

The St. Croix River, New Brunswick: An International Canadian Heritage River.



Decade Two:
Canadian Heritage
River System
Periodic Monitoring
Report: 2001-2011.



Prepared by the St. Croix International Waterway Commission, in collaboration with New Brunswick
Department of Natural Resources, 2012.



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Prepared by Leigh-Anne Outhouse on behalf of the St. Croix International Waterway Commission in
Collaboration with the New Brunswick Department of Natural Resources, 2012.
Presented to the Canadian Heritage Rivers System Board March 31, 2012.

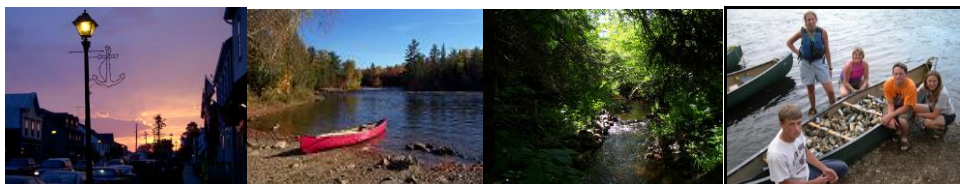


Cover Photo Credits: McAdam Train Station: Canadian-Photographer.ca and Grassy Island and East Grand Lake: Woodie Wheaton Land Trust-East Grand Watershed Initiative
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“The St. Croix flows placidly and tumultuously through the rolling Appalachian Hills on a journey from the Chiputneticook Lakes to the tidewaters of Passamaquoddy Bay, where in 1604 Samuel de Champlain established the first European settlement in North America north of Florida. Native peoples, Acadian settlers, British Loyalists, logs floating to mill and shipyard, canoeists, fishermen – its waters have carried them all past unbroken forest, murmuring rapids, and shimmering lakes to the craggy shores of the estuary. Paddle and fish its sparkling waters under the watchful gaze of bald eagles and ospreys, relax in the serenity of its historic towns, feel the currents and tides of history flow.”



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Preamble:

The St. Croix International Waterway Commission was established in 1987 by both the Province of New Brunswick and the State of Maine to help governmental and local interests implement a long-term, cooperative management plan for their shared 180km/110mi St. Croix boundary corridor.

This corridor includes two of the largest lakes in New Brunswick and Maine, one of Eastern North America's premier recreational rivers, and a major estuary. It also includes communities, aboriginal groups, industries, landowners, transportation and utility corridors, cultural sites and wilderness areas that are critical to the region's heritage, economy and way of life.

The Commission's management goals have been a driving force behind the coordinated significant progress over the last two decades. These five goals are identified as:

- 1) Protect and enhance the Waterway's natural heritage: its scenic landscapes and waterscapes; its fish, wildlife, forest and plan resources; and its quality of air, land and water.
- 2) Preserve and realize additional benefits from the Waterway's cultural heritage: its significant history; its traditional economic and recreational bases; and its rural quality of life.
- 3) Identify and nurture new avenues for recreational and economic development, compatible with the Waterway's natural and cultural values.
- 4) Establish priorities and a balance for growing demands on limited land and water resources along the Waterway, for the greatest long-term public benefit.
- 5) Strengthen government and public/private partnerships for effective planning and management to more equitably share the benefits and responsibilities of Waterway stewardship.

Out of these 5 management goals developed a management plan with twenty-two policies under the following seven themes: International Heritage Waterway, Environmental Setting, Human Heritage, Natural Heritage, Recreation Heritage, Economic Development and Waterway Management.

The St. Croix River received Canadian Heritage River status in 1991 as a Canadian Heritage River. Its designation as a Canadian Heritage River in 1991 was based in large part on the wide variety of its natural, human and recreational heritage values. We at the St. Croix International Waterway Commission take great pride in this river's designation and continue to seek out and achieve our goals to maintain this beautiful, natural, international boundary waterway and maintain our valued Heritage River designation.

Acknowledgements:

Special thanks go out to Leigh-Anne Outhouse for preparing this document on behalf of the St. Croix International Waterway Commission. Additional support and much thanks go out to: Lee Sochasky for her assistance and knowledge with compiling the tables for this document, and Danielle Shineton at the New Brunswick Department of Natural Resources for her support and assistance.

