Environment Canada Environnement Canada

Atlantic Ecosystem Initiatives

Year in Review 2009–2010

Canada

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Atlantic Ecosystem Initiatives – Year in Review 2009–2010
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About the Atlantic Ecosystem Initiatives Year in Review 2009–2010

Environment Canada's Atlantic Ecosystem Initiatives provides Grant and Contribution funding support through the Atlantic Coastal Action Program (ACAP), a unique community-based partnership program between Environment Canada and 16 multi-stakeholder community organizations in the four Atlantic provinces; and to regional coalitions whose work positively impacts larger ecosystems within the Gulf of Maine, the Southern Gulf of St. Lawrence and the Bay of Fundy.

The program supports initiatives that use local and regional expertise, and support people and organizations working in their own communities and regions to help build a better environment for Canadians.

This Year in Review demonstrates how the Atlantic Ecosystem Initiatives are achieving tangible environmental results for Canadians by delivering on Environment Canada's Strategic Outcomes.

Atlantic Coastal Action Program

ACAP is a unique community-based program initiated by Environment Canada in 1991 to help Atlantic Canadians restore and sustain local watersheds and adjacent coastal areas. There are currently 16 ACAP organizations in the four Atlantic provinces. Each one is an incorporated, non-profit organization that operates independently and is formally linked under the regional umbrella of ACAP. The work of ACAP organizations is made possible through project funding from a variety of sources including Environment Canada, with the majority of direct financial and in-kind support coming from other federal government departments, provincial and municipal governments, local businesses and community partners. Local communities also support individual ACAP organizations through substantive volunteer labour and in-kind contributions.

ACAP recognizes that local organizations are the most effective champions to achieve environmental sustainability in their own communities. By empowering communities and taking on a holistic approach towards protecting and conserving the environment, ACAP organizations and their partners have achieved numerous successes.

Delivering on Environment Canada's Strategic Outcomes

The work of the 16 ACAP organizations produces results that deliver on Environment Canada's Strategic Outcomes. Each year the organizations submit an annual work plan that is designed to meet the collective objectives of each ACAP organization and the priorities of Environment Canada. As outlined in the Departmental Performance Reports and the Reports on Plans and Priorities, these include:

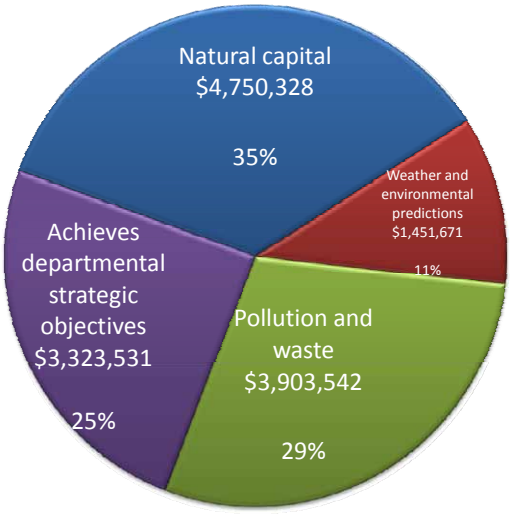
1. Canada's natural capital is restored, conserved and enhanced.
2. Weather and environmental predictions and services reduce risks and contribute to the well-being of Canadians.
3. Canadians and their environment are protected from the effects of pollution and waste.

Other activities contribute to achieving departmental strategic objectives.

ACAP FACT

In the 2009–2010 fiscal year, 64 projects with a total value of more than $5,350,000 were carried out.

Total In-kind and Cash Contributions per Strategic Outcomes



"Canada's Natural Capital Is Restored, Conserved and Enhanced"

Out of a total of 54 ACAP projects, 52 were linked to this strategic outcome, which deals with water resources, biodiversity and ecosystems. There are currently more than 15 active monitoring programs in ACAP communities throughout the Atlantic region. While water quality monitoring is the most prevalent monitoring activity, other efforts focus on water quantity, pollution prevention and ecosystem health (including natural life biodiversity). Volunteer time from many sectors, totalling 23 400 hours, was dedicated to the achievement of project objectives.

The table below shows all projects directly linked to this strategic outcome. SL denotes Science Linkages projects.

New Brunswick	
ACAP Saint John	**Miramichi River Environmental Assessment Committee**
Advancing Sustainable Development Priorities in Saint John, New Brunswick	Environmental Monitoring and Research
Biophysical Assessment of Wetlands in an Industrial City (SL)	Greater Ecosystem Initiatives
Pollution Mitigation in Saint John, New Brunswick	Miramichi Status and Trends Reporting (SL)
Eastern Charlotte Waterways	Watershed and Habitat Management
Integrated Coastal Management and Stewardship Program (SL)	**Quoddy Futures Foundation**
Lake Utopia Riparian Land Use Survey and Landowner Education	Annual Monitoring and Remediation (SL)
Municipal Green Plan	Quoddy Ecosystem Initiative Resource Inventory – Phase II (SL)
Partnership for Environmental Education Phase 2	**Société d'aménagement de la rivière Madawaska et du lac Témiscouata**
Recycling of Computer Waste in Southwestern N.B. – Bridging Project	Classification des cours d'eau du bassin hydrographique des lacs Baker, Caron et Unique versus les cyanobactéries
	Collaboration environnementale par le partenariat et l'éducation
	Protection des écosystèmes de notre bassin versant

ACAP FACT

The total value of Environment Canada's contribution to projects in 2009–2010 was $1.3 million.

Newfoundland and Labrador

Central Labrador Environmental Action Network
- Development of a Comprehensive Environmental Management Plan

Humber Arm Environmental Association
- Economic Benefit Study
- Guidebook for Coastal Communities
- Oil and Surface Pollutant Modelling (SL)
- Provincial Forum on Municipal Wastewater Effluents
- Student-based Marine Monitoring

Labrador Southeast Coastal Action Program
- Development of a Comprehensive Environmental Management Plan

Northeast Avalon ACAP
- Cyanobacteria Research in Cochrane to Topsail Pond Watershed (SL)
- Provincial Forum on Municipal Wastewater Effluents
- Stormwater Retention Mapping Study
- Watershed Action Plan

Nova Scotia

ACAP Cape Breton
- Freshwater Ecosystem Monitoring in Eastern Cape Breton Island (SL)
- Reclaimed Desired Plan Communities for Former Mining Operations
- Stream Restoration of Stewarts Brook

Bluenose Coastal Action Foundation
- Environmental Education through Geocaching
- Gold River Project
- LaHave Water Rescue Project (SL)
- Mushamush River Watershed Management Plan
- Roseate Tern Recovery Project

Clean Annapolis River Project
- Annapolis Habitat Enhancement Project
- Annapolis Integrated Watershed Management Project
- Building Aquatic Science of the Annapolis Watershed (SL)

Pictou Harbour Environmental Protection Project
- Capacity Building for Community Sustainability Project
- Valuing Ecological Goods and Services in the Pictou Harbour Watershed Project

Sable Island Preservation Trust
- Conservation and Protection of Sable Island's Tern Colonies (SL)
- Field-Testing of Webcam Remote
- Provide an ESRI-MAC GIS Facility as a Conservation Management Tool for Sable Island

Prince Edward Island

Bedeque Bay Environmental Management Association
- Energy Conservation and CO_2 Emissions Reduction in the Bedeque Bay Watershed
- Evaluation of a Best Management Practice for Reducing Risk from Sprayer Track Rows in Potato Production (SL)
- Monitoring, Measuring and Enhancing Biodiversity in the Bedeque Bay Watershed
- Water Quality and Quantity Protection, Education and Monitoring in the Bedeque Bay Watershed

Southeast Environmental Association
- Building Green Tourism in Eastern Prince Edward Island
- Guiding the Community to Environmental Health
- Helping Farmers Take Charge of Greenhouse Gas Emissions; A Reduction Strategy
- Montague Nutrient Study – The Connection Phase (SL)

Monitoring, Measuring and Enhancing Biodiversity in the Bedeque Bay Watershed

Bedeque Bay Environmental Management Association (BBEMA),
Prince Edward Island

1) Community-based Aquatic Habitat Monitoring and Education

Prince Edward Island enjoys a long tradition of citizen involvement in ecological monitoring activities. BBEMA successfully conducted a number of ecology monitoring, research and education programs with local community groups. In 2009–2010, BBEMA began working with the community of Lennox Island, a Mi'kmaq reserve located on the north shore of the island, in the Malpeque Bay. Since Lennox Island does not currently have a community-based watershed group, BBEMA will work with both the Lennox Island Band Council and the Lennox Island Aboriginal Ecotourism Centre on an ongoing basis to support and guide their environmental education and monitoring efforts. As a first step, BBEMA met with various members of the Mi'kmaq Confederacy of Prince Edward Island to identify important cultural connections with their water education materials. They also identified Mi'kmaq heritage adaptations for incorporating a fish habitat program into upcoming workshops and activities. This will help the Confederacy implement culturally relevant and accurate water and fish habitat monitoring protocols.

2) Freshwater Macro-invertebrate Biodiversity – Monitoring and Education

BBEMA continues to work with local school groups to conduct macro-invertebrate sampling, identification and analysis within local streams. The data collected provide clues to the overall health and biodiversity of each river/stream study site. At local stream test sites within the watershed, 140 students collected aquatic insect samples. BBEMA also taught students how to conduct biodiversity health assessments within freshwater ponds at the Maple Plains demonstration site. These water-based ecology tours allow BBEMA to discuss the importance of biodiversity within this agricultural watershed.

3) Saltwater Biodiversity Monitoring and Education

In partnership with Fisheries and Oceans Canada and the Southern Gulf of St. Lawrence Coalition on Sustainability, BBEMA continued its successful biodiversity monitoring program in the coastal zone. This year, BBEMA was instrumental in hosting training and information sessions. Subsequent to these sessions, the Kensington North Watershed Group in partnership with the Trout River Watershed Association and the Mi'kmaq Confederacy of P.E.I. (Lennox Island Reserve) joined forces to undertake the 2009 Community Aquatic Monitoring Program sampling of the vast Malpeque Bay Estuary.

4) Enhancing Biodiversity Through Tree and Shrub Planting in the BBEMA Watershed

BBEMA worked with the South Shore Tourism Association to create, adopt and implement Green Space Biodiversity Enhancement Plans for 10 local tourism facilities. Each plan focused on providing habitat for natural wildlife, feeding and staging areas for wild birds or protecting waterways on or adjacent to lands through the enhancement of hedgerows and riparian zones. The plans include recommendations for ongoing maintenance and future planting and/or enhancement guidelines. In addition, BBEMA will continue its partnership with the landowners to maintain, and expand if desired, these plans.

ACAP FACT

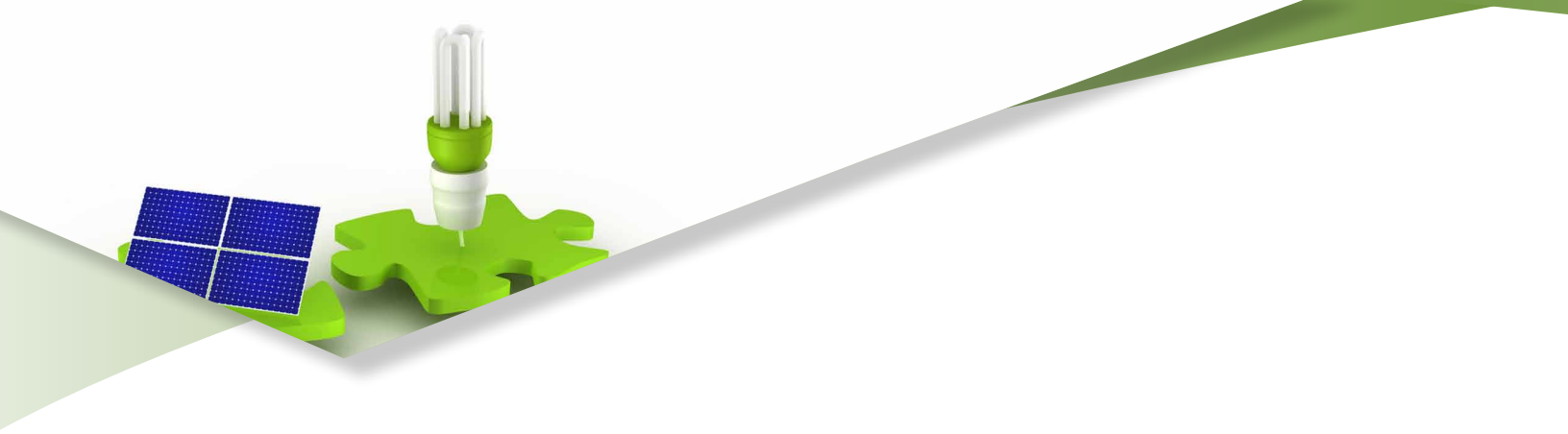
Throughout Atlantic Canada, a total of more than 520 750 hectares of land and 186 kilometres of shoreline were improved, created, restored, preserved or rehabilitated.

"Weather and Environmental Predictions and Services Reduce Risks and Contribute to the Well-Being of Canadians"

There were 14 projects from 8 ACAP organizations linked to this strategic outcome, which deals with adaptation and risk mitigation of changing weather, water and climate conditions. Project activities included education and engagement, reduction of pollution from transportation vehicles, energy conservation and research on ecosystem health. Volunteer time from many sectors, amounting to 7800 hours, was dedicated to the achievement of project objectives.

The table below shows all projects directly linked to this strategic outcome. SL denotes Science Linkages projects.

New Brunswick	
Miramichi River Environmental Assessment Committee Environmental Monitoring and Research Miramichi Status and Trends Reporting (SL) Watershed and Habitat Management	**Quoddy Futures Foundation** Annual Monitoring and Remediation (SL) Quoddy Ecosystem Initiative Resource Inventory – Phase II (SL)
Newfoundland and Labrador	
Central Labrador Environmental Action Network Development of a Comprehensive Environmental Management Plan	**Humber Arm Environmental Association** Oil and Surface Pollutant Modelling (SL) Student-based Marine Monitoring **Northeast Avalon ACAP** Watershed Action Plan
Nova Scotia	
ACAP Cape Breton Cape Breton Climate Change Education and Awareness Program **Clean Annapolis River Project** Annapolis Habitat Enhancement Project Annapolis Integrated Watershed Management Project	**Pictou Harbour Environmental Protection Project** Capacity Building for Community Sustainability Project Valuing Ecological Goods and Services in the Pictou Harbour Watershed Project



Cape Breton Climate Change Education and Awareness Program

ACAP Cape Breton, Nova Scotia

The Cape Breton Climate Change Education and Awareness Program was an education-based project designed to improve Cape Breton residents' knowledge about climate change. This program actively engaged residents to reduce their carbon footprint through a variety of education and outreach activities.

- In 2009–2010, ACAP Cape Breton delivered the ecoENERGY Retrofit – Homes energy evaluation service to 40 homeowners. The organization was awarded licence by Natural Resources Canada to deliver this important service to households across Cape Breton. Through this and other energy efficiency programs, ACAP Cape Breton works to lower greenhouse gas emissions. This year's efforts resulted in a 20-tonne reduction in pollutant emissions.
- ACAP Cape Breton welcomed approximately 500 people to its second annual Eco Expo in late October. Modelled after home and craft shows, the Eco Expo showcased the latest trends in environmental products, services and information under one roof. A main component of the Eco Expo was the "Climate Change Corner," which provided information about climate change in Atlantic Canada and the impacts of climate change on the Earth.
- ACAP Cape Breton welcomed 125 attendees to Cape Breton's first Climate Change Conference at the Inverary Resort, Baddeck, in November 2009. The goal of the conference was to raise awareness of the issue of climate change and its impacts on Cape Breton Island.
- ACAP Cape Breton's Centre for Sustainable Communities features a display on Climate Change. As a primary source for environmental information in Cape Breton, the traffic in the centre is high, with approximately 1000 people visiting in just one year.

ACAP Cape Breton developed and delivered a variety of community presentations. To encourage attendance, participants received a free CFL bulb and a tree seedling. Two major themes were:

- **Climate Change:** designing and delivering presentations for all school grade levels, reaching approximately 550 students and teachers. Additionally, ACAP Cape Breton's Executive Director, a certified Al Gore presenter, delivered "An Inconvenient Truth" presentation to approximately 300 people.
- **Waste and Energy Reduction:** delivered community presentations to approximately 100 people that covered the topics of energy reduction, waste reduction, anti-idling, water conservation and active transportation.

To measure the effectiveness of this initiative, ACAP Cape Breton surveyed 100 residents about their personal methods of evaluating and reducing their own carbon footprint. The commitments were vast and varied, including reduced idling, better recycling, planting trees, carpooling, more energy efficient households, hosting eco-friendly parties, active transportation and eating local food. An impressive 75% of the participants responded that they were still carrying out their commitments six months after they were made. The survey results are a clear testament to the effectiveness and success of ACAP Cape Breton's outreach efforts.

ACAP FACT

Over 2500 citizens participated in energy conservation and waste reduction programs, resulting in more than 1500 kWh of energy saved.

"Canadians and Their Environment Are Protected from the Effects of Pollution and Waste"

There were 41 projects from 15 ACAP organizations linked to this strategic outcome, which deals with environmental and air pollutants, greenhouse gases and emissions, and risk assessment/management. Project activities included pollution mitigation, environmental monitoring and sustainable use of resources. Over 20 000 hours of volunteer time from many sectors (over a third from local individuals) were dedicated to the achievement of project objectives.

The table below shows all projects directly linked to this strategic outcome. SL denotes Science Linkages projects.

New Brunswick

ACAP Saint John
- Advancing Sustainable Development Priorities in Saint John, New Brunswick
- Biophysical Assessment of Wetlands in an Industrial City (SL)
- Pollution Mitigation in Saint John, New Brunswick

Eastern Charlotte Waterways
- Lake Utopia Riparian Land Use Survey and Landowner Education
- Municipal Green Plan
- Partnership for Environmental Education Phase 2
- Recycling of Computer Waste in Southwestern N.B. – Bridging Project

Miramichi River Environmental Assessment Committee
- Environmental Monitoring and Research
- Miramichi Status and Trends Reporting (SL)
- Watershed and Habitat Management

Quoddy Futures Foundation
- Annual Monitoring and Remediation (SL)
- Quoddy Ecosystem Initiative Resource Inventory – Phase II (SL)

Société d'aménagement de la rivière Madawaska et du lac Témiscouata
- Classification des cours d'eau du bassin hydrographique des lacs Baker, Caron et Unique versus les cyanobactéries

Newfoundland and Labrador

Central Labrador Environmental Action Network
- Development of a Comprehensive Environmental Management Plan

Humber Arm Environmental Association
- Economic Benefit Study
- Oil and Surface Pollutant Modelling (SL)
- Provincial Forum on Municipal Wastewater Effluents
- Student-based Marine Monitoring

Labrador Southeast Coastal Action Program
- Development of a Comprehensive Environmental Management Plan

Northeast Avalon ACAP
- Provincial Forum on Municipal Wastewater Effluents
- Watershed Action Plan

Nova Scotia

ACAP Cape Breton
- Reclaimed Desired Plan Communities for Former Mining Operations
- Stream Restoration of Stewarts Brook

Bluenose Coastal Action Foundation
- Environmental Education through Geocaching
- Gold River Project
- LaHave Water Rescue Project (SL)
- Mushamush River Watershed Management Plan
- Roseate Tern Recovery Project
- Sustainable Bridgewater

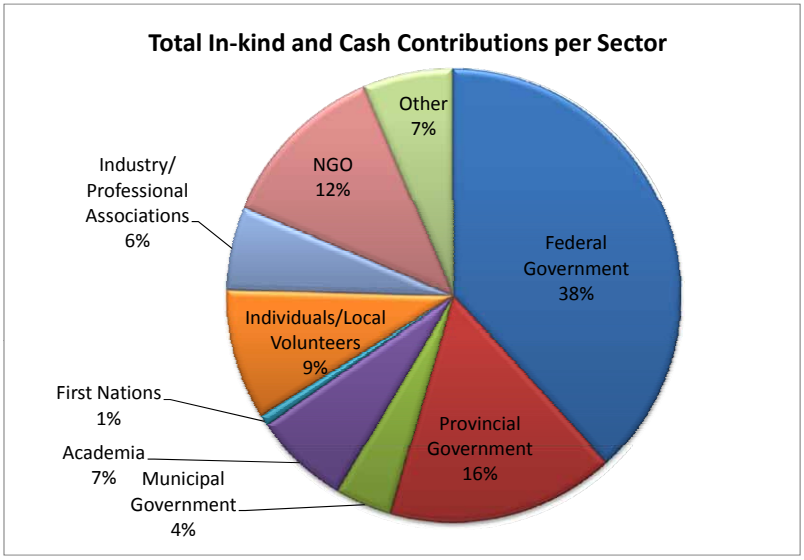
Clean Annapolis River Project
- Annapolis Habitat Enhancement Project
- Annapolis Integrated Watershed Management Project

Pictou Harbour Environmental Protection Project
- Capacity Building for Community Sustainability Project
- Valuing Ecological Goods and Services in the Pictou Harbour Watershed Project

Prince Edward Island

Bedeque Bay Environmental Management Association
- Energy Conservation and CO_2 Emissions Reduction in the Bedeque Bay Watershed
- Evaluation of a Best Management Practice for Reducing Risk from Sprayer Track Rows in Potato Production (SL)
- Monitoring, Measuring and Enhancing Biodiversity in the Bedeque Bay Watershed
- Water Quality and Quantity Protection, Education and Monitoring in the Bedeque Bay Watershed

Southeast Environmental Association
- Building Green Tourism in Eastern Prince Edward Island
- Guiding the Community to Environmental Health
- Helping Farmers Take Charge of Greenhouse Gas Emissions; A Reduction Strategy
- Montague Nutrient Study – The Connection Phase (SL)



Pollution Mitigation: Reducing the Effects of Pollution and Waste in Saint John, New Brunswick

ACAP Saint John, New Brunswick

ACAP Saint John has organized and hosted beach sweeps for almost a decade because it recognized that these events were effective in reducing debris on targeted beaches. However, organizers identified the need for supporting and nurturing community ownership of the problems associated with littering and illegal dumping. As a result, the Green Network was formed in 2006. This energetic and increasingly popular network is a partnership between the City of Saint John Municipal Operations, ACAP Saint John, the Fundy Region Solid Waste Commission and the dedicated stakeholders of the Greater Saint John community. Each year, cleanup participants take note of the difference the Green Network makes in the community and are motivated to help. Since 2006, both the number of volunteers and cleanups have more than doubled.

The network's success lies in its ability to harness the energy of local volunteers actively involved in cleaning up their community. It supports the choice of cleanup locations, providing a knowledgeable coordinator and the necessary materials and resources, such as gloves, garbage bags and safety tips.

A sample of cleanups for Earth Day 2009:

- St. Malachy's High School – 21 devoted students removed 13 bags of debris, including a train brake.
- Forest Hills School – 300 students collected 8 large bags of garbage in just 1 hour. The debris consisted of chip bags, plastic bags, glass and plastic bottles, paper, and cardboard.
- Beaver Lake Fishing Club – 30 keen volunteers spent 5 hours picking up debris at this illegal dumpsite and collected 100 bags of garbage.

- Canaport LNG – the Greater Saint John community once again showed its support for protecting the local environment by participating in the 12th Marsh Creek Cleanup. The event was funded by Canaport LNG in partnership with ACAP Saint John's Green Network. A total of 211 volunteers participated, making it the largest cleanup to date. Two Waste Management dumpsters and a City of Saint John garbage truck could not hold all of the debris collected in just two hours. The City of Saint John Municipal Operations had to send extra trucks to collect the remaining debris. Approximately 7 tonnes of garbage was collected, including 92 shopping carts, 352 bags of garbage, 23 tires and approximately 1 tonne of construction debris.

Through the Green Network, ACAP Saint John successfully organized 37 community cleanups involving more than 2250 volunteers from a variety of local businesses, community groups and schools, with 23.8 tonnes of litter and debris removed from the local urban landscape.

Other Activities that Contribute to Achieving Departmental Strategic Objectives

There were 33 projects from 12 ACAP organizations linked to strategic objectives, such as economic analysis, stakeholder relations and communication. Project activities included partnership building, economic studies and working with other levels of government to develop environmental plans.

The table below shows all projects linked to strategic objectives. SL denotes Science Linkages projects.

New Brunswick

ACAP Saint John
- Advancing Sustainable Development Priorities in Saint John, New Brunswick
- Biophysical Assessment of Wetlands in an Industrial City (SL)
- Pollution Mitigation in Saint John, New Brunswick

Eastern Charlotte Waterways
- Integrated Coastal Management and Stewardship Program (SL)
- Municipal Green Plan
- Partnership for Environmental Education Phase 2
- Recycling of Computer Waste in Southwestern N.B. – Bridging Project

Miramichi River Environmental Assessment Committee
- Environmental Monitoring and Research
- Greater Ecosystem Initiatives
- Miramichi Status and Trends Reporting (SL)
- Watershed and Habitat Management

Quoddy Futures Foundation
- Annual Monitoring and Remediation (SL)
- Quoddy Ecosystem Initiative Resource Inventory – Phase II (SL)

Newfoundland and Labrador

Central Labrador Environmental Action Network
- Development of a Comprehensive Environmental Management Plan

Humber Arm Environmental Association
- Economic Benefit Study
- Guidebook for Coastal Communities
- Oil and Surface Pollutant Modelling (SL)
- Provincial Forum on Municipal Wastewater Effluents
- Student-based Marine Monitoring

Labrador Southeast Coastal Action Program
- Development of a Comprehensive Environmental Management Plan

Northeast Avalon ACAP
- Cyanobacteria Research in Cochrane to Topsail Pond Watershed (SL)
- Provincial Forum on Municipal Wastewater Effluents
- Stormwater Retention Mapping Study
- Watershed Action Plan

Nova Scotia

Bluenose Coastal Action Foundation
- Gold River Project
- LaHave Water Rescue Project (SL)
- Mushamush River Watershed Management Plan
- Roseate Tern Recovery Project
- Sustainable Bridgewater

Clean Annapolis River Project
- Annapolis Habitat Enhancement Project
- Annapolis Integrated Watershed Management Project

Pictou Harbour Environmental Protection Project
- Capacity Building for Community Sustainability Project
- Valuing Ecological Goods and Services in the Pictou Harbour Watershed Project

Prince Edward Island

Bedeque Bay Environmental Management Association
- Evaluation of a Best Management Practice for Reducing Risk from Sprayer Track Rows in Potato Production (SL)

Provincial Forum on Municipal Wastewater Effluents

Northeast Avalon ACAP and Humber Arm Environmental Association, Newfoundland and Labrador

In anticipation of Environment Canada's upcoming Municipal Wastewater Effluent (MWWE) regulations, two ACAP organizations in Newfoundland and Labrador worked closely with the Municipalities Newfoundland and Labrador (MNL) to deliver a municipal wastewater forum during their Fall Convention in Gander, N.L. The MNL was formed in early 1950 to represent the interests of municipal councils in the province working towards assisting communities achieve and sustain strong and effective local government, and thus improving the quality of life for all the people in Newfoundland and Labrador.

To begin the planning process, a survey was compiled and distributed to municipal representatives who attended a spring MNL event. Survey questions focused on determining the following:

- participants' knowledge of municipal wastewater requirements;
- participants' preparedness and/or existing capacity to implement wastewater treatment options;
- participants' level of interest in receiving information about technological options for their municipal needs; and
- the level of interest on domestic septic-system related issues.

The results from this survey were beneficial in preparing a practical and useful approach to the provincial wastewater forum. One hundred promotional brochures were developed and distributed to municipal representatives.

The Provincial Waste Water Forum was well attended by approximately 300 municipal staff and councillors from communities throughout Newfoundland and Labrador. Topics discussed included an overview of the new federal regulatory approaches to managing

municipal wastewater effluents, funding opportunities for municipalities requiring infrastructure expenditures to comply with the new regulations, as well as presentations on wastewater treatment options most suitable for provincial municipalities.

Feedback from forum attendees was quite favourable. The information shared during the forum was extremely relevant, timely and valuable as municipalities get acquainted with the changes that these new regulations will bring to their communities. This forum gave the ACAP organizations in Newfoundland and Labrador an appreciation of the level of interest, awareness and knowledge about wastewater treatment issues at the municipal level. The profiles of the ACAP organizations also increased since this project reached areas of the province not normally engaged. This provincial forum was a clear success in raising awareness around the issues associated with municipal sewage treatment infrastructure projects, and in creating a venue for municipal leaders throughout the province to partake in these discussions.

ACAP FACT

The AEI story was heard throughout Atlantic Canada thanks to 150 presentations made, 11 000 outreach materials distributed, 55 radio spots and 160 media interviews and articles.

Science Corner

The Science Linkages Initiative is an important component of the funding program that creates partnerships between ACAP organizations and Environment Canada scientists. Through joint projects, Environment Canada scientists transfer their knowledge of scientific methods and practices to the ACAP organizations, while the organizations in turn provide valuable knowledge about local science needs and ecosystems. Another benefit of the Science Linkages Initiative is that all of the projects, either directly or indirectly, fit into Environment Canada's priorities and in many cases those of other federal and provincial departments. In this way, the ACAP organizations help deliver on government programs and initiatives.

The table below shows all science projects.

New Brunswick	
ACAP Saint John Biophysical Assessment of Wetlands in an Industrial City **Eastern Charlotte Waterways** Integrated Coastal Management and Stewardship Program	**Miramichi River Environmental Assessment Committee** Miramichi Status and Trends Reporting **Quoddy Futures Foundation** Annual Monitoring and Remediation Quoddy Ecosystem Initiative Resource Inventory – Phase II
Newfoundland and Labrador	
Humber Arm Environmental Association Oil and Surface Pollutant Modelling	**Northeast Avalon ACAP** Cyanobacteria Research in Cochrane to Topsail Pond Watershed
Nova Scotia	
ACAP Cape Breton Freshwater Ecosystem Monitoring in Eastern Cape Breton Island **Bluenose Coastal Action Foundation** LaHave Water Rescue Project	**Clean Annapolis River Project** Building Aquatic Science of the Annapolis Watershed **Sable Island Preservation Trust** Conservation and Protection of Sable Island's Tern Colonies
Prince Edward Island	
Bedeque Bay Environmental Management Association Evaluation of a Best Management Practice for Reducing Risk from Sprayer Track Rows in Potato Production	**Southeast Environmental Association** Montague Nutrient Study – The Connection Phase

The outputs for these science projects are reflected in the indicators table below.

Category	Indicator
Habitat Conservation	
Initiatives towards the protection of Species at Risk	• 3 Species at Risk addressed through 4 related projects
Reduced levels of toxics and pollutants in land and water	• 300 kilograms of pesticides or fertilizers diverted from use or reduced • 300 kilograms of hazardous household waste, commercial toxic substances, paints and solvents diverted from landfill or reduced
Restored and protected habitats	• 4.4 kilometres of shoreline improved, created, restored, preserved or rehabilitated • 518 068 hectares of land improved, created, restored, preserved or rehabilitated
Remediated land and water areas	• 3 sites were restored/cleaned up • 2 tonnes of waste were diverted • 5000 litres of water were cleaned up • 27 degraded areas addressed and beneficial uses restored
Adoption of plans, strategies, best management practices and guidelines	• 4 plans, 4 strategies and 6 guidelines were developed • 57 participants engaged in Best Management Practices
Agreements with landowners and resource users to protect habitats	• 23 participating landowners/resource users • 3 conservation agreements signed with landowners
Reduced entry, extent or spread of invasive species	• 8 plans, strategies and assessments developed • 1 invasive and alien species addressed by plans, strategies and assessments, and 13 by management efforts
Data Collection and Analysis	
Data is available to support decision making	• 85% of projects returned data • 46% increase in number of database elements
Education and Capacity Building	
Communities and individuals are better able to manage and take a lead on environmental issues	• 23 communities participated • 82% difference between the groups' capacity before and after the projects
Increased knowledge and awareness of specific environmental issues by target group	• 4000 people reached directly (meetings, workshops, technical manuals) • 75% of targeted audience aware of and understood specific environmental issues addressed by Community Funding Programs • 10 projects made linkages between traditional knowledge, local knowledge and science • 132 sessions/events were held
Skills developed	• 64 participants indicated increased skills • 74 participants in skills development activities
Increased participation by target group	• 321 people were engaged/involved in specific environmental activities • 39 youth were employed/trained
Established partnerships and networks	• 47 partnerships were established

ACAP FACT

Over 10 projects worked towards the protection of Species at Risk, implicating 20 species. There were 20 plans or strategies developed to reduce entry, extent or spread of 35 invasive species.

Miramichi Status and Trends Reporting

Miramichi River Environmental Assessment Committee, New Brunswick

Miramichi River Environmental Assessment Committee (MREAC) successfully completed an *Addendum: Trends Reporting: Focus on the Miramichi Watershed*. This document is founded on the work and research of their 2007 *State of the Environment Report for the Miramichi Watershed*, featuring one author from Environment Canada, Atlantic. While the focus of this report is on the Miramichi, there is also information on the province of New Brunswick, the Gulf of St. Lawrence and the Atlantic Region. The Miramichi watershed sits in the Maritime Lowland ecoregion of New Brunswick. The three major stressors identified are forestry (a major industry throughout most of the drainage area), roads (affecting wildlife habitat) and mining operations (effects on the local water quality).

In the *Status and Trends Report*, MREAC provides details on many issues relevant and important to Environment Canada.

Water Quality: Annual bacterial monitoring programs (such as Swim Watch) and improvements to municipal wastewater quality treatment and industrial processes have greatly improved the water quality in freshwater and estuarine waters. The report found no immediate threat to overall water quality on the Miramichi. The most immediate concern is with fish habitat and sustained increases in water temperatures.

Biodiversity and Habitat: The large and mainly forested Miramichi watershed hosts a large variety of wildlife habitats. The dissection and fragmentation from the forest industry has resulted in fewer and fewer refuges for species requiring large tracts of natural area. While forestry management plans attempt to accommodate a variety of ecological values, habitats are impacted. Habitat issues remain a major concern within the Miramichi watershed.

The most pressing species-at-risk issue identified is the nesting and rearing habitat for the endangered Piping Plover (*Charadrius melodus*). Miramichi's approximately 35-kilometre-long coastal zone hosts important Piping Plover nesting grounds. In addition to the threat from natural storm events, this species is threatened by human activities, such as off-road vehicles.

Invasive Species: The Miramichi ecosystem has invasive species, and there could be more to come. The challenges are mostly with the marine and freshwater environment but include terrestrial species as well. These species are namely Chain pickerel (*Esox niger*) and Smallmouth bass (*Micropterus dolomieu*) in the freshwaters. While Chain pickerel was eradicated, efforts for Smallmouth bass are ongoing. On the horizon is the arrival of Didymo (*Didymosphenia geminata*), an unsightly single-celled algae (diatom) organism. Previous efforts to eradicate introduced species prove very challenging.

As in other parts of Atlantic Canada, the Purple loosestrife (*Lythrum salicaria*) has invaded the terrestrial landscape along the Miramichi watershed. The impacts of climate change on both plant and animal species is a major concern. The presence of invasive species, which may be better suited to a warming climate, may change the character of the landscape.

Wetlands: The abundance of wetlands within the Miramichi ecosystem has an active peat moss industry. Another economic opportunity within this lowland region is the cultivation of cranberries. While the development of cranberry operations are not dependent on wetlands, there is still an effect on wetland features and watercourses. The province of New Brunswick is currently setting guidelines and regulations related to coastal and freshwater wetlands.

Air Quality: Based on previous ground-level ozone monitoring work with Environment Canada and the Airshed Resource Management Area report, MREAC reports that air quality in the Miramichi is generally good. With the closure of the pulp and paper industry, residents no longer endure the total reduced sulphur that is common to pulp and paper towns.

ACAP FACT

Over 250 best management practice environmental plans, strategies and guidelines were developed. A total of 300 local landowners signed 44 conservation agreements to protect local habitats.

ACAP at a Glance

During the 2009–2010 fiscal year, ACAP organizations carried out 54 worthwhile projects. There was a wide range of interests, and project areas included stream restoration, climate change, education and awareness programs, monitoring (water, ecosystems, biodiversity), geocaching, species at risk, partnerships, and mapping.

The table below summarizes ACAP projects by province. A respectable 23 400 volunteer hours from all levels of government, local citizens, businesses and academia were dedicated to the achievement of project objectives. Valued at more than $4.35 million, in-kind and cash project contributions to each ACAP community and environment are noteworthy. For each Environment Canada dollar, the ACAP organizations garnered $3.80 from other sources.

Province/Organization	Projects	Total Project Value
New Brunswick	**17**	**$1,623,482**
ACAP Saint John	3	$564,477
Eastern Charlotte Waterways	5	$442,238
Miramichi River Environmental Assessment Committee	4	$270,120
Quoddy Futures Foundation	2	$108,950
Société d'aménagement de la rivière Madawaska et du lac Témiscouata	3	$237,697
Newfoundland and Labrador	**11**	**$787,051**
Central Labrador Environmental Action Network	1	$77,050
Humber Arm Environmental Association	5	$356,388
Labrador Southeast Coastal Action Program	1	$95,863
Northeast Avalon ACAP	4	$257,750
Nova Scotia	**18**	**$1,517,932**
ACAP Cape Breton	4	$300,640
Bluenose Coastal Action Foundation	6	$497,527
Clean Annapolis River Project	3	$330,400
Pictou Harbour Environmental Protection Project	2	$207,825
Sable Island Preservation Trust	3	$181,540
Prince Edward Island	**8**	**$457,097**
Bedeque Bay Environmental Management Association	4	$302,397
Southeast Environmental Association	4	$154,700
Totals	**54**	**$4,385,562**

The outputs for these projects are reflected in the indicators table below.

Category	Indicator
Habitat Conservation	
Initiatives towards the protection of Species at Risk (SAR)	• 16 SAR addressed through 13 related projects
Mitigation and prevention of human impacts to SAR	• 10 new or existing technologies/mitigation measures implemented to prevent harm to SAR • 10 individual SAR impacted by technologies/mitigation measures
Reduced levels of toxics and pollutants in land and water	• 300 kilograms of pesticides or fertilizers diverted from use or reduced • 7495 kilograms of hazardous household waste, commercial toxic substances, paints and solvents diverted from landfill or reduced
Restored and protected habitats	• improved, created, restored, preserved or rehabilitated 164 kilometres of shoreline and 520 750 hectares of land
Remediated land and water areas	• 70 sites were restored/cleaned up • 27 tonnes of waste were diverted • 5000 litres of water were cleaned up • 40 degraded areas addressed and beneficial uses restored • 3 areas of concern delisted
Adoption of plans, strategies, best management practices and guidelines	• 140 plans, 43 strategies and 74 guidelines were developed • 550 participants engaged in Best Management Practices
Agreements with landowners and resource users to protect habitats	• 303 participating landowners/resource users • 44 conservation agreements signed with landowners
Reduced entry, extent or spread of invasive species	• 20 plans, strategies and assessments were developed • 10 invasive and alien species addressed by plans, strategies and assessments, and 23 by management efforts
Data Collection and Analysis	
Data is available to support decision making	• 86% of projects returned data • 60% increase in number of database elements
Air Pollution and Greenhouse Gas (GHG) Reduction	
Reduction in releases into the atmosphere of specific pollutants and GHGs	• 20 tonnes of pollutant emissions were reduced • 88.5 tonnes of GHG emissions were reduced
Use of sustainable transportation	• 40 people per kilometre were removed from roads • 26 265 people participated in programs such as anti-idling, car pooling, bicycling and walking
Participation in energy conservation and waste reduction programs by target audience	• 2710 participants • 1370 kiloWatt hours of energy saved in participating buildings

Category	Indicator
Education and Capacity Building	
Communities and individuals are better able to manage and take a lead on environmental issues	• 695 communities participated
Increased knowledge and awareness of specific environmental issues by target group	• 38 625 people reached directly (meetings, workshops, technical manuals) • Products: 55 radio spots, 141 media releases, 10 754 newsletters/ fact sheets distributed, 8 written articles, 65 presentations made, 24 events attended and 303 displays • 80 projects made linkages between traditional knowledge, local knowledge and science • 570 sessions/events were held
Skills developed	• 550 participants indicated increased skills • 2000 participants in skills development activities
Increased participation by target group	• 9500 people were engaged/involved in specific environmental activities • 440 youth were employed/trained
Established partnerships and networks	• 485 partnerships were established

Regionally Based Ecosystem Initiatives

The Atlantic Ecosystem Initiatives (AEI), in addition to the 16 ACAP organizations, provides funding to three regionally based ecosystem bodies: the Gulf of Maine Council on the Marine Environment, the Bay of Fundy Ecosystem Partnership and the Southern Gulf of St. Lawrence Coalition on Sustainability. These ecosystem bodies, by their nature, address systemic issues in a larger, ecosystem-wide footprint than their ACAP counterparts.

The Gulf of Maine Council on the Marine Environment

The Gulf of Maine Council on the Marine Environment was established in 1989 by the governments of Nova Scotia, New Brunswick, Maine, New Hampshire and Massachusetts to foster cooperative actions within the transboundary Gulf watershed. Its mission is to maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations.

The Bay of Fundy Ecosystem Partnership

The Bay of Fundy Ecosystem Partnership is a virtual institute open to individuals and groups who want to protect and enhance the health of the Bay of Fundy. The partnership aims to promote the integrity, vitality, biodiversity and productivity of this ecosystem, as well as the social well-being and economic sustainability of its coastal communities. The organization also facilitates communication and cooperation among individuals and organizations interested in understanding, sustainably using and conserving the resources, habitats and ecological processes of the Bay of Fundy.

The Southern Gulf of St. Lawrence Coalition on Sustainability

The Southern Gulf of St. Lawrence Coalition on Sustainability is a multi-stakeholder regional body representing the parts of Nova Scotia, New Brunswick, Prince Edward Island and Quebec that are within the Southern Gulf of St. Lawrence ecosystem. The Southern Gulf region is an important ecological, economic and socio-cultural region of North America. Communities along the gulf coast depend on its resources for income

and their quality of life. The gulf region supports key ecosystems such as salt marshes, beaches, estuaries and forests. It provides critical habitat, including spawning, feeding and nursery grounds for numerous land and marine species.

During the 2009–2010 fiscal year, ecosystem initiatives (EI) organizations carried out seven worthwhile projects totalling $895,000. For each Environment Canada dollar, the EI organizations garnered an average $5.60 from other sources. The table below summarizes EI projects.

EI Projects
Bay of Fundy Ecosystem Partnership
Creating Knowledge of the Bay of Fundy Ecosystem Using Knowledge on the Bay of Fundy Coastal Ecosystem
Gulf of Maine Council on the Marine Environment
Ecosystem Indicators Partnership Gulfwatch Project Coordination Secretariat Coordination
Southern Gulf of St. Lawrence Coalition on Sustainability
Coastal Erosion Monitoring and Awareness for Improved Decision-making Conserving Aquatic Ecosystems Employing the Community Aquatic Monitoring Program Online Regional Sustainability Atlas

Coastal Erosion Monitoring and Awareness for Improved Decision-making

Southern Gulf of St. Lawrence Coalition on Sustainability

Coastal development in the Southern Gulf of St. Lawrence is on the rise. As a result, coastal erosion threatens to negatively affect infrastructure, residential properties and public safety. Developing a coastal-erosion adaptation strategy for high risk and vulnerable areas for this area is essential to preserving the coastlines. There is currently no integrated and consistent monitoring program undertaken by community groups to provide a coastal erosion snapshot for the area. Shorefront property owners have little information to make ecologically friendly choices when deciding to protect their properties. Most importantly, much of the coastal erosion information available to the public is too scientific and often leads to either inaction or improper action. Community groups understand that their coastlines are rapidly changing and are gathering together to assemble the proper tools and knowledge necessary for mitigating potential risks.

With these objectives in mind, the Coastal Erosion Working Group of the Southern Gulf of St. Lawrence Coalition on Sustainability (SGSLCS) worked with four community groups from each of four provinces (Quebec, New Brunswick, Nova Scotia and Prince Edward Island) within the Southern Gulf area to set up a pilot coastal-erosion monitoring and awareness project. Monitoring the coastal erosion rates of selected shorelines will provide Gulf-wide integrated erosion data. It will also serve to empower and enable local community groups to make better decisions in collaboration with appropriate provincial agencies, their town councils and concerned stakeholders.

SGSLCS provided training to several individuals interested in coastal erosion monitoring. It built capacity with one group by teaching them how to use the monitoring tools to continue monitoring rates of erosion and profile any changes of their coastal areas. It also provided one-hour training sessions on the Online Sustainability Atlas to groups and volunteers participating in this project. Through this training, participants learned how to use the atlas to locate their site and use this system to better manage data

collected within their region. The participants also learned how to use an online atlas on Google Earth to import data from online databases.

With the guidance of coastal zone experts from the Geological Survey of Canada and the New Brunswick Department of Natural Resources, a toolkit was developed for participating community groups to monitor and characterize their shoreline. Specific stretches of coastlines were selected with the four community groups and established as monitoring sites. All locations were geo-referenced using a GPS unit and entered into the regional sustainability atlas. To sustain these important monitoring programs, the SGSLCS provided long-term loans of these toolkits to four community groups so they can continue monitoring on their own.

Relevant groups and citizens benefitted from these coastal erosion initiatives. The project visually demonstrated that coastal erosion is a critical issue in the light of changes to climate and that concrete actions are required. While this project did not restore or protect any habitats or species, the habitats currently monitored by local groups are receiving greater attention through vigilant observation of changes. These groups are now in a better position to be the first respondents to these changes.

The increased attention and focus on coastal erosion this past year through this project allowed the SGSLCS to engage in fruitful cross-border discussions on coastal erosion at the annual general meeting. The SGSLCS's hope is to continue supporting local groups with necessary monitoring tools and skills and maintain the level of attention and interest to ensuring the coastal zones are capable of adapting to the rapid changes occurring. The SGSLCS accomplished much with this one project, and it hopes that these efforts continue to bloom for community-based coastal erosion monitoring and adaptation.

The Atlantic Ecosystem Initiatives: Planting the Seeds for Future Environmental Work

Many organizations that receive funding through the AEI also work in other ways to support and protect our environment. Here are some examples of the tremendous work that is taking place.

- In November 2009, the Greater Saint John Community Foundation established a $15,000 special anniversary grant for students interested in working with **ACAP Saint John**. The grant was set up as a way of supporting community interest in the natural environment and as a tribute to ACAP Saint John's work in the community for more than 18 years. This generous grant allowed ACAP Saint John to hire two local students.
- In February 2010, Irving Pulp & Paper Limited entered a guilty plea in the New Brunswick provincial court for releasing black liquor foam, a toxic by-product of pulp making, into the Saint John River. The court assessed a payment of $30,000 to the **ACAP Saint John** organization towards restoration efforts of the Hazen Creek ecosystem.
- In spring 2010, **ACAP Cape Breton** offered a workshop on green renovations and alternative heating, presented by the Ecology Action Centre. The alternative-heating workshop included information on various methods for heating residential homes, retrofits and new home designs. The workshop took place at the ACAP Cape Breton Centre for Sustainable Communities and was free and open to the public.
- **Clean Annapolis River Project** participated in a research project led by N.T. Yap Environmental Systems Analysts Limited to assess whether community-based environmental monitoring can play a role in environmental assessment follow-up programs designed with the goal of adaptive management.

ACAP FACT

AEI organizations employed/ trained 450 youth throughout Atlantic Canada. More than 33 000 volunteer hours were donated to projects from a large variety of local sources.

www.**ec.gc.ca**

Additional information can be obtained at:

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