Lake, Board Member Troy William Giles, Board Member W.J. Iams, Volunteer Director Ron Burtan, Board Member Sean Dolter, Past Site Coordinator		
Southeast Environmental	17/10/01 5:00-6:30 PM	Whymm Inn, P.E.I
Participants: David Boyce, Site Coordinator Terrilyn Kerr, Site President Elizabeth Stuart, Board Member Jane King, Board Member Kent McDonald, Board Member Tom Rath, Board Member Daniel MacKinnon, Board Member Clair Murphy, Environment Canada Window Harry Nabuurs, Board Member Bruce Raymond, Board Member		
Bedeque Bay	15/10/01 4:00-5:00 PM	Kinkora PEI
Participants: Brenda Penak, Site Coordinator Brendan Kelly, Site President Llana Kunelius, Soil Researcher Daniel McLure, Board Member, Farmer Clara Duffy, Administrative Assistant Paige Harris, Insect Researcher Jessika Corkum, Ecology Researcher		
Cape Breton	26/11/01 7:00-8:00	Site Office, Sydney Nova Scotia
Participants: Judy Mc Mullen, Site Coordinator Sharon Carter, ACAP Employee		
Pictou Harbour	12/10/01 12:00-2:30 PM	Museum of Industry, Pictou
Participants: Bob Christie, Site Coordinator Jack Kyte, Site President Ben Irving, Wildlife Specialist Richard Kellock, Fisheries Specialist		
Sable Island	15/08/01 10:11:30 PM	Environment Canada, Nova Scotia
Participants: Bill Crossman, Site Coordinator Johns Merrick, Environment Canada Window		

Bluenose	18/10/01 7:00-8:30 PM	Middleton Town Hall
Participants: Brooke Cook, Site Coordinator John Maclellan, Environment Canada Window H. Plant, Treasurer Niels A Nielson, Board Member A Wilson Mathuen, Vice Chairman Keith Olivella, Board Member		
Annapolis	22/10/01 7:00-8:30 PM	Middleton Town Hall
Participants: Stephen Hawboldt, Site President Phil Hore, President Les Smith, Treasurer Douglas Parker, Vice President Murray Freeman, 3 Year Board Member		
Saint John	27/10/01 5:00 - 6:30 PM	Saint John ACAP Office
Participants: Sean Brillant, Site Coordinator Peter McKelvey, President Ken Sollows, Vice President Jean MacDonald, Secretary		
Miramichi	23/10/01 11:00-12:30 PM	Miramichi ACAP Office
Participants: Harry Collins, Site Coordinator Joel Corcoran, Site President Alison Stewart, Office Administrator		
Eastern Charlotte	22/10/01 5:00-6:00 PM	Eastern Charlotte Town Hall
Participants: Susan Farquharson, Site Coordinator Joseph Hunt, Current Chair Gregor Price, Past Vice Chair Benny Travis, Water Quality Monitor and Board Member Loretta Tatton-Waycotte, Project Administrator Michael Hanson, Inland Waters Coordinator		
St. Croix	28/10/01 7:30-9:30 PM	St. Andrews Marine Research Centre
Participants: Mark Bader, Site Coordinator William McAlister, treasurer Art Mackay, Site President Dr. John Anderson, Board Member Susan Eddy, Secretary Christa Carpenter, Board Member Deirdra Whitehead, Board Member Hugh M Akagi, Board Member Peggy Ross, Board Member		
Madawaska	14/10/01 7:00-9:00	Madawaska ACAP Office
Participants: Natalie Ryckman, biologist Normant Morin, Site President Fernand J Martin, Board Member		

* Each of the focus group participants agreed to be identified in this thesis

Appendix 3a: Letter of Information for Focus Group Participants

Dear Sir/Madam,

I am a student in the Master of Arts program in Geography at Memorial University of Newfoundland. I am conducting research for a Master's thesis under the supervision of Dr. Keith Storey and Dr. Alistair Bath both in the Department of Geography at Memorial. The focus of my study concerns factors of success affecting community coastal resource management initiatives. I am focusing specifically on the Atlantic Coastal Action Program as a case study for my research. As you are likely aware, this program represents a new model of governance based on getting the communities involved in the decision making process on a more equal level with governments. The process includes identifying the issues that are of greatest concern to the communities through a multi-stakeholder approach, and developing and implementing solutions together which are arrived at through consensus.

My study focuses on the aspect of evaluation within the ACAP initiative. First, I am evaluating and examining the levels of success achieved by each of the fourteen ACAP sites. For the purpose of this research success refers to the ability for each ACAP site to meet the pre-established goals of ACAP through the attainment and/or surpassing of a set of goals and objectives. Second, I am examining the various obstacles and solutions to success which affected each of the fourteen sites. This part of my study will involve focus group sessions and/or interviews with each of the fourteen ACAP sites to identify obstacles and solutions.

As an important part of my research, I would like to conduct a focus group session with yourself as one of the participants. Through this process I hope to gain insight into the obstacles and solutions that your site faced during the implementation and operation of the ACAP initiative. The focus group process will take approximately 45 minutes. Your responses will be recorded on paper during the interview, and a recording device will be used to ensure that all of the pertinent information is identified and documented. If requested, information provided to me will be kept confidential and if you request on the attached consent form, you may be assured of anonymity if any of your responses are incorporated into my thesis. If you would like more information on the study you can contact myself at (519) 821-2768, or my thesis supervisors Keith Storey (709) 737-8987 and Alistair Bath (709) 737-4733.

I thank you for your participation,

Jessica P Winkler

Appendix 3b:Lettre d'information aux participants du groupe de discussion

Madame,
Monsieur,

Je suis étudiante au programme de maîtrise en géographie à l'université Memorial à Terre-Neuve. Je fais une recherche pour une thèse de maîtrise sous la direction de Keith Storey et de Alistair Bath, tous deux de la faculté de géographie de l'université Memorial. Mon étude porte sur les facteurs qui influent sur le succès des initiatives communautaires de gestion des ressources côtières et j'ai choisi comme principale étude de cas le Programme d'action des zones côtières de l'Atlantique (PAZCA). Comme vous le savez, ce programme représente un nouveau modèle de gestion publique fondé sur une volonté de faire participer les collectivités au processus décisionnel sur une base plus égale avec les gouvernements. Le processus vise entre autres à définir les questions qui préoccupent le plus les collectivités au moyen d'une approche multilatérale, ainsi qu'à trouver des solutions par consensus et à les mettre en application.

Mon étude porte plus particulièrement sur l'aspect évaluation du PAZCA. En premier lieu, je compte évaluer les niveaux de succès atteints dans chacun des 14 sites du PAZCA. Aux fins de ma recherche, le succès s'entend de la capacité de chacun des sites du PAZCA de réaliser les objectifs préétablis du PAZCA en atteignant, voire en dépassant, un ensemble de buts et d'objectifs précis. En deuxième lieu, j'examinerai les divers obstacles au succès dans chacun des 14 sites et les solutions qui ont été proposées pour les surmonter. Cette partie de mon étude inclura des réunions et/ou des entrevues avec les participants d'un groupe de discussion dans chacun des 14 sites afin de mieux définir quels ont été ces obstacles et solutions.

Pour réaliser cet important volet de ma recherche, j'aimerais former un groupe de discussion auquel je vous demanderais de participer. J'espère, grâce à ces discussions, avoir un meilleur aperçu des obstacles qui se sont posés dans chacun des sites durant l'instauration et la réalisation du PAZCA, et des solutions qui ont été proposées. La réunion du groupe de discussion durera environ 45 minutes. Malheureusement, je ne pourrai animer cette réunion moi-même, ma connaissance du français étant limitée, mais j'ai demandé à Nathalie Ryckman de vous poser en mon nom certaines questions sur votre site du PAZCA. Nathalie consignera vos réponses par écrit (en anglais) et me les transmettra. Si vous en faites la demande, l'information que vous fournirez pourra demeurer confidentielle; par ailleurs, si vous demandez que vos réponses soient anonymes sur le formulaire de consentement ci-joint, soyez assuré qu'elles le resteront si l'une ou l'autre de vos réponses était intégrée à ma thèse. Si vous voulez avoir plus d'information sur mon étude, vous pouvez communiquer avec moi au (519) 821-2768, ou avec l'un de mes directeurs de thèse : Keith Storey, au (709) 737-8987, et Alistair Bath, au (709) 737-4733.

Je vous remercie à l'avance de votre participation,

Jessica P Winkler

Appendix 4a: Consent Form for Focus Group

I agree to participate in a Focus Group session being conducted by Jessica Winkler of the Department of Geography, Memorial University of Newfoundland, under the supervision of Dr. Keith Storey and Dr. Alistair Bath, Department of Geography. I have made this decision based on the information and consent letter and have had the opportunity to receive any additional details I wanted about the study. As a participant in this study I realize I will be asked to take part in a focus group session lasting approximately 45 minutes and that I may decline answering any of the questions if I so choose. All of the information which I provide will be held in confidence and at my request, the interview may be stopped at any point in time. I also understand that this project has been received and reviewed by the Department of Geography at Memorial University of Newfoundland and that I may contact Dr. Keith Storey (709) 737-8987 and Dr. Alistair Bath (709) 737-4733 should I have any concerns or questions about my involvement in this study.

____ I wish to remain unidentified if any information I have provided is incorporated into Jessica Winkler's final thesis

____ I do not wish to remain unidentified if any information I have provided is incorporated into Jessica Winkler's final thesis

Participant's name _____

Participant's Signature _____

Date _____

Appendix 4b: Formulaire de consentement pour groupe de discussion

J'accepte de participer à un groupe de discussion animé par Natalie Ryckman pour Jessica Winkler de la faculté de géographie de l'université Memorial de Terre-Neuve, sous la supervision de Keith Storey et de Alistair Bath, de la faculté de géographie. J'ai pris cette décision après avoir lu la présente et la lettre d'information à ce sujet, et on m'a fourni tous les détails additionnels que je voulais obtenir au sujet de l'étude. À titre de participant(e) à ce groupe de discussion, je comprends que l'on me demandera de participer à un groupe de discussion qui se réunira durant environ 45 minutes, et si je le veux, je pourrai refuser de répondre à l'une ou l'autre des questions qui me seront posées. Toute l'information que je donnerai sera gardée confidentielle et à ma demande, le groupe pourra interrompre ses discussions à n'importe lequel moment. Je comprends également que ce projet a été reçu et évalué par la faculté de géographie de l'université Memorial et que je peux communiquer avec Keith Storey, au (709) 737-8987, ou avec Alistair Bath, au (709) 737-4733, si j'ai des questions ou des préoccupations au sujet de ma participation à cette étude.