EXECUTIVE SUMMARY

This report meets the requirements of the Canadian Heritage Rivers System (CHRS) monitoring reporting which must occur every 10 years. Our first report was issued in January 2001 covering the first 10 years in the St. Croix River from designation in 1991-2000. This second report focuses on the second decade on the St. Croix River from 2001-2011, an eleven year period as required by CHRS and the New Brunswick Department of Natural Resources.

The section of the St. Croix River designated to the CHRS lies along the Canadian side of the international border between the Province of New Brunswick and the State of Maine, extending from the source of Monument Brook in the north to the mouth of the St. Croix estuary in the south. The CHRS management area technically comprises the river and lakes on the New Brunswick side of the border and a 250 foot land corridor beside the River.

This report focuses on the condition of the natural, cultural, recreational heritage and integrity values that were the basis for CHRS designation within the New Brunswick portion of the St. Croix River System. This document focuses on the changes that have occurred to these values since the last River report was issued in 2000. The report focuses on the existing management arrangements, the status and/or conditions of natural, cultural/historical, recreational/tourism features, and the opportunities and values that form the basis of the St. Croix River's CHRS designation. This will include the strengths and weaknesses, opportunities and challenges, for heritage conservation, sustainable use, recreation, education and tourism. It should be noted that though the CHRS designation only includes the New Brunswick portion of the River, this report will also include many directly relevant activities occurring on the Maine portion of the River that have shown significant impacts or influences to the New Brunswick portion of the River. The nature of this River is as an international boundary waters, and it is important to represent this holistic view in its reporting.

The St. Croix is an example of a working river in the CHRS, originally designated outside of Park boundaries, with a sizeable population located along its shores, ocean-going ships in its estuary, and industry and operating dams along much of its length. In fact, managing agencies make significant efforts within the entire watershed to manage the heritage and recreational values for which the river was nominated. There are several key government agencies with various degrees of responsibility for managing the natural and cultural heritage and recreational values on the Canadian side of the river, most notably the New Brunswick Department of Natural Resources (DNR), the New Brunswick Department of the Environment (DENV), the New Brunswick Department of Tourism and Parks, the federal Department of Fisheries and Oceans (DFO), Parks Canada Agency, as well as, local governments and businesses. In addition there are two international commissions with indirect responsibility for

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the natural, cultural or recreational values of the system: the International Joint Commission (IJC) and the St. Croix International Waterway Commission (SCIWC).

The SCIWC was enacted by New Brunswick and Maine legislation in 1987 to help protect and manage both sides of the St. Croix boundary corridor, designated the St. Croix International Waterway. In 1990, the Waterway Commission completed the document “Preliminary Plan for Long-Term Cooperative Management of the St. Croix International Waterway” that enabled the designation of the river to the CHRS. Following consensus on this plan, the Waterway Commission completed the document “St. Croix International Waterway: A Heritage – A Future”, as a co-management plan for both governments and as the basis for managing the waterway as a Canadian Heritage River, this was formally adopted by Maine and New Brunswick in 1994. In 2007 action was undertaken by the SCIWC to update this document through a thorough review and evaluation of the original management plan, and due to the extensive geographical area, process and extensive scope of this work the updated plan remains in progress.

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The St. Croix River Watershed

