

Canadian
Heritage
Rivers
System



Le Réseau
des rivières
du patrimoine
canadien

Three Rivers Prince Edward Island Monitoring Report 2004 - 2014

Prepared for
Three Rivers Heritage Association
P.E.I. Department of Environment, Labour and Justice
The Canadian Heritage Rivers System

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Three Rivers Prince Edward Island Monitoring Report 2004-2014

Executive Summary

The Three Rivers in Southeastern Prince Edward Island was designated to the Canadian Heritage Rivers System (CHRS) in 2004. This report highlights the achievements of the Three Rivers Heritage Association and its many partners in the conservation and interpretation of the stipulated cultural heritage, natural heritage, and recreation values on the river since its designation. The *Three Rivers Prince Edward Island Monitoring Report 2004 - 2014* provides a progress report on each of the objectives identified in *Island Gem: A Management Plan for Three Rivers* and identifies the achievements of its people and those who have contributed to research, conservation, and documentation of the Montague, Valleyfield, Brudenell and Cardigan watersheds. A list of the individuals and organizations who contributed to these achievements is included.

Despite the challenge of being a volunteer organization with no salaried staff and thanks to the contributions of many individuals and partners, significant progress has been made towards the implementation of the management plan. This progress includes:

- ◆ Installing two Three Rivers Canadian Heritage River trilingual (Mi'kmaq, French, & English) monuments at focal points on the Montague and Georgetown waterfronts;
- ◆ Creating the Roma at Three Rivers - Roma à Trois Rivières National Historic Site interpretive centre featuring French history during the de Roma period 1732-1745 in Three Rivers;
- ◆ Developing the Cardigan Heritage Centre, an interpretive centre featuring displays on shipbuilding, cultural history, and genealogy in Three Rivers;
- ◆ Improving the waterfronts at Montague, Georgetown, and Cardigan;
- ◆ Expanding the marinas at Montague, Brudenell and Cardigan
- ◆ Branding the Three Rivers as a Canadian Heritage River;
- ◆ Maintaining an active publishing, education, and community consultation program;
- ◆ Creating an historic photographic history and collection of images for an image bank;
- ◆ Maximizing Heritage River awareness and other spinoffs from increased tourism;
- ◆ Implementing projects to improve water quality monitoring;
- ◆ Serving as a partner in the Atlantic Climate Adaptation Solutions Project;
- ◆ Improving public recreation access; and
- ◆ Expanding knowledge on the history of various cultures within Three Rivers.

One of the most important achievements is improved public awareness of the Three Rivers and its values. A time line is included in this report that summarizes some of the important achievements. A subjective assessment of the Three River's *Vision* was developed and a series of recommendations on new projects are provided.

This report has determined that the Three Rivers heritage values for which the river was nominated remain intact. Significant progress has been made in certain areas. The conclusion of this report is that the Three Rivers is worthy of continued designation as a river of national significance within the Canadian Heritage Rivers System.

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1.0 Introduction

The Canadian Heritage Rivers System (CHRS) is a national program promoting river heritage conservation through the recognition of Canada's outstanding rivers. A cooperative effort of federal, provincial and territorial governments, the CHRS requires annual reports and an in-depth monitoring report every ten years to determine if the designated river retains the outstanding heritage values for which it was originally nominated.

In 1991, the Island Nature Trust under contract from the Prince Edward Island Department of Tourism, Parks and Recreation completed a systems study of 17 Island rivers for the Canadian Heritage Rivers Board. Three rivers were selected for consideration and assessed against the CHRS's cultural, natural and recreational values. In 2001, Three Rivers became the second river nominated in Prince Edward Island. It was co-nominated by the provincial government and the Three Rivers Heritage Association. The nomination was based on Three Rivers rich cultural values and the recreational opportunities they offer. As Three Rivers was significantly altered by farming and settlement, it was not nominated for its natural heritage values. The Association coordinated meetings with the people in the watershed and also with other interested parties to gauge public support for the designation of Three Rivers. As strong support was present, the Association developed *Island Gem: A Management Plan for Three Rivers*. This plan was submitted to the Canadian Heritage Rivers Board. In May, 2004, Three Rivers became the second designated Canadian Heritage River in Prince Edward Island and the 34th in Canada.

The Three Rivers Heritage Association is a volunteer not-for-profit organization whose role is to champion the Three Rivers's *Vision*. Its Board is community based with representation from the Town of Montague, Municipality of Lower Montague, Town of Georgetown, Community of Cardigan and Community of Brudenell councils, the Garden of the Gulf Museum, the Descendants of the Brudenell Pioneers, the Mi'kmaq Confederacy, the Southeast Environmental Association and three members at large. The Association functions through both formal and informal partnering, creation of a community presence, and education.

The purpose of this 10 Year Monitoring Report for Three Rivers is to fulfill the CHRS requirement to undertake a ten year monitoring report that will assess the values for which the river was nominated and determine if the river continues to possess these values and thus continues to merit designation.

The *Three Rivers Prince Edward Island Monitoring Report 2004 - 2014* will be submitted to the CHR Technical Planning Committee (TPC) in early 2015. The report and the recommendations of the TPC will be tabled at the Canadian Heritage Rivers Board meeting planned for August, 2015. This report is for information purposes only and is meant to be a concise and informative evaluation.

2.0 Background

Three Rivers is the historical grouping of the Cardigan, Brudenell, and Montague/Valleyfield Rivers. It lies on the southeastern part of Prince Edward Island between approximately N 46.272° and N 46.029° Latitude and W -62.820° and W -62.397° Longitude. Three Rivers extends westward from the eastern tip of Boughton Island and Cardigan Bay to the headwaters of the Montague/Valleyfield River in Lewis and Caledonia/Valley, the Brudenell River north of New Perth and the Cardigan River in Head of Cardigan as well as the uplands of many tributaries of these rivers (Figure 1). It lies in the Appalachian-Acadian Physiographic region (Canadian Heritage Rivers System, 2001b).

The Three Rivers watershed is made up of Cardigan, Brudenell and Montague/Valleyfield River watersheds. It is Island's largest watershed representing an area of approximately 357 square kilometers, roughly 6.3% of Prince Edward Island. Artifacts have shown the presence of Mi'kmaq in the Three Rivers watershed for many centuries prior to the arrival of European's within the watershed. The presence of this superb travel corridor allowed European settlers to establish their shipbuilding, farming, fishing, and trading enterprises in this area in 1732.

In 2001, Three Rivers became the second river nominated from Prince Edward Island for the Canadian Heritage River System. Its abundance of rich human/cultural heritage values, combined with recreational opportunities and the natural values that support these elements led to its designation in May 2004.

Three Rivers' human/cultural values center on some of the earliest Acadian and Scottish settlements in Canada and significant achievements in agriculture and aquaculture industries. The recreational values at the time of designation were high but were under utilized. Despite extensive alteration by humans, the maintenance of the watershed's natural values is integral to the human/cultural and recreation values.

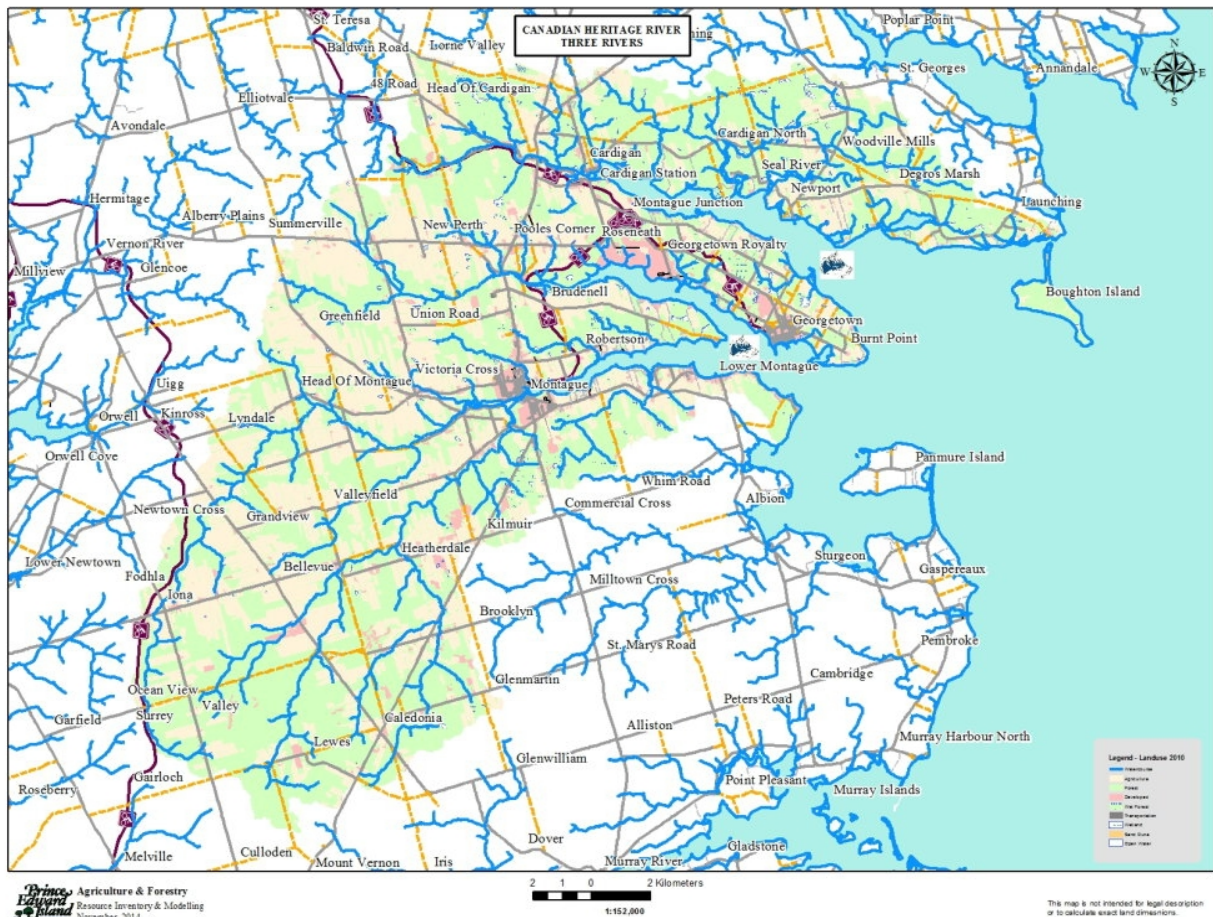


Figure 1. Three Rivers Watershed (depicted in green). Image courtesy Government of Prince Edward Island.

3.0 Methodology

The deliverables for this report were refined through consultations with Mr. Sean Ledgerwood, Watershed and Subdivision Coordinator, P.E.I. Department of Environment, Labour and Justice, Mr. Jim Young, the Prince Edward Island representative on the Canadian Heritage Rivers Board, and the Board of the Three Rivers Heritage Association. The 10 Year Monitoring Report on the Three Rivers was defined as the period of May, 2004 through to the May, 2014. Mr. Niall MacKay and Mr. David Boyce served as the Three Rivers Heritage Association's Steering Committee for the consultant in the preparation of this report. Mr. Sean Ledgerwood and Johanne Ranger were provided a copy of the preliminary report for review and comment.

The primary approaches used to gain information about activities and changes on the Three Rivers since designation in 2004 were:

- A review of the Three Rivers Heritage Association records including available meeting minutes, "Three Rivers Heritage Association Newsletters, correspondence, annual reports, and publications;
- Interviews with key individuals with the Three Rivers Heritage Association;
- Telephone conversations, emails, and meetings with members of the Three Rivers Heritage Association's Steering Committee;
- Correspondence, telephone consultations and interviews with key members of government and non-government organization staff or volunteers (see Appendix 1);
- Provision of information summaries from certain government and non-government organizations;
- A review of significant legislative changes that impact or potentially impact the human/cultural, recreational, and natural heritage values of Three Rivers;
- A search of relevant literature sources including newsletter and magazine series (*Island Magazine; Island Naturalist; Island Nature Trust Update; The Scots Thistle*);
- Internet searches of the Guardian and Eastern Graphic newspapers and the other internet material for either key words related to the Three Rivers Canadian Heritage River objectives and specific events identified by interviewees or the consultant; and
- Review of web site content for material related to the Three Rivers Canadian Heritage River objectives and specific events identified by interviewees or the consultant.

Utilizing these approaches, the Three Rivers Time Line (Table 1) was constructed. It represents the more significant achievements by the Three Rivers Heritage Association and its primary partners, including government, on the conservation and interpretation of the historical resources, the development of recreation on the Three Rivers Canadian Heritage River since its designation, and the monitoring of natural heritage values. Certain well known events (e.g. opening of Confederation Bridge) and more holistic programs that cover the entire province (e.g. improved language access) were included to provide a contextual basis for comparison.

Tables were developed to identify changes in the Three Rivers's CHRS cultural heritage, natural heritage, and recreational values and to illustrate the progress towards achieving the management goals in *Island Gem: A Management Plan for Three Rivers*. A bibliography addressing the breadth of the achievements in the delivery of various values was developed. These values include the aspirations of its people in the areas of heritage research and conservation, recreation, community pride, ecological integrity, and recreation. Appendix 2 celebrates and acknowledges the many individuals and groups who have contributed to the achievement of these values within Three Rivers.

Utilizing the information discovered in these various approaches, this report provides an assessment of the validity of the Three Rivers Canadian Heritage River Vision as expressed on page 13 of “*Island Gem: A Management Plan for Three Rivers*”. Based on interviews with the Three Rivers Heritage Association’s Steering Committee and an interpretation of its capacity as a volunteer organization, this report provides a subjective assessment on the progress made towards the goals and objectives identified in “*Island Gem: A Management Plan for Three Rivers*” during the initial ten years. The *Three Rivers Prince Edward Island Monitoring Report 2004 - 2014* also identifies a number of projects that were approved by the Three Rivers Heritage Association Board on December 12, 2014 for implementation during the next ten year reporting period should the resources be available to do so.

Vision

All stakeholders and interested parties working together to maintain and promote the human/cultural heritage values, related natural heritage values, and recreational opportunities for which Three Rivers watershed is recognized in the Canadian Heritage River System.

4.0 The Three Rivers’s Time Line

Table 1 provides a chronology of the work conducted by the Three Rivers Heritage Association and its partners in the conservation of the cultural and natural resources and the development of recreation on the Three Rivers Canadian Heritage River since its designation as well as the inclusion of precursor dates regarding the designation. Certain well known events that set a comparative context are included in this time line.

Table 1. A Time Line of Significant Events for the Three Rivers Canadian Heritage River since Designation with the Inclusion of some Relevant Precursor Events.

Year	Description of Events on the Three Rivers Watershed
1997	Development of the Three Rivers Heritage Association commenced
1997, May	Confederation Bridge opened
1997, October	Cardigan Fish Hatchery divested to the University of Prince Edward Island
1999	Three Rivers Heritage Association incorporated under Part II PEI Companies Act
1999, September	Marshall Supreme Court Decision provides Mi’kmaq Treaty Rights for fisheries
1999, Autumn	Three Rivers Heritage Association contracted Island Nature Trust to prepare the Three Rivers CHRS nomination document
2000, July	Confederation Trail “Tip to Tip” trail surfacing completed. P.E.I. becomes the first province to complete its section of Trans Canada Trail

2000, November	Cardigan Communities Development Corporation Inc. established
2001, February	Cardigan residents approve waterfront plan for heritage centre and marina
2001, August 27	Three Rivers nominated as a Canadian Heritage River
2001	Three Rivers Heritage Association Newsletter commences
2002	Cardigan Communities Development Corporation established its Heritage Committee and its Waterfront Committee
2002	Mi'kmaq Confederacy of PEI established as common voice for advancement of Treaty and Aboriginal Rights for Lennox Island and Abegweit First Nations
2002	UPEI's Cardigan Fish Hatchery divested to Ken Moyaert
2002	Waste management separation of compost, waste, and recyclables implemented Island wide
2002	Three Rivers Heritage Association website established
2003	<i>Island Gem - A Management Plan for Three Rivers</i> developed and reviewed
2003	Launch of <i>Perthshire to Three Rivers: A genealogy of the descendants of the Brudenell Pioneers</i>
2003	Field work for new Flora of Prince Edward Island commenced
2003	Cardigan Heritage Centre designed as a lighthouse
2003, June 8	First Canadian Rivers Day proclaimed
2003, September	Tropical Storm (Hurricane) Juan hits
2003-04	David Boyce serves as Canadian Heritage River Board Chairperson
2003-04	Surveys of Butterflies, Dragonflies, and Damselflies underway
2004, February 19	White Juan high storm surge on Three Rivers
2004	<i>Island Gem - A Management Plan for Three Rivers</i> submitted to CHRS Board
2004, May	Three Rivers designated as Canada's 34 th Canadian Heritage River
2004, June 1	Federal Species at Risk Act in full effect
2004, July 10	Grand opening of Cardigan Heritage Centre and Marina
2004, July 18-9	Dewar Family Reunion mainly at Brudenell Park
2004	The Great Canadian Rivers "Three Rivers" was added to this television series
2004	400 th Anniversary of Acadie
2004	Government of PEI Watershed Management Fund created
2004	UPEI Bird List Server launched for PEI bird reports
2004	Greening Spaces program inaugurated with large caliper red oaks at Island Schools as well as community planting treatments
2004	<i>Isle of Contentment</i> display on early Scottish settlers at Eptek
2004	Three Rivers CHRS River labeled in Visitor Guide and P.E.I. Highway Map
2004	Fund raising commenced for <i>Maritime Breeding Bird Atlas II</i>
2004	Off Highway Vehicle Act amendment creates auxiliary police officers
2004	Contaminated sites registry established in Environmental Protection Act
2004	Species at risk redefined and ministerial order process invoked in <i>Environmental Protection Act</i>
2004	Vase tunicate discovered on mussels in Montague River
2004 to 2008	Cardigan Heritage Centre develops binders on local history
2004, August	Genealogical Gathering - P.E.I. Scottish Settlers Historical Society
2004, September	Roma at Three Rivers officially opens & first Fete Roma held
2004, December	Native Council of P.E.I. commences the <i>Gigmanag</i> quarterly newsletter
2004, December 26	Significant storm damage to Panmure Island causeway and adjacent dunes
2005 to 2006	Erosion control project implemented at Panmure Island causeway

2005, July 9	A parchment signing ceremony on Montague waterfront was held for the designation of the Three Rivers Canadian Heritage River
2005	<i>Trespass to Property Act</i> amended to require permission to trap or snare on private land
2005	Agriculture Stewardship Program under Agriculture Policy Framework , First Tier, commenced
2005	Genealogical Gathering - P.E.I. Scottish Settlers Historical Society
2005	Northumberland Strait Ecosystem Initiative Working Group established
2005	Natural Area Protection Act amendment allows dedesignation of public land natural areas
2005, December	Public consultations commenced on a new forest policy for Prince Edward Island
2006, February	Public consultations on habitat and resource protection on Northumberland Strait
2006, May	Government of Canada approves Indian Residential Schools Settlement Agreement
2006, June 11	Official unveiling of the CHR Monument at Montague Waterfront on Rivers Day
2006	Ground Hemlock regulations created
2006	<i>Maritime Breeding Bird Atlas II</i> field work commences
2006	Phase II development of Confederation Trail commences
2006	Water well protection plans, contaminated sites registry and petroleum hydrocarbon remediation standards established
2006	Social Economy and Sustainability Research Network established
2006	Archaeology Act established
2006	Energy credit system established under Renewable Energy Act
2006	Montague Downtown Business Centre and streetscape funding announced
2006	PEI Government introduces Impoundment Capital Fund
2006	Valleyfield River bridge replaced
2006, September	Prince Edward Island Gaelic Society established
2006, October	Moving to Restore a Balance in Island Forests: Prince Edward Island Forest Policy released
2007, February	Domestic pesticide vendor business license and vendor certificate system established
2007, February	Public Land Atlas released
2007, March	Institute of Island Studies Public meetings Concerning PEI's Heritage and Museums
2007, April	Home heating tank replacement and inspection system established
2007, July	Points East Coastal Drive's Three Rivers Discovery Tour opens
2007	New Watershed Management Fund inaugurated
2007	<i>Lands Protection Act</i> Regulations exclude land holding limit for Natural Areas
2007	<i>Beverage Containers Act</i> established
2007	Nature Conservancy of Canada purchases private land on Boughton Island
2007	Free groundwater nitrate clinics commence
2007	<i>We are all upstream We are all downstream, We are all part of a watershed</i> report on public consultations released
2007, June 10	Official opening of the CHR Monument at Georgetown Waterfront on Rivers Day
2007, September	Georgetown Timber Ltd. announces indefinite shutdown
2007, December	New Main Street Bridge crossing on Montague River opens
2007-2008	High pressure washing system developed to address tunicates on mussels