____ Je souhaite demeurer anonyme si l'un des éléments d'information que je fournis est intégré à la thèse finale de Jessica Winkler.

____ Je ne souhaite pas demeurer anonyme si l'un des éléments d'information que je fournis est intégré à la thèse finale de Jessica Winkler.

Nom du (de la) participant(e) _____

Signature du (de la) participant (e) _____

Date _____

Appendix 5a: St. John's Harbour Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-St. John's Harbour role in traditional cargo handling -The fishery, Salmon	-Survey of the recreational and commercial fishery - On-line GIS that maps harbour spills, river spills, surface runoff, fish kills and water circulation patterns	-Water sampling for nutrients -Analysis of sediment from harbour bottom -Long term water quality monitoring of harbour and rivers	-An environmental library at the ACAP office	- CEMP produced in 1999 - CEMP has been revised in 2003
CATEGORY 2 Types of Media Involvement	-Fact sheets produced on Salmon restoration -The fisheries inventory study used the knowledge and experience of the local fishery community to assess the fishing, tourism and commercial uses (also divers and tour operators)	-Sensitivity map/ GIS available to view on the website	- Frequent ads in local paper - Shocking billboard ads	-Public awareness campaign on environmental stewardship within the watershed -Creation of information videos available to the public	-Advertise in local papers -Billboard ads
CATEGORY 3 Communication Enhancers	- CEMP, all project descriptions, and contact information on the website	-Actively use an on-line GIS system to integrate, store, and communicate information	- Public has access to the results of the water quality monitoring at the ACAP office and is often advertised in the local paper	-Memorial University debating club focus on harbour issues -Science linkage project 'pollutant loading into the St. John's Harbour due to surface runoff' -Display booth set up at many events and festivals	-Membership database continually updated -New Board members recognized in paper -Volunteer appreciation events
CATEGORY 4 Training, Monitoring, Evaluation and Results			-Water tested at least 4 times per year for indicator bacteria, salinity, dissolved oxygen nutrients, pH, temperature -Examination of non-point pollution sources (storm water runoff and combined sewer flow overflow)		-Baseline water/sediment quality study completed -Update on December 22 oil spill - Results of scientific studies available on-line and at the office
CATEGORY 5 Policies, Procedures, and By-laws		-Development of a watershed Environmental Policy	-'Candidates dish the dirt: harbour cleanup debated at ACAP forum' -'Ottawa: the missing piece in harbour cleanup puzzle' -Participated in sewage treatment plan for the federal government	-Organized a debate between 2 local schools on issue of St .John's clean-up -Presentations at elementary schools -Presentations to students to complement their studies on ocean pollution -Presentation on water quality issues for science class	
CATEGORY 6 Physical/ Monetary Assistance	- Salmon restoration project		-Coastal beach sweeps -Robin Hood Bay leachate study	-Worked with MUN engineering student on his project -Provide information to student visiting the ACAP office -Colouring contests and free balloons for the kids	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	**Indicator # 2 Restoring and protecting fish and wildlife habitat**	**Indicator # 2 pollution prevention within homes and industry**	**Indicator # 2 Creating opportunities for meaningful citizen involvement**	**Indicator # 2 Securing a role in implementation and evaluation**
CATEGORY 1 Identifying, Defining, and Documenting	- Salmon study - Fisheries inventory study	-Fish health study -An assessment of existing circulation patterns in the water outside of the harbour	-On-site septic system study -An assessment of sewage treatment and development of a strategy for implementation of a sewage treatment and disposal system for the St. John's harbour drainage		-1997 CEMP later revised to 2003 CEMP -New work plan developed each year
CATEGORY 2 Types of Media Involvement			-Landfill leachate public awareness program	-Often used letters to the editor as a forum to provide the public with information and initiate discussion -Developed a series of public service announcements that aired on local radio stations	-Website provides a list of scientific studies on the harbour -Proposed clean up plan for the harbour on the website
CATEGORY 3 Communication Enhancers		-Literature review on biosolids management	-Green team project -Information sessions for local residents in St. John's Harbour south	-Study undertaken to identify stakeholder attitudes and knowledge of St. John's Harbour water quality issues -Comprehensive list of members with contact information -Partner with area volunteer organizations (e.g. East Coast Trail Volunteers)	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-With professor at MUN researched socio-economic issues related to the clean-up of the Harbour		-Industrial and institutional wastewater survey identifies wastewater pollutants -Landfill leachate study	-Water quality monitoring -Blue team surveys local rivers -Beach and coastal sweeps	-CEMP originally produced in 1999, revised in 2003
CATEGORY 5 Policies, Procedures, and By-laws				-Circulation of ACAP postcard on Harbour pollution encouraging concerned people to send one to Premier Brian Tobin	
CATEGORY 6 Physical/ Monetary Assistance		-Re-introduced in excess of 10,000 salmon into the Waterford River		-Annual general meeting advertised for 7:30 pm at the Fluvarium	-Organized a fundraising gala: sale of tickets and securing items for a silent auction

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Salmon re-introduction study	-Attended seminar on the benefits of water metering		-Site coordinator has been there >10 years
CATEGORY 2 Types of Media Involvement			- Water conservation promotional material	-Political successes reported to the local media	-Website updated frequently
CATEGORY 3 Communication Enhancers					-Presentation from Biosolutions on investigating bioremediation as an alternative for the Harbour -Report produced entitled 'an assessment of the economic impacts of 2 options proposed for the clean-up of the St. John's harbour'
CATEGORY 4 Training, Monitoring, Evaluation, and Results				-Progress is reported to local media -Results from water quality monitoring posted on the website - Provided technical training to staff, board, and members	-Staff technologist took a 2 day Arc View GIS course -Seminar on clean-up of sediments in the St. John's Harbour -Source pollution workshop, conference and public awareness campaign -Attended ACAP II workshop -Attended watershed management workshop -Conserving Newfoundland's wetlands workshop
CATEGORY 5 Policies, Procedures, and By-laws		-Meeting held with Premier Brian Tobin, the mayors of the three municipalities, and Bill Stoyles to discuss the provincial governments support for developing a sewage treatment facility in region		-CEMP available to download on the website	-Electronic postcard- send a message to politicians about the St. John's Harbour cleanup -Public welcome at general meeting
CATEGORY 6 Physical/ Monetary Assistance		-Salmon restoration project (re-introduction of salmon into 3 urban streams in St. John's)			-News conference provided an opportunity to advertise upcoming general meeting

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Appendix 5b: Humber Arm Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Defines sustainable livelihoods and lists the traditional industries in the area (pulp & paper, salmon fishing, lobster trapping, & processing) -Local knowledge collected and mapped	-All data on water resources/land uses put on a SPANS GIS system -Coastal resource inventory mapping -Corner Brook Caves mapping project -Community values maps	-Stream feasibility/ classification studies -Survey conducted on the human dimensions of water resource management -Urban rivers water testing -Student and citizen-based water quality monitoring		-2 CEMPs (1997, 1999)
CATEGORY 2 Types of Media Involvement		-Some maps are available online while others are available at the office	-Regular articles in local paper -Pamphlets on conservation in the garden, bathroom, kitchen, laundry room and retrofitting	-Environmental videos and brochures -Local newspaper and site newsletter	-4 CBC interviews on ACAP projects -Sale of kids environmental books
CATEGORY 3 Communication Enhancers	-Contact number, address, and emails on website	-Traditional knowledge of the area was collected and digitized into the GIS system -Some maps available on-line	-Bacteria contamination results posted on the web -Water conservation public awareness campaign -Results of projects described in newspaper -Corner Brook Caves project -Rural wastewater assessments	-Presented the ACAP program to a delegation of Sri Lanka Officials hosted by the Centre for Forest and Environmental Studies -Science at the library -ICZM meetings -Annual Environfest	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Reports produced on water quality in fishing area	-New data is integrated into the mapping system, and management plans from ongoing studies -Environmental effects monitoring	-Treatment project of water efficiency and flow monitoring of 141 households -Student and citizen based water quality monitoring	-Educational presentations on water pollution within Humber Arm	
CATEGORY 5 Policies, Procedures, and By-laws		-Environmental agreement first step to keep the coastline clean: community leaders pledged to do everything in their power to keep the coastline near their towns free of pollution and litter	-10 area communities agree to sign sewage accord: ACAP used a signed accord to convince the federal and provincial governments to lend financial support -Meeting on sewage treatment with government -Attended Brian Tobin's dinner and spoke briefly	-Corner Brook high school adopted 'Clean River Quest' as part of their winter science program -Regular presentations to Our Lady of Mercy, Elmwood School, and Grenfell College on ecosystem health, environmental ethics & consensus-based decision making	-School presentations on marine pollution, water conservation, air pollution & history of ACAP site -Water sampling with grade 5 students -Educational modules -Environmental scholarship with the Minister of fisheries
CATEGORY 6 Physical/ Monetary Assistance			- Stream cleanup program -2 students hired to initiate citizen-based water quality monitoring -Stream bank stabilization project on Bell's Brook	-ENVIROKid's program for environmental awareness in kids (4-16) -Water conservation education	-Corner Brook day celebration rain date -Carried out restoration work on Bells Brook

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	**Indicator # 2 Restoring and protecting fish and wildlife habitat**	**Indicator # 2 pollution prevention within homes and industry**	**Indicator # 2 Creating opportunities for meaningful citizen involvement**	**Indicator # 2 Securing a role in implementation and evaluation**
CATEGORY 1 Identifying, Defining, and Documenting	-Assessment of the impact of ocean dumping on traditional fishing grounds	-Studies carried out on the impact of local industry on fish habitat	-Identification of possible sources of industrial wastes in Humber Arm -Septic system study -Researched biogreen system for water treatment	-A community-based oil spill contingency planning project involving the development of oil storage and spill risk databases	-New focus areas and projects identified yearly
CATEGORY 2 Types of Media Involvement		-Ltterbusters campaign	-Active public awareness program covering urban river contamination - Article on the perils of pouring fluids into drains	-Articles in paper requesting for volunteers -Newsletter outlines programs and projects	-Description of current and past projects on the website -Comprehensive list and description of reports available through the HA library
CATEGORY 3 Communication Enhancers	-Community visioning sessions		-Green team established in '93 -Green teams employ 20 -Environmental attitudes video		-ACAP General meeting
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Christmas tree mulching -Rural wastewater pump-out and assessments	-Developed 'floatables' educational program -Production of video on student attitudes towards their coastal estuary -Survey on human dimensions of water resource management with Dr. Bath -List of members with contact information	-All remedial options fall into the initial 5 goals of the program -CEMP indicates 43% of remedial options identified have been commenced or carried out
CATEGORY 5 Policies, Procedures, and By-laws	-Comprehensive list made of policies and regulations that if better enforced could support the actions of Humber Arm				
CATEGORY 6 Physical/ Monetary Assistance		-Re-stock Atlantic Salmon in the Corner Brook stream -Study on environmental effects of pulp and paper mill's effluent into the Bay of Islands	-Westland recycling program -Household hazardous waste collection -Paint swap		