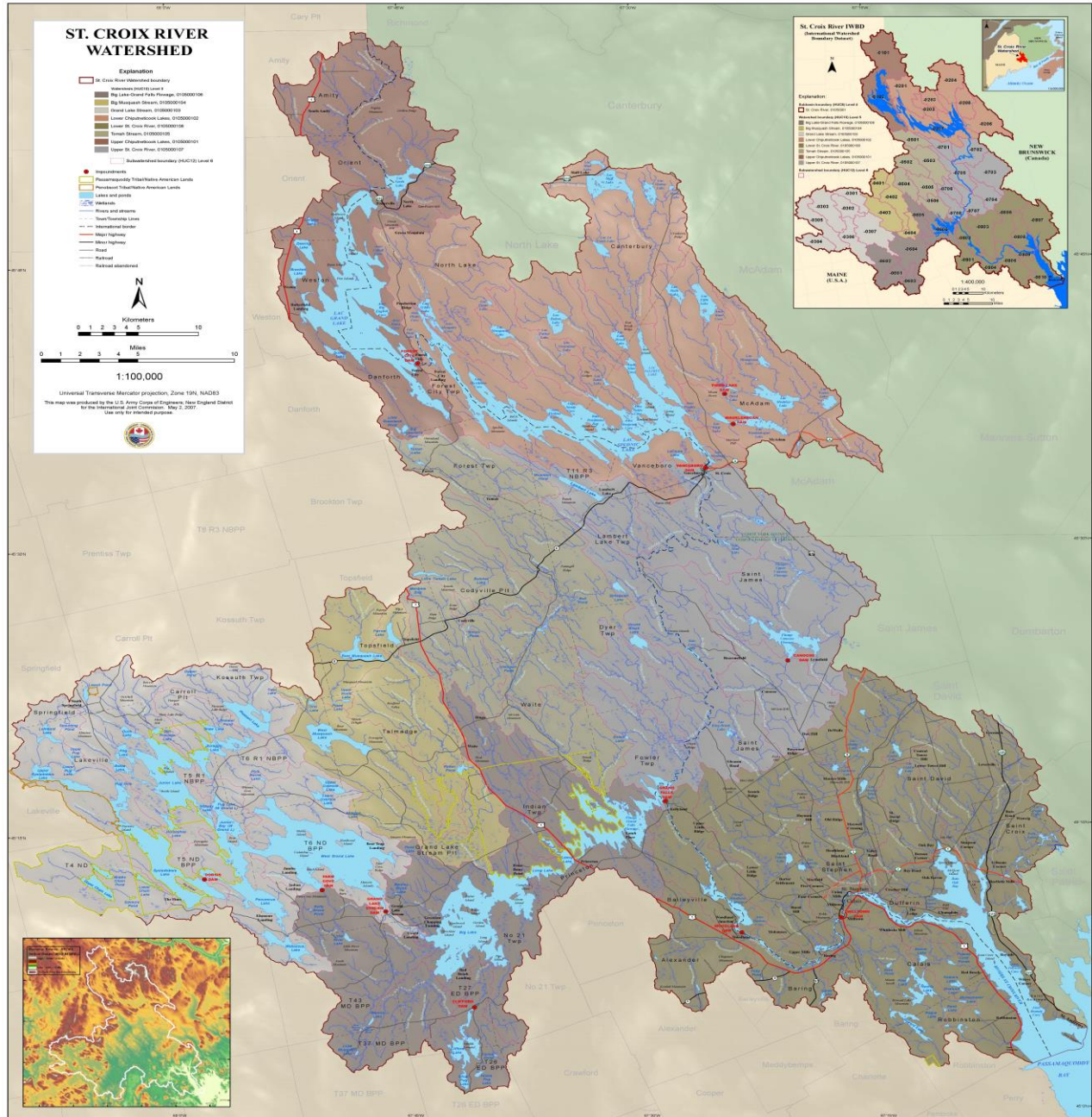


Figure 1: International Joint Commission: International St. Croix Watershed Board, May, 2007.

The St. Croix River, NB and 250 ft Boundary Corridor: Part of the CHRS designated area