2008	Montague/Valleyfield Watershed Planning Advisory Group established
2008	50 th Anniversary of Garden of the Gulf Museum
2008	<i>Environmental Protection Act</i> Regulations establish new buffers
2008	PEI climate change strategy released
2008	First province-wide Alternate Land Use Services Program in Canada initiated
2008	Higher resolution topographic mapping program implemented (LiDAR)
2008	Ecosystem-based Forest Management Standards Manual launch
2008	Great Enlightenment Buddhist Institute Society registers in PEI
2008, February,	PEI Heritage Collector Cards launch
2008, February 23	The Garden of the Gulf launches <i>Reflections: Images and Stories from Three Rivers: Montague, Brudenell and Cardigan</i>
2008, Summer	The CHR plaque at Georgetown Waterfront was replaced to correct an error
2008, August 15-29	Canada Summer Games (baseball and softball)
2008, August 6	Cardigan Area Heritage Association (CAHA) incorporated
2008, August 13	Georgetown Timber Ltd. closure announced
2008, December	Cardigan Area Heritage Association becomes a registered charity
2009	Cavendish Farms Wellness Centre opened
2009	Three Rivers Heritage Association and Hillsborough River Association applied for and received the Canadian Heritage Rivers Board approval to host the 7 th Canadian River Heritage Conference
2009	<i>Lands Protection Act</i> amended to exclude natural areas and environmentally significant lands
2009	<i>Pesticides Control Act</i> amended to restrict lawn care products
2009	go!PEI launched
2009	Replica of Montague railway shed opens
2009	Prince Edward Island Historic Places resource guide for schools released
2009, March	Public meetings held on draft Montague/Valleyfield Rivers Management Plan
2009, April	Shipbuilding in Prince Edward Island designated an historic event of Canada by Minister of Environment Canada
2009, April 25	Island watershed groups decide to establish the PEI Watershed Alliance
2009, June	Three Rivers presentation to the 6 th Canadian River Heritage Conference
2009, Summer	Three Rivers Heritage Association website closes with loss of ISN service
2009, September	Wonders of chocolate celebrated at Roma
2010, Early	PEI Department of Fisheries, Aquaculture and Rural Development relocates to Montague
2010	ACOA funding received for evaluation of Cardigan Heritage Centre
2010	Sewage system disposal Regulations established
2010	New forest inventory and orthographic mapping project commences
2010	East Isle Shipyard closes
2010	Five year Maritime Butterfly Atlas commences
2010	Conservation strategy for Atlantic Salmon released
2010	Jean Pierre Roma plaque unveiled at Roma at Three Rivers
2010	2010 Survey of Recreational Fishing in Canada released
2010	<i>State of Wildlife 2007</i> report released
2010, September	The new Montague Regional High School opens on the Valleyfield Road
2010, October	Garden of Gulf Museum launches “At The Oval” DVD by Hughie Graham
2010, December 21-2	Storm surge and 120 km/hr winds damage Panmure Island causeway, Graham’s

	Pond and Beach Point
2011	Roundabout replaced Wood Islands Road (Route 4) - Valleyfield Road Junction
2011	Culinary Trail developed by Tourism and Culture PEI
2011	<i>2010 State of the Environment</i> report released
2011	Georgetown DOT Wharf divested to Georgetown Port Inc. (GPI)
2011	PEI Woodlot Owners survey results released
2011, April 29	Rising Tides: Preparing for Climate Change in Prince Edward Island workshop at UPEI
2011, May	Hugh Graham wins inaugural Dr. Willie Eliot Research Award for “At the Oval”
2011, Summer	New owners move Cruise Manada out of Montague
2011, August 23	Shipbuilding on PEI as an Historic Event of Canada plaque unveiled at Cardigan
2011, December	Cardigan Area Heritage Association purchases Cardigan Heritage Centre
2012	Town of Georgetown celebrates its 100 th anniversary
2012	New Cardigan Bridge opens with expanded entrance
2012	Ceilidhs commenced at Georgetown Playhouse Theatre
2012	Arts and Heritage Trail developed by Tourism and Culture PEI
2012	UPEI Climate Research Lab opens
2012	John Sylvester commissioned by the 7 th Canadian River Heritage Conference to collect pictures of Three Rivers and Hillsborough
2012	Abegweit Biodiversity Enhancement Hatchery (fish) commences operation and Moyaert’s hatchery dedicated to aquaculture
2012	Addictions Research Centre in Montague closure announcement
2012	Scotsburn Lumber creates Union Road timber yard
2012	<i>Technical Manual for Watershed Management in Prince Edward Island</i> released
2012, February 6	Official launch of Queen Elizabeth II’s Diamond Jubilee and Medal Award
2012, February 16	Garden of the Gulf Museum moves artifacts to its new Artifactory
2012, March 12	Draft Fish Habitat Compensation Plan for Cardigan River
2012, August	<i>Prince Edward Island: Planning for a Sustainable Future - A Time for Questions</i> released
2012, August	Poole’s Corner Roundabout opens
2012, August 23	“A Night with the Artisans” held in Montague
2012, September	Veteran banners unveiled at Cardigan
2012, September 29	The “Impressions” Historical Culture Photo Exhibition opens in Montague
2012, December	Knox’s Dam drawn down commences (re-flooded in April 2013)
2012, December	First Victorian Christmas fundraiser at Garden of the Gulf Museum
2012-13	Stream crossing inventory of Public Lands managed by PEI Forests, Fish and Wildlife Division developed
2013, January	Federal Court decides Federal Government has jurisdiction for Métis
2013	Victory Chimes Seniors Club and Cardigan Craft Guild closed their books
2013, April,	Mariner Seafood Plant announces closure
2013, May 3	Workshop on Planning for Risk under a Changing Environment
2013, June 16-19	7 th Canadian River Heritage Conference held at the Prince Edward Delta in Charlottetown and field trip to Roma at Three Rivers and Cardigan Heritage Centre.
2013, July	<i>Land’s Protection Act</i> report submitted to government
2013, July	Kent Square Retail Shops in Georgetown grand opening
2013	Loane Road bridge across Valleyfield River replaced

2013, August 4	Garden of the Gulf Museum 3 rd Floor opens & 125 th anniversary celebrated
2013	Centennial of 4-H in Canada
2013	PEI Women's Institute launches <i>Recognizing... Reflecting... and Responding...</i>
2013	Town of Georgetown wins CBC Television Maritimes Cultureville contest
2013	Town of Georgetown's Centennial Commemorative Trellis of Recognition project funding approval from Canadian Heritage
2013	2014 PEI Funding received to develop <i>Victory Chimes</i> scale model at Cardigan Heritage Centre
2013	<i>Meacham's 1880 Atlas</i> reprint released by PEI Museum and Heritage Foundation
2013	Government of PEI releases Wildlife Conservation Fund license plates
2013, October 3-5	The Georgetown Conference: Rural Redefined held
2013, November	New Public Land Atlas launched
2013, December	<i>2010 State of the Forest Report</i> released
2013, December	Closure of Veterans Affairs District Offices
2014	Discussions underway on Eastern PEI Municipality Coalition
2014	2014 Celebration Ride - PEI Snowmobile Association
2014	Heritage Trail Walking Program - Go PEI
2014	Aspin Kemp and Associates announces relocation to Montague waterfront
2014	Riverside Inn hotel and theatre opens
2014	Historic murals, sculptures, band shell, and Gallery on the Main launched in Montague
2014	Nitrogen loading criteria formula identified for Three Rivers
2014	Edition #8 Field Checklist of Birds of Prince Edward Island released
2014	Heritage Trail passport released
2014, February 1	CLIVE (Coastal Impacts Visualization Environment) sea rise level and coastal erosion video game for PEI released
2014, March, 11	Climate Change and Aquaculture symposium held at UPEI
2014, April 28,	Island Water Futures: Assessing the Science Symposium (high capacity wells)
2014, May	150 th Anniversary of Caledonian Club of Prince Edward Island
2014, May 31	Scotland's Year of Homecoming - Scottish Diaspora Tapestry World Premiere
2014, July 12	<i>Victory Chimes</i> scale model unveiled at the Cardigan Heritage Centre
2014-5	10 Year Review of <i>Island Gem - A Management Plan for Three Rivers</i>

Note 1: Only highlights of environmental legislation, policy and program changes between 2003 and 2010 are included in this list. A complete list is provided in the 2010 State of the Environment Report.



Figure 2. Three Rivers Canadian River Heritage Designation Parchment Signing Ceremony on Montague waterfront, July 9, 2005.

5.0 Cultural Heritage Values

Background

The Three Rivers watershed has been home to Aboriginal peoples for thousands of years. Today, it is still the home of the Mi'kmaq descendants who reside off the Abegweit First Nation or Lennox Island First Nation. While other Europeans came to PEI for various periods, the 1732 arrival of French colonists and subsequently British colonization changed the face of the Three Rivers watershed. Based on the Three Rivers CHR nomination documents and the registry of historic sites and places, at the time of designation, this river displayed nationally significant heritage sites with one National Historic Site and two Canadian Historic Places and archaeological or resource sites of significance to Mi'kmaq, French, Scottish, Irish and English history.

Three Rivers had a well developed interior ferry and rudimentary road system that was key to transportation between various Three River communities and St. Pierre du Nord (St. Peter's) and, by 1790, to Charlottetown. The richness of animal populations which provided food, streams that could be used as power sources, an abundance of fish, timber and other natural resources, and good soils allowed many cultures to prosper on the Three Rivers. During the latter days of the age of sail, the Three Rivers was a dominant force in shipbuilding, international trade, and crop production. At the time of designation, there was an abundance of cultural sites present in Three Rivers.

Condition of Values since Designation

Significant research and other activity has occurred on the Three Rivers in respect to the cultural heritage values in the 10 years since designation. The majority of these achievements have been made by individuals and organizations researching, creating, and or developing interpretive centres, historical documents, displays, and other materials particularly those at Roma at Three Rivers, the Garden of the Gulf Museum, and the Cardigan Heritage Centre. Some 72 historic homes and structures have been registered as Historic Places most of these between 2008 and 2010. The Garden of the Gulf Museum, Three Rivers Heritage Association, Roma at Three Rivers, Prince Edward Island Historic Places Registry and the many organizations and individuals espousing similar goals have thus served as the primary partners in the conservation of the historical resources in Three Rivers. As such, they have been promoters of positive change in heritage conservation in Three Rivers. In addition, the Association and its partners have championed activities to improve public awareness of the status of Three Rivers as a Canadian Heritage River. Appendix 2 provides a list of those who were identified during the research for this ten year monitoring report who contributed to the cultural and natural heritage achievements and the development of recreational infrastructure and community engagement.

As awareness amongst those residing, researching or visiting Three Rivers is one of the primary management tools, considerable effort has been expended by the Three Rivers Heritage Association and its many partners in identifying Three Rivers as a Canadian Heritage River. Significant achievements directly led by the Three Rivers Heritage Association include:

- Development of nomination documents and *Island Gem: A Management Plan for Three Rivers* and achieving designated Canadian Heritage River status for Three Rivers;
- Hosting the signing ceremony for the designation of the Three Rivers parchment (2005);
- The installation of two Three Rivers CHRS plaques at Montague (2006) and Georgetown (2007)

- with ceremonies that were well attended;
- The design and installation of the CHRS signage at seven Three Rivers access roads or walking trails that provide public access to the waterways;
- Inclusion of a section featuring Canadian heritage rivers in the “Prince Edward Island Visitor Guide”;
- Branding of various map products with the CHRS symbol thus labeling the Three Rivers as a designated Canadian Heritage River;
- Research, production and distribution of 25 issues of the Three Rivers Heritage Association Newsletter;
- Development of education programs including the speakers program for the Three Rivers Heritage Association’s Annual Meetings and articles in local newspapers and other publications;
- Presentations to municipal, provincial and federal governments as well as various non-government organizations;
- Providing information for the Three Rivers documentary which airs on the Discovery Channel;
- Research on photographs used in the Association’s Newsletters;
- Sourcing images for the Canadian Heritage Rivers Calenders;
- Creation of the Three Rivers web site and its maintenance from 2002 to 2009;
- Development and presentation of the submission to the CHRS Board for hosting of the 7th Canadian River Heritage Conference in Charlottetown;
- Representation on the Canadian Heritage River Board from 2002-3 to 2008-9;
- Presentations at the 6th and 7th Canadian River Heritage Conferences in Gatineau and Charlottetown;
- Media releases to provide public awareness; and
- Membership in the initial planning committee for the 7th Canadian River Heritage Conference.

The ceremonies for the Three Rivers trilingual CHRS plaque included representation from the primary cultures involved in the development of the Three Rivers area.

A tidal river where a significant amount of the cultural artifacts are located near the river bank is a dynamic environment. The shores of Three Rivers have changed over time due to natural forces (tidal action, storms, freeze-thaw cycles, erosion, sedimentation, and climate change) and human intervention. Some wharves that served as the bases for the interior ferry system have largely deteriorated from erosion and rot while wharf facilities and marinas such as Cardigan, Montague and Georgetown have been upgraded.

Some historic structures have been lost to age, fire, vandalism, or misadventure. Others have been conserved by their owners. Seventy-two have been registered as Prince Edward Island Historic Places within the review period. Thanks to the efforts of the Cardigan Area Heritage Association, shipbuilding on PEI was designated as a National Historic Event of Canada. The plaque unveiling was held at Cardigan in 2011. It is hoped that this ship building plaque will be erected in 2015 and that a third Three Rivers CHR monument will be located adjacent to it.

Training programs through the Community Museum Association of Prince Edward Island have upgraded the skill levels of staff at the Garden of the Gulf Museum and the Cardigan Heritage Centre. A number of historic structures have been re-purposed such as the 1874 Cardigan Railway Station which changed from the Cardigan Craft Guild store to become a seasonal, two day a week farmer’s market as well as a retail space and Brudenell School which was repaired and now serves at a community meeting and rental

space as well as its role as the Community of Brudenell Council meeting space.

To ensure communications between various groups, representatives of the Town of Montague, Town of Georgetown, the Community of Brudenell, the Municipality of Lower Montague, the Village of Cardigan, Southeast Environmental Association, Garden of the Gulf Museum, and three community representatives at large sat on the Board of the Three Rivers Heritage Association for many years. Unfortunately, particularly in the last several years leading up to May, 2014, representation has declined.

Significant improvements to cultural interpretation on the Three Rivers include: the creation of Roma at Three Rivers and its various programs including its French period garden, period dress of tour guides, period dress outreach to other sites, historic foods and its Fete Roma (heritage feast); the development of community binders (now over 30) and expansion of interpretative displays and genealogy resources at the Cardigan Heritage Centre; the creation of a new Artifactory (artifact storage space) with proper environmental controls and the renovation and creation of the third floor display space of the Garden of the Gulf Museum; development of new publications, interpretive displays and expositions at the Garden of the Gulf Museum; publishing various books and articles; implementation of community festivals (e.g. Montague Octoberfest, Georgetown Summer Days); creation of the Lane's Riverview Inn's 80 seat theatre; establishing observation points at Georgetown and maintaining its Train Station Interpretive Centre; creation of the Montague Farmers Market on the waterfront (2011) and Cardigan Farmers Market; developing new displays marking the Veterans of the First and Second World Wars; researching and writing stories and the genealogy of the PEI Fathers of Confederation including A.A. MacDonald; continued development and implementation of the Museum Madness children's program, printing and distribution of the museum's Montague Walking Tour Map, and the addition of genealogical materials and artifacts to the Garden of the Gulf Museum; and other activities (see Table 1 and bibliography). Improvements in online access to genealogical research materials and the development of more family genealogies also occurred. Cardigan Heritage Centre visitation started with 600 visitors in 2004 and has increased gradually to a level of 2,000 in 2013. It researched and developed a slide show on some 130 veterans as part of Remembrance Day celebrations. The Cardigan Heritage Centre was successful in obtaining PEI 2014 funding for a scale section of the *Victory Chimes* which was unveiled with great fanfare in July, 2014. The PEI Women's Institute issued their centennial book, *Recognizing... Reflecting... Responding...: A history of the Federated Women's Institutes of Prince Edward Island 1913-2013* in 2013.



Figure 3. French period dress outreach by Roma at Three Rivers. Photo by David Boyce.

Under the Heritage Places Protection Act, a ministerial advisory board was established to assess heritage places using such criteria as age, architectural style and historical associations. A Register of Heritage Places was created that allows either a Registered Heritage Place or a Designated Heritage Place to be conferred. The former is honorific while the latter establishes legal protection and makes the property

eligible for a blue plaque and financial aid. The first heritage place on the Three Rivers watershed which was placed on this Register was the Kings County Courthouse which was designated on May 12th, 2001. On the Three Rivers watershed, from that time until the end of this monitoring report period in May 2014, 68 additional structures were established as Registered Prince Edward Island Heritage Places in Brudenell, Cardigan, Georgetown, Georgetown Royalty, Launching, Lower Montague, Montague, New Perth, Panmure Island, Roseneath, and Victoria Cross. In addition, The Goff House (2006) in Woodville Mills, the Garden of the Gulf Museum (2008) in Montague, the Government of Canada Building in Montague (2012) and Panmure Island Indian Head Lighthouse (2012) were established as Designated Prince Edward Island Historic Places. Based on the current Three Rivers watershed boundary delineation and Canada's Historic Places web site list, there are currently 75 sites identified as Historic Places. In April 2009, the Minister of Environment designated Shipbuilding in Prince Edward Island a National Historic Event of Canada and a memorial plaque was unveiled at the Cardigan Wharf on August 23, 2011. Also in 2009, the PEI Department of Education and Early Childhood Development released the Prince Edward Island Historic Places resource guide for Grade 6 students. Parks Canada installed a new commemorative plaque featuring Jean Pierre Roma at the Roma at Three Rivers National Historic Site in 2010. The Cardigan Consolidated School and Montague Consolidated School participated in the Provincial Heritage Fair celebration of Canadian heritage.

In part, the culture of a community lies in the retention of its languages and music. Since designation, there has been a resurgence of language training with the addition of Mi'kmaq, French and Gaelic classes. A new *French Language Services Act* and regulations were proclaimed in 2013 thus expanding French language services.

The revitalization of the Island's traditional music styles and crafts have seen numerous performances, expositions, shows, and festivals. Some of the residents of Scottish ancestry within the watershed stitched a panel for The Scottish Diaspora Tapestry which was unveiled on May 31st at East Lothian, Scotland during Scotland's Year of Homecoming 2014. Some of the venues on the Three Rivers watershed include the Annual Abegweit PowWow Panmure Island, Montague Waterfront (commenced



Figure 4. Cardigan Heritage Centre and Marina. Photo by Nora MacDonald.

2011), Georgetown Gazebo, Garden of the Gulf Museum, the Cardigan Heritage Centre, Roma at Three Rivers Fete Roma (heritage feast), A. A. MacDonald Gardens, Town of Montague Octoberfest, Town of Georgetown's Summer Days, Canada Day celebrations, Kaylee Hall, Reds Corner, Kings Playhouse Ceilidhs, Lane's Riverview Inn 80 seat theatre, Artisans on the Main, and various art and craft galleries. The Cardigan Craft Guild was dissolved and the Cardigan Craft Centre was leased to the Cardigan Farmer's Market in 2013.

On its *Mainstreet* Program, CBC Radio produced three series featuring life on the Island and its history (*Bygone Days*,

Island History, and *In the Garden*). The former two series continue. The hosts of *Island Morning* and *Mainstreet* also conducted many interviews on various aspects of cultural heritage, natural heritage, recreation, music and theatre. UPEI’s Robertson Library has created a digital archives that allows access to the Reg “Dutch” Thompson’s interviews and the issues of *The Guardian* newspaper from 1880 to 1957 were scanned and made available in a searchable format. In addition to these achievements, researchers and writers have produced publications or displays on community history, family genealogy, transportation systems, recreation, natural history, and much more. The long list of the achievements in the Three Rivers’s Time Line (Table 1) and the number and breadth of publications (Appendix 3) offer real proof of what has been achieved in only ten years.

Despite these many achievements, volunteer organizations are struggling with raising funds to implement their undertakings and to recruit volunteers. Most government agencies are under constant pressure imposed by flat line or reduced budgets and expanded roles and responsibilities. More volunteer time is being spent competing for limited project funds and there is an ongoing challenge between approval timing and the recruitment of appropriate staff or acquisition of resources. However, the 2014 PEI Fund which established three levels of funding grants was a bright light for heritage, art, music, and theatrical performance funding. The Cardigan Heritage Centre, Kings Playhouse Theatre in Georgetown, the Town of Montague, Roma at Three Rivers National Historic Site, the Prince Edward Island Genealogical Society, and PEI Women’s Institute were successful in receiving funding for their proposals.

An economic downturn and business closures have been very challenging within Three Rivers communities with the closure of some of the watersheds largest operations (e.g. Georgetown Timber Ltd., East Isle Shipbuilding Ltd., Mariner Seafoods Ltd.). Changes to Employment Insurance rules have led more workers to source work out-of-province. This and some volunteer burnout have affected the availability of volunteer board members, project volunteers and funding for certain organizations. Some organizations such as Roma at Three Rivers host an annual volunteer appreciation night. Less burdensome funding application processes might help alleviate some of the challenges as would provision of seed money to hire part time staff.

Table 2 summarizes the status of the cultural heritage values identified in the Nomination Document for the Three Rivers. These have been grouped into the CHRS *A Cultural Framework for Canadian Heritage Rivers, 2nd Edition* themes and sub-themes.

Table 2. Cultural Heritage Values of Three Rivers, Prince Edward Island since Designation.

CHRS Cultural Framework (2000)	Three Rivers Cultural Heritage value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1. RESOURCE HARVESTING			
Sub-theme 1.1 Fishing	1. Aboriginal prehistoric fishing;	Mi’kmaq Confederacy of PEI Resource Mapping Initiative	None

	2. Historic domestic fishing and processing;	Roma at Three Rivers interpretation (2004)	None
	3. Commercial fish equipment;	Closure of Mariner Seafoods (2013); Opening of a shellfish processing company on Georgetown Wharf (2013);	Fluctuation of commodity prices and trade; Discovery of invasive species (vase tunicate); Predation on mussels by certain waterfowl species
	4. Collection of shellfish	MOU regarding shellfish harvesting	Discovery of invasive species (vase tunicate);
Sub-theme 1.2 Shoreline Resource Harvesting	1. Trapping of fur bearing animals	Presentations to school groups held at Roma on traditional trapping; Annual training workshops held on trapping	Fluctuation of commodity prices; longevity of participants
	3. Hunting of birds and land animals	Safe hunting courses offered in Cantonese; Youth Waterfowl Workshops held; Changes to migratory bird season length and bag limits (2013, 2014)	Decline in American Black Duck population; increase in Mallard population; hybridization of American Black Duck and Mallards
Sub-theme 1.3 Extraction of Water	1. Direct Drive Power Generation: Knox's Dam	Renewable Energy Act (2004); Knox's Maritime Electric Historical presentation (2006); TRHA Newsletter articles	None

	3. Agricultural extraction	Well and surface water monitoring (2009-10); High capacity agriculture wells researched (2013-4)	Nitrification of ground and surface water; Possible expansion of high capacity wells
2. WATER TRANSPORT			
Sub-theme 2.1 Commercial Transportation	3. Power Commercial Freight: Wharves - Georgetown; Lower Montague; Montague; Cardigan; Newport; Morrison's Beach	<i>Reflections: Images and Stories from Three Rivers</i> ; Island Magazine articles; Three Rivers Heritage Association Newsletters	Natural forces (tidal action, storm events, erosion); Human caused climate change.
Sub-theme 2.2 Transportation Services	3. Shipyards Element: numerous historic shipyards along estuary; Georgetown Shipyard (East Isle Shipyard)	Cardigan Heritage Centre (2003-14); Roma at Three Rivers (2004-14); Various articles (see bibliography); East Isle Shipyard closed (2010); Building of traditional dories	Loss of last of schooner fishermen and rum runners; Natural forces (tidal action, storm events, erosion); Human caused climate change.
Sub-theme 2.3 Exploration and Surveying	1. French Exploration	Roma at Three Rivers National Historic Site Interpretive Centre established (2004); 2 nd Roma monument unveiled in 2010	Recruitment of volunteers; Funding availability

	2. English exploration:	Cardigan Heritage Centre (2004); Garden of the Gulf Museum initiatives; Research on Holland Maps	Recruitment of volunteers; Funding availability
	3. Migration and settlement	Roma at Three Rivers Interpretive Centre established (2004); Cardigan Heritage Centre (2004); Garden of the Gulf Museum Artfactory and 3 rd floor exhibit space (2012)	Recruitment of volunteers; Funding availability
3. RIPARIAN SETTLEMENT			
Sub-theme 3.1 Siting of Dwellings	1. Shoreline seasonal Campsites: None identified		Not applicable
	2. Riverside homestead or farm:	Registration of PEI Historic Places (2001-2013); Creation of Archaeology Act (2006); Heritage Fairs	Natural forces (tidal action, storm events, erosion); Human caused climate change; Clearing of hedgerows and land clearing; Natural regeneration of woodland
	4. Permanent riverside dwellings sited with respect to rivers	Roma at Three Rivers Interpretive Centre established (2004); Cardigan Heritage Centre (2004);	Natural forces (tidal action, storm events, erosion); Human caused climate change; Fires

<p>Sub-theme 3.2 River Based Communities</p>	<p>3. River industry-based communities:</p>	<p>2 CHR Monuments (2006, 2007); LiDAR high resolution topographic surveys conducted (2008); PEI Shipbuilding as an Historic Event designation (2009); UPEI Climate Centre established (2012)</p>	<p>Natural forces (tidal action, storm events, erosion); Human caused climate change.</p>
	<p>4. River crossing-based communities:</p>	<p>LiDAR high resolution topographic surveys conducted (2008); UPEI Climate Centre established (2012); Bridge replacements at Valleyfield River, Montague River, Cardigan and Loane Road (2006, 2007, 2012, & 2013)</p>	<p>Natural forces (tidal action, storm events, and erosion)(Env., Labour, Justice 2013); Human caused climate change; Infrastructure aging; Hedgerow replacement needs</p>
<p>Sub-theme 3.3 River Influenced Transportation</p>	<p>1. Ferries and fords</p>		<p>Natural forces (tidal action, storm events, and erosion); Human caused climate change.</p>

	2. Road bridges	Environmental assessments and replacement of Valleyfield River bridge (2006), Montague Route 4 bridge (2007), Cardigan bridge (2012); Loane Road bridge (2013); CLIVE launch (2014)	Natural forces (tidal action, storm events, and erosion); Human caused climate change.
	3. Rail bridges		Natural forces (tidal action, storm events, and erosion); Human caused climate change.
	4. River-influenced roads and railways	Shore armouring at Panmure Island Causeway (2005-6) and Lower Montague (2010); CLIVE launch (2014)	Natural forces (tidal action, storm events, and erosion); Human caused climate change.
4. CULTURE AND RECREATION			
Sub-theme 4.1 Spiritual Associations	2. Ritual or ceremonial structures and sites <i>Not listed in Nomination Document appendix</i>	Native Council of PEI Annual Abegweit PowWows Panmure Island (2004-2013); Phelan (2013); Noël et al (2014)	None
	3. Aboriginal burial places	Mi'kmaq Confederacy research (2002 to present);	None

	4. European Burial Sites	<p>“Kirkin’ O the Tartan” ceremonies (2007); Rejuvenating Brudenell Pioneer Cemetery; Greening Spaces plantings; PEI Heritage Places Registry additions (2004 -14)</p>	<p>Lack of funding & staff to maintain known cemeteries; Erosion and vandalism of monuments; Natural forces (tidal action, storm events, and erosion); Human caused climate change.</p>
Sub-theme 4.2 Cultural Expression	<p>1. Riverside museums, art galleries: Garden of the Gulf Museum; Artisans on the Main; Cardigan Heritage Centre; Roma at Three Rivers; Kings Playhouse; Gallery on the Main</p>	<p>CHR Monument unveilings (2006, 2007); School Heritage Fairs; Resurgence of music & visual arts; Cardigan Heritage Centre (2003-14); Roma at Three Rivers (2004-14); PEI Heritage Collector Cards (2008); Heritage Places Educational Resource Guide (2009); Artisans on the Main (2012)</p>	<p>Lack of funding and staff; Volunteer recruitment; Fluctuation in tourism visitation</p>

	2. Culturally associated sites: Roma at Three Rivers, Cardigan Heritage Centre, Garden of the Gulf; Heritage Places; Kings Playhouse	Development of Roma at Three Rivers site (2004); Prince Edward Island Gaelic Society formed (2006); Registrations of Heritage Places under Heritage Places Register created (2004-14); PEI Heritage Collector Cards (2008); Heritage Places Educational Resource Guide (2009); Kings Playhouse; Walking Tour Map for Georgetown (2007) and Montague	Lack of funding and staff; Volunteer recruitment; Stability of tourism visitation
	3. River-based Cultural Landscapes: Montague waterfront development; Georgetown waterfront development; Cardigan waterfront development	Development of Montague and Georgetown Waterfronts (2004-2014); Georgetown's Kent Square Historic District; Registrations of Heritage Places under Heritage Places Register created (2004-14)	Natural forces (tidal action, storm events, and erosion); Human caused climate change
Sub-theme 4.3 Early Recreation	1. Recreational boating:	Very significant increases through marina expansions at Cardigan, Montague, and Brudenell	Natural forces (tidal action, storm events, and erosion); Human caused climate change; Nutrient loading

	2. Angling:	Loss of Atlantic salmon stocks (Guignion, 2009); Lengthening of rainbow trout season on Montague River (2013-2014)	Erosion and siltation; Changes in angler recruitment; Nutrient loading; Potential fish kills
5. JURISDICTIONAL USES			
Sub-theme 5.1	1. European internecine conflict		
Sub-theme 5.3 Environmental Regulation	1. Flood Control <i>Not listed in Nomination Document appendix</i>	Armouring at Andrew's Point and certain cottages (various years); Storm water system improvements in Georgetown; Replacement of baffles in the Knox's Dam fishway (2012-13); Bridge entrance policy	Natural forces (tidal action, storm events, and erosion); Human caused climate change.
	3. Improvements in aquatic ecosystem management	Upgrading of sewage systems to national standards (2004 to 2010); ALUS program (2006); Creation of PEI Watershed Alliance; Best Management Practices (Island Nature Trust, Harris (2006)); UPEI Canadian Rivers Institute research studies; Southeast Environmental Association initiatives	Nutrient management levels; Cumulative effect of erosion and siltation

Notes on changes or threats: Some of the changes or threats are dependant on global forces including climate change, international trade, and human demographics. Provincial and Federal legislation and higher budgetary allocations have the potential to reduce some of the identified threats.



Figure 5. Most of the Island's former railway line was retained and converted into the Confederation Trail hiking, cycling, and snowmobiling trail. Picture of Brudenell River crossing, Photo by Doug Murray.

5.0 Natural Heritage Values:

Background

The *CHRS Nomination Document for Three Rivers, Prince Edward Island Cardigan, Brudenell and Montague/Valleyfield Rivers* for the designation of Three Rivers and the *Canadian River Heritage System Background Study for Three Rivers, Prince Edward Island Cardigan, Brudenell and Montague/Valleyfield Rivers* noted the following natural heritage values or natural integrity values:

- seven of 30 known drowned forests on PEI are located between Boughton Island and Panmure Island;
- the presence of nesting Piping Plover which are listed as endangered species;
- the Three Rivers has natural values that are clearly significant at a provincial level;
- the presence of nine provincially rare vascular plants one of which is regionally rare;
- Three Rivers is the largest watershed on Prince Edward Island;
- a provincially important Great Blue Heron colony on Boughton Island;
- the presence of an offshore island with a variety of habitat and shoreline types; and
- areas of natural beauty in each of the three river watersheds.

The Nomination document notes that the nomination is being made on the basis of its human/cultural heritage and recreational potential. However, these documents also recognize that a healthy, natural environment is vital to maintaining the recreation and cultural values for Three Rivers.

Hydrologically, the Three Rivers lies within the Atlantic Ocean Basin and is a stream number 1 element. It falls within the Physiographic Sub-theme 2.1, #4 Appalachian Acadian Uplands Physiographic Province. Freshwater seasonal flow normally maximizes during snow melt periods (winter or spring) except in the advent of event rain storms. There are no long term data on water flows. Anecdotal observations indicated freshwater flow reaches its lowest mean daily flow during dry periods between July and September. Tidal flows maximize during spring tides, other moon events or storm surges.

Condition of Values since Designation

During the nomination process, it was determined that the natural heritage values of the Three Rivers on their own do not provide sufficient justification for including the river into the CHRS. However, the importance of the Three Rivers's natural values at a provincial level was accepted and the *Island Gem: A Management Plan for Three Rivers* identifies management goals to conserve the natural and hydrological resources in the watershed. In addition, the beauty of areas within Three Rivers was identified as spectacular in some areas.

Three Rivers has narrow freshwater streams but canoe travel is possible on over 52 km under normal flow and tide conditions. The tidal amplitudes on the Three Rivers's estuary encouraged river navigation by sailing and power vessels during open water conditions and the formation of thick ice in winter allowed sleigh travel. For the first 282 years of the Island's European settlement period, these factors combined with natural resources and good soils allowed for much of the cultural development along the banks of the Three Rivers and its tributaries. The pastoral landscape that was created contributes to the natural beauty of the Three Rivers and enhances its recreation and tourism potential. Some of the viewscape in the Three Rivers estuary, in particular, are spectacular.

Since the Three Rivers designation in 2004, the natural area on Boughton Island was expanded by the purchase of the private land through the leadership of the Nature Conservancy of Canada Atlantic Region. This land was subsequently transferred to the Province of PEI for management and was designated as a natural area. The Great Blue Heron colony on Boughton Island continues in a healthy state. Four new natural areas representing an area of 88.7 ha were also established in Valleyfield/Montague watershed.

The Island Nature Trust has been monitoring Piping Plover (*Charadris melodia*) on the Island in areas outside the PEI National Park for decades. Their surveys have shown that Piping Plover nested at Boughton Island in each of the ten years in the evaluation period with one to three pairs nesting. The fledgling rate has been three to four chicks at this site from 2004 to 2013. The Trust installed symbolic fencing to encourage beach users and their dogs to stay away from the nests. Four volunteer Piping Plover guardians monitored success and encouraged conservation measures. The species was reassessed in 2013 by the Committee of the Status of Wildlife in Canada (COSEWIC) and its status has remained as endangered.

Region wide declines in flycatchers and certain other bird species have been documented in long-term breeding bird survey data. The COSEWIC status of Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*), Canada Warbler (*Wilsonia Canadenis*), Common Nighthawk (*Chordeiles minor*), Olive-sided Flycatcher (*Contopus cooperi*), and Red Knot (*Calidris canutus*) has been set as threatened. The Eastern Wood Peewee (*Contopus virens*) and Rusty Blackbird (*Euphagus carolinus*) were changed to species of special concern. In 2013, the Island Nature Trust commenced a landowner education program to assist Bobolinks and Barn Swallows.

The spread of white-nosed syndrome through bat colonies in Nova Scotia and New Brunswick led to a COSEWIC emergency assessment subcommittee review of bats in Canada. On February 3rd, 2012, three species were listed as endangered. Two of these species are known to be present in PEI colonies, namely, the Little Brown Myotis (*Myotis lucifugus*) and Northern Myotis (*Myotis septentrionalis*). In the winter of 2012-13, the syndrome was discovered in bats on Prince Edward Island and there has been a catastrophic decline of these bats on PEI.

In the past decade, a small number of more southern birds and birds species from Europe have been discovered on Prince Edward Island raising the total number of species recorded to 368. The continued protection programs for raptors have led to an increase in some species, especially the Bald Eagle (*Haliaeetus leucocephalus*) where the number of nesting pairs increased to over 80 across PEI. In the 1960's, there was a single Bald Eagle on the Brudenell River and no nesting eagles elsewhere on PEI. It is believed that the Osprey (*Pandion haliaetus*) population on the Island has stabilized after years of increase.

Survey work by various parties have expanded the knowledge on the presence of rare species within the Three Rivers watershed. There are currently 11 species of birds, two species of butterflies, two species of

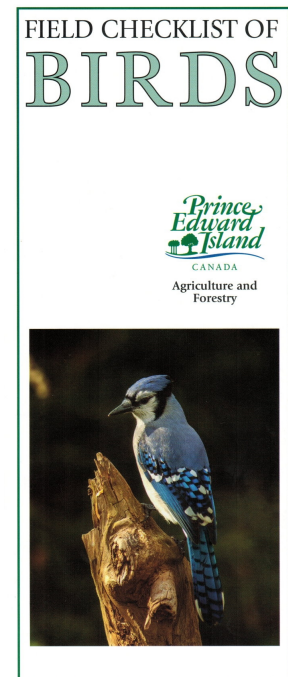


Figure 6. Edition 8, Field Checklist of Birds of Prince Edward Island.

dragonflies/damselflies, and 18 species of plants listed as S1 or S2 on the Atlantic Canada Conservation Data Centre's database.

During the review period, one fresh water surface water flow gauge station was operated by the PEI Department of Environment, Labour and Justice on the Valleyfield River during part of 2009 and 2010. This station was operated to determine whether or not water extraction was allowed in conjunction with an agricultural water extraction permit. Surface water quality was also monitored by the department on 11 sites on the Brudenell, 11 sites on the Cardigan and 18 sites on the Montague/ Valleyfield Rivers. Nitrate monitoring on Valleyfield stations showed a slight decline in 2010 but there were occasional incidents when the level exceeded the CCME guidelines for fresh water life. In addition to this work, the department conducted estuarine sampling on the Montague and Valleyfield estuaries. Samples during the 1992 to 2013 period showed a slight decline in nitrate levels and only a few instances in the Montague estuary where the level exceeded the CCME 3.0 mg/l guideline.

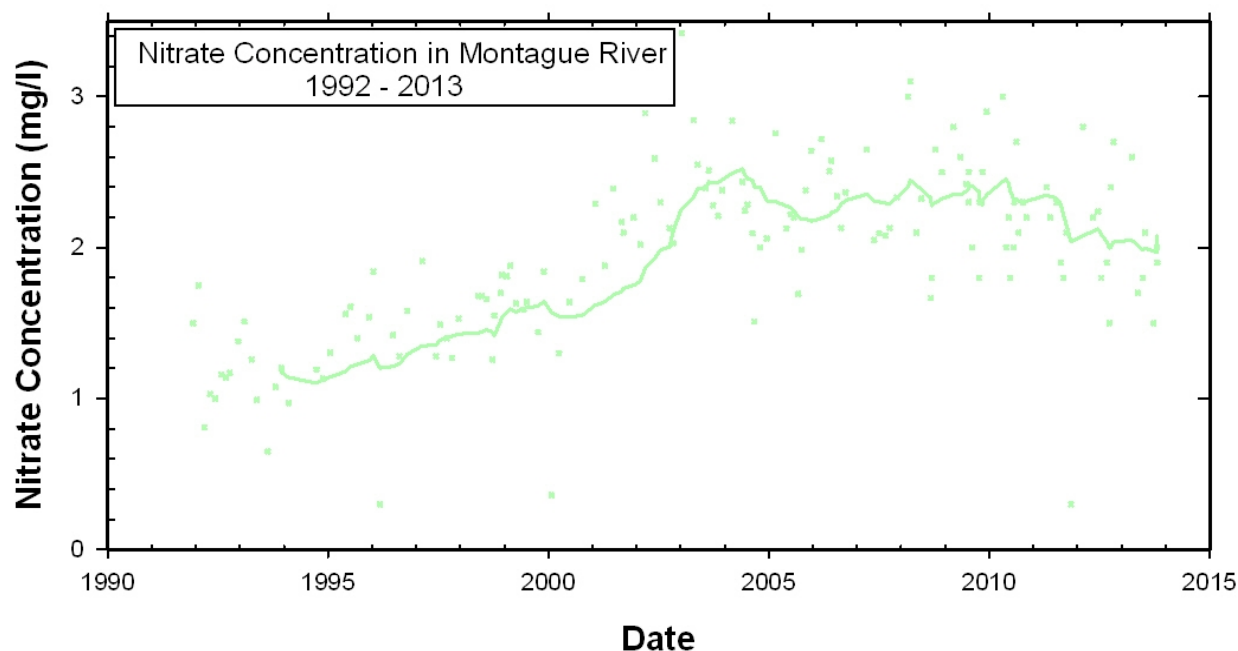


Figure 7. Nitrate concentration in Montague River. Chart by Cindy Crane, PEI Department of Environment, Labour and Justice.

Long term groundwater level monitoring stations are maintained at Caledonia and Georgetown. The Caledonia Station has been monitored since 1970 while the Georgetown station has been monitored since 1990. No significant issues were identified in groundwater levels.

The last known fish kill caused by pesticides in the Three Rivers watershed was on the Valleyfield River in 1999. New *Pesticide Control Act* regulations were established in 2005 that require the licensing of pesticide vendor and application businesses, mandatory certification of private and commercial

applicators and vendor sales personnel, and maximum allowable wind speeds. Cosmetic pesticide sales were restricted in 2010. In 2003, a six year federal - provincial pesticide monitoring program was conducted in PEI for surface water, ground water and stream sediments. Samples were collected and analyzed on the Montague River in 2004 but there were no pesticides detected. Sixteen pesticides are monitored at seven groundwater sites within the watershed. The wells are from schools, municipal drinking water supply sites and private homes. A number of samples showed the presence of certain pesticides below the 1 nanogram/litre level (parts per billion). Summary data are publically available at the PEI Department of Environment, Labour and Justice's website. In addition to groundwater pesticide monitoring, the department sampled surface water every three years starting in 2009 for a suite of pesticides used in agricultural operations. One of these stations is on the Montague River and it was tested in 2011 and 2014. No pesticides were detected in the 2011 Montague River surface water samples but two or the 32 pesticides tested were detected in the 2014 sampling, namely, Clothianidin and Chlorantraniliprole. These were detected at levels below the Canadian Water Quality Guidelines for the Protection of Aquatic Life. There was one test conducted for glyphosate which did not detect the compound but the presence of this pesticide is not normally tested. The 2014 sampling fell outside the ten year review period. These results are also available on line from the department's website. In 2014, the department began stream sediment sampling on the Montague but no pesticide detections were registered. In the eventuality of a pesticide kill, speckled trout brood stock are collected from the Brudenell River and, if necessary, the Valleyfield River for development of genetically appropriate fry for stocking.

Concern over rising ground water and surface water nitrate concentrations and fecal coliform bacterial contamination has been noted for some time on PEI. Government programs have been established to encourage water sampling and analysis and to provide treatment recommendations on the results. This data forms part of the government's ground water quality monitoring system. There has been little change in ground water nitrate concentrations in Three Rivers with average nitrate concentrations being 2.5 mg/L in the period of 1997 to 2014 and 2.4 mg/L in the 2004 to 2014 period. Less than 1% of wells exceeded the 10 mg/L Canadian drinking water limit during this period. There was a slight increase in nitrate concentrations in 2014 with a level slightly over 2.5 mg/L. After a successful pilot project in 2007-2009, septic system contractors were trained in site assessment suitability and selection of septic system design. Technological improvements in construction materials for septic systems have helped to improve groundwater contamination and the testing of hydrologic conductivity. Based on the success of this work, Sewage System Disposal Regulations were amended in 2010 to prohibit the spreading of material removed from septic tanks on fields. It compelled operators to bring this material to the Charlottetown or Summerside wastewater treatment plants. In addition to these improvements to home owner based systems, improvements were made to the central wastewater systems at Montague, Georgetown and Brudenell Resort. These facilities now meet the secondary treatment disinfection national guidelines using a ultraviolet disinfection thus eliminating potential issues that might arise from chlorination.

Changes in fuel tank regulations have reduced the number of incidents of oil spills. A road salt storage contamination issue in a municipal well was fixed. In addition, legislation was introduced to require management plans for community well field protection.

In 2010, training was provided at Holland College to assist in certification of small operators of small, privately owned central drinking water supply systems. In 2006, a well field protection plan was developed for Georgetown's municipal water supply wells and, in 2008, Montague did this for their system. Fecal coliform sampling was conducted at estuarial stations in Three Rivers. Some shellfish closures have been recorded near the Brudenell Point waste water treatment facility. Closures are

addressed by a Memorandum of Understanding on conditional shellfish closures but there is no long term evidence of expansion or reduction of the fecal coliform levels in the estuary.

In addition to the analysis conducted by the PEI Department of Environment, Labour and Justice, the Canadian Rivers Institute at UPEI commenced a sampling initiative to estimate nutrient loading and concentrations in the Montague/Valleyfield watershed commencing in 2006 for the Southeast Environmental Association (SEA). Estuarine sites were added in 2007. Based on new knowledge regarding annual patterns of nutrient loading, monthly sampling was conducted in 2010-11 for nitrogen and phosphorus levels at 12 stations on the Montague and Valleyfield rivers. The estuarine sites were dropped. The sampling included temperature, conductivity, dissolved oxygen, and pH. In addition, a 100 ml water sample was collected and subsequently analyzed for nitrate-N and phosphorus-P. Total water discharge was estimated as was the nutrient discharge to the estuary. This work showed that nitrogen and phosphorus increased significantly in autumn and winter. Nitrogen levels remained high until early summer. The study showed a clear increase in nitrogen coming from agricultural areas but no such relationship was observed for phosphorus. During the winter, a significant source of organic nutrient loading was detected in the south branch of the Montague River. The substantial loads of nitrate-N can contribute to anoxia (a condition of depleted levels of dissolved oxygen) in the waters of the Montague estuary. To overcome this condition in this estuary, a reduction in nutrient loading is required (van den Heuvel et al, 2010). In 2014, a simple nutrient loading model was released (Bugden et al, 2014).

Research work on PEI was commenced on nutrient management balance programs to establish nutrient loading levels but there has been minimal adaptation of nutrient planning measures within the Three Rivers watershed.

SEA recorded white water (anoxic or low oxygen) events near the Montague Marina from 2003 to 2013 as well as instances in the Cardigan River estuary in 2008 to 2010 and in the Brudenell River estuary in 2009. Hourly dissolved oxygen monitor readings were recorded from late May to December, 2013 at a point just below the Upper Montague Road (Sori's Bridge). These readings showed anoxia throughout late summer and into autumn (Coffin, 2014). Additional work is underway to characterize nutrient modeling and estuarine flow modeling on the Three Rivers estuary (Coffin, personal communication). The increase in opening size of the Cardigan River bridge in Cardigan may have improved water exchange which could reduce occurrences of anoxia in the Cardigan River estuary.

Major storms in December of 2004 and 2010 caused flooding and significant damage to infrastructure and the structural damages associated with flooding at Panmure Island causeway, Lower Montague and other sites. There was a major reconstruction and stabilization project implemented in 2005 and 2006 including armouring, road rebuilding, dune creation and stabilization.

The most significant surface water quality issue within Three Rivers is still the movement of water borne sediment from agricultural lands, particularly lands under row crop cultivation. Buffer strip expansion and agriculture crop rotation legislation and the implementation of soil engineering programs to reduce soil loss have improved the situation on lands where the farmers have followed the legislation and invested in soil loss abatement programs. Alternate Land Use Service (ALUS) incentives were provided to install 6.2 km of fences to keep livestock out of riparian zones. In addition, during the Three Rivers CHRS evaluation period, 22.67 hectares (ha) of grass waterways, 6.45 ha of terraces, 1.76 ha of farmable berm, 31.84 ha of headland, 3.07 ha of long term riparian buffer expansion (planted in trees), 3.28 ha of agriculture land within buffer planted to trees (impacted buffer), 33.36 ha of voluntary buffer withdrawn for agricultural production, and 70.52 ha of high slope land were removed from tillage by farmers utilizing the Alternate Land Use Services (ALUS) program. These enhancements reduced soil erosion on

4,265 ha or 16% of the agricultural land base in the Three Rivers. However, tillage best management practices are in many cases not being met. As well, the organic content of tilled land is below recommended levels. In addition, the Agricultural Stewardship Program provided financial support to farmers for manure, fuel and pesticide storage facilities, improved silage, and impermeable base feedlots. However, the statistics for these facilities are not readily available.

The P.E.I. Department of Transportation and Public Works established the Environmental Management Division (now Section) to reduce the environmental impacts of public road construction and maintenance projects. This group developed the Department's Project Approval Process and empowered Environment Officers to implement necessary environmental controls and work methods. They also instituted training programs for Departmental staff, the P.E.I. Roadbuilders Association, and contractor staff to reduce the environmental impact of projects. They addressed four significant stream crossing challenges, namely: replacing a Valleyfield River bridge adjacent to Sutherland's Hole in 2006, the Montague Route 4 bridge in 2007, the Cardigan bridge in 2012 and the Loane Road bridge in 2013. The construction of two roundabouts to modify traffic safety and flow concerns at the Wood Islands Road (Route 4) Valleyfield Road intersection in 2011 and at Poole's Corner in 2012 utilized erosion control measures to minimize siltation. In addition, a significant number of point source erosion sites on the public road right-of-way were addressed through the modification of road grading practices and the use of more sediment traps, diversion ditches, tap drains, placement of asphalt millings, and culvert replacement. The more stringent enforcement of watercourse protection standards on road and industrial construction projects have reduced soil loss rates. However, there are still erosion problems on some clay roads with higher slopes or long runs especially during torrential rains or heavy snow melt periods. Highway bridge structures on P.E.I. are currently designed for a 75 year life span. Thus, in an effort to address increased water levels associated with land subsidence and predicted climate change induced sea level elevations, recent bridges on the Three Rivers have been built higher off the water. The PEI Departments of Agriculture and Forestry and Transportation and Infrastructure Renewal address issues arising from beavers plugging culvert, bridge and water control structures and the inherent flooding and erosion.

With the exception of land conversion, forest management practices cause comparatively low levels of erosion. During the period of 2000 to 2010, 889 ha of forest was converted to other uses while the amount of agricultural land remained essentially the same. During the 2000 to 2010 period, there was an increase of 30 ha in urban area, 123 ha of wetland, and 307 ha in residential development. There was also 451 ha for which the use was non-evident. During the 2004 to 2013 period, there has been a significant decline in subdivision development approvals within the Montague and Souris region for single family (~62% reduction) and cottage lots (~93% reduction). The number of development permits for this same region and period showed single family dwellings permits ranged from 33 to 46 verses a nine year average of ~41 while summer cottage development permits ranged from 15 to 41 verses an average of 26.

The majority of forest harvesting operations were clearcuts but the area harvested during the period is unknown because the forest inventory does not align with the Three Rivers' CHRS review period. The majority of tree planting activities were on cutover forest land. During the 2004 to 2014 period, 411 ha was reforested (see Figure 6), primarily with first generation improved conifer seed. A number of Forest Enhancement Program plans were prepared for private properties on the Three Rivers watershed and 75.86 ha of tree improvement work was implemented. This included the planting of seedlings as species enrichment plantings, pre-commercial thinning, and patch cutting. Forest harvests on public lands are managed by the PEI Department of Agriculture and Forestry under management plans that are made available on the internet. A Forest Stewardship Council certified management plan was developed for the Valleyfield Demonstration Woodlot in 2013. The Greening Spaces program provided seedlings for

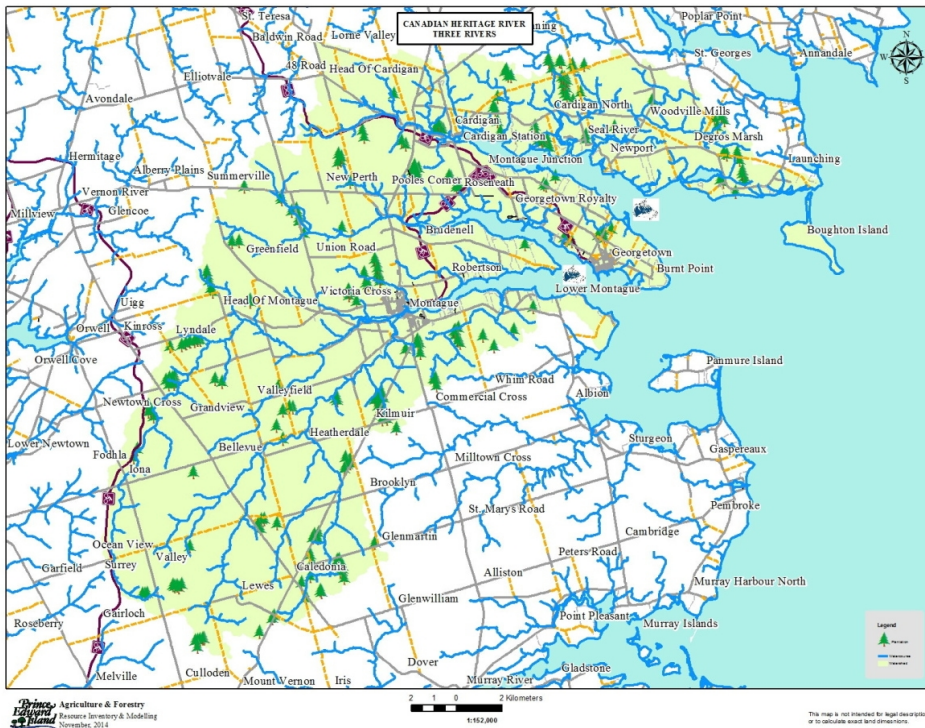


Figure 8. Plantations established between 2004 and 2014 on the Three Rivers watershed. Illustration courtesy of PEI Department of Agriculture and Forestry.

school and community planting projects. These programs are supported through a combination of landowner contributions and P.E.I. Department of Agriculture and Forestry program support. In addition, the Public Forest Council, the PEI Model Forest Partnership and the PEI Woodlot Owners Association undertook various consultations, education initiatives and projects.

During the first ten years since designation, the Southeast Environmental Association initiated a variety of projects in the Three Rivers watershed. This work was led by three coordinators, David Boyce, Sarah Jane Bell and Jackie Bourgeois. SEA's primary funding source was Atlantic Coastal Action Program (ACAP) and later the Atlantic Ecosystem Initiative (AEI). These funds do not provide for instream stream enhancement programs. SEA's initiatives included: Community Aquatic Monitoring Program (CAMP) sampling; Canadian Aquatic Bio-monitoring Program (CABIN) stream invertebrate monitoring; Preliminary Ecosystems Services Assessments (PESA); roadside litter survey for several years including 2010 report; striped bass research, nursery maintenance and a brochure on watersheds in 2004-2005; a community based water quality monitoring initiative in conjunction with St. Mary's University (2012-13); erosion vulnerability assessment of Montague (2013); riparian zone and stream assessment mapping on the Valleyfield, Cardigan and Brudenell Rivers (2013); a value mapping project which produced a preliminary values map (2013-14); climate change vulnerability assessment of Montague in conjunction with Dr. Adam Fenech of the UPEI Climate Research Lab (2013); and assessment of septic tanks and oil tanks. In addition, SEA conducted water quality sampling in conjunction with Dr. Andrew Trivett of the UPEI Engineering Department but the SEA report was not available. It developed a Wordpress and Facebook site for outreach in 2013-14. SEA obtained Watershed Management Fund monies from the PEI Department of Environment, Energy and Forestry in 2007-09 and contracted the delivery of a watershed management plan for the Montague-Valleyfield River. A vision and the goals, issues, and solutions were developed with an advisory group and a Montague/Valleyfield Watershed Management Planning Group developed a draft watershed management plan. The plan focused on a vision statement, goals, and immediate, short and long term strategies and objectives. Public consultations on this plan took place in the spring of 2009 but the plan was not finalized and funds could not be accessed for delivery of the plan.

Concern over “red water” and the inability to receive an allocation of Watershed Management Plan funding because of SEA’s access to ACAP/AEI funding led to the creation of the Montague Valleyfield Watershed Enhancement Coop. Unfortunately, a lack of funding has caused many people to leave the group and there is a need to rebuild it. Cardigan Watershed has conducted education outreach for the past several years and some stream enhancement work circa 2012 (small brush mat installation, debris removal, and removal of potential infalls) on the south of the Shore Road on Cardigan River. It lobbied with PEI Department of Transportation and Infrastructure Renewal for expansion of the bridge entrance to improve tidal exchange rates, dredging of the channel and placement of the spoils behind the new armouring. A draft Fish Habitat Compensation Plan for the Cardigan River was developed in conjunction with PEI Department of Transportation and Infrastructure Renewal. Pisquid River Enhancement Project staff conducted instream enhancement just above the head of tide on the Cardigan River mainstream.

Other partners in the wetland improvement work included Ducks Unlimited Canada, the Atlantic Salmon Federation, the Environment Canada Eco-Action Program, the P.E.I. Wildlife Conservation Fund, landowners, and others. Some of the more significant projects include: replacement of baffles for fish passage at Knox’s Dam, and a draw down of the water at Knox’s Pond to reduce the amount of an invasive plant (*Elodea* spp). Ducks Unlimited created new wetlands and developed its online “Atlantic Wetland Care Program” for landowners.

In respect to natural beauty, the pastoral landscape and beauty still exist. However, there has been a reduction in forest cover and hedgerows due to conversion of forested and hedgerow habitats into agricultural production (mostly blueberries), and housing. During the decade, there has been an overall decline in the number of subdivisions being approved in the Montague/Souris region while the number of single family dwelling permits has fluctuated from 33 to 55 and the number of summer cottages has ranged from 15 to 41. On the positive side, the Government increased the width of agricultural buffer zones, established a new forest policy, created the forest enhancement incentives program, the Greening Spaces Program, and the ALUS incentives for erosion control.

The variation in the value of the Canadian dollar in relation to the United States dollars has had a large impact on many of the agricultural, fishery and forestry resources on the Three Rivers as well as the exporting of many value added manufactured products. There has been a change in farming practices with more soya beans being produced in the watershed.

Public land access was improved by the creation of a Public Lands Atlas and additional public land signage. A State of Environment Report 2010 was released in 2011, the State of Wildlife Report 2007 was released in 2010, the State of the Forest Report 2010-2 was released in 2013.

Utilizing an expert panel assessment system, vascular plants, vertebrate animals, and some invertebrate animal populations were ranked for abundance and population risk by the Province and Atlantic Canada Conservation Data Centre (ACCDC). A rarity ranking system was used to rank species at risk and the location data (Geographic Positioning System (GIS) coordinates) for these rare species was stored in GIS computers residing at the ACCDC. Government programs and non-government organization volunteers collected and identified plants, dragonflies, damselflies, and butterflies on Prince Edward Island. Fund raising efforts are underway for Island Nature Trust to publish the plants data in a new Flora of Prince Edward Island. Based on these more detailed surveys, 90 vascular plants, 7 birds, and 33 insects (dragonflies, damselflies, and butterflies) have been identified as rare based on ACCDC’s ranks of S1, S2, and S2/3. Also, 13 new provincial records of black flies and 14 species of mosquitos were collected on the Island. The Government of Prince Edward Island established the Species at Risk Technical

Advisory Committee.

Concern grew over the impact of invasive species on the Three Rivers with the discovery of the vase tunicate (*Ciona intestinalis*) in 2004 and American waterweed (*Elodea canadensis*), an aquarium plant, at Knox's Dam. Other invasive species of water habitats have already become established in Eastern Prince Edward Island. Mussel growers and the PEI Department of Fisheries, Aquaculture and Rural Development developed a high pressure washing system which allows most mussel growers to contend with the vase tunicate problem. Two workshops were conducted to share knowledge on alien invasive species and an Alien Invasive Species Council has been established. A number of other plants have been listed as invasive in natural habitats, only one of which is being controlled. The latter is the purple loosestrife (*Lythrum salicaria*). Ducks Unlimited Canada have introduced a beetle (*Galerucella californiensis*) to help control its growth.

Evidence of the historical presence of striped bass was not noted in the nomination document. Some were caught within the Three Rivers watershed in recent years. The southern Gulf of St. Lawrence population of the striped bass (*Morone saxatilis*) was listed as threatened under the Federal Species at Risk Act in 2004. As this species has high recreation potential, a series of studies were conducted on the Hillsborough to assess its development potential. These studies concluded that, in all probability, the striped bass does not spawn on PEI and that those individuals feeding in the Island are part of the Southern Gulf of St. Lawrence's population that breeds on the Miramichi River in New Brunswick.

Note: Since 1980, the Province of Prince Edward Island has utilized a 10 year inventory period to collect and interpret vegetation covertypes. Thus, stereo-graphic aerial photography was collected in 1980, 1990, 2000 and 2010. These reporting periods do not coincide with the Three Rivers 10 Year Report cycle. Since the last aerial photography was conducted only 5.5 years into the Three Rivers's period, vegetative cover cannot be systematically compared. In 2010, there was 18,912 ha in forests, 11,317 of land in farm crop production (37.7% grains, 16.0% potatoes, 14.5% hay/grass, 12.9% soya bean, 5.8% pasture, 5.9% blueberries, corn 2.7%, and 4.5% others), 1,230 ha in wetland, 997 ha in residential use, 840 ha in transportation use (roads and power line corridors), 406 ha in urban use, 345 ha in industrial use, 234 ha in recreational use, and the balance in other uses. The Department of Agriculture has indicated that, between 2000 and 2010, there was an increase of 444 ha (an 198% increase) in blueberry land and an unknown number of hectares are under the process of conversion.

Table 3 summarizes the condition of the Three Rivers for those natural heritage values for which the **Hillsborough River** was identified in the document *A Framework for the Natural Values of the Canadian Heritage Rivers, second Edition* on pages 15, 18, 22, 31, 38, 49, 58, 71, and 80. The current *A Framework for the Natural Values of the Canadian Heritage Rivers, second Edition* does not cite natural heritage values for the Three Rivers so those identified for the Hillsborough were used instead.

Table 3.

A Review of Three Rivers Natural Heritage Values since Designation

CHRS Natural Framework (2001) Themes and Sub-themes	Three Rivers Natural Heritage Elements Description (adapted from CHRS 2001)	Significant Actions, Research, or Studies	Changes or Threats to Nomination Value(s)
1. HYDROLOGY			
Sub-theme 1.2 Seasonal Variation	Period of highest flow is June	Preliminary work on water flow was conducted (van den Heuvel et al, 2011); UPEI Climate Research Lab established	Climate change; Increasing frequency of event storms predicted by climate change models
Sub-theme 1.3 Water Content	Total dissolved solids ranked as medium (51 to 100 mg/l)	Sampling program conducted on Valleyfield/ Montague River	Climate change; Increasing frequency of event storms predicted by climate change models
Sub-theme 1.4 River Size	Small river with flow volume rated at <85 m/s and a length <500 km		Climate change
2. PHYSIOGRAPHY			
Sub-theme 2.3 Geological Processes	Porous (sandstones) - Medium porosity: loams, sands, & gravels	Soil sampling conducted by Department of Agriculture and Forestry (started in 1999)	None
3. RIVER MORPHOLOGY			

<p>Sub-theme 3.2 Channel Patterns</p>	<p>Estuarine</p>	<p>Marinas expanded on Cardigan, Brudenell and Montague Rivers; Coastal Erosion and Flood Risk Fact Sheet (2013); CLIVE simulation model launched in 2014; Research initiated on estuary profile model (UPEI)</p>	<p>None</p>
<p>4. BIOTIC ENVIRONMENTS</p>			
<p>Sub-theme 4.1 Aquatic Ecosystems</p>	<p>Riverine Systems: 3. Lowland zone Estuarine Systems: 8. Intertidal zone, 9. Saltwater Marshes</p>	<p>Knox Dam drawn down; Elodea control implemented in Knox's Dam; See Sub-theme 3.2; Salt marsh migration study (2014)</p>	<p>Aging infrastructure for dams and roads; Predicted Sea rise level that will impact saltmarshes; Climate change; Increasing frequency of event storms predicted by climate change models</p>
<p>5. VEGETATION</p>			

<p>Sub-theme 5.1 Significant Plant Communities</p>	<p>Vascular plants</p>	<p>Forest Enhancement Program created; Greening Spaces commenced (2004); vascular plant surveys completed for new Flora of PEI; Publications on historical forests of PEI (Sobey)</p>	<p>Potential increase of invasive species</p>
<p>6. FAUNA</p>			
<p>Sub-theme 6.2 Rare Animal Species</p>	<p>Piping plover only species listed. Additions required: Birds: Regionally rare species - <i>endangered species</i> Piping Plover; <i>threatened species</i> Barn Swallow, Bank Swallow, Bobolink, Canada Warbler, Common Nighthawk; Eastern Wood Peewee, Olive-sided Flycatcher, and Red Knot; and <i>species of special concern</i> Eastern Wood Peewee and Rusty Blackbird; other flycatcher (aerial insectivores) and grassland bird feeding guild declines have also been noted Mammals: Little Brown Myotis and Northern Myotis (bats)</p>	<p>Surveys for Piping Plover conducted and symbolic fencing installed; Awareness campaign commenced on Barn Swallow, Bank Swallow, and Bobolink (2012); Surveys of Great Blue Heron on Boughton Island colony conducted; Expert committee review of species rarity done and integrated into GIS;</p>	<p>Need for COSEWIC management plans and identify required work for various species</p>

		Striped bass designated as endangered (2004); Book being finished on the second Maritime Breeding Bird Atlas; White-nose Syndrome discovered in bats (2012-3); COSEWIC assessment reports published	
NATURAL BEAUTY	Unlisted in the national framework but identified in the nomination document and the CHRS Natural Heritage Themes used by the Provinces and Territories.	Limited conversion of forest and hedgerows; Creation of conservation and training programs (see time line); Streetscape and waterfront programs	Fluctuations in Canadian dollar value; Increase in agricultural economic pressure; Potential increase in strip development; Urbanization pressure; Increase in storm damage

Notes on changes or threats: Aging of infrastructure for dams and roads were rated as a moderate threat. Declines of certain feeding guilds of birds rated as moderate to high threat. Non-native species response to climate change and the potential of certain species to become invasive species in Three Rivers was rated as a moderate threat. The balance of the changes or threats are dependant on global forces including climate change, international trade, and human demographics. Provincial and Federal legislation and higher budgetary allocations could reduce certain identified threats.

7.0 Recreation Values

Background

The Three Rivers CHRS Nomination document indicated that the Three Rivers has outstanding recreation opportunities. The document did not identify or rate the recreation capacity or pressures. However, some descriptive wording was provided on water related activities, nature appreciation, fishing and hunting, trails and routes, and human heritage appreciation.

Condition of Values since Designation

There are Island wide data for hunting, fishing, and trapping and some visitation data. Since designation, there have been no formal surveys of recreation on Three Rivers. However, there are some anecdotal observations by members of the Three Rivers Heritage Association, observations by the staff of Roma at Three Rivers and the Cardigan Heritage Centre, and certain other observers of recreation activities on Three Rivers. A physical activity strategy for Prince Edward Island for the period of 2004-2009 was released in 2004.

Representatives of the Three Rivers Heritage Association and the Hillsborough River Association met with a variety of organizations to promote the Canadian Heritage River brand on the Three Rivers. Thus, the Three Rivers Canadian Heritage River brand was included in a variety of visitor products including maps and brochures.

The Island East Tourism Group Inc. was established and visitation to Three Rivers area has increased despite a more challenging tourism environment. Aquila was contracted to implement a study of cruise ship tourism in January 2014. In 2011, the Eastern Region Sport and Recreation Council was established with funding secured from the PEI Department of Health and Wellness. Recreation PEI and Go PEI established a number of new programs to assist various groups and individuals to participate in recreational activities as part of health and wellness initiatives. These organizations have led a variety of improvements in sports and recreation within the watershed (see Table 1 and Table 5).

Water Related Activities

At the time of designation, boating potential on the Three Rivers estuary was identified as an opportunity.

The Cardigan Marina and the Montague Marina are the primary power and sail boating areas on the Three Rivers. The community supported expansion of marina capacity at Cardigan, Montague and Brudenell and funding was secured. During the review period, some dredging was done on the Cardigan and Montague wharf areas to improve boat access. The Montague Marina now offers dockage for 76 boats, up 26 berths since 2009. There was an expansion of the marina facilities at Brudenell from 4 to 35 in 2013 and work was started on 20 more. The services being offered have improved with better electrical, water, and service docks as well as various onshore services supporting marina visitation. In addition, there are some mooring sites associated with certain marinas. Public exposure of the Montague Marina was increased through a 2013 YouTube video by Eddie Jara, the Waterfront's seal and river cruise operation (Tightline Tours), the Station Store, craft businesses, new restaurants, a fish and chip truck, and a website and Facebook site. The three marinas host an ad in the Atlantic Boating Guide. The Georgetown slipway allows ready access for clam harvesters and other boats. Concern has been raised on the need to maintain recreational waters free of further aquaculture leases.

Cruise Manada in Montague offered boat tours out of Montague but moved its operation out of the Three Rivers area in 2011. Tranquility Cove Adventures in Georgetown commenced two experiential tours, Deep Sea Fishing Adventure featuring an on-boat barbeque of the fish caught and the Giant Bar Clam Dig Experience at the Boughton Island Natural Area. Tightline Tours at the Montague Marina offers deep sea fishing, seal watching and river cruises, lobster haul and other experiential tours.



Figure 9. Kayaking on Montague River. © John Sylvester Photography.

Outside Expeditions continued to offer kayak and canoe rentals throughout the decade on the Brudenell River. The amount of wind surfing has remained minimal but the amount of kayaking based on anecdotal observations suggests that the amount of kayaking has increased. Canoeing in Three Rivers appears to have remained relatively stable. The Red Cross Relay multi-sport relay has continued at Brudenell and its surrounds but this event morphed into the Red Island Relay. A volunteer group took over its operation in 2007 and Cycling PEI took it over in 2011. A triathlon called the Triathlon-by-the-Bay has been held in July at Brudenell Provincial Park since at least 2011.

Trails and Routes

Hiking, walking, and cycling levels have significantly increased by both Islanders and visitors. The Confederation Trail (the former railway right-of-way), a number of shorter hiking trails, and an automobile tour route existed on the Three Rivers at the time of designation. Since 2004, the Confederation Trail cycling and hiking routes were maintained and interpretive signage and infrastructure were added. To conserve some of the historic stone watercourse crossings, the Confederation Trails crew installed plastic culverts through the openings and inserting mortar between the pipe and the stone. Circa 2004, shoreline protection was installed at Vessey's Creek and Shaw's Lane. The waterfront which connects to the trail was developed at Montague, Georgetown, and Cardigan. The line clearing and sub-surfacing for a new 38 km Confederation



Figure 10. Confederation Trail, Montague Marina and Railway Turntable Historic Place. Photo by Doug Murray

Trail line from Stratford to Iona was prepared. This segment and the line from Iona to Murray Harbour add a 9 km segment in the Caledonia Hills within the Three Rivers watershed. Trail surfacing and gateways for the new trail were completed in the Autumn of 2014. The 2014 Confederation Trail

Cycling Guide is available online. Brudenell Riding Stables offers a guided trail ride through the Brudenell Provincial Park. Michael Haynes completed the research for *Trails of Prince Edward Island* which features trails within the Three Rivers watershed.

In 2007, the themes for the tourism routes across the province were changed. The Island East Tourism Group supported by ACOA and the Government of PEI developed the Three Rivers Discovery Route as part of the new Points East Coastal Tour. This initiative was supported by a website. It led to a 5% increase in visitation. The Three Rivers Discovery Drive covers an 80 km road route between Murray Harbour North and Cardigan with an Information Stop at the Georgetown Harbour. It features Roma at Three Rivers National Historic Site and its three self guided woodland and coastal walking trails, the Historic Walking Tour of Georgetown, the A.A. MacDonald Memorial Gardens and geo-caching sites, the Garden of the Gulf Museum, Three Rivers Canadian Heritage River, Cardigan Heritage Centre as well as other cultural heritage, natural heritage and recreation sites and experiences. During the planning process, Three Rivers Heritage Association made efforts to better align the Three Rivers Discovery Drive so that all of its discovery points were within the Three Rivers watershed but this effort was unsuccessful.

The Roma at Three Rivers woodland trails were developed at their site at Brudenell Point in 2004. Island Trails and Trails-for-All both held events. The PEI Region's Red Cross Relay (running, biking and canoeing), now the Red Island Relay, was conducted at Brudenell from 2004 to 2014. The Canadian Red Cross - PEI Region continues to conduct swimming and water safety training including canoe training. Part of Stage 4 of the 2009 Tour de P.E.I., a very successful international women's cycling race competition, was conducted in Three Rivers watershed. Casual observations have shown a significant increase in trail use since designation.

There are three Scenic Heritage Roads designated in the Three Rivers watershed. In 2011-2012, PEI Department of Transportation and Infrastructure Renewal completed a Management Strategy for Designated Scenic Heritage Roads to recognize their heritage and aesthetic values.

A well developed snowmobile trail system combining portions of the Confederation Trail, unplowed public roads and private lands has been maintained. Volunteers install safety and route signage for the trail and the trails are groomed. In ~2010, the Greenvale Stormriders Snowmobile Club developed a new club house at Greenvale. In 2014, The PEI Snowmobile Association hosted the 2014 Celebration Ride which attracted visitors from across North America. In some years since designation, a lack of snow on the Confederation Trail or good ice cover within the Three Rivers watershed has hampered snowmobiling. The number of licensed snowmobiles has ranged from 809 to 1,928 machines with a ten year mean of 1,422. Four of the last 10 years have been above average and only the 809 in 2006-7 were below the 1,159 permit level. The utilization of wheeled ATVs has increased dramatically as has the number of complaints of environmental damage in the watershed by riders using these vehicles in an inappropriate manner. Confederation Trail enforcement officer positions and infraction penalties were created and volunteer trail wardens were recruited. The Confederation Trail enforcement officer role was combined with expanded Conservation Officer responsibilities.

Nature Appreciation

Birding has increased significantly with higher numbers of birders visiting the Island. The Valleyfield Demonstration Woodlot is one of the areas highlighted for birding. The establishment of a web based rare bird alert system for the province in 2004 and a Facebook site, Birding on PEI, and ebird augment opportunities for bird listers. Citizen science initiatives have expanded to include owl surveys, the

Montague Christmas Bird Count, the Great Backyard Bird Count, a second Maritimes Breeding Bird Atlas project, a Maritime Butterfly Atlas, damselfly and dragonfly surveys, and other animal survey systems. The “Field Checklist for Birds for Prince Edward Island” was revised in 2014 adding 15 species to the number of birds recorded on PEI. Expert panels were convened to identify species at risk and surveys were conducted of amphibians, birds, dragonflies, damselflies, butterflies, mosquitos and blackflies. The 2nd Maritime Breeding Bird Atlas surveys were implemented and work is underway to release the publication in 2015. Field work was completed for a new flora of Prince Edward Island but drafting of the text has been delayed.

A variety of education programs have been conducted to enhance nature appreciation (see Table 5). Recreation PEI facilitates funding grants for low income families that improve the potential to participate in various recreational activities (Canadian Tire Jump Start and Kid Sport). The signage system for public lands was expanded to improve recreational opportunities through inclusion of signage for Fish and Wildlife Section managed lands. The management of Provincial Forests and the Fish and Wildlife Section lands was combined under the Provincial Forests Section. Watercourse buffer zones legislation was amended to make contravention more enforceable. While the Agriculture Crop Rotation Act has addressed certain issues, it has not solved the agricultural land soil erosion problem. Education programs and Alternate Land Use Service incentives have improved the amount of erosion occurring and, where these have been applied, they have positively impacted the landscape in some areas. The Natural Areas Protection Act was amended to allow a dedesignation process for natural areas on public lands. In 2007, designated natural areas were excluded from the aggregate land holdings under the *Lands Protection Act*. Changes to the Lands Protection Act allowed farmers to expand the land base they controlled by up to 40% if they excluded non-arable lands within their land holdings.

In 2007, a Public Lands Atlas for Prince Edward Island was printed and a second edition was released in 2013. New public land signage was developed for Wildlife Management Areas, Natural Areas, Ponds and Provincial Forests. These signs were unveiled at the Hillsborough River Eco-Centre in October, 2007. The atlases and signage have enhanced recreational opportunities on public lands.

In 2000, the Cardigan Communities Development Corporation initiated a planning and public consultation process on the creation of the Cardigan marina. The marina and heritage centre were opened in 2003 with the Cardigan Communities Development Corporation being the owner of these facilities.

Fishing and Hunting

Based on provincial license sales between 2004 and 2012:

- The rules for courtesy resident licenses and fisher/farmer changed in 2004. Angling fishing participation for resident and courtesy resident have shown an increase in participation rates from approximately 7300 in 2005-8 (range 7271 to 7477) to 8850 in 2012. There has been a very strong increase in courtesy licenses for those 60 years of age and older. Salmon licenses showed a decline from 504 in 2004 to 93 in 2009 but had increased to 210 in 2011. Winter fishing licence data was largely unavailable but anecdotal information on fishing shack presence suggests very few people participated in 2004 and that the numbers have declined.
- Total resident game hunting permits decreased from 2094 in 2005 to 1875 in 2011 with migratory bird hunting permits dropping from 2254 in 2004 to 1090 in 2011. In 2004, there were only 1566 game permits purchased. In 2011, a courtesy license was issued for seniors aged 60 so the 2011 game permits were approximately 1996. These changes were despite the introduction of the Waterfowler Heritage Day in 2000, Youth Waterfowl Workshops, Ducks

Unlimited's Green Wing Program, and the Ruffed Grouse Society's Novice Upland Game Hunting Workshop (Table 5). Youth hunting permits varied from 153 in 2004 to 124 in 2010. Non-resident permits varied from 946 in 2004 to 676 in 2011 with an average of 658 between 2007 and 2011. Permit data for 2012 and 14 were not available.

- Participation rates in trapping ranged from 96 in 2005-06 to 157 in 2012-13. The 39 year average is 252 but the 10 year average between 2004-05 and 2013-14 was 119 . Education programs to encourage new participants in trapping and more humane trapping were conducted.

Long term monitoring of duck production at sites chosen at random from a wetland inventory within the Three Rivers watershed were discontinued in 2011. There are insufficient sampling sites to provide waterfowl production estimates at the watershed level. However, at the Atlantic Flyway level, there has been a decrease in the American Black Duck population while a substantive increase in the Mallard population. The latter is of concern because of hybridization between the two species. CWS determined at a region level that the resident Canada Goose population allowed the creation of a two week early goose season on PEI. Analysis of Breeding Bird Survey data has shown a decrease in the populations of many species with grassland and aerial flycatchers being particularly hard hit. In 2013, the Island Nature Trust commenced education and stewardship programs for Bobolink and Barn Swallows.

The 2010 Survey on Recreational Fishery in Canada was completed. The Wetland Conservation Policy provides a compensatory payment scheme to create habitat enhancement to replace the area lost to development. Based on harvest levels, coyote (*Canis latrans*) populations peaked in 2004 and have since stabilized. The Beaver (*Castor canadensis*) Policy for P.E.I. was revised in 2007. Harvest levels of muskrat (*Ondatra zibethica*), a primary species in many wetlands, dropped to the lowest level since 1997/98 in 2008/09. However, numbers rebounded from 2010 through 2013/14 to the levels of 1997-99 periods. Garry Griffin's thesis (2013) on muskrats showed that the number of trappers, pelt prices and weather accounted for 75% of the harvest variation.

The PEI Watershed Alliance was created in 2010 to facilitate knowledge transfer. Recreational fishery opportunities for rainbow trout were expanded from September 16 to October 31st in 2013 through an extended season for certain areas on the Montague River and Valleyfield River. Scott Roloson, a graduate student at UPEI, has been studying rainbow trout habitat utilization and movement within the Montague/Valleyfield River.

Siltation continued to be a major problem in Three Rivers. This is primarily from agricultural tillage and highway roads especially clay roads and ditches but other land use operations also contribute to the high erosion level. While expanded agricultural buffers, establishment of cover on come high slope land and better headland management practices have assisted with reducing erosion rates, best management practices for soil conservation on most tilled agricultural lands do not meet the recommendations.

There was very little smelt ice fishing on the Three Rivers in the past ten years. Based on observations of smelt shacks, there has been a slight decrease in the number. In 2001, salmonid (trout and salmon) surveys were conducted by the U.P.E.I. Watershed Research. Those surveys showed a continued



Figure 11. Three Rivers rainbow trout.
Photo by Rosanne MacFarlane

presence of salmon in the Cardigan River with two year classes of salmon present in 2007. However, the fishway at the old Cardigan Fish Hatchery head pond was not operational up to 2008. The Atlantic Salmon Federation's "A Conservation Strategy for Atlantic Salmon in Prince Edward Island" has classed the Cardigan's Atlantic salmon run as being on the verge of disappearing. Surveys of salmon in 2001-2 and 2008 showed that salmon were no longer present in the Brudenell and Valleyfield Rivers.

Human Heritage Appreciation

Some of the highlights since designation of the Three Rivers as a CHRS river include: the designation of Three Rivers as the Island's second Canadian Heritage River (2004); the opening of the Roma at Three Rivers interpretation centre (2004) and expansion of its interpretation and trail programs; the expansion of the collections of the Cardigan Heritage Centre which officially opened in 2004; the installation and unveiling of two CHRS monument plaques at Montague (2006) and Georgetown (2007); the Marshall Supreme Court decision was released clarifying Mi'kmaq Treaty Rights for the fishery (1999 and subsequent challenges); the *French Language Services Act* which expanded French language services (2013); the designation of Heritage Places within Three Rivers communities under the Heritage Places Protection Act registry especially in 2008 through 2010; the creation of the Mi'kmaq Confederacy of Prince Edward Island (2002) and its subsequent research on treaty and Aboriginal rights, collection of oral history and the advancement of employment opportunities; the development and airing of Three Rivers Great Canadian River documentary by the Discovery Channel (starting in 2002); the restoration of a number of heritage homes; and offering of education and interpretive programs on natural history, genealogy, and cultural history (Table 5). In addition, various methods including award nominations, music contests, song writing clinics, and expansion of events were used to expand music, dance, theatre, and visual arts for different cultures. An interpretive panel was installed on the Georgetown waterfront as part of the Points East Coastal Drive. Interpretive panels were established on the Confederation Trail and the Stratford to Iona spur of the trail was consolidated in preparation for application of gravel and official opening in autumn 2014. The Heritage Trail Walking program was established by Recreation PEI - Go PEI to encourage heritage appreciation through walking to at least ten sites during 2014. Many more events are listed in the Time Line (Table 1).

Volunteers are the mainstay of human heritage appreciation. They have produced significant new publications (Appendix 3), renewed culture expression including Mi'kmaq, French and Gaelic classes, improved French language service, established new interpretive sites (Roma at Three Rivers, Cardigan Heritage Centre; Garden of the Gulf Museum artfactory and 3rd floor expansion), designated heritage buildings, raised funds to renovate the Kings Playhouse and add a wing for programs, enhanced plantings and site development at the A.A. MacDonald Memorial Gardens, and more. More singer song writers began recording their music and playing to live audiences across PEI and some are now plying their craft internationally. The Town of Montague was successful in obtaining PEI 2014 funding to create visual art along its waterfront. In essence, this spirit in our culture has increased. The Historica Heritage Fairs and education efforts, CHRS signage, and interpretive panels have helped to expand awareness. In 2004,



Figure 11. Unveiling of Three Rivers Canadian Heritage River Plaque on Montague waterfront in 2006. Photo by David Boyce.

there were a number of awards celebrating individual or community group contributions to culture, natural heritage, and recreation (e.g. Prince Edward Island Environmental Awards). However, more volunteer organizations are struggling to recruit executive committee members and some of the most committed volunteers are showing signs of burn out. Job losses and changes in Employment Insurance programs have caused an exodus of seasonal workers to western provinces. The failure of governments to commit government funding programs to seize development opportunities until after the tourism marketing has been released means that many of these organizations are never sure if they will be able to run their programs thus resulting in further stress to an already stressful situation.

Table 4. A Review of Three Rivers Recreational Values Identified in CHRS since Designation

Recreational Capability and Sub-themes (Nomination Document)	Three Rivers Recreation Capacity Ratings (Nomination Document)	Significant Actions, Research or Studies	Description of Current Situation	Changes or Threats to Nomination Value
1 Boating				
Sub-theme 1.1 Canoe, Kayak, Boating	High	Expansion of marinas at Cardigan, Montague and Brudenell;	Significant increase in power boat and sailboat dock sites; Kayaking and canoeing increased	Potential encroachment from aquaculture operations; Potential boat wake damage to shoreline
2. Angling				
Sub-theme 2.4 Fly Fishing	High	Recreational Fishing Survey, License analysis	Significant provincial increase in sportfishing	None
Sub-theme 2.5 Ice Fishing	Good	Nil	Anecdotal observations suggest decline	None

Sub-theme 2.6 Species specific	Good	COSEWIC (2004, annual species reports); Agr. & For. (2013, 2014) + bibliography	Soil sedimentation, nitrate and phosphorus levels are of concern; Rainbow and speckled trout populations appear stable (very good) but the Atlantic salmon may be lost; Striped bass listed under COSEWIC; Anoxic events in Montague, Cardigan and Brudenell River estuaries	Impact of soil runoff and nutrient loading; Nitrification of ground and surface water; Loss of Atlantic salmon breeding populations
3. Water Contact				
Sub-theme 3.2 Water contact	Good	Env., Ene, & For. 2011 + bibliography; Sewage waste treatment upgrades (see time line & bibliography)	Good for casual contact for boating; significant improvements in waste management	None
4. Water Associated Activities				
Sub-theme 4.3 Hunting	High	Season and bag limit changes; CWS studies	Significant declines in American Black Duck population and increases in Mallards; Extended duck and goose season and changed bag limits; Motivational programs to recruit hunters and trappers commenced in 2000	Rate of American Black Duck/Mallard hybridization; Hunter and Trapper recruitment challenges; Pressure against fur use and firearms
6. Natural Heritage Appreciation				

Sub-theme 6.1 Wildlife	High	Confederation Trails expansion 2012-14; States of Wildlife 2007, Environment 2010 and Forests 2010 reports; (+ Time Line)	Inadequate resources to address opportunities	Certain population declines; Climate change
Sub-theme 6.2 Vistas/Scenic Quality	Exceptional for landscape	Panmure Island erosion control project (2005)	Pastoral landscape still present	Agricultural economic pressures; Increased urban sprawl; Increased cottage development
7. Human Heritage Appreciation				
Sub-theme 7.1 Historic Sites	High	68 new Heritage Places registered and 4 designated under Heritage Places Protection Act; Jean Pierre Roma plaque installed (2010); + Time Line	Improved interpretation but still limited staff and funding to express opportunities	Slight changes (plus and minus)
Sub-theme 7.2 Cultural Landscape	High	See Time Line	Improved interpretation but still limited staff and funding to express opportunities	Ability to recruit human resources; Fund raising challenge

Notes on changes or threats: Erosion and nitrification of ground water were rated as moderate threats. Bird population declines rate a moderate threat. The balance of the changes or threats

are dependant on global forces including climate change, international trade, and human demographics. Provincial and Federal legislation and budgetary allocations have the potential to reduce the identified threats.



Figure 12. December 2010 storm surge damage repairs at Lower Montague. Photo by Don Jardine.

Table 5 summarizes some of the training that is available to assist Three Rivers watershed residents to achieve their aspirations in respect to cultural heritage, natural heritage and recreation and which aid in the achievement of the Three Rivers’s Vision.

Table 5. Some of the education Programs supporting the implementation of the Three Rivers Heritage Association’s Vision.

Program	Lead Organization(s)
Cultural Heritage:	
Three Rivers Speaker Series	Three Rivers Heritage Association
CHRS Monuments	Three Rivers Heritage Association, Canadian Heritage River System Secretariat, Town of Montague, Town of Georgetown, Government of PEI
Roma at Three Rivers	
Enactments & Period Dress	Board of Roma at Three Rivers
Roma at Three Rivers	
French Education Program	Board of Roma at Three Rivers
Historic Trapping Methods	Clarence Ryan through Roma at Three Rivers
Cardigan Heritage Centre	Cardigan Area Heritage Association
Historica Heritage Fairs	Historica Foundation & PEI School system, Grades 5 through 9 (from 2005 to 2014, Cardigan Consolidated and Montague Consolidated Schools have participated
PEI Heritage Collector Cards	PEI Public Archives and Records Office
Heritage Trail Walking	

Program	Go PEI
Mi'kmaq Heritage	Native Council of PEI PowWow at Panmure Island; CHRS Montague and Georgetown Monument ceremonies with inclusion of Mi'kmaq language on plaque and traditional ceremonies; Mi'kmaq ceremonies; Mi'kmaq Confederacy of Prince Edward Island
Artifact Conservation Programs	Community Museums Association; Archives Council; P.E.I. Museum and Heritage Foundation; Garden of the Gulf Museum; Cardigan Heritage Centre; PEI Public Archives and Records Office
Genealogy	P.E.I. Genealogical Society; Community schools; Public Archives and Records Office; Garden of the Gulf Museum; Cardigan Heritage Centre; Prince Edward Island Scottish Settlers Historical Society; Fort Augustus Irish Descendants Association; Benevolent Irish Society of P.E.I.; Nathan Mair; U.P.E.I. Senior's College; New genealogy publications in Bibliography (see Appendix 3); Expansion of online resources including Island Register, UPEI Robertson Library digital data archive, Ancestry, and other sites
<i>By Gone Days, Island History</i>	
<i>In the Garden</i> shows	CBC Radio <i>Mainstreet</i> features
Architecture lectures	Institute of Island Architectural Studies and Conservation
P.E.I. Studies Desk	Robertson Library, U.P.E.I.
Island Studies lectures	Institute of Island Studies, U.P.E.I.
Visual Arts	Public Forest Council; Arts Guild; various craft shows, art galleries, and studio tours
 Natural Heritage	
Stream Enhancement	PEI Watershed Alliance; Atlantic Salmon Federation; UPEI Biology and Engineering Departments and Institute of Island Studies; Atlantic Veterinary College; PEI Department of Environment, Labour and Justice; PEI Department of Agriculture and Forestry; PEI Department of Transportation and Infrastructure Renewal; Fisheries and Oceans Canada; Southeast Environmental Association; Macphail Woods Ecological Forestry Project; Island Nature Trust; Holland College Wildlife Conservation Technology
Adopt an Eagle Program	Island Nature Trust with Grades 2 to 6 Montague and Cardigan Schools
Confederation Centre Public Library Nature Series	Island Nature Trust
Atlantic Teacher's Tour	Canadian Woodlands Forum & P.E.I. Department of Agriculture and Forestry
Fish Friends Program	Atlantic Salmon Federation; Abegweit Biodiversity Enhancement Hatchery; Cardigan Consolidated School
Electro-fishing Training Project Webfoot	PEI Department of Agriculture and Forestry Ducks Unlimited Canada in conjunction with Island Nature Trust - Cardigan and Montague Elementary Schools Grade 4 students
Environmental Management	P.E.I. Department of Transportation and Infrastructure Renewal (staff, contractors); P.E.I. Department of Environment, Labour and Justice (staff, contractors); PEI Department of Agriculture and Forestry (staff, contractors, woodlot owners); Southeast Environmental Association
Provincial Forest Envirothon	P.E.I. Department of Agriculture and Forestry; team from Grades 9-12 of

Forest Management	Montague High School P.E.I. Department of Agriculture and Forestry; Public Forest Council; PEI Model Forest Partnership; PEI Woodlot Owners Association; Macphail Woods Ecological Forestry Project; Forest Consultants
Pesticide training courses	P.E.I. Department of Agriculture and Forestry
Septic system site evaluation, selection & operation	Holland College, PEI Department of Environment, Labour and Justice, Septic system contractors, central wastewater system operators
Education programs	P.E.I. Model Forest Network Partnership; UPEI; Holland College; Senior's College; PEI School System
Animals & Plants	Macphail Woods Ecological Forestry Project; Natural History Society of Prince Edward Island (Nature PEI); Island Nature Trust; PEI Department of Agriculture and Forestry
Invasive Alien Species	PEI Invasive Alien Species Working Group 2008 and 2010 workshops; Island Nature Trust; Canadian Food Inspection Agency; PEI Invasive Species Council
Confederation Trail Maintenance & development	P.E.I. Department of Transportation and Infrastructure Renewal; PEI Tourism and Culture; Island Trails
Riparian Zone Planting	P.E.I. Department of Agriculture and Forestry; Island Nature Trust
Riparian Zone BMPs	Island Nature Trust; PEI Watershed Alliance; Watershed groups
Fish, Game and Fur Bearer Harvesting	P.E.I. Department of Agriculture and Forestry; PEI Trappers Association; PEI Wildlife Federation
Environmental Farm Plan	Federation of Agriculture
Citizen Science Initiatives	Bird Studies Canada (Backyard Bird Count, Christmas Bird Counts, Maritimes Nest Record Scheme, Great Backyard Bird Count); Island Nature Trust (Piping Plover Surveys, Bobolink and Swallow surveys, Farmland Birds Project (Barn Swallows and Bobolinks conservation program)); Atlantic Canada - Conservation Data Centre (Maritime Butterfly Atlas); Southeast Environmental Association (CAMP, CABIN); UPEI Bird List Server; Ebird Canada; and others

Recreation:

Boat Safe Handling Courses	Blue Heron Canadian Power and Sailing Squadron's Winter Boating Seminar Series of Study Courses; On-line courses
National Pleasure Craft Operator Competency	On-line courses
Bird identification courses	Natural History Society of Prince Edward Island (Nature PEI); Bird Studies Canada; Holland College's Wildlife Conservation Program
Project Webfoot	Ducks Unlimited Canada (youth awareness program); Island Nature Trust
Youth Waterfowl Workshop	P.E.I. Department of Agriculture and Forestry (2000-2014); Delta Waterfowl; Canadian Wildlife Service; Ducks Unlimited Canada; P.E.I. Wildlife Federation; P.E.I. Archery Association
Waterfowler Heritage Day	P.E.I. Department of Agriculture and Forestry
Firearms Safety Training	P.E.I. Department of Agriculture and Forestry
Mandarin Firearms Safety & Hunting Training	P.E.I. Department of Agriculture and Forestry
Advanced Trapper Workshops	P.E.I. Department of Agriculture and Forestry/P.E.I. Trappers Association

Trapper Education Program	P.E.I. Department of Agriculture and Forestry/P.E.I. Trappers Association
Becoming an Outdoors Woman Tourism workshops	Donna Gillis, Tracy MacDonald Tourism Industry Association of P.E.I.; P.E.I. Department of Tourism and Culture; Atlantic Tourism and Hospitality Institute; Institute of Island Studies (UPEI); Island East Tourism Group; Georgetown Conference; Strategic Tourism Expansion Program (STEP)
Hiking, walking, learn to run High Five Program Leader Training	Recreation PEI - Go PEI Recreation PEI
Principles of Healthy Child Development	Recreation PEI
Recreation & Facility Training	Recreation PEI; PEI Department of Health and Wellness
Horse Riding Lessons	Brudenell Riding Stables

8.0 Integrity Guidelines

Integrity was considered at the time of the nomination of the Three Rivers, and the document states: “The Three Rivers meets all the general integrity guidelines”.

Table 6 summarizes the condition of the Three Rivers integrity guidelines since designation. The framework themes are drawn from the 2001 document *Canadian Heritage Rivers Systems - Principles, Procedures and Operational Guidelines*. Since only general integrity guidelines were provided at the time of nomination, these specifics frame the changes or threats to river integrity.

Table 6. Three Rivers Integrity Guidelines since Designation

CHRS Principles, Procedures and Operational Guidelines	Three Rivers Integrity Guideline(s)	Changes or Threats to River Integrity
3.3.1 Natural Integrity Guidelines	Note: Three Rivers was not nominated for Natural Heritage.	
The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the processes, features, activities or other phenomena which give the river its outstanding value	As the largest watershed in P.E.I., the natural heritage of Three Rivers supports many of the uses which make it valuable for CHRS nomination. Early settlement would not have taken place if the size and the flow were not sufficient to support these populations and the variety of activities.	None

	<p>Its role as an inland ferry transportation and settlement route made the Three Rivers an important strategic location. Recreational opportunity on the river is varied, due to the presence of both fresh water and salt water environments and river width/flow.</p>	
<p>The nominated area should contain those ecosystem components required for the continuity of the species, features or objects to be protected</p>	<p>The communities on the Three Rivers have always been dependent upon the natural resources of the river valley. Interest in the rivers heritage has improved and will continue to improve cooperation between governments and residents.</p>	None
<p>The quality of the water should be such as to provide the continuity and/or improvement of resources upon which “value” to the system has been determined</p>	<p>Recreational water quality on the Three Rivers is quite good. Inclusion in the national system of Heritage Rivers can only serve to improve water conservation efforts on the river.</p>	Nutrient loading, erosion and siltation
<p>The natural aesthetic value of the river is not compromised by human developments</p>	<p>The pastoral beauty of the landscape is high to exceptional in certain areas.</p>	None
<p>3.3.2 Cultural Integrity Guidelines</p>		
<p>The nominated area is of sufficient size and contains all of most of the key interrelated and interdependent elements to demonstrate the key aspects of the processes, features, activities or other phenomena which give the river its outstanding value</p>	<p>The Three Rivers meets the four historical integrity guidelines.</p>	None

<p>The visual appearance of the nominated section of the river enables an appreciation of at least one of the periods of the river's historical appearance</p>	<p>Most of the nomination area has the same appearance as during the different stages of historical development. Examples include a number of private and public buildings and structures, woodlands, wetlands and pastoral quality of the countryside. Neighbouring land use does not seriously affect the historical experience offered by the Three Rivers.</p>	<p>Cottage development in certain areas on the river</p>
<p>The key artifacts and sites comprising the values for which the river is nominated are unimpaired by impoundments and human land use.</p>	<p>Most of the artifacts comprising the values for which the river is nominated are unimpaired by impoundments and human land uses.</p>	<p>None</p>
<p>3.3.3 Recreational Integrity Values</p>		
<p>The river possesses water of a quality suitable for contact recreational activities for the sought after growth of recreational opportunities for which it is nominated</p>	<p>For the most part, quality of the water is very good, suitable for contact and non-contact recreation.</p>	<p>Continued siltation especially during rain event storms; nutrient loading and eutrophication and anoxic events especially on the upper Montague estuary.</p>
<p>The river is capable of supporting increased recreational uses without significant loss or impact on its natural, cultural or aesthetic values</p>	<p>Recreational use by sailors and power boaters are relatively high but the marinas have improved waste management facilities. Concern has been raised on the increased size and power of the boats and the wake created by some boats.</p>	<p>Expansion of aquaculture</p>

9.0 Subject Assessment of Progress towards *Island Gem*'s Vision, Goals, and Objectives

Introduction:

The Three Rivers Heritage Association set out its vision and goals in *Island Gem: A Management Plan for Three Rivers* in 2003. The Association operates as a volunteer organization without salaried staff. Periodically, the Association raises funds through applications for project funds to various organizations. The Association's budget since the CHR designation in 2004 to 2010 was approximately \$5,000 per year and less than \$500 between 2011 and 2014. The subjective assessment of progress provided in Table 7 is based on the various goals and objectives and is placed in the context of the progress toward these aspirations, the measures that were identified in the plan, and the organization's structure, partnering efforts, and budget. The Three Rivers Heritage Association was unsuccessful in negotiations to better align the Three Rivers Destination Tour of the Points East Coastal Drive within the boundaries of the Three Rivers watershed.

Table 7. A subjective assessment of the progress towards the *Island Gem*'s Vision.

"Island Gem:" Goal or Objective	Assessment of Progress
1. Vision: All stakeholders and interested parties working together to maintain and promote the	
natural and human/cultural heritage values; and	Very good
recreational opportunities	Good
for which the Three Rivers watershed is recognized in the Canadian Heritage River System.	
2. Three Rivers Canadian Heritage River Goals:	
Natural Heritage Goal: The promotion, preservation, and education of the natural heritage values of Three Rivers.	Very good
2.1 Objectives:	
Improve awareness of the diverse natural heritage values that are located in the Three Rivers area to local residents and potential visitors;	Good
Educate the public about the drowned forests between Panmure and Boughton Island;	Poor
Educate the public about the significance of the Valleyfield Demo Woodlot and Brudenell Pines;	Good

Promote and preserve the value of the Great Blue Heron Colony on Boughton Island	Good
3. Recreational Goals:	
Goal: The promotion of the recreation opportunities Three Rivers provides.	Good
3.1 Objectives:	
Promote the diverse recreational opportunities in the Three Rivers area;	Good
Increase public awareness about lesser known recreational opportunities in the Three Rivers watershed, such as hiking, cycling, and wildlife viewing;	Good
Make a conscious effort to ensure that all future recreational opportunities and waterfront development are consistent with the vision for Three Rivers as set out in the management plan.	Fair
4. Human Heritage Values Goals:	
Goal: The promotion, preservation, and education of the human/cultural heritage values of the Three Rivers watershed.	Good
4.1 Objectives:	
Ensure continued participation of the Aboriginal community in the management of Aboriginal heritage values;	Good
Support other heritage groups that are currently working on promoting historical events, figures, or groups of significant importance to the Three Rivers area;	Very good
Educate the public about the Brudenell Point settlement and the relevance this settlement has in regional, provincial, and national history;	Very good
Preserve the archaeological integrity of the Roma site;	Very good
Increase public awareness about the Interior Ferry System throughout the Three Rivers watershed and increase awareness of historical transportation routes;	Poor
Educate the public about the relevance of the Montague Electric Company as the main provider of electricity in the Three Rivers area in the early 20 th century;	Fair

Promote and preserve the architectural significance of personal and public buildings in the Three Rivers area;	Very good
Promote the historical relevance of the shipbuilding industry in Three Rivers during the 18 th and 19 th centuries.	Very good
5. Actions	
The use of Federal and Provincial legislation and voluntary guidelines that are in place for the conservation of the heritage values.	
5.1 Objectives:	
Study and monitor the impact of increased usage on the natural, cultural, and recreational heritage features of Three Rivers;	Good
Monitor and record water quality on a regular basis and complete a 10 year monitoring report to be submitted to the CHRS board;	Very good
Preserve, promote, and educate the residents in the Three Rivers area, as well as the province as a whole, of the important regional, provincial, and national roles Three Rivers has played through public gatherings, workshops, and displays;	Fair
Encourage community participation and support by coordinating meetings involving all stakeholders;	Fair
Provide information and/or expertise in the area of new and improved methods of agriculture, aquaculture, forestry management, and resource sustainability	Good
6. Roles and Responsibilities	
Cooperative efforts of the following groups will ensure responsible implementation of the management plan.	
6.1 Three Rivers Heritage Association:	
Act as an interest group on behalf of Three Rivers watershed.	Fair to Good
Achieve and sustain a high level of interest and involvement among all stakeholders	Fair
Promote sustainable economic development within the watershed	Fair
Establish a headquarters for various environmental projects, river improvements, and management of the natural, cultural, and recreational heritage values.	Poor

Regular monitoring and reporting of the rivers' progress.	Fair to Good
Completion of a 10 year report on the rivers' progress for the CHRS board.	Good
Explore potential tourism opportunities for economic and social improvements related to the rivers' heritage.	Fair
Promotion of Three Rivers as a Canadian Heritage River.	Good to Very Good
6.2 Federal Government:	
Enforcement of appropriate laws and regulations	Poor to Fair
Consultation on management initiatives.	Poor to Fair
Creation of new laws.	Poor
Promotion of Three Rivers as a Canadian Heritage River	Fair to Good
6.3 Provincial Government:	
Enforcement of appropriate laws and regulations	Fair to Good
Consultation of management initiatives	Good
Creation of new laws	Good
Promotion of Three Rivers as a Canadian Heritage River	Good
Promotion of Three Rivers as a tourism destination	Good
6.4 Canadian Heritage River System	
Consultation with management initiative.	Poor to Fair
Sharing of information	Poor
Periodically review the status of Three Rivers to determine if selected values are being maintained	Poor
Develop public awareness and appreciation of the Canadian Heritage Rivers System	Fair
Promotion of Three Rivers as a Canadian Heritage River	Fair
6.5 Local Municipalities:	

Assist in management of the watershed within municipal boundaries	Good
Creation of new bylaws	Poor
Promotion of Three Rivers as a Canadian Heritage River	Fair
Ensure that future plans are consistent with the management plan	Fair
6.6 Non-governmental Organizations:	
Assist in the implementation of the management plan throughout the Three Rivers watershed	Good
Work in cooperation with all stakeholders for the betterment of the watershed	Fair
Promotion of Three Rivers as a Canadian Heritage River	Fair
Ensure that future plans are consistent with the management plan	Fair
7. Indicators of Success:	
Success in achieving the vision in place for the Three Rivers watershed will be a constant progression to meet changing realities and conditions. Upon designation as a Canadian Heritage River, cooperation of all stakeholders will be vital in the success of meeting and exceeding the goals and objectives in the management plan. Success in achieving the vision in place for Three Rivers will be indicated by:	
Public awareness of the watershed's human/cultural heritage values and recreational opportunities	Fair
Cooperation among the stakeholders and interest groups in achieving Three Rivers' vision, goals, and objectives	Fair to Good
The ability to meet changing realities and conditions within the Three Rivers watershed	Good
The ability of stakeholders to sustain the human/cultural values and recreational opportunities Three Rivers offers	Good
Effective communication between stakeholders, interest groups, and local residents to ensure that future plans are consistent with the management plan	Poor to Fair

10.0 The View Upstream

This report acknowledges some of the achievements made by the many partners working towards *Island Gem - A Management Plan for Three Rivers' Vision*. This report was time and funding limited so these achievements represent a partial list of what was actually achieved by the many contributors. One of the most common statements made during the consultations has a flavor like “well, not much happened...or... we made some progress”. Placed in the reality of the 2004-2014 time period, this report is a celebration of just how much has been achieved!

The goals and objectives set out in *Island Gem: A Management Plan for Three Rivers* are still valid. More work is required to achieve some of what could be done with added energy, better communication and new funding. There is an urgent need to rebuild the Three Rivers Heritage Association into a vibrant organization so that *Island Gem's Vision*, goals and objectives are achieved. Efforts are needed to communicate *Island Gem's Vision*, goals and objectives with the public and the various groups working inside and outside Three Rivers. With the current population demographics present within Three Rivers, there is a need to collect and document historical images, events and artifacts and to record oral history before this information is lost. To address the natural heritage, there is also a need dramatically reduce point source soil erosion and nutrient loading into the estuary.



Figure 13. Three Rivers Canadian Heritage River sign on Georgetown waterfront. Photo courtesy Three Rivers Heritage Association.

One of the goals of this report was to look at the possibilities, i.e. the View Upstream in our Time Line on the Three Rivers. So, from the Three Rivers Heritage Association's perspective, the possibilities to enhance *Island Gem: A Management Plan for Three Rivers Vision* include:

1. Implement an outreach program on the release of the *Three Rivers CHRS 10 Year Report* to share the knowledge on what has been achieved and to energize more individuals and organizations to contribute their skills to the revitalization of the Three Rivers Heritage Association so as to better implement *Island Gem: A Management Plan for Three Rivers' Vision*.
2. Install The Three Rivers Canadian Heritage River signage on all major crossing points on the large tributaries of the Three Rivers so that: visitors recognize they are in the Three Rivers Canadian Heritage River; residents take pride in the river's dynamic history; and both visitors and residents relate to watersheds from a soil conservation perspective. It would be preferable that this signage meet the “world class” visitor experience mandate of Phase II Confederation Trail Development Plan.
3. Establish a CHRS monument at or near the Cardigan Heritage Centre.
4. Encourage those groups and governments operating within the Three Rivers watershed

- that have not incorporated information on the Three Rivers CHR designation in their written materials and websites and Facebook pages to do so.
5. Utilize high definition topographic models such as CLIVE to model the potential impact of rising water levels caused by climate change and land subsidence on saltmarshes, archaeological sites, structures, and roads systems.
 6. Research and submit nominations for awards that enhance the profile of those contributing to the implementation of *Island Gem: A Management Plan for Three Rivers' Vision* (e.g. PEI Museum and Heritage Foundation's Heritage Awards, PEI Environmental Awards, Island Nature Trust's J. Angus MacLean Natural Areas Award, Order of Prince Edward Island, the Community Museum Association's Dr. William Elliot Award, DFO's National Recreational Fisheries Award, etc.).
 7. Install additional interpretive signage on the Confederation Trail within the Three Rivers watershed so that: the visitor experience is enhanced; the increasingly urbanized population becomes more aware of the history and natural values of the watershed; and visitors can utilize the Three Rivers public access roads or Confederation Trail to walk or cycle to Three Rivers viewpoints.
 8. Improve knowledge of the impact of aquatic and terrestrial invasive species on the Three Rivers watershed and encourage landowners and visitors to utilize measures to curtail the spread of invasive species.
 9. Improve the marketing of human/cultural heritage sites, natural heritage assets, and recreation sites within Three Rivers so that: the visitor experience is enhanced; the financial stability of various sites is achieved; and the dynamic history and ecological roles are conveyed to residents and visitors.
 10. Place a copy of all the Three Rivers Heritage Association Newsletters in the libraries within the watershed, UPEI's Robertson Library and the Confederation Centre Library;
 11. Discuss ways and means of ensuring that various organizations conserve their minute book records so that they become an educational tool for future generations.
 12. Support the development of a Museum of Nature within the P.E.I. Museum and Heritage Foundation that achieves the natural history and curatorial mandates set out in current legislation.
 13. Mobilize discussions with government so that casual staff and grant funding for interpretive facilities including the Garden of the Gulf Museum, the Cardigan Heritage Centre, Roma at Three Rivers, Southeast Environmental Association and Three Rivers Heritage Association is determined well before their marketing campaigns are initiated so that the volunteer boards are afforded the time to develop better their campaigns. (This is a needed tool to reduce the amount of volunteer burnout from uncertainty).
 14. Contribute ideas to Island East Tourist Group's experiential tourism programs so that visitor knowledge of the Three Rivers's cultural, recreation, and natural values is part of their programs (e.g. personages depicting a shipbuilding role, wood statue carvings integrating personages that portray a role in the Three Rivers's development).
 15. Investigate and install armoring on coastal pioneer cemeteries;
 16. Conduct archaeological surveys to identify significant sites and the needs for conservation; and
 17. Identify additional important dates and achievements on the Three Rivers time line so that themes can be used for marketing and conveying historical information.

11. Summary of Benefits of achieving the Designated Canadian Heritage River status for Three Rivers.

Table 8. Summary of benefits of achieving the Designated Canadian Heritage River status for Three Rivers.

Type of Benefit	Description
<p>Environmental Benefits (ex: improved water quality; improved habitat; increases in fish / animal / plant populations, etc.)</p>	<p>Improved science and knowledge on the factors influencing river biology (nutrients flow patterns, sedimentation, fish passage, silt stabilization, etc.).</p> <p>Increased awareness of the need to monitor water quality and pressure to improve water quality.</p> <p>Increased citizen science initiatives (water quality (CAMP); invertebrates (CABIN)).</p> <p>Continued access to native trees and shrubs for forest improvement and watershed enhancement.</p> <p>Expansion of watercourse buffer zones (Environmental Protection Act) and implementation of Alternate Land Use Service grants to support conservation measures.</p> <p>Expansion of waste water treatment facilities and regulations for disposal of wastes.</p>
<p>Cultural Benefits (ex: improved appreciation of river / watershed / aboriginal or other history of river use; increased identification and protection of culturally significant sites, etc.)</p>	<p>Installation and unveiling ceremonies of Three Rivers CHR plaques on Montague and Georgetown waterfronts.</p> <p>Creation of two new cultural heritage interpretive centres (Roma at Three Rivers and Cardigan Heritage Centre).</p> <p>Expansion of the Garden of the Gulf Museum and creation of a new artifactory storage space.</p> <p>Registration or designation of 72 PEI Heritage Places.</p> <p>Unveiling of a new plaque at Roma at Three Rivers.</p> <p>Unveiling of Shipbuilding on PEI as a National Historic Event plaque.</p> <p>Implementation of the Heritage Fairs for grades 5 to 9 students.</p>
<p>Recreational benefits: (increased or decreased use of river; changes in use of river; improved access to river, etc.)</p>	<p>Large increase in recreational boating with three marinas either expanded or developed (Cardigan, Montague and Brudenell).</p> <p>Expanded recreational fishing opportunities for rainbow trout.</p> <p>Development of two Public Land Atlases to identify those lands which the public can access (land here is 90% private).</p> <p>Increased use and expansion of the Confederation Trail.</p> <p>Development of 3 trails at Roma at Three Rivers</p>
<p>Improved Knowledge (ex: increased understanding of river wildlife / vegetation / history / traditional knowledge, etc.)</p>	<p>See publications list in Appendix 3 (Note: this represents some of the publications).</p> <p>See Table 5 education programs.</p> <p>Community Museums Association study tours and training.</p> <p>Implementation of the Heritage Fairs for grades 5 to 9 students.</p>

<p>Monetary benefits: (increased access to funding; increased revenue, etc.)</p>	<p>Support funding for CHR nomination, designation and decadal review documents and for CHR plaques. Construction of new facilities. Expansion of experiential tourism and recreation opportunities. Development of potential for cultural heritage tours. Multiplier effect of new money entering Three Rivers economy.</p>
<p>Increased Stewardship: (increased involvement in stewardship activities, number of activities / events, etc.)</p>	<p>Expansion and cataloguing of historical artifact collections at heritage centres. Citizen science initiatives (see above). Registration or designation of 72 PEI Heritage Places.</p>
<p>Community engagement and collaboration: (increased dialogue with community and other partners and stakeholders; increased participation in river management discussions; increased involvement in river activities)</p>	<p>Increased communication and collaboration between various groups interested in cultural and natural heritage conservation. Expanded public discussions in newspapers, radio and television programs regarding environmental and heritage activities. Dramatic increase in interest in local family and cultural genealogy as well as development of new resource centres within the community and online. Enhanced community discussion of rural development initiatives (e.g. marinas, waterfronts, Georgetown Conference: Rural Redefined).</p>
<p>Have any education programs related to the river, health of the river or watershed, use of the river, etc. been undertaken since designation?</p>	<p>Extensive educational programs were implemented during the decade and are listed in Table 5. Note that is not a complete list of the opportunities. See Appendix 3 publications list.</p>
<p>Have any communications products (signage, exhibits, photo contests, social media and web etc.) been developed to communicate the designation and its benefits?</p>	<p>Trilingual CHR plaques were installed with a launching ceremony at Montague and Georgetown. These plaques are in high visitation corridors on the waterfront. Research and development of 25 issues of Three Rivers Heritage Association Newsletter Installation of Three Rivers Canadian Heritage River signs at major river crossing points and points of interest. Inclusion of CHR logo on various map products for Three Rivers. See publications list in Appendix 3 (Note: this represents some of the publications). Development of online communication products (7th Canadian River Heritage Conference website and Facebook site; Southeast Environmental Association Facebook site; Three Rivers Heritage Association website (2002-2009); Community government web sites; Museum and Interpretation Centre websites; facility websites, Facebook sites and other social media tools; Points East Coastal Drive website).</p>

	<p>Development of the Roma at Three Rivers and Cardigan Heritage Centre interpretation facilities, programs and advertising.</p> <p>Development of community art installations & photo expositions.</p> <p>Expanded Veterans exhibits and ceremonies.</p> <p>Media releases from various organizations.</p> <p>Participation in community festivals.</p>
<p>Have there been any downsides to obtaining the designation? (ex: perceived regulatory barriers, etc).</p>	<p>The primary challenge discovered to date is volunteer burnout because of the large number of initiatives and a small, aging population.</p>
<p>Please list any other benefits (include indirect and intangible benefits)</p>	<p>Government official and legislator awareness developed from review of funding applications.</p> <p>Improved environmental and cultural awareness.</p> <p>Improved land use and knowledge of covertype mapping.</p> <p>Increased citizen science initiatives within Three Rivers (e.g. atlas of breeding birds of the Maritimes, Maritimes butterfly atlas, studies on dragonflies/damselflies; eBird; UPEI Bird List Serve.</p> <p>Skills development in cultural interpretation, watershed improvement, forest management, construction, trails development and management, water chemistry testing, flora and fauna identification, etc.).</p> <p>Intellectual property rights for publications and knowledge gained.</p> <p>Project management, community relations, fund raising and social media skills development.</p> <p>Conveyance of cultural knowledge and skills between generations.</p>

Note: This table was not part of the original decadal report study contract. Its contents are derived from some of the information found during the study and are an indirect measure of outcomes related to the factors identified in Schedule 7, Table 7 of “Canadian Heritage Rivers System Principles, Procedures and Operational Guidelines 2014”. No correlation studies were found on the benefits of designating a Canadian Heritage River. However, based on the various outcomes found during the development of the *Three Rivers 10 Year Report*, the creation and development of *Island Gem: A Management Plan for Three Rivers* and its subsequent designation as a Canadian Heritage River appears to have stimulated significant benefits to the community and the Island. In some of the funding proposals for projects, the designation of Three Rivers as a CHR was noted in funding application submissions.

11.0 Summary

The Three Rivers became the second Canadian Heritage River on PEI. It was co-nominated by the Three Rivers Heritage Association, a non-governmental organization, and the Province of Prince Edward Island. The cultural heritage values and recreation potential were the primary factors that provided the basis for the designation of the Three Rivers as the 34th Canadian Heritage River in 2004. *Island Gem: A Management Plan for Three Rivers* sets out the *Vision* as well as the goals, objectives, actions, roles and responsibilities and indicators for success for the Three Rivers.

Despite the challenge of being a volunteer organization with no salaried staff, thanks to the contributions of many individuals and partners, significant progress has been made towards the implementation of the management plan. This progress includes:

- ◆ Installing two Three Rivers Canadian Heritage River trilingual (Mi'kmaq, French, & English) monuments at focal points on the Montague and Georgetown waterfronts;
- ◆ Creating the Roma at Three Rivers - Roma à Trois Rivières National Historic Site interpretive centre featuring French history during the de Roma period 1732-1745 in Three Rivers;
- ◆ Developing the Cardigan Heritage Centre, an interpretive centre featuring displays on shipbuilding, cultural history, and genealogy in Three Rivers;
- ◆ Improving the waterfronts at Montague, Georgetown, and Cardigan;
- ◆ Expanding the marinas at Montague, Brudenell and Cardigan
- ◆ Branding the Three Rivers as a Canadian Heritage River;
- ◆ Maintaining an active publishing, education, and community consultation program;
- ◆ Creating an historic photographic history and collection of images for an image bank;
- ◆ Maximizing Heritage River awareness and other spinoffs from increased tourism;
- ◆ Implementing projects to improve water quality monitoring;
- ◆ Serving as a partner in the Atlantic Climate Adaptation Solutions Project;
- ◆ Improving public recreation access; and
- ◆ Expanding knowledge on the history of various cultures in Three Rivers.

One of the most important achievements is improved public awareness of the Three Rivers and its values. A time line is included in this report that summarizes some of the important achievements. A subjective assessment of the Three River's *Vision* was developed and a series of recommendations on new projects are provided.

This report has determined that the Three Rivers heritage values for which the river was nominated remain intact. Significant progress has been made in certain areas. The conclusion of this report is that the Three Rivers is worthy of continued designation as a river of national significance within the Canadian Heritage Rivers System.

Appendix 1. Individuals contacted during this study.

Randall B. Angus, Director, Integrated Resource Management Directive, Mi'kmaq Confederacy of PEI; Member, 7th Canadian River Heritage Conference Steering Committee; Chair 2004-06 Cardigan Communities Development Corporation

Shane Arbing, Provincial Parks Manager, P.E.I. Department of Tourism and Culture

Mark Arsenault, Habitat & Wildlife Technician, P.E.I. Department of Agriculture and Forestry

Boyde Beck, Curator of History, Exhibits and Editor Island Magazine, PEI Museum and Heritage Foundation

Jock Beck, Singer and Song Writer, Cardigan, PE

Sean Blaney, Botanist, Atlantic Canada - Conservation Data Centre

Jackie Bourgeois, Executive Director, Southeast Environmental Association

Sheila Bourgeois, Manager, Montague Waterfront Development Corporation, Montague, PE

David Boyce, Secretary - Treasurer, Three Rivers Heritage Association; PEI Representative (2002-3 to 2008-9) Canadian Heritage Rivers Board; Director Southeast Environmental Association (1995-2006)

Hal Brothers, Member, Cardigan Watershed, Board Member, Southeast Environmental Association

Brian Brown, Manager, Field Services Section, P.E.I. Department of Agriculture and Forestry

Dr. David Cairns, Research Scientist, Fisheries and Oceans Canada, Charlottetown, PE

Marion Clark, former member of Three Rivers Heritage Association Board, Montague, PE

Michael R.S. Coffin, PhD Candidate, UPEI

Shelley Cole-Arbing, Environmental Coordinator, Environmental Management Section, P.E.I. Department of Transportation and Infrastructure Renewal

Donna Collings, Curator, Garden of the Gulf Museum, Montague, PE

Reg Conohan, Eastern District Provincial Forest Supervisor, PEI Department of Agriculture and Forestry, Southampton PE; former Chair Community of Cardigan Council

Cynthia Crane, Surface Water Biologist, PEI Department of Environment, Labour and Justice

Carol Craswell, Supervisor, Land Administration, PEI Department of Transportation and Infrastructure Renewal

Rosemary Curley, Biologist; Former Program Manager, Protected Areas & Biodiversity Conservation,

P.E.I. Department of Agriculture and Forestry

Doug Deacon, Past Chair, Island East Tourism Group, Charlottetown PE

Ruth DeLong, Trails Communities Relations Coordinator, PEI Department of Tourism and Culture

Bernice DeLory, Historian, Georgetown PE

Edgar Dewar, former Board Member, Three Rivers Heritage Association, Roma at Three Rivers, and Southeast Environmental Association

Scott Douglas, Biologist, Gulf Region, Department of Fisheries and Oceans

Mary Gallant, former Editor, *The Scots Thistle*, Secretary, P.E.I. Scottish Settlers Historical Society

Terry Gauthier, Tree Improvement Supervisor & Greening Spaces Coordinator, P.E.I. Department of Agriculture and Forestry.

Leo Gill, Confederation Trail Maintenance Manager, P.E.I. Department of Transportation and Infrastructure Renewal

Elizabeth Glen, Certified Genealogist, Bonshaw PE

Patsy Gotell, Executive Director, Island East Tourism Group, Montague, PE

Beth Grant, Executive Director, Recreation PEI, Charlottetown, PE

Kelly Gray, Chair, Georgetown Area Development Corporation, Georgetown, PE

Garry Gregory, Wildlife Management Biologist, P.E.I. Department of Agriculture and Forestry

Diane Griffin, Atlantic Region Nature Conservancy of Canada Board Member; former PEI Program Manager, Nature Conservancy of Canada

Daryl Guignon, UPEI Community Environmental Liaison, UPEI Biology Department, Charlottetown, PE

Catherine Hennessey, Heritage Consultant & Hillsborough River Association History Resource Advisor

Dale Hickox, President, PEI Snowmobile Association

Shawn Hill, Coordinator Alternate Land Use Services Program, PEI Department of Environment, Labour and Justice; Coordinator, PEI Watershed Alliance

Andrew Ing, GIS Technician, Information Technology Shared Services, Provincial Treasury

Don Jardine, Project Manager, UPEI Climate Research Lab, Coordinator, 7th Canadian River Heritage Conference; former Director of Pollution Prevention Division, PEI Department of Environment, Energy and Forestry

Rev. Barry King, Director, Community Museums Association of Prince Edward Island, Charlottetown, PE

Neil A. Kinsman, Regional Coordinator - East, Sport, Recreation and Healthy Living Division, PEI Department of Health and Wellness

Dr. Helen E. Kristmanson, Director, Aboriginal Affairs and Archaeology, Intergovernmental and Public Affairs Office, Executive Council of Prince Edward Island

Sean Ledgerwood, Watershed and Subdivision Specialist, P.E.I. Department of Environment, Labour and Justice; Member, CHRS Technical Planning Committee; Lead 7th Canadian River Heritage Conference

Simon Lloyd, Special Collections Librarian, Robertson Library, U.P.E.I.

Barbara MacDonald, Acting Resource Conservation Manager, PEI Field Unit, Parks Canada

Dr. Edward MacDonald, Associate Professor, Department of History, UPEI

Nora MacDonald, Chair, Board of Directors, Cardigan Area Heritage Association

Scott MacDonald, Forest Enhancement Program Coordinator (East), P.E.I. Department of Agriculture and Forestry

Rosanne MacFarlane, Freshwater Fisheries Biologist, P.E.I. Department of Agriculture and Forestry

Niall MacKay, Chair, Three Rivers Heritage Association; former Chair, Montague Waterfront Corporation

Don MacNeil, President, Hillsborough River Association 1997 to 2012

Kate MacQuarrie, Director, Forests, Fish and Wildlife Division, P.E.I. Department of Agriculture and Forestry

Tim Mair, President, Georgetown Port Inc; Co-Chair Georgetown Strategic Tourism Expansion Program (STEP)

Mary Lynn McCourt, Land Imagery Analyst, P.E.I. Department of Agriculture and Forestry

Alan McLennan, Program Coordinator, Eastern Habitat Joint Venture, P.E.I. Department of Agriculture and Forestry

Mike Montigny, Manager, Resource Inventory and Modelling Section, P.E.I. Department of Agriculture and Forestry

John Morrison, Director, Sport and Recreation, P.E.I. Department of Health and Wellness

Doug Murray, Consultant; former PEI Director for Canadian Heritage Rivers Board (1997 through 2002); Director of Parks, P.E.I. Department of Tourism and Parks

Peter Nishimura, Climate Change Adaptation Specialist, Climate Change and Air Management, P.E.I. Department of Environment, Labour and Justice

Bob Perrin, Treasurer, Roma at Three Rivers

Ian Petrie, Montague Valleyfield Watershed Enhancement Coop and Southeast Environmental Association Boards

Stephen B. Pigott, Acting Regional Engineer - Eastern, Capital Projects, PEI Department of Transportation and Infrastructure Renewal

Jonathan Platts, Conservation Program Specialist, Ducks Unlimited Canada P.E.I., Charlottetown PE

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Scott Roloson, Graduate Student, UPEI

John Rowe, Three Rivers Heritage Association Board member; former Chair Garden of the Gulf Museum Board

Clarence Ryan, P.E.I. Trapper's Association, Pisquid River Enhancement Project

Derek Smith, Executive Director, Eastern Regional Sport and Recreation Council

George Somers, Manager, Drinking Water Management Section, P.E.I. Department of Environment, Labour and Justice

Charlotte Stewart, Heritage Officer, P.E.I. Department of Tourism and Culture

Walter Spud Stewart, Angler and retired Conservation Officer

Erin Taylor, Manager, Climate Change and Air Management, P.E.I. Department of Environment, Labour and Justice

Scott Taylor, Hatchery Manager, Abegweit Biodiversity Enhancement Hatchery, Abegweit First Nation, Scotchfort PE

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Janet Wood, Manager, Product Development, PEI Department of Tourism and Culture

Jim Young, Director, Environment Division, PEI Department of Environment, Labour and Justice; PEI Board Member, Canadian Heritage Rivers Board

Julie Lynn Zahavich, Piping Plover Project Coordinator, Island Nature Trust

Appendix 2. Individuals, Groups, Organizations, and Businesses who supported the implementation of the Three Rivers Heritage Association's Vision.

The Three Rivers Heritage Association wishes to acknowledge all those who have supported the implementation of the Vision defined in *Island Gem: A Management Plan for Three Rivers*. The Vision for the Three Rivers was and is holistic as it reaches to the aspirations of entire communities on the river as well as those who have links to the heritage of this place. The Association wishes to thank all those who have contributed in any way to the progress towards the Vision of the Three Rivers. Your contributions speak collectively to what has been achieved.

No list will cover all those who have contributed but the following list attempts to identify the breadth of those who have assisted with this voyage towards a common Three Rivers Vision.

4H	Naomi Bree
Abegweit Biodiversity Enhancement Hatchery	Brenda Brothers
Abegweit First Nation	Claude Brothers
Jimmy Aitken family	Hal Brothers
Judi Allen	Harold Brothers
Randy Angus	John Brothers
Shane Arbing	Brian Brown
Archives Council of Prince Edward Island	Brudenell Cemetery Inc.
Georges Arsenault	Scott Buchanan
Marguerite Arsenault	Bill Buell
Mark Arsenault	Kelli Bulger
Robert Arsenault	Clayton Bulpitt
Artisans on the Main	Suzanne Burns
Atlantic Canada - Conservation Data Centre	Joey Cain (ref in Vol 6:1)
Atlantic Canada Opportunities Agency (ACOA)	Dr. David Cairns
Atlantic Salmon Federation	Caledonian Club of Prince Edward Island
Harold Avery	John Callaghan
Myrna Babineau	Bennett Campbell
Carl Balsor	Edwena Campbell
Amy Beck	Gerald Campbell
Boyde Beck	Kenneth Campbell
Jock Beck	Canadian Aquaculture Institute
Melody Beck	Canadian Coast Guard Maritimes Charlottetown Office
Sarah Jane Bell	Canadian Food Inspection Agency
Rebecca Bellefontaine	Canadian Heritage Rivers Board and Secretariat
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Grace Blackette	Cardigan Bay Boaters Association
Sean Blaney	Cardigan Communities Development Corporation (CCDA)
Geraldine Bourgeois	Cardigan ESSO
Jackie Bourgeois	Cardigan Fire Department
Sheila Bourgeois	Cardigan Heritage Centre
David Boyce	Cardigan Welcome Centre
Barbara Boys MacCormac	
Barney Bree	

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CFCY	Eastern Regional Sports and Recreation Council
Wayne Chaisson	Federated Womens Institutes of PEI
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Jackie Christian	John Fitzpatrick
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Marion Clark	Dr. Adam Fenech
Gilbert Clements	Margaret Fogarty
Coca-Cola Refreshments Company Canada	Olivia Ford
Mike Coffin	Fort Augustus Irish Descendants Association
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Community of Brudenell (Chair, Councillors and staff)	Sr. Bernadette Gallant
Community of Cardigan (Chair Person, Councillors and staff)	Garden of the Gulf Museum Board & Friends of the Museum
Community School Association	Glen Gardiner
Reg Conohan	Norbert Carpenter
Jim Cook	Gary Gaudet
Lynne Craddock	Linda Gaudet
Cynthia Crane	Terry Gauthier
Carol Craswell	Georgetown Area Development Corporation
Leo Creamer	Georgetown Fire Department
Sandra Creed	Georgetown Port Inc.
Rosemary Curley	Georgetown Harbour Authority
Clair Currie	Georgetown Welcome Centre
Mike Currie	Hon. Robert Ghiz
Cycling PEI	Dr. Donna Giberson
Martin Dawson	Don Gibson
Doug Deacon	Leo Gill
Ruth DeLong	Heather Gilles
Bernice DeLory	Brian Gillis
Descendants of the Brudenell Pioneers Inc.	Elizabeth Glen
Dewar Reunion Committee	William Glen
Dale Dewar	Good Earth Productions
Edgar Dewar	go!PEI
Katherine Dewar	Nancy Gorveatt
Vera Dewar	Jamie Gosbee
Angela Douglas	Perry Gotell
Randy Dibblee	Patsy Gotell
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Carl Dingwell	Government of Prince Edward Island (various departments and agencies)
Pat Doucette	Hughie Graham
Lawson Drake	Beth Grant
Ducks Unlimited Canada	Rob Grant
Ducks Unlimited (US)	Kelly Gray
Todd Dupuis	

Greenfield Stormriders Snowmobile Club
Garry Gregory
Diane Griffin
Daryl Guignon
Dennis Haché
Julie Haddow
Greta (Wigginton) Hall
Cole Halley
Harbour Authorities within Three Rivers
Robert and Jake Harding
Rachel Harper
Jane Harris
Patricia Hayes
Catherine Hennessey
Dale Hickox
Hilda Hilchey
Shawn Hill
Beth Hoar
Human Resources Development Canada
Andrew Ing
Connie Ings
Jayne Ings
Institute of Island Studies (UPEI)
Island East Tourism Group
Island Nature Trust
Island Trails
Island Waste Management Corporation
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Susan Johnston
Leah Jordan
Meika Keunecke
KidSport™ P.E.I.
Rev. Barry King
Kings Playhouse Board of Directors
Neil Kingsman
Kim Klein
Lily Klein
Richard Knox
Dr. Helen Kristmanson
Wendell Labobe
Lewis Lavandier
Gordon (Red) Lavers
Sean Ledgerwood
Stephen Lewis
Gayle Llewellyn
Peter Llewellyn
Niki Lewis

Wade Lewis
Claudia Lister
Carol Livingstone
Simon Lloyd
Ellen Lockerby
Barry Logan
David Mabon
Joe MacAuley
Hon. Lawrence MacAuley, M.P.
Janice MacBeth
Barbara MacCormack
Barbara MacDonald
Carl MacDonald
Louise MacDonald
Edna MacDonald
Dr. Edward MacDonald
Heidi MacDonald
Hugh MacDonald
Janie MacDonald
John MacDonald
Kent MacDonald
Louise MacDonald
Neill MacDonald
Nora MacDonald
Ronnie MacDonald
Scott MacDonald
Trevor MacDonald
Gary MacDougall
Gerald MacDougall
Cheryl MacLean
John MacFarlane
Rosanne MacFarlane
Delores MacInnis
Bernadette MacIntyre
Donald MacIntyre
Dwayne MacIntyre
Gladys MacIntyre
Lawrence MacIntyre
Niall MacKay
Donnie MacKenzie
Jerry MacKenzie
Marion MacKenzie
Don MacKinnon
Wade MacKinnon
Ed MacLaren
Kevin MacLaren
Kim MacLaren
Wade MacLauchlan
Jimmy MacLean

Rob MacLean	Tobey Murphy
Steve MacLean	Doug Murray
Janet MacLellan	Stephen Myers
Jenna MacLellan	Susan Myers
David MacLeod	Dianne Nabuurs
Todd MacLeod	Johnny Nabuurs
Sarah MacLeod	Native Council of Prince Edward Island
Roy MacMillan	Nature Conservancy of Canada (volunteers, Board members & staff)
Don MacNeill	Nature PEI - Natural History Society of PEI
Jason MacNeill	Kay Nicholson
Howard MacNeill	Dr. Irene Novaczek
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George MacPherson	Parks Canada (PEI National Park)
Michael Mailman	ParticipACTION Program
Bea Mair	Inabelle Peardon
Nathan Mair	PEI Department of Agriculture and Forestry
Therese Mair	PEI Department of Education and Early Childhood Development
Tim Mair	PEI Department of Environment, Labour and Justice
Charlie Martell	PEI Department of Finance and Municipal Affairs
Maritimes Breeding Bird Atlas II	PEI Department of Fisheries, Aquaculture and Rural Development
Maritime Butterfly Atlas	PEI Department of Tourism and Culture
Matthews Canada Ltd.	PEI Department of Transportation and Infrastructure Renewal
Ken Moyaert	PEI Employment Development Agency
Ken Mayhew	PEI Genealogy Society
Dan McAskill	PEI Invasive Species Council
Dave McBurney	PEI Museum and Heritage Foundation
Amy McCarron	PEI Regional Sport and Recreation Council
Danny McCarron	PEI Scottish Settlers Historical Society
Mary Lynn McCourt	PEI Shellfish Association
Pat McGowan	PEI Snowmobile Association and landowners supporting trails
Muriel McGrath	PEI Trappers Association
Allie McLennan	PEI Wildlife Federation
Fay McQuillan	Bob Perrin
Stephen Meerberg	Becky Peterson
Mi'kmaq Confederacy of Prince Edward Island	Ian Petrie
Erin Miller	Stephen Pigott
Montague Fire Department	Jonathan Platts
Montague Library	George Ployer
Montague Town Council	Brad Potter
Montague Valleyfield Watershed Enhancement Coop	Brian Pound
Montague Waterfront Development Corporation	
Montague Welcome Centre	
Mike Montigny	
John Morrison	
Craig Murphy	
MacKenzie Murphy	

Faye Pound
Public Archives and Records Office PEI
Public Health Agency of Canada
Margaret Quinn
Tom Rath
Bruce Raymond
RBC Foundation
Recreation PEI
Aggie-Rose Reddin
Red's Corner
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Scott Roloson
Roma at Three Rivers (Board members,
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Rothman Foundation
John Rowe
Royal Canadian Mounted Police
Rural Job Initiative
Clarence Ryan
Andrew Sark
John Scales
George Scrimgeour
Ian Scrimgeour
David and Elaine Seeler
Muriel Shaw
Steve Sharratt
Hon. Gail Shea, M.P.
Billy Shepard
Buddy Shepard
Raymond Shields (ref in Vol 6:1)
Skills PEI
Art Smith
Bruce Smith
Derek Smith
Jennifer Smith
Dr. Douglas Sobey
Société Saint-Thomas D'Aquin
Brian Somers
George Somers
Southeast Environmental Association (Board
members, volunteers and staff)
Connie Spencer
St. Mary's University
Elizabeth Statts
Linda Stephenson
Danny Steele
Charlotte Stewart
Darlene Stewart

Russell Stewart
Walter Spud Stewart
Jim Sutton
Frank Szentmiklossy
Mary Trainor
Brad Taylor
Erin Taylor
Scott Taylor
The BUZZ (Editor and staff)
The Eastern Graphic (Editor and reporters)
The Guardian (Editor and reporters especially
Steve Sharratt)
The Municipality of Lower Montague (Chair,
Councillors and staff)
Chief Jamie Thomas and family
Barry Thompson
Brian Thompson
Gwen Thompson
Reg "Dutch" Thompson
Myra Thorkelson
Tourism Industry Association of PEI
Town of Georgetown (Mayor, Councillors and
staff)
Town of Montague (Mayor, Councillors and
staff)
George Trainor
Mary Trainor
Dr. Andrew Trivett
University of Prince Edward Island
Peter Van Den Broek
Tony Van Den Broek
Dr. Mike van den Heuvel
Julie Vasseur
Jackie Waddell
Hattie Walsh
Sally Warrington
David White
Wildlife Conservation Fund Committee
Wade Williams
Greg Wilson
Noel Wilson
Women's Institute's Executive and members
Tim Woolner
Janet Wood
Jim Young
Julie Lynn Zahavich

Plus all those other donors of artifacts, landowners, business owners and staff, teachers, support staff of schools, journalists, genealogists, researchers, artists, crafts persons, musicians, photographers, writers, conservationists, fishers, hunters, trappers, cyclists, hikers, walkers, boaters, snowmobilers, trail wardens, tour guides, consultants, sports organization members, fire departments, service organizations, university faculty, students, staff and non-government organization members, staff of government departments and agencies, politicians, and others who have contributed positively to achieving this Vision.

Appendix 3. Bibliography of references pertinent to the Three Rivers Heritage Association's Vision set out in *Island Gem: A Management Plan for Three Rivers*.

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