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting	-Study on enhancing the tourism and recreational aspects of Humber Arm	-Nature interpretation signs describing native species along the riparian zone of the Corner Brook Stream -Aquatic habitats and indigenous species identified -Benthic invertebrates study -Attended Ottawa conference on biodiversity	-Water efficiency and conservation project collects water usage amounts for area towns		-Coordinator has been there >5 years -Past coordinator is now a Board Member
CATEGORY 2 Types of Media Involvement			-Water quality and conservation brochures	-Newspaper articles communicate progress of projects	-Monthly webpage updates
CATEGORY 3 Communication Enhancers	-Encourage the development of support systems to establish infrastructure for ecotourism -Regular contact made with Corner Brook Pulp and Paper	-Development of GIS database for Traditional Ecological Knowledge	-Issue of water meters is explored in newspaper	-Strategic Planning Workshop involving over 25 community, industry and government representatives -Met with St. John's ACAP site to discuss regulatory requirements for sewage treatment -Coordinator attends a teleconference each month which provides an opportunity for other environmental groups to be aware of activities conducted by ACAP	-Water treatment options conference in Corner Brook -Pollution prevention workshop -Hosted a full day workshop on ICZM for all of the stakeholders consulted during the project
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Identified regions that are underutilized for eco-tourism, development encouraged for the establishment of infrastructure for ecotourism			-Results of beach sweep and paint swap published in the paper -Results of public survey published in the paper	-Attended the EMAN conference and UNESCO Meetings in Halifax -Sewage treatment conference
CATEGORY 5 Policies, Procedures, and By-laws	- ACAP HA is involved in a cooperative approach to handling the region's bark leachate problem, involving City Council (landfill), Blomidon Golf and Country Club (Bark used as fill), Corner Brook Pulp and Paper (producer of bark), and Genesis Organic (use bark in manufacturing			-CEMP available on website	- All issues raised in the meetings will be formulated into a letter for the federal government
CATEGORY 6 Physical/ Monetary Assistance			-Installation of water saving devises: facet aerators, low flow shower heads, and toilet flappers		-Public meetings advertised in paper

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Appendix 5c: Southeast Environmental Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Agriculture is a traditional industry, therefore need to conserve soil -Agricultural bacteria study -Bacterial genotyping	-Information from watershed studies, provincial and federal databases plugged into GIS system	-Clean River Quest - volunteer water quality monitoring -Monteque River Water quality study	-Community conservation centres -Cardigan water science centre	
CATEGORY 2 Types of Media Involvement	-Newspaper articles directed to Island farmers and Atlantic fish farmers -Articles on the importance of fencing cattle	-On-line mapping project	-Articles on the importance of water conservation 'reduce water and energy	-'News from the SEA' -Natural areas brochure -Information packages on wildflowers, solar sewage treatment, sustainability of agriculture, aquaculture	-Biweekly articles in Eastern Graphic of issues and projects of interest -Retired professor gave talk on buffer zones
CATEGORY 3 Communication Enhancers	-Website which advertises the site and provides all contact information -Business cards	-GIS training -Building data sets in a GIS layer -Forum on Green Belts	-No signs to keep swimmers out: swimming in water near bridge could cause serious health problems -Annual River Sharers Forum	-Mall display on items found in the beach sweep -Guest speaker at SEA meeting -Hosted environmental workshop -Hosted forum on pesticide use -Funds help promote green education -Full day workshop to talk about waste -Stewardship workshop	-Volunteer ceremonies each fall -Give out volunteer awards at AGM -Host party to formally recognize volunteers -To formally recognize partners on projects, they participate on the project steering committee throughout its implementation
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Monitoring effects of aquaculture on estuaries -Agricultural bacteria study -Forum on erosion and pesticide use -Atlantic Veterinary College take over Cardigan fish hatchery as a satellite research and educational centre		-Local surface waters monitored using chemical/ physical/ biological parameters -Ecosystem health indicators project: aims at lowering soil erosion, maintaining and enhancing water quality and restoring and enhancing the natural ecosystem		- All plans by the site have been followed through or given a time frame to be completed
CATEGORY 5 Policies, Procedures, and By-laws	-Better understanding as evidenced by tolerance for new provincial regulations -Cardigan Bay siltation remediation plan		- All ACAP groups forwarded a letter to Paul Martin in 2000 about establishing a Green Infrastructure was followed through	-Achieving a sustainable ecosystem presentation to schools	
CATEGORY 6 Physical/ Monetary Assistance	-Environmental Farm Plan -Agriculture and Environmental Remediation -Livestock fencing(cover 50% of cost) -Dune grass transplanting		-Stream/riparian enhancement -Forestry enhancement -Murray Harbour Wetland: restoration of surface waters by reducing nutrient and bacterial loading from a municipal sewage treatment plant	- Have accessed funding for tree nurseries, Salmon incubators -Environmental camps -Designed eastern school district recycling program	-Storm dates for winter meetings

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting		-Aquatic community study -Environmental damage assessment protocols -Organic matter sampling and analysis -Valleyfield fish kill data collection	-Group searches beaches for the international census to record the number of piping plovers still found on the island -Project focused on home environment	-Hazardous spills reduction program -Rails to trails project	
CATEGORY 2 Types of Media Involvement			-Series of one page fact sheets prepared to inform residents about local environmental problems	-Summer projects update -Bugs program -Social marketing workshop -Management of waste begins at home-speaker -Public asked for input on future of Cardigan Bay (through public meetings)	-Option on website to sign up for quarterly newsletter -All of the projects organized and outlined on the website
CATEGORY 3 Communication Enhancers	-A series of workshops to introduce Environmental Farm Plans to PEI	-SEA hold public forum on soil erosion	-Community conservation project, green home visits -Workshop on solid waste problems - Murray river sanitary survey	-Survey conducted among woodlot owners to better understand their objectives for the woodlot and raise awareness -Worked with 3 rivers Heritage River Working Group to gather oral history of area	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Workshop for farmers and woodlot owners	-Stream and forest enhancement project	-Litter survey -Christmas tree mulching -Paint swap	-Climate change public education and outreach	
CATEGORY 5 Policies, Procedures, and By-laws	-Environmental farm plans	-Three Rivers Managemenet Plan	-A set of pollution prevention policies and practices developed, implemented and monitored for effectiveness		
CATEGORY 6 Physical/ Monetary Assistance		-Avian habitat initiative -Woodlot enhancement -Georgetown community tree nursery -Dune Grass transplanting -Hedgerow and riparian zone enhancement -Aquatic habitat restoration	-Waste water regional recycling -Yard waste day -Expand recycling program at Montague Intermediate school		
	Indicator # 3 Introducing new sustainable industries	**Indicator # 3 Enhancing Biodiversity**	**Indicator # 3 Full Value Water Pricing**	**Indicator # 3 Communicating Successes and best practices**	**Indicator # 3 Championing informed decision making**
CATEGORY 1 Identifying, Defining, and Documenting	-Coastal sand mining report examined the effect of localized extraction of beach sand has on coastal erosion patterns	-Moores biodiversity enhancement project			-Coordinator has been there >5 years
CATEGORY 2 Types of Media Involvement				-Article on the happenings of the annual meeting	-Web site gives comprehensive list of newspaper articles and updated regularly

CATEGORY 3 Communication Enhancers				-Regular contact with other groups having parallel goals -Meet with SEA on semi-regular basis	-ACAP conference -4 day workshop with more than 100 representatives.from community groups, government and environmental agencies
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Introduction to ecotourism initiative -Research carried out on aquaculture and the environment -Natural and historic tourism development/ green tourism development -Benthic impact study and aquaculture -Bird based tourism	-Community training program on native species			-Training manual for instructors: the national hydrology resource centre will provide a multiday session at the study watersheds -Instructors will learn goals and conceptual approach of the program and all required sampling and data acquisition methods -Volunteer introductory and training project
CATEGORY 5 Policies, Procedures, and By-laws		-Witch hazel management plan			
CATEGORY 6 Physical/ Monetary Assistance	-Enhancing tourism in community of Mill Town Cross	-'Students re-plant trees by the thousands' -Forestry enhancement project			-SEA annual General Meeting with guest speaker premier Pat Binns advertised

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Appendix 5d: Bedeque Bay Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Agriculture (potato and livestock farming) and oyster fishing -Maple Plains Project -Traditional knowledge collected from community related to land use	-GIS education project for Bedeque Bay Environmental Management Association -Collection, documentation, and interpretation of historical land use in Pilot area of Bedeque Bay watershed -GIS layers with ecotourism natural and cultural layers	-Well watch, but no trends given to public	-Community environmental garden and composting -Community environmental centre -Atlantic Sustainability Resource centre -Resource library available on website	-CEMP developed
CATEGORY 2 Types of Media Involvement	-Tomato tasting event -The farmers market 'rural roots' booth -Annual farm and garden tour	-All habitat assessment data is received and transformed to GIS by Holland College	-Monitoring transparency of East Prince waters -Development of riparian buffer zone fact sheet	-Soil conservation/ vermi composting newsletter -General brochure on BBEMA	-Trail opening at Summerside -Cable TV announcement
CATEGORY 3 Communication Enhancers	-Mailing address, telephone numbers, and email address provided on the website	-GIS used to integrate natural layers with cultural layers		-Earthworm specialist participates in study - Community environmental centre integrates agricultural and environmental concerns -Earthworm terrarium and observation area -Able gardening project for physically challenged	-Market volunteers receive bouquets - Volunteer of the month -Environmental Award -Annual general meeting - New Board members recognized in paper -Annual membership fees -The website provides a form to become a member -Database of members
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Identify aquatic insects at the market - More sustainable farming projects adopted	-Monitor biodiversity -Report of baseline data collected during the 2000 field season	-Nitrate monitoring project in conjunction with Holland college		
CATEGORY 5 Policies, Procedures, and By-laws	-Provide input right to farm legislation through participation on the farm practices Review Board -Steering committee of the Environmental farm plan			-Students plant 150 trees -Grade 2 beach trip for nature interpretation -Meeting with highschool to encourage local Somerset Elementary school to be more observant and aware of their natural surroundings -Vermin-composters in the classroom	
CATEGORY 6 Physical/ Monetary Assistance	-Investigating bioengineering techniques to filter effluent from agricultural lands -Provide trees and hedgerows -Rain dates established -Environmentally friendly farm and gardens display -Point direction to get outside funds		-Building of artificial lagoon -Beach sweeps -Check dams constructed to reduce roadside erosion around the southwest brook	-Worked on projects with various Masters students -Interactive display and model at the community environmental centre	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Working with farmers on solutions to key erosion problem sites -Sustainable fisheries project	-Inventory of threatened spaces -Habitat assessment project -Amphibian surveys -Rainbow trout sampling -Inventory of hedgerow in watershed with Holland College	- Green business plans	- Oil tank inspection - Oil spill contingency planning done through Green Business planning	-Work plan established yearly
CATEGORY 2 Types of Media Involvement	-General BBEMA Brochure	-Down By The Bay newsletter	-Green business planning brochures -Distribute fact sheets from the government -Hazardous waste collection day -Well watch fact sheet indicating nitrate levels	-Down by the Bay newsletter on upcoming activities	-Vision for watershed incorporated in the website -Website describes all projects in 2 categories: research/ monitoring and awareness -In-depth description of Maple Plains Agro-Environmental Demonstration project
CATEGORY 3 Communication Enhancers	-Sustainability in the community workshops -Healthy, pesticide free gardens -Temporary displays and models comparing the outcomes of good farm practices versus bad farm practices -Soil and crop improvement farm tour. that focused on farms that have participated in the EFP process	-GIS - Planting assistance - Development of a wetland	-Schoolyard green team -Green home visits-free home energy inspections -Vehicle emissions testing -Public open houses at BBEMA's field office -Maple Plains Agro-Environmental Demonstration sites-demonstrate how farming and nature can co-exist in harmony	-Project to compare and contrast the best method of collecting traditional knowledge -Cooperate with the city of Summerside, DFO, and EC to study problem of and find solution to odours along the Summerside sea wall	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Training Holland College students to use water and soil quality analysis equipment -Annual seed swap	-Biodiversity monitoring	-Reduction in the amount of debris collected in streams -Green home visits record levels of home pollution	- 40 residents develop environmental indicators for watershed	-Informal evaluation done on all projects
CATEGORY 5 Policies, Procedures, and By-laws	-Assisted in delivering the Environmental Farm Plan		-BBEMA is a member of Chamber of Commerce, developing agreements with specific businesses in the watershed through the Green Business Planning Project		
CATEGORY 6 Physical/ Monetary Assistance	-Land tax incentive for conservation of natural habitats	-Heritage trees within Summerside -New hedgerow /riparian zones -Planting trees/shrubs within the watershed	- Businesses will reduce costs for efficiency products -Well watch		-Organized fundraiser : Farm and Garden tour

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		- Some native animal and plants have been identified -Endocrine disrupting study			-Coordinator has been there >5 years
CATEGORY 2 Types of Media Involvement	-Article on ecotours	- Demonstration farm: plant demonstration and checklists	-Numerous articles on water quality and conservation	-Biweekly column "Down by the Bay" in the Journal Pioneer -Results of mummichogs as indicators of water quality study (scientific journal, newsletter, web page)	
CATEGORY 3 Communication Enhancers	- Community Access program			-Met with David Boyce of SEA on a semi-regular basis at EC office in Charlottetown -Regular informal public meetings	-Conference on gardening -2 workshops held in conjunction with the 'environmentally friendly community garden' -Journal article written for Pioneer
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Ecotours-green tourism project -Market allows diversification (coffee, crafts, produce)	-Representative from BBEMA and Holand College are financially covered to attend National Ecological Monitoring Workshop -Elmside school naturalization -Biodiversity monitored	-Participated in the community gardening conference in Montreal -BBEMA hosts workshop at National Youth Summit in Summerside		-GIS training for staff and volunteers -Individual from Holand College demonstrates various GIS applications and Toolbook software -Coordinator gets training on income management
CATEGORY 5 Policies, Procedures, and By-laws		-Potential investigated for designation of Holman's Island as a National Wildlife Refuge	-Community garden project: inform public on types of watering and mulching		-Board of Directors meeting information available
CATEGORY 6 Physical/ Monetary Assistance		-Heritage tree replacement program			

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Appendix 5e: Cape Breton Evaluation Results

Criteria and Indicators to Evaluate Program Success					
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Mining -Community consulted in the identification of sensitive coastal areas/resources	-Mapped illegal dump sites and abandoned industrial sites -Coastal resource inventory -Environmental database development		-ACAP Cape Bretonâs Environmental Activities Centre	
CATEGORY 2 Types of Media Involvement		-A model illustrating the concept of storm surface water runoff is on public display at the Environmental Activities Centre -Development of GIS and a library database			-Free workshop on greening your special events -Green column in the Cape Breton Post
CATEGORY 3 Communication Enhancers	-Address and contact information posted on the website	-Sensitive coastal areas input into GIS	-Collection of data from locals on coastal resources in the target area	-Science and Technology week events -Environmental show for Cape Breton Youth -Chat room available on webpage -Workshops: pollution prevention, organic gardening, how recycling works, waste management	
CATEGORY 4 Training, Monitoring, Evaluation, and Results		-Development of an Environmental Management Plan			
CATEGORY 5 Policies, Procedures, and By-laws			-Implementation of watershed protection plans	-Environmental kids program offered by ACAP during march break -School students win awards for projects	
CATEGORY 6 Physical/ Monetary Assistance	-CORE: Coke Oven Remediation Program		-Remediation of Muggah Creek watershed -Lake/river clean-up initiatives -Beach clean-ups -Paint swaps -Stream habitat restoration/ enhancement projects -Over 16 stream assessment/ enhancement water quality monitoring	-Kit and handouts developed highlighting how teachers can implement environmental education	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Comprehensive list of abandoned mine sites and associated waste rock storage areas -Green office assessments	-Tree swallow project	-Lunch and learn: gaining control of home heating, recycling in the home -Study of coal ash in composting -GoGreen Business Program	-Establishment of community-based oil spill contingency plan -Environmentally safe cleanup	
CATEGORY 2 Types of Media Involvement			-Educational pamphlets on proper winterizing of homes, environmental impacts of coal/wood burning and ways to minimize impacts -Radio campaign to promote green choices in the home, workplace, outdoors and supermarket	-The site has its own newspaper Ítoward a sustainable future for industrial Cape Breton' -ACAP hired 17 technicians who hit the streets seeking homeowners wanting help to reduce	-Site programs and projects described on the website
CATEGORY 3 Communication Enhancers			-Launch of household and business waste exchange -Free information session on managing automotive fluids -Free home energy inspections and Green Home Visits	-Membership forms available on webpage -2 types of membership options available -Door to door public survey to identify public concerns and perceptions on environmental issues	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Campaign encouraging greater education and the importance of developing marketable skills - Industrial Cape Breton Clean-up project		-Cape Breton Smog Study -Paint Swap	-Formed community neighbourhood patrols for illegal dumpsites	
CATEGORY 5 Policies, Procedures, and By-laws			- Policy and backyard composting guidelines outlined on website		
CATEGORY 6 Physical/ Monetary Assistance		-Purple Loosestrife project -Washbrook habitat restoration -Wentworth Brook enhanced -Coastal habitat enhancement project -Digger logs project	-Centralized composting unit designed -Enviro-Depots and the deposit system promoted -Targeted seniors for lessons in environmental recycling -Tree expert to speak about moth control during lunch meeting		-Recycling junk to make x-mas ornaments

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Green Crabs monitoring		-Study of coal-ash in composting	- Coordinator at site >5 years
CATEGORY 2 Types of Media Involvement			-Regular water conservation articles -Articles reporting the results and progress of projects -Water advertisements in the Cape Breton Post include articles on water conservation and efficiency	-Many projects' results outlined in sites' newsletters	
CATEGORY 3 Communication Enhancers	-Internet open house at the Environmental Activities Centre				
CATEGORY 4 Training, Monitoring, Evaluation, and Results		-Hands on biodiversity aquarium		-Recycling and composting training provided for industrial, commercial and institutional sectors	-Public education campaign on household hazardous waste -Detailed instructions for the curbside blue bag program
CATEGORY 5 Policies, Procedures, and By-laws				-CEMP available to download on the webpage	-Bimonthly general meetings -All minutes from meetings kept on file
CATEGORY 6 Physical/ Monetary Assistance		-Programs aimed at eliminating purple loosestrife from encroaching into wetlands	-Showerhead swap program -$100 credit towards purchase of a low-flow toilet -Installation of 500 retrofit kits -Rainbarrel campaign		

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Appendix 5f: Pictou Harbour Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Mining, -Manufacturing -Agriculture -Forestry -Aboriginal resource mapping -First nations environmental network	-Coastal mapping for non-marine resources -Assessment of the environmental quality of the West River Watershed in Pictou Harbour	-Water quality studies mapped for temp, level, fecal coliforms, pH, conductivity, lead, alkalinity, nitrate, sulphide, sodium, magnesium, calcium, fe, al, ...		
CATEGORY 2 Types of Media Involvement				-Forest wildlife pamphlet -Forest tour checklist	-Articles in local paper describe projects
CATEGORY 3 Communication Enhancers			-'Good news under the microscope: boat harbour treatment system turns out positive results'		-Volunteer appreciation program
CATEGORY 4 Training, Monitoring, Evaluation, and Results					
CATEGORY 5 Policies, Procedures, and By-laws				-Resource kits developed to enable teachers and environmental educators to interpret local heritage and create learning opportunities	
CATEGORY 6 Physical/ Monetary Assistance	-Stream bank stabilization -Boat harbour remediation -Oyster sampling from West River and surrounding watershed		-Middle River Watershed management strategy -Buffers established around provincial park and wildlife sanctuaries -Stream bank stabilization	-Development of an educational unit on estuaries and watershed to Grade 5 and 6 science curriculum	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Introduction of realistic environmental farm plans	-Investigation of utility or immunological biomarkers for assessment of environmental health -Identification of rare and sensitive resources -Review of fish ladder -Fish becoming land locked and smelt migration	-Household water survey to be conducted		
CATEGORY 2 Types of Media Involvement				-'Everyday people taking an Environmental responsibility' -Harbour protection group outlines mandate	
CATEGORY 3 Communication Enhancers	-Green office campaign -Coastal 2000 open house		-Go Green at Home	-Work with the Pictou landing First Nation on a sustainable forestry in Mi'kma'kik plan -Interviews conducted with local individuals, fisherman, interest groups, representatives from municipalities and local industry	
CATEGORY 4 Training, Monitoring, Evaluation, and Results					
CATEGORY 5 Policies, Procedures, and By-laws		-Develop forestry environmental management systems			
CATEGORY 6 Physical/ Monetary Assistance		-'The big clean-up: nova Scotia's mussel Beach' -Habitat remediation and restoration for Potters Brook and associated salt marsh/wetland undertaking -Restoration of Bear Brook -Habitat enhancement -Creation of the artificial wetland	-Mill waste composting project -Removing failing septic systems		

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting					
CATEGORY 2 Types of Media Involvement				-High bacteria levels found in east river	
CATEGORY 3 Communication Enhancers					-Coastal zone 2000 conference -Due diligence seminar
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Analysis of ecotourism opportunities -Development of infrastructure in support of ecotourism				
CATEGORY 5 Policies, Procedures, and By-laws					
CATEGORY 6 Physical/ Monetary Assistance					

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Appendix 5g: Sable Island Preservation Trust Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Constant human presence: shipwrecks, lighthouse keepers, sealers, meteorological -Researched the history and significance of the island	-Much of the research contributes to the Museum of Natural History exhibit	-Well water quality results recorded		
CATEGORY 2 Types of Media Involvement		-Sensitivity maps are available to view on the net but they are not interactive			
CATEGORY 3 Communication Enhancers	-Contact numbers for the site (ACAP), for partners (EC), for emergency contact and for a series of topics according to a subject area			-Tri-yearly newsletter to keep members up to date on key activities of the trust and serve as a forum to present issues/ questions from public and members	
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Continual monitoring of wells		
CATEGORY 5 Policies, Procedures, and By-laws		-5 year strategic mandate on website -Conservation strategy on the website	-Strictly enforce storage and handling procedures for hydrocarbons		
CATEGORY 6 Physical/ Monetary Assistance	-Ensure there is always a human presence on the Island	-Continual presence of operational staff on the Island		-Work with numerous University students	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Visits by members to identify a conservation strategy	-Study success of tern colonies -Main conservation concerns; introduction of contaminants and extraction of water -Vegetation studies (impact of horses versus plants)	-Identification of pollution impacts from tourism	-Regional Environmental Emergencies Team (REET) -Spill reporting contact numbers on website -Contacts to report on environmental emergency for all Atlantic region	
CATEGORY 2 Types of Media Involvement			-Icons on website discuss island related pollution issues	-Newsletter summarizing ongoing research -Media packages created on SIPT info/ backgrounders/ factsheets/ profiles -Website summarizes: study of Tern breeding colonies, Horse Terrain interactions, Bird strike study, Go for green Sable project, Atmospheric research	-Discusses current studies taking place on the Island -"What Happens on Sable" icon on the website to update the public
CATEGORY 3 Communication Enhancers		-Project to gain info on tern numbers -Reproductive success and sources of chick mortality in relation to habitat as typography	-Sable Island exhibit at Halifax museum	-Application for membership on website	
CATEGORY 4 Training, Monitoring, Evaluation, and Results					
CATEGORY 5 Policies, Procedures, and By-laws					
CATEGORY 6 Physical/ Monetary Assistance					

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Identified the type and abundance of native animal and plant species -Website informs the public of the flora and fauna on the island as well as the threats to the island			
CATEGORY 2 Types of Media Involvement	-"Energy From Beneath The Sea" icon on the website -The website discusses the tourism industry pros and cons and the notion of carrying capacity			-Newsletter detailing the summers seismic exploration on the island/ lessons learned	
CATEGORY 3 Communication Enhancers					-Annual tour/ meeting on the island will give first hand knowledge to board members of the issues and provide an opportunity for staff and Board to meet
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Development/ testing and demonstration of high penetration wind/diesel energy system -Atmospheric monitoring system -Wind power project			-The Trust will give presentation at the Maritime Museum in Halifax -Allowing the public to visit after verbal introduction and set of rules for conservation	
CATEGORY 5 Policies, Procedures, and By-laws	-Provision of scientific and administrative advise to government, industry, institutes, and the public -Navigational program -Work closely with the coastguard	-Continue to extend legislative protection to the feral horse population		-Environmental Management Plan is available to download on the website	
CATEGORY 6 Physical/ Monetary Assistance	-Go for Green -Researching wind power on Sable Island	-Dune restoration -Time and research invested into the possibility of re-introducing the walrus			

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Appendix 5h: Bluenose Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Shale pits -Aquaculture -Fishing industry -Agriculture -Waterways history collected by interviewing residents of each waterway, collecting photographs	-Some sensitivity mapping (project related) completed	-Water-based trail series -Lunenburg Healthy Harbour project -Water quality monitoring near agricultural lands -Met with individual from Bedford Institute of Oceanography regarding water quality monitoring	- Lunenburg marine education centre -BACAP office in Mahone Bay	-CEMP
CATEGORY 2 Types of Media Involvement	- Marine education centre located in Lunenburg distributed information on fishing, boating, and marine life	- Mapping of projects that is available upon request	-Water conservation articles and brochures -Presentation to Princes Owners Association regarding Coastal 2000 -3000 pamphlets made on water conservation and household hazardous waste	-Production of video which demonstrates the impact of untreated sewage on marine life	-Bluenose ACAP Times distributed to 4700 households in the watershed
CATEGORY 3 Communication enhancers	- www.auracom.com	-Work with students in geography to complete mapping projects	-Site has copies of reports in office available to the public upon request -Marine education centre -Water quality results available upon request	-Community meetings and events have been held (canoe races, nature walks, presentations and booths at festivals -Display booth at festivals/school forums -WIND: Watershed Interpretive and Naturalist Demonstration	-All volunteers are invited to summer BBQs, AGM and Christmas parties -Volunteer log book -Board history -Project history digital notes
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Electrofishing done annually -Clean boating project			- Environmental awareness surveys conducted in 1995 and 2001 in BACAP watershed	
CATEGORY 5 Policies, Procedures, and By-laws		- Visited town planners to change building permits on islands to include sustainable building practices	-Town of Lunenburg sewage treatment infrastructure money awarded	-School enviro-fund -BACAP as a resource centre for students	
CATEGORY 6 Physical/ Monetary Assistance	-Clean boating project -River restoration -Habitat restoration to make MushaMush a top salmon river	-Ecological monitoring and evaluation project	- Hazardous waste day -Restoration of lower part of Ernst Brook -Mushamush river restoration -Acid drainage remediation project	- ACADIA geomorphology and aquatic projects -Extensive elementary, middle and high school educational programs -Hire coop students	- Rain dates pre-established for outdoor activities

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	- Watershed surveys conducted in 2000 -Community meetings and open houses regarding the results of surveys and development of the watershed management plan -Examination of inshore fishing industry to determine type and level of fishing activity	-Frog watch program -Ecological monitoring and evaluation project -Areas of habitat loss mapped using a GIS and overlay with sensitive habitat mapping -Yellow Perch study -Osprey nesting project	- Watershed surveys conducted in the summer 2000	–Oil spill response project -Manual developed for groups who wish to ensure that their community is prepared to effectively deal with small oil and chemical spills	- New projects and deliverables for each field season
CATEGORY 2 Types of Media Involvement		- Pamphlets and brochures handed out at various events	-Developed household healthy harbour brochure	- Local paper and posters	-Website describes past, current, and upcoming projects
CATEGORY 3 Communication Enhancers	- Open houses and seminars have been conducted regarding watershed issues, water-front living, sustainable fishing practices	- Training all volunteers - Information available on the website and presented at various school events	-Water quality monitoring open house -Information meeting for area businesses -Waste survey of local businesses	-Survey watershed residents -Develop volunteer base -Youth conservation corps surveyors -ACAP survey	
CATEGORY 4 Training, Monitoring, Evaluation, and Results		-Ecological monitoring -River restoration on Mushamush system: reintroduce, restore and conserve salmon and trout habitat	-Solid waste information program	- Island watch program	- Monitoring is conducted on a need be basis for each project
CATEGORY 5 Policies, Procedures, and By-laws		- Work in association with local recreational business owners to establish conservation and stewardship awareness in waiver forms and tours	-Development of Hazardous Waste Reduction Project to help businesses and households meet the limits established by the new by-law-Town of Lunenburg	- Board meetings open to the public	
CATEGORY 6 Physical/ Monetary Assistance	- Money raised through various projects completed by BACAP for training, education, and restoration	-Acid rain remediation -Coastal action program restores rivers -Shale pit restoration -Lunenburg healthy harbour project -Beech sweeps and clean-ups -Removal of fish passage obstacles and restore spawning areas	- Formal solid waste education program was developed and delivered to schools, businesses and other community groups	- Board meetings scheduled the third Thursday of every month at 700 pm at the Town Hall and open to everyone interested in attending	- Site actively seeks funding all year round

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting	- Operational definition for sustainble industries identified in CEMP	- Native animal and plant species have been identified through surveys for various projects		- Literature and journal research carried out to understand the successes of other community projects	-Coordinator has been there 5 years
CATEGORY 2 Types of Media Involvement	- Clean boating, community coastal islands, Mushamush restoration			-Mercury found in loons -Youth conservation workshop	- Website updated at least twice a year
CATEGORY 3 Communication Enhancers	- ACAP community centre provides access to the World Wide Web	-Feedback via phone and email for native plant and animal sightings	-Attended coastal zone '94 conference in Halifax -Attended forest capital of Canada meeting in Bridgewater -Attended annual ACAP conference -Attended national habitat conference in New Brunswick	-Electronically network with other sites -Solid waste education -Presentation to coastal zone management class at St.Marys -20 schools received presentations on solid waste management -Students video offers solution to harbour wastes -Class undertakes project to beautify school yard	-Participated in EMAN conference on composting and waste management -Participated in sustainable communities conference -Attended workshop on approaching funding foundations
CATEGORY 4 Training, Monitoring, Evaluation, and Results		- Fish friends program in schools to raise and release fish in river		-Community gatherings organized to communicate successes	-Received internet training from Clean Nova Scotia Foundation -Professional biologists and botanists conduct research and show others how to properly conduct research
CATEGORY 5 Policies, Procedures, and By-laws		- Coastal Island conservation program and management plan		-CEMP available to download on the website	-Letters and telephone calls of concerns are raised at Board meetings - Minutes of Board meetings kept on file
CATEGORY 6 Physical/ Monetary Assistance		- Mushamush restoration		- Community resource centre enhanced annually	-BACAP to hold annual meeting in Mahone Bay

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Appendix 5i: Annapolis Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Agriculture -First nations involved in the inventory, monitoring and management of wetlands	-Coastal flooding mapping -Cultural and natural history mapping project -Living landscape map including forestry, agriculture, fishing activities	-Analysis of the 'soil and water assessment tool' (SWAT)	-Annapolis watershed pollution prevention centre -Development of the environmental science centre	
CATEGORY 2 Types of Media Involvement			-Published and distributed series of fact sheets on 'dry bogs'	-The River Guardian Program Newsletter -Published and distributed self-guided tour of the cultural and natural history of the western end of the Annapolis watershed	
CATEGORY 3 Communication Enhancers	-Annapolis Atmosfarm Outreach Pilot Project created to identify the greenhouse gases produced from agricultural practices	-GIS maps created and maintained of the water, sewer and storm sewers in Annapolis, Bridgetown, and Middleton	-Reports on water quality available to the public	-Fundy marine Ecosystem Science project (10 fact sheets)	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-River friendly farming project -Sustainability awareness project -Agricultural project wetland -Agricultural pollution prevention project		-Solomon Chute Brook sampled for fecal coliform counts -Operation SWIM (Sub-Watershed Investigative Monitoring) -non-point and point sources of fecal coliform bacteria contamination identified		
CATEGORY 5 Policies, Procedures, and By-laws				-Envirofun calender: educational collection of games, puzzles and mazes which area school children are using to teach their peers about the Annapolis watershed, its uniqueness and its environmental stresses	
CATEGORY 6 Physical/ Monetary Assistance	-River friendly farming restoration project		-Black River riparian stewardship demonstration project -Hedgegrow and riparian zone planting	-Environmental education fund: provide assistance to schools and community groups for their informal environmental education projects	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Annapolis Atmosfarm Outreach Pilot Project: visited dairy, beef horse operations	-Wing Greenwood Habitat Assessment - Fundy marine ecosystem science project		-Community based oil spill response planning	
CATEGORY 2 Types of Media Involvement	-Development of a website that can be given to farmers to help with the operating process of the farm			-Community-based oil spill response planning	-Listing of ongoing research and conservation projects/ programs on the website
CATEGORY 3 Communication Enhancers	-Meetings with farmers to discuss sustainability in agriculture -Sustainable forestry and agriculture programs		-Water friendly living program -Home owner outreach: householder offered confidential water tests, a subsidy to have their system inspected and pumped -Paradise tutored on bathroom habits -River project commands attention -Residential greenhouse gas audits -Water and energy conservation programs	-700 elementary students surveyed on how they would use the resources and on their future expectations -Over 300 members	
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Citizen- based phytoplankton monitoring -Pollution prevention audits conducted for businesses, institutions and households -Directory of individuals and companies with the expertise to conduct pollution prevention audits for businesses, institutions and households		-Success of frog lands stewardship evaluated on many fronts: the success of achieving the deliverables as delineated under each of the three objectives, surveys and interviews with participating community organizations/ schools
CATEGORY 5 Policies, Procedures and By-laws					
CATEGORY 6 Physical/ Monetary Assistance		-Annapolis fish habitat restoration -Gotta have a home project for loon habitat enhancement -Frog lands stewardship project -Round Hill River fish habitat restoration -Aquatic habitat restoration -Building and installing bird nests	-Support for tire recycling -Divert fruit and vegetable processing by-products from landfills and convert them to animal feed -Ground level ozone monitoring		

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting					-Site coordinator has been there >5 years
CATEGORY 2 Types of Media Involvement				-Brochure detailing Annapolis River Guardians and their accomplishments	
CATEGORY 3 Communication Enhancers				-Sustainability awareness project: promote public awareness of successes in the Annapolis watershed in achieving environmental sustainability -Report on water quality in watershed	-Environmental Educators Conference -Planning for sustainable communities -Bay of Fundy Ecosystem Project -Attended soil and nutrient management course -Farm water seminar -Environmental monitoring workshop -Community based ecosystem initiatives workshop
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Eco-tourism coordinator -Salmon Chute Trail examined vegetation				-Annapolis river fish habitat training program
CATEGORY 5 Policies, Procedures and By-laws					-Received Canada Environment Award
CATEGORY 6 Physical/ Monetary Assistance	-Atmosfarm project	-Constructed 100 hectares of wetland	-Decrease in household water consumption -New water conservation proposal which requested i) a water conservation review, ii) a check for low-flow facets, showerheads and toilets, and iii) managing accommodations for other water saving methods		

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Appendix 5j: Saint John Evaluation Results

Criteria and Indicators to Evaluate Program Success					
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-New Brunswick's principal sea port -Logging -Transportation -Review of the historical uses of the area and recording folklore -Seniors contribute environmental folklore on Marsh Creek	-Infrastructure forum -Habitat assessment of the middle section of Marsh Creek	-Each summer scouts, neighborhood associations and volunteers monitor changes in water quality	-Ecosystem resource centre -Pollution prevention resource centre -Library for general environmental information	-CEMP
CATEGORY 2 Types of Media Involvement	-Efforts to clean up Marsh Creek to restore fishing activity			-Provided information and materials (reports, data cards) to organizations in New Brunswick	-Liquid waste exchange project -Smog prediction knowledge and awareness initiative
CATEGORY 3 Communication Enhancers		-Point and non point sources of pollution mapped	-Water quality monitoring data graphs available on the web site -Marsh creek sweep	-Public forum on oil spills prevention and response -Coastal zone management forum -CEMP workshop -Interpretive beach walks -Local day camps	-Volunteer picnic and awards
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Environmental economics study		-Harbour study -22 sites monitored weekly for pH, salinity, dissolved O2, turbidity, temp. and fecal coliforms -Water quality fair '95 -Quantified the extent and types of chemical and physical contamination of the Harbour		-Environmental monitoring
CATEGORY 5 Policies, Procedures, and By-laws			-Environmental mayoral debate	-Agreements with schools on presentations about household hazardous waste reduction	
CATEGORY 6 Physical/ Monetary Assistance	-Assistance to encourage pollution prevention is provided via wage subsidies to participating members of the Industrial/ commercial and institutional sector to enable them to hire co-op students -Remedial options guidebook identifies technical, economic, regulatory, and best management practices	-Financial and socio-economic analysis of the benefits of improving the waste water treatment services as they influence water quality of the Saint John Harbour and its estuaries	-Beach sweep -Creek sweep		

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting		-Survey of the Benthic macroinvert's -Saint John food web study in relation to the movement and accumulation of toxins	-Letter sent requesting a water conservation strategy for the city	-Informative panel discussion on oil spill prevention and response	
CATEGORY 2 Types of Media Involvement					-Webpage contains many of ACAPSJ's reports as well as important local environmental information -Website lists and describes projects -Kids' activity page
CATEGORY 3 Communication Enhancers		-Electro-fishing conducted at 6 sites on Marsh Creek -Research on 'the health of harbour flatfish' -Research on 'Saint John Harbour intertidal food web' -2 laboratory experiments were conducted: lethal and sub lethal efforts of soluble fractions of Marsh Creek sediment on the Miramichi		-Folklore collected from area residents	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Opportunity to educate body shops, paint contractors, paint suppliers and others of the changes that are occurring in their industry		-Flow monitoring of municipal outfalls, including quantity and quality		-Remedial action by pollution prevention
CATEGORY 5 Policies, Procedures, and By-laws					
CATEGORY 6 Physical/ Monetary Assistance		-Rockweed harvesting -Electro fishing to provide indication of diversity of fish found in Marsh Creek -Benthic macroinvertebrates sampled at various locations of Marsh creek	-Household hazardous waste reduction program -Materials exchange program		

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting					-Coordinator has been there >5 years
CATEGORY 2 Types of Media Involvement			-Conducted a water conservation program in cooperation with the City of Saint John	-'Paint swap huge success' -Beach sweep nets three tons of debris -Media provided extensive coverage of the Creek Sweep before, during, and after the event	-The website offers slide show presentation of Hazen Creek and Read Head Marsh
CATEGORY 3 Communication Enhancers				-Volunteer connection page	-Ocean dumping conference -Air quality conference -ACAP seminar on financing alternatives for municipal wastewater treatment facilities -Envirotec conference -Oil spills conference
CATEGORY 4 Training, Monitoring, Evaluation, and Results				-Follow-up surveys and outcome measurements as well as success stories available at the resource centre	-Volunteers are trained in water sampling
CATEGORY 5 Policies, Procedures, and By-laws				-The CEMP is available to download on website	
CATEGORY 6 Physical/ Monetary Assistance		-Man-made marsh treats polluted run off from the McAllister Place Parking lot -Nearly 20 NB beaches cleaned up over the weekend -Volunteers find less trash in creeks this year			-Annual general meeting advertisement with guest speaker

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Appendix 5k: Miramichi Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Pulp and paper -Salmon and trout fishery -Mining - Local Knowledge and Traditional Ecological Knowledge involved in resource inventory analysis	-Community and land use mapping -Various fish habitats mapped	-Review discharge monitoring reports to ensure that all environmental standards are being met -Contingency plans identified and documented to handle lower water quality levels		-CEMP
CATEGORY 2 Types of Media Involvement			-General water chemistry analysis of large quantities of water (2000 gal) -The importance of fish habitat -Newspaper article on the importance of natural buffers to reduce erosion	-Information packages developed on various environmental issues (water quality, fish habitat protection, pollution sources) for distribution of community businesses, schools, organizations	-River survey set for area to determine community's knowledge of environmental and pollution issues regarding the river (media not always informed but sometimes)
CATEGORY 3 Communication Enhancers	-Contact number and information on the web about the initiative		-Water quality levels recorded in a database -Water quality results posted where the community can see/ has access to see -Obtain and analyze reports on wastewater discharge	-Hosted the 2000 climate change workshop -Managed a science horizon and science linkage program -Environmental workshop -Miramichi environmental science workshop -2 one day workshops with the science community	-Formal membership system implemented to identify and recognize those involved
CATEGORY 4 Training, Monitoring, Evaluation, and Results		-Ongoing monitoring of the Napan River sub-watershed	-Freshwater tributaries of the Miramichi monitored -Need for water treatment remains urgent -Miramichi River management pilot project -MREAC monitors problem of siltation on Miramichi-erosion of fine clay and soils threatens grounds where fish spawn -Study impacts of non-point sources of pollution on water quality in the region	-River/air watch -Swim watch	
CATEGORY 5 Policies, Procedures, and By-laws			-Agreements drafted to invest more money in waste water treatment centres	- Informal agreements made with local schools for annual visits and presentations	-Policies enacted to encourage implementation of the initiative
CATEGORY 6 Physical/ Monetary Assistance	- Physical works time directed, as needed, at restoring and/or maintaining traditional industries	-Monitor and partner with the Catamaran Brook project on the impacts of clear cutting	-Addressed ongoing siltation problems at Cave-in and Johnson's Pit -Volunteer boat patrols (river watch) to encourage better stewardship, report environmental problems, and actively monitor water quality	-Site has provided assistance to school children and university students on projects	-Rain dates are pre-established for all outdoor projects in case of inclement weather

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting	-Site visits conducted to assess the level of sustainability of existing livelihoods and suggest ways of attaining greater sustainability	- Fish and wildlife areas in need of restoration and protection have been identified	- Sources of high pollution within homes and industry have been identified	-Publicized a 1-800 number for emergency spill phone line	-A new set of goals and deliverables is established each year
CATEGORY 2 Types of Media Involvement			-Promote better maintanence of on-site sewage treatment systems -'Pollution problem:home sewage a threat to river'	-Composting -Erosion control -Fish habitat protection -River watch -MREAC study looking at rural septic systems -Miramichi swim watch	
CATEGORY 3 Communication Enhancers	-Open houses and seminars on rural wastewater management	-50 salmon fish tissue and blood and plasma samples were collected and disected for biological and chemical analysis mercury monitoring project in stripped bass	-Establishment of GREEN TEAM for pollution prevention in the home -Information sheets on the proper application of chemicals -Proper wood burning techniques	-Partnered with DFO and Eel Ground First Nation in a variety of scientific research aimed at habitat restoration/ preservation of the Stripped Bass on the Northwest Miramichi -Awareness of environmental issues survey -Pilot rural wastewater improvement study in '93 surveyed 600 homes regarding type of sewage system in operation and maintenance history	-Establishment of a 1-800 # available to the general public which will deal specifically with pollution and environmental concerns relating to the Miramichi River -Provision of regular news releases to report the number and nature of incoming calls
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Review of Certificates of Approval for local industry	-Establishment of community based monitoring program to help communities track trends and identify how their actions affect the local environment	-When possible MREAC has evaluated the outcome of projects it has undertaken
CATEGORY 5 Policies, Procedures, and By-laws	- Pollution prevention pacts made with manufacturing industry		-Blackwater discharge and sampling requirements	-Most of MREAC's decisions are made through a multi stakeholder process	
CATEGORY 6 Physical/ Monetary Assistance		-Assisted with captive salmon stock at the South Esk fish hatchery -Fish habitat protection	-MREAC offers composting tips -AIRWatch	- Board of Directors meetings are held at a time to include the most public	- Funding is sought all year round

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed deci making
CATEGORY 1 Identifying, Defining, and Documenting	-Aquatic biomonitoting	- Native animal and plant species identified in the area			-Coordinator has b years
CATEGORY 2 Types of Media Involvement	- Media attention directed at new sustainable industries			-Environmental survey results posted -Projects summarized in the local paper	
CATEGORY 3 Communication Enhancers					-Hold monthly mee wednesday of each -Workshop on shal science, communit involvement and la ecosystem issues -Annual science da workshops
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Some water treatment centres audited for performance		-Pollution preventi training -GIS training for A personnel
CATEGORY 5 Policies, Procedures, and By-laws			-Serve as an advisory committee for municipalities/ industries in community organizations from promotion of sustainable development of land use	-Over 150 copies of the CEMP sent out	- All of the minute of Directors meeti on file - Letters and phon concern are addres Board of Directors
CATEGORY 6 Physical/ Monetary Assistance	- Assistance provided to encourage environmental management plans/strategies for new sustainable industries	-International twinning project in Russia			-MREAC public m sewage assessmen -MREAC annual n public forum adver

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Appendix 5l: Eastern Charlotte Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Once incredibly rich fishing ground: herring, scallop, lobster and groundfish resources -Marine aquaculture -Fish processing -Coastal mapping involving people by utilizing their knowledge of the area	-Developed a watershed atlas that contains thematic maps on: water quality locations and data, environmentally significant areas, bacteria monitoring sites and data, benthic monitoring sites and data, unique fish habitat areas, effluent sources, industry locations, contingency planning and natural resources -Passamaquoddy Bay Coastal Resource mapping, partners with ACAP St.Croix and Saint John	-Water samples analyzed for nutrient level and fecal coliform bacteria -Water quality monitoring parameters: conductivity, turbidity dissolved oxygen, pH, air and water temp at point sampling, water levels field observation	-Air photo reference library -Environmental resource library - Environmental resource centre -Educational displays on EC watershed area, hydrologic cycle, water resource conservation, life cycles of flora and fauna, use of topo maps and air photos, watershed management -Resource and drop in centre	-CEMP completed in 1998
CATEGORY 2 Types of Media Involvement		-Aerial photo library/topo maps and GIS -A series of hardcopy and digital maps on physical features		-Green Pin Awareness campaign -Community conference about the future of Eastern Charlotte -Naturalist presentation by St.Croix and Eastern Charlotte -Slide presentation on ECW organization -Environmental group asks for public comment on water classification-project to help protect Charlotte county rivers	-Bacteria monitored on Croix -Coastal Chronicle
CATEGORY 3 Communication Enhancers	-Contact email addresses and telephone numbers on the website	-Community resource mapping project incorporates layered thematic data including soils, forestry, water quality, geology, fisheries, stream assessments -Air photo reference library		-Forum at the St.George community Centre on environmental management -Implemented public information/ education seminars	-ECW community appreciation day
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Bi-weekly sampling -Water classification guidebook created		
CATEGORY 5 Policies, Procedures, and By-laws				-Turtle educational presentation (k-3 -Organize educational tours to local industries -Sky watchers educational program	
CATEGORY 6 Physical/ Monetary Assistance			-Creation of buffer strips -Beach sweeps -Swim watch	-Educational tours of local industry -ECW organized an environmental camp	

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	**Indicator # 2 Restoring and protecting fish and wildlife habitat**	**Indicator # 2 pollution prevention within homes and industry**	**Indicator # 2 Creating opportunities for meaningful citizen involvement**	**Indicator # 2 Securing a role in implementation and evaluation**
CATEGORY 1 Identifying, Defining, and Documenting	-Resource valuation projects: determine viability and feasibility of harvesting soft shell clam in the Upper L'Etang -Rockweed harvesting impact study -Shoreline sanitary survey indicating sources of contaminating discharges	-River classification program		-Oil spill contingency planning -Oil spill awareness -Mock oil spill disaster	
CATEGORY 2 Types of Media Involvement			-Kits developed for wastewater management	-Quarterly release newsletter -Eastern Charlotte waterways video -Charlotte mapping project under way	-Newsletter subscription available from the webpage -Website provides descriptions of all ongoing projects
CATEGORY 3 Communication Enhancers			-2 employees travel door to door providing septic tank maintenance folders	-Volunteer database for emergency response -Eastern Char. Waterways circulates questionnaire	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Public education/information seminars				-Cost/benefit study of reopening the shellfish bed
CATEGORY 5 Policies, Procedures, and By-laws					
CATEGORY 6 Physical/ Monetary Assistance	-Salmon released at Pulp Mill -Chamcook clammers dig opening	-Shellfish resource valuation and restoration program (cost/ benefit study) -Creation of conservation areas (land and aquatic) -'School kids help release salmon parr in Magaguadavic'			-Funding is sought all year round from businesses, government, local citizens, and organizations

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Tree swallow nesting box survey			
CATEGORY 2 Types of Media Involvement				-L'Etang Clam Harvest may resume -'Beech sweep nets all kinds of junk'	
CATEGORY 3 Communication Enhancers				-Attended ACAP conference in Humber Arm	-Oil spill awareness workshop -Conference on sustainable development at U of New Brunswick -Fisheries conference at DFO -Oil spill awareness conference -Website lists all relevant publications
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Cost/benefit study of opening shellfish bed	–Several marine species, some of which have not been seen in 12-15 years are starting to return to the Letang Estuary			-Training packages and workshops for volunteers -Resource valuation guidebook -Training and maintaining a staff member dedicated to bacteria monitoring of coastal waters -Attended conference in Pennfield NB about sea lice problem in aquaculture industry
CATEGORY 5 Policies, Procedures, and By-laws					
CATEGORY 6 Physical/ Monetary Assistance	-Recreational fisheries development workshop -Charlotte county shellfish workshop	-Rockweed harvesting			

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Appendix 5m: St. Croix Estuary Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Agriculture -Champlain Industrial Park (manufacturing, transportation and service industries compatible with marine shipping) -Scallop, lobster, clam, urchin and herring fishery -Team of people collected data for coastal mapping project by interviewing the community	-Assessment of area risk to sea level rise -Types of resource data collected include shellfish, marine, estuarine, aquatic plants, cultural and tourism resources, protected lands and wildlife	-Water Quality Field Program Report -Freshwater and Estuarine Water Quality Monitoring -Oak Bay Water Overlay Monitoring -Storm sewer water analysis non-point pollution study	-Community access centre	-CEMP
CATEGORY 2 Types of Media Involvement		-A series of community meetings were planned to encourage community input into the maps	-Water conservation: every drop counts pamphlets	-Smog prediction and environmental awareness	-SCEP NEWS
CATEGORY 3 Communication Enhancers	-Contact names, telephone number, and email address on website			-Public forum on a proposed quarry project in Bayside -Sponsored a night with environmental educator Dick Wheeler -Areas at risk to sea level rise	
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Environmental impacts of salmon aquaculture in Passamaquoddy Bay assessed -The physical, chemical and biological effects of scallop and urchin dragging -Environmental impacts assessed of proposed quarry at Bayside -The feasibility of establishing an underwater park studied		-Weekly monitoring of 37 fresh water and estuarine		
CATEGORY 5 Policies, Procedures, and By-laws			-Development of non-point source pollution strategy	-Urban runoff study with local high schools -Estuary educational tours and field days -Program for Estuary Steward Trainees	
CATEGORY 6 Physical/ Monetary Assistance	-Three day clam stock assessment program at two shellfish flats -Environmental impacts of scallop and urchin dragging studied -Construct pump-out stations for boat holding tanks		-Intense shoreline survey of streams, culverts in and around Chamcook Harbour -Oak Bay stream and water overlay monitoring -Algae watch -Foam watch	-Skywatchers educational program -High school students test water quality	-Acquired land and developed a park

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting		-3 winter bird surveys conducted at Todd's Point -Todd's Point initiative and inventory	-Septic systems study	-Oil spill contingency plans	
CATEGORY 2 Types of Media Involvement			-Industrial, commercial and institutional pollution prevention campaigns		-Webpage outlines SCEP's 50 actions -Outlines SCEP's projects
CATEGORY 3 Communication Enhancers		-Finfish and shellfish sampled for dioxins and furans	-Household hazardous waste collection days	-A database of over 125 stakeholder organizations -Local knowledge has provided info on bog berries, aboriginal burial grounds, eagle and osprey nesting sites, traditional ground locations for scallop lobster and groundfish	-Public meetings convened to discuss results of rockweed harvesting research results
CATEGORY 4 Training, Monitoring, Evaluation, and Results			-Sewage treatment plant monitoring		
CATEGORY 5 Policies, Procedures, and By-laws		-Site-specific terrestrial habitat protection strategy identified			
CATEGORY 6 Physical/ Monetary Assistance		-Oak Bay Clam Flat action project -Phytoplankton/ nutrient monitoring program/ shoreline sanitary survey -Raised funds to purchase property on the St.Croix river which became known as Whidden and Eleanor Ganong Nature Park -Beach sweeps	-Separation of storm and sanitary sewers in St.Stephen -Paint swap		-Annual St. Croix River Kayak and Canoe Run fund raising activity

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Tree swallow and loon surveys	-Water use auditing -Water Efficiency in St. Stephen: an audit of water uses		
CATEGORY 2 Types of Media Involvement				-Published results on the pilot rockweed harvest	-Website lists all of the publications
CATEGORY 3 Communication Enhancers					-St. Croix watershed forum -Rockweed conference -Presentation made to the Community Ecosystems Initiatives Workshop -Citizen's volunteer monitoring conference -Coastal Zone Canada Conference
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Environmental impacts of Salmon Aquaculture in Passarmaquoddy Bay -Integrated research program on rockweed		-Assess net losses in the water delivery system of St. Andrews prior to and after infrastructure upgrades -Consumption of municipal water rising in St. Stephen -Regular monitoring of 8 waste water treatment plants on the New Brunswick side of the estuary		-Volunteers trained in all applicable aspects of data collection -St. Croix estuary training course -Volunteers trained in water overlay sampling
CATEGORY 5 Policies, Procedures, and By-laws		-Group releases estuarine plan			
CATEGORY 6 Physical/ Monetary Assistance					

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Appendix 5n: Madawaska Evaluation Results

	Criteria and Indicators to Evaluate Program Success				
	Criterion 1 Sustainable Livelihoods	**Criterion 2** Natural Heritage	**Criterion 3** Water Quality	**Criterion 4** Responsible Stewardship	**Criterion 5** Ecosystem Planning
	Indicator #1 Restoring and Maintaining Traditional Industries	**Indicator # 1 Sensitivity mapping/resource inventory**	**Indicator # 1 Citizen-based water quality monitoring**	**Indicator # 1 Establishing environmental education activities**	**Indicator # 1 Commitment to implementing plans**
CATEGORY 1 Identifying, Defining, and Documenting	-Pulp mill industry	-Watershed mapping -Comprehensive inventory of study area with specific attention to natural and human heritage/ cultural resources tourism, recreation and infrastructure -Community land use planning	-Water level management projects -Citizen-based water quality monitoring Madawaska -Sediment quality studies -Classifying the water bodies according to water quality -Water quality/lab service in cooperation with university	-Cafe de l'Estacade was transformed into an information and interpretation centre downtown Edmundston -Use of linear park as a public education tool on eco-tourism, successes in creating nesting opportunities for local duck -Ecological awareness centre	-CEMP
CATEGORY 2 Types of Media Involvement				-Newsletter indicating who SARMLT is, what they do and contact numbers -Article on climate change and what the public can do to help (car pool, no idle)	-Environmental interpretation project
CATEGORY 3 Communication Enhancers			-Publish community water quality monitoring results	-Work with university on many projects -Open houses and fundraisers	
CATEGORY 4 Training, Monitoring, Evaluation, and Results					
CATEGORY 5 Policies, Procedures, and By-laws	-Promotion of ISO 14 000	-Revise fill regulations -Educational excursions for flora and fauna interpretation activities			
CATEGORY 6 Physical/ Monetary Assistance		-Restoring historical buildings along the waterways, build family picnic area, and assure the restoration and management of the hydrographic basin -Creation of heritage park	-Madawaska river clean up -River bank protection by combating erosion cleaning up and stabilizing the banks of the Madawaska -River/swim watch		

	Indicator # 2 Assisting existing livelihoods in becoming sustainable	Indicator # 2 Restoring and protecting fish and wildlife habitat	Indicator # 2 pollution prevention within homes and industry	Indicator # 2 Creating opportunities for meaningful citizen involvement	Indicator # 2 Securing a role in implementation and evaluation
CATEGORY 1 Identifying, Defining, and Documenting		-Wild stocks, coastal habitat being destroyed, claims report released by conservation council of NB -Observation posts for birds established along the Madawaska River -Installation of 105 interpretation posts	-Projects to preserve fragile habitats surrounded by industries		
CATEGORY 2 Types of Media Involvement			-Dissemination of information on all of the projects		-Website indicates all of the projects that the site has undertaken in a chronological order -Website provides a description of linear park and all of the activities offered along the trail
CATEGORY 3 Communication Enhancers			-Derelict vehicle removal program -Cave-in project	-Community land use planning	
CATEGORY 4 Training, Monitoring, Evaluation, and Results		-Wildlife population management plan			
CATEGORY 5 Policies, Procedures, and By-laws				-Citizens sign petition in favor of a cycling trail	
CATEGORY 6 Physical/ Monetary Assistance		-Bird nesting sites project -Fish habitat enhancement -Projects aimed at reaching a balanced fish population	-Waste stream management (industrial, municipal, rural and agricultural)		-Sold posters at 10$ to help raise money for Linear Park

	Indicator # 3 Introducing new sustainable industries	Indicator # 3 Enhancing Biodiversity	Indicator # 3 Full Value Water Pricing	Indicator # 3 Communicating Successes and best practices	Indicator # 3 Championing informed decision making
CATEGORY 1 Identifying, Defining, and Documenting		-Attempt to enhance ecosystem integrity -Maintain and improve population of flora and fauna -Projects to protect the lake from the invasion of zebra mussels			
CATEGORY 2 Types of Media Involvement				-Presentation of results from studies presented to public at conference	
CATEGORY 3 Communication Enhancers					-The website provides a link to the various newsletters that the site has published
CATEGORY 4 Training, Monitoring, Evaluation, and Results	-Development of Linear Park as an eco-tourism initiative				
CATEGORY 5 Policies, Procedures, and By-laws				-The CEMP is available to download on the website	
CATEGORY 6 Physical/ Monetary Assistance		-Linear park aids in the protection of the aquatic environment -Lectured on environmental and resource issues (i.e. efficiency, energy use, water quality) to local industries in the region	-Reintroduction of native species -Egg hatchery identification program	-Interprovincial cycling network	-Pamphlet indicating upcoming general meeting and encouraging participation -Advertised upcoming conference and invited public to talk about upcoming projects

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Appendix 6: Table of Obstacles as Identified in the Focus Group Sessions

OBSTACLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Management															
Trying to build consensus	✖														1
Short term thinking			✖	✖									✖		3
Keeping autonomy from government						✖									1
Name of organization													✖		1
Finding people to sit on the board				✖									✖		2
Getting Volunteers			✖												1
Participation of volunteers/ board members												✖			1
Keeping enthusiasm among board members	✖														1
Infrastructure already established	✖														1
Lack of regulatory powers									✖	✖	✖	✖		✖	5
Lack of high degree of corporate involvement									✖						1
Level of bureaucracy							✖								1
ownership of the site							✖								1
mandate is pulled by funding source										✖					1
Building trust among board members						✖									1
Understanding their role						✖									1
Lack of constant coordinator					✖			✖							2
Understanding what the site can and should be doing						✖									1
Internal identity crisis											✖				1
Not letting the process become too political	✖										✖				2
Monetary (Physical and Monetary Assistance)															
Federal dollars given on a per capita basis	✖														1
Economy of province	✖	✖													2
Spending elsewhere (environment not a priority)	✖														1
Minimal Funds	✖	✖	✖	✖	✖			✖	✖	✖	✖		✖	✖	11
Time and energy to get funding				✖	✖						✖		✖		4
Long term projects versus short term funds			✖	✖		✖			✖						4
Economic vulnerability of province				✖											1

Political (Policies, Regulations, and Bylaws)															
Support from municipal government	✖	✖							✖			✖			4
Gaining cooperation from 3 tiers of government	✖														1
Making the issue federal to increase political advocacy	✖														1
Government not knowing how to be partners						✖									1
Provincial/federal constraints							✖			✖					2
Governments not enforcing regulations												✖		✖	2
Media Involvement															
No store front therefore no identity								✖							1
Getting credit for projects								✖							1
Public thinks site is more powerful than it is										✖					1
Attaining credibility			✖	✖	✖	✖		✖	✖	✖	✖	✖	✖	✖	11
Fear/distrust from community				✖											1
Nobody reads the local paper													✖		1
Communication															
Distrust between players										✖					1
Cross border communication													✖		1
Working with the local community		✖													1
Identifying, Defining, and Documenting															
Size of Watershed											✖				1
Absence of true community							✖								1
Getting the community to change actions			✖	✖				✖				✖			4
Total	**11**	**5**	**7**	**9**	**4**	**7**	**4**	**6**	**6**	**7**	**8**	**9**	**9**	**4**	