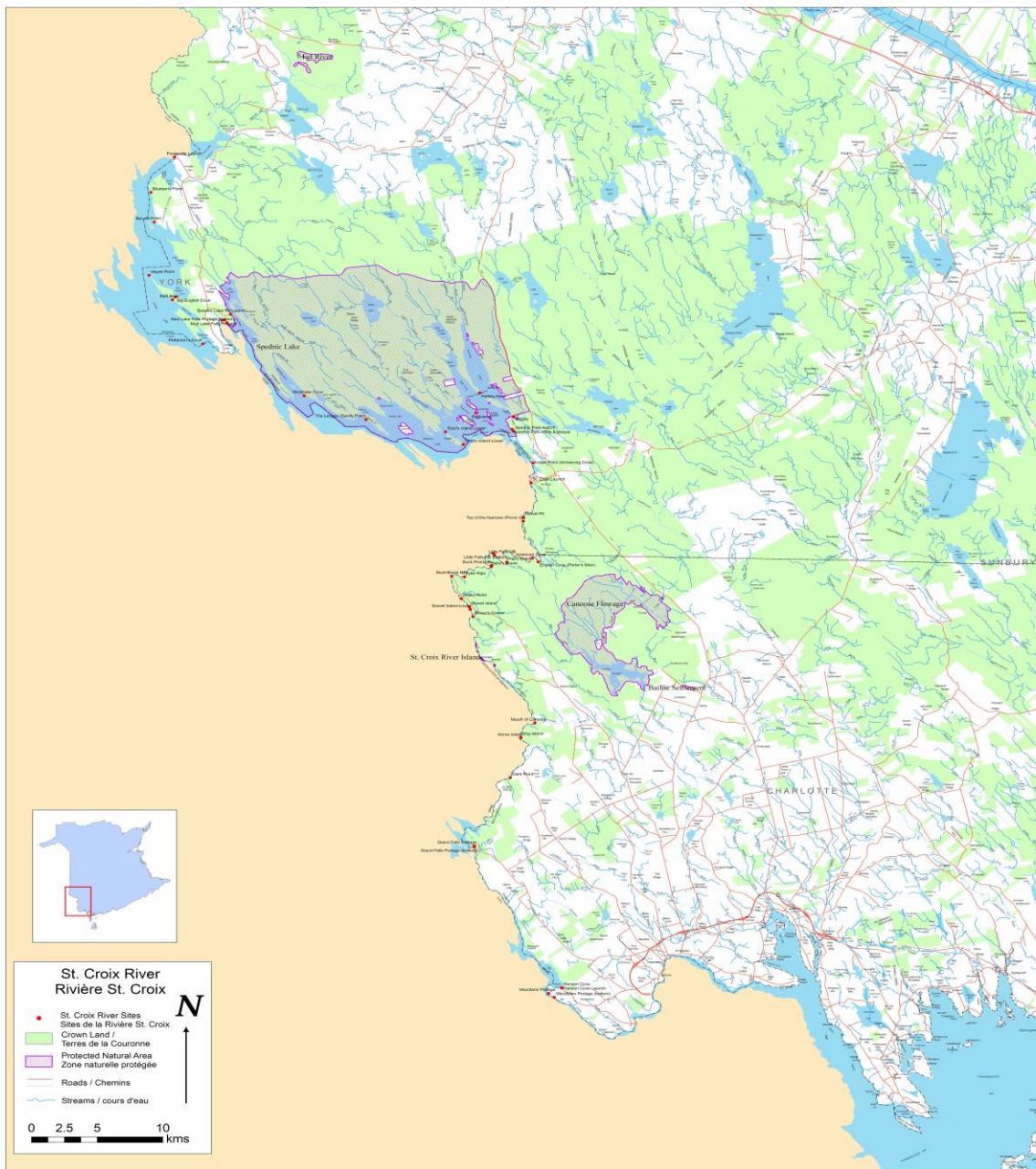


Figure 2 St. Croix River and Boundary, NB

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Figure 1: St. Croix Watershed Base Map Courtesy of the International Joint Commission

Figure 2: St. Croix River, New Brunswick and the Boundary Corridor Courtesy of the New Brunswick Department of Natural Resources

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1.0 Introduction

1.1 The St. Croix River

The St. Croix River is a 185km/110mil long river that acts as a natural, cultural, and political boundary line between Canada and the United States. The St. Croix is a multifaceted river consisting of a series of conservation lands and easements, populated communities, forested lands and actively managed forest industry lands, historical and archeological features. It has cultural significance for aboriginal communities and Canadians and Americans, established recreational activities that attract tourists and locals alike, natural integrity, pristine waters, border crossings, and dams. It is actively managed in collaboration with local businesses, communities, and government departments at the provincial/state and federal levels on both sides of the border.

The St. Croix River has three distinct geographic zones: the Chiputneticook Lakes (North, East Grand, Mud, Spednic and Palfrey Lakes) which include the headwaters and a controlled storage capacity system of lakes; the main stem of the river which flows along through communities such as St. Croix until Milltown; where the salt water tides of Passamaquoddy Bay, an extension of the Bay of Fundy, meet the river in the estuarine zone.

The St. Croix was nominated and designated for its natural, cultural and recreational heritage features. Below are the highlighted features of each category.

Major natural heritage features associated with the St. Croix River are:

- Rock formations with readily visible signs of uplifting, folding, and faulting and of the effects of glaciation on re-shaping the landscape;
- Provincially significant fossil deposits at Sand Point;
- Thirteen plant species known to be rare in this area, such as the cardinal flower, high bush blueberry and viburnum;
- The endangered bald eagle and more abundant osprey which can be frequently sighted; and
- A beautiful maritime river landscape with thick wooded areas, open lakes, narrow river corridors and a large tidal estuary.¹

The St. Croix played an important role in Canadian history in both the periods before European exploration and settlement, and after. Among its many points of historical interest are:

- Important archaeological sites showing evidence of 4,000 years of settlement by native cultures such as the Susquahanna Indians, and the first evidence of the Meadowood Culture found in Atlantic Canada;

¹ Canadian Heritage Rivers System website: http://www.chrs.ca/Rivers/StCroix/StCroix-F_e.php. Accessed February 16, 2012.

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- The International Historic Site of St. Croix Island where in 1604 the explorers Sieur de Monts and Samuel de Champlain landed and established the first European settlement in North America north of Florida;
- The St. Croix's role as a political boundary, which dates from 1621 when it separated the English and Acadian settlements;
- Evidence of the river's importance as a waterway for the 19th and early 20th century lumber industry; and;
- The area's role in the development of the railways, as seen in the McAdam Railway Station which was built in 1900 by the Canadian Pacific Railway and is now a National Historic Site.²

The St. Croix River provides many outstanding recreational opportunities. In 1982, it received special recognition and protection by a New Brunswick Order-in-Council declaring it the St. Croix Waterway Recreation Area. In the same year, the Maine Department of Conservation, in cooperation with the U.S. National Parks Service, conducted a comprehensive assessment of Maine's river resources, which came to be known as the Maine Rivers Study. The Maine Rivers Study classifies the St. Croix River as an 'A' river, and the Maine Rivers Act singled it out for special consideration due to its status as an international boundary.

Notable Recreation features for the St. Croix River:



Figure 3 credit of Woodie Wheaton Land Trust- East Grand Lake

Its designation as a Canadian Heritage River in 1991 was based in large part on the wide variety of recreational uses which it provides:

- touring by canoe for paddlers of all skill levels on lakes and navigable whitewater rapids;
 - Excellent fishing, particularly for land-locked salmon and small-mouth bass;
 - Viewing of wildlife and nature;
 - Hiking and backpacking;
 - Cross country skiing, snowshoeing, and winter camping; and
- Visiting the area's national and provincial historic sites for an appreciation of the important contribution of the St. Croix to the pre-European and historical development in Atlantic Canada.³

² Canadian Heritage Rivers System website: <http://www.chrs.ca/Rivers/StCroix/StCroix-Fe.php>. Accessed February 16, 2012.

³ Ibid.

1.2 The St. Croix as a Canadian Heritage River.

The nomination process for the St. Croix River began in June 1984, the same year the Canadian Heritage Rivers System was created. It was one of six rivers nominated at the time. Its unique elements such as: being an international river, that is both populated and controlled, the first of the rivers nominated in Atlantic Canada, and a river that existed outside protected area boundaries until 1988 made it one of the boldest nominations at the time. However, the St. Croix has long been a natural, cultural, and political boundary between Canada and the United States, and has played a distinctive role in Canadian Maritime history, and this remains true today. Its designation as a Canadian Heritage River under the Canadian Heritage Rivers System (CHRS) was a complex process that proved to be quite challenging. The establishment of the St. Croix International Waterway Commission (SCIWC) in 1989 played a key role in the development of the long-term management plan, the first version of which titled, *Preliminary Plan for Long-Term Cooperative Management of the St. Croix International Waterway*, was accepted as sufficient pledge to manage the river under CHRS designation regulations, and the St. Croix was officially designated in 1991. A more in-depth document was prepared by the SCIWC and completed in 1993, *St. Croix International Waterway: A Heritage - A Future* which has since been adopted as the designation document for the CHRS.

As part of its designation requirements for the CHRS, the first 10 year report was presented to the CHRS board in January 2001.⁴ This report covered the first decade as a Canadian Heritage River, and the current report will provide a summary of the highlights from this first report. The remainder of the current report will focus exclusively on the second decade of the St. Croix River from 2001-2011, which actually includes eleven year as agreed upon with the CHRS and the New Brunswick Department of Natural Resources. This document will cover both the positive and negative events that have occurred in the most recent decade on the St. Croix River with focus on the cultural, natural and recreational heritage values as outlined by the CHRS and the integrity values. It will also provide insight and conclusions based on the second decade as a Canadian Heritage River.

2.0 Summary of the St. Croix from Designation in 1991 to 2000.

Highlights from the First Decade:

The first report which covered the first decade of the St. Croix as a Canadian Heritage River focused on the years 1991-2000. The numerous improvements to the heritage and integrity of the waterway over the first decade can be accredited in a large part to the St. Croix International Waterway Commission and its hard work in developing, and implementing the document outlining

⁴ The St. Croix River, New Brunswick. A Decade in the Canadian Heritage Rivers System 1991-2000. Prepared by Nick Coomber Heritage Planning.

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management priorities and policies for the St. Croix. The document titled, *St. Croix International Waterway: A Heritage - A Future* outlines five management goals with twenty-two policies under seven theme headings: International Heritage Waterway, Environmental Setting, Human Heritage, Natural Heritage, Recreation Heritage, Economic Development and Waterway Management. The St. Croix International Waterway Commission continues to take a leadership role in implementing this management plan through collaboration with federal governments in Canada and the United States, provincial and state governments, municipal governments, local community organizations, businesses, residents and aboriginal groups. The management plan continues to take a holistic view of river management, thoroughly established in the co-management doctrine for the long-term sustainability of the river. Overall, during the first decade as a Canadian Heritage River the St. Croix River maintained a balance, and has showed significant improvements to its heritage and integrity values.

The summary can be best highlighted dividing the information into the geographical zones. Below is a summary found in the first decade report:

Chiputneticook Lakes: *The lakes section has seen the fewest changes over the past decade, and the area is still primarily natural. Improvements include the recovery of a smallmouth bass population almost to its 1980 level when it had supported a renowned fishery, and the construction of some new boat access facilities. In addition, while the New Brunswick government has reduced its operation of provincial parks to minimal levels, Department of Natural Resources and Energy (now Department of Natural Resources) has still been able to increase the number of managed remote campsites available for canoeists, mostly in the lakes section. While Georgia-Pacific Corporation, until recently the major landowner and forestry company, did not cut along shorelines or elsewhere in the CHRS management area, forestry operations have continued in the watershed, altering habitats and ecosystems. However, the St. Croix Corridor Zoning Regulation adopted by New Brunswick in 1995 prevented unregulated development within 30-100 metres of the shorelines and New Brunswick's purchase of all Georgia-Pacific holdings on the Canadian side of the waterway in 1999 converted much of the upper watershed into Crown land. This offers the potential for additional protection of the lakes and upper river sections of the waterway. At this time, over 33,000 hectares adjacent to Spednic Lake has been proposed for inclusion in New Brunswick's protected area strategy.*

St. Croix River Main Stem: *In the river section, there have been some important gains and losses, Georgia-Pacific Corporation, which operates four major dams in the designated section of the waterway, has consistently met the requirements of effluent licenses at its Woodland Pulp plant. Water quality has continued to improve throughout the past decade, helped by the natural flushing of debris from historic pulp and forestry operations. Georgia-Pacific voluntarily maintained more consistent water levels in the river, to the benefit of canoeist and fisheries as well as, the overall quality of the river's waters. However, in spite of a major re-stocking program, the population of native Atlantic Salmon has declined in tandem with other regional populations, probably because of oceanic conditions. The blockage of the Woodland and Grand Falls fishways to the passage of alewives from entering Spednic Lake a few years earlier appears to have caused a precipitous decline in this species. This, in turn, may have caused a decline in the*

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osprey population, which feeds on alewives. On an entomological note, a new species of dragonfly was discovered in the corridor in 1995.

St. Croix Estuary: In the estuary section of the water, there has been a significant reduction in bacterial contamination of Oak Bay, allowing the conditional re-opening of its clam beds for commercial and recreation digging after 50 years of virtual closure. Regional oceanic influences appear to be responsible for the decline not only of Atlantic salmon but also other species such as herring, which are now no longer harvested in traditional weirs. Dragging for urchins and scallops also continues to disrupt the natural bottom biota. In spite of this, the number of harbour porpoise, a threatened species, visiting the estuary appears to be increasing. In regard to the estuary's abundant cultural values, Parks Canada constructed an interpretive facility in support of St. Croix Island International Historic Site and restored the St. Andrew's Blockhouse after a fire in 1993. The downtown area of St. Andrew's which contains numerous houses constructed by Loyalists, was declared a National Historic District in 1997.

3.0 Table 1. Chronology of Significant Events, St. Croix River 2001 – 2011.

| Year | Significant Events, Actions, Research and Studies, 2001-2011 | Within CHRS boundary | Adjacent |
|------|--|--|--|
| 2001 | <ul style="list-style-type: none"> • St. Croix boundary water quality and/or quantity monitoring by agencies, organizations and volunteers • Dam monitoring by the International Joint Commission and US agencies • Delivery of the long-term New Brunswick/Maine St. Croix International Waterway Management Plan | <p>√</p> <p>√</p> <p>√</p> | <p>√</p> <p>√</p> <p>√</p> |
| 2011 | <ul style="list-style-type: none"> • Sept. 11 terrorist attacks kill nearly 3000 in the US, dramatically alters future use of St. Croix boundary waters • 100 year drought impacts the St. Croix and provides valuable information for future management planning • Discovery Channel Canada features the St. Croix on its <i>Great Canadian Rivers</i> series; aired and promoted since • Innovative St. Croix Atlantic salmon restoration projects continue: stocked adults and juveniles tracked • New Brunswick establishes the Spednic Lake Natural Protected Area – the province's largest eco-reserve with over 255 km² of boundary lands, waters and islands – to support the St. Croix International Waterway Management Plan http://laws.gnb.ca/en/showfulldoc/cr/2003-8//20120228, http://www2.gnb.ca/content/gnb/en/departments/natural_resources/CrownLandsForests/content/ProtectedNaturalAreas/Class2/SpednicLake.html • Nature Trust of NB receives a donation of the 138ha Clark's Point Nature Preserve on the upper St. Croix River http://www.naturetrust.nb.ca/en/preserve-clarks-point • The Maine Legislature continues to block the St. Croix's sea-run alewife (a native fish) from its spawning grounds, at the request of a state smallmouth bass fishing lobby. Canada begins trucking alewives around the first | <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> | <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> |

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| | <p>Maine barrier. By 2002 the St. Croix alewife run declines to just 900 fish</p> <ul style="list-style-type: none"> • Water quality assessments begin on the lower river, to guide future joint NB/Maine water classification | <p>√</p> | <p>√</p> |
| <p>2 0 0 2</p> | <ul style="list-style-type: none"> • New Brunswick adopts its Water Classification Regulation: immediately classifies all St. Croix lakes, ponds and drinking water supplies as Class A; commits to giving St. Croix River and stream segments early classification. • St. Croix Estuary Project creates the 330-acre Ganong Nature and Marine Park at Todd's Point on the estuary • Ste-Croix 2004 Committee is formed to plan the 400th anniversary of the French settlement of St. Croix Island • International Joint Commission sponsors a major workshop on the State of the St. Croix Ecosystem • Waterway Commission assumes operation of 40 New Brunswick St. Croix campsites and water accesses • St. Croix Atlantic salmon research continues: stocked adults and juveniles are tracked • Ground is broken for the Downeast Heritage Museum in Calais, to highlight St. Croix natural and cultural resources • Village of McAdam begins to restore the McAdam Railway Station, a national historic site. Three rooms are re-opened to the public, refurbished in their 1900 style, with artifacts and interpretive displays • Town of St Stephen establishes a public Chocolate Park on the St. Croix waterfront • Kayakers paddle from Boston to Nova Scotia to highlight coastal resource issues; they make their Canadian landfall at St. Andrews to a federal, provincial and municipal welcome • Discovery Channel Canada's St. Croix videos are placed in all St. Croix community libraries as an educational resource • Waterway Commission holds a St. Croix spill communication workshop to improve future pollution notification and response across the international border | <p>√ √ √ √ √ √ √ √ √ √ √ √</p> | <p>√ √ √ √ √ √ √ √</p> |
| <p>2 0 0 3</p> | <ul style="list-style-type: none"> • Maine acquires 50 miles of shoreland on Spednic Lake and the upper St. Croix River, largely completing cross-border protection of this sensitive natural corridor – a major goal of the St. Croix's international management plan • Maine creates the 330-acre Devil's Head Conservation Area on the St. Croix estuary: a companion piece to N.B.'s Ganong Nature & Marine Park • Parks Canada and the U.S. National Park Service upgrade interpretation at their facing Saint. Croix Island International Historic Sites at Bayside (NB) and Red Beach (ME), in preparation for the 400th anniversary of the French settlement of the island, in 2004 | <p>√</p> | <p>√ √ √</p> |

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| | <ul style="list-style-type: none"> • New Brunswick holds additional consultations on future St. Croix water classification • Maine revises its classification of select St. Croix boundary waters to match New Brunswick’s proposed classification, to ensure future management consistency • St. Croix Estuary Project begins on-going bacterial testing at sites along the St Croix estuary; to 2010 it produces a series of annual reports and recommendations to reduce localized pollution • A 2-province/3-state workshop on coastal tourism provides information and support for St. Croix initiatives • Regional economic agencies in New Brunswick develop natural and cultural tourism strategies • Waterway Commission assumes operation of Spednic Lake Provincial Park, preventing its closure • Exploratory drilling for gold deposits begins along the St. Croix headwaters, continues intermittently to the present • Town of St. Stephen creates a 1km Waterfront Walkway along its St. Croix riverfront • Waterway Commission assumes operation of Maine St. Croix campsites, creating cross-border management consistency • U.S. Geological Survey and International Joint Commission create a St. Croix water data website, giving public access to historic and real-time water information at http://me.water.usgs.gov/stcroix.html | <p>√</p> <p>√</p> | <p>√</p> <p>√</p> |
| <p>2 0 0 4</p> | <ul style="list-style-type: none"> • <i>Ste-Croix 2004</i>: the 400th commemoration of the 1604 French settlement of St. Croix Island. Principal events involve ten days, 47,000 people and four nations. Other activities continue throughout the year • US National Park Service and the Waterway Commission collaborate to produce and place Ste-Croix 1604 educational kits in 200 New Brunswick and Maine schools • Canadian-American Center at University of Maine – Orono and the Waterway Commission collaborate to produce and distribute 2,200 maps showing Samuel Champlain’s 1604-1606 North American travels • Downeast Heritage Museum opens on the waterfront in Calais, highlighting St. Croix natural and cultural heritage • The U.S. National Park Service hires a permanent Park Ranger for its Saint Croix Island International Historic Site; this person assists with future interpretive and school programs on both sides of the border. • Waterway Commission produces a new recreation map for the St. Croix boundary waters • Passamaquoddy Tribe produces an interactive Passamaquoddy place names DVD for the St. Croix region and also a book and CD set titled <i>I can speak Passamaquoddy/Maliseet (Nihtawi-Skicinuwatu)</i> • Waterway Commission provides folders of St. Croix historic maps to local schools • New Brunswick completes consultations on St. Croix water classification • Waterway Commission completes its current round of baseline water quality studies on eight watershed lakes • St. Croix Estuary Project issues a major review of estuarial species and indicators: <i>The St. Croix Estuary 1604 – 2004: the Environmental Health of the St. Croix Estuary after 400 years</i>, with a particular focus on trends 1978-2001. http://www.scribd.com/doc/42840482/The-Health-of-the-St-Croix-Estuary-1604-2004 • International studies begin on the interaction of two St. Croix fish, the native alewife and the introduced smallmouth bass, to seek resolution of Maine’s blockage of the international alewife spawning run. Studies are | | |

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| | <p>also undertaken to determine if St. Croix alewife are a unique population.</p> <ul style="list-style-type: none"> • State of Maine begins studies of dissolved oxygen levels on the lower river segment, toward upgrading its model in light of continuing water quality improvement | | |
| <p>2 0 0 5</p> | <ul style="list-style-type: none"> • Waterway Commission initiates the annual St. Croix Water Forum, bringing users and managers together for improved communication on water levels and flows management throughout the international watershed • New Brunswick establishes an advisory committee to help develop a long-term management plan for its 655 km² Spednic Lake Protected Natural Area • A committee is established by federal, provincial and local fisheries interests to develop a plan for integrated marine resource management in Southwestern New Brunswick waters that include the St. Croix estuary • International Joint Commission creates a directory of organizations, agencies and interests within the watershed • Waterway Commission completes baseline water quality studies on an additional eight watershed lakes • Town of St. Stephen commissions its new wastewater treatment plant, replacing two outdated facilities • Pulp mill on the river in Baileyville, Maine, upgrades the water re-use system for its pulp dryer, reducing river water use by 1 million gallons per day. • Downeast LNG proposes a major liquid natural gas import terminal for the Maine side of the St. Croix estuary, raising international controversy and strong protests from Canada and New Brunswick. U.S. permitting for this proposed facility continues, intermittently, into 2012 • Waterway Commission is selected as one of five finalists for the 2005 Thiess International River Prize for outstanding river management. The other four finalists, from the US, France and China, are all multi-million-dollar government led programs | | |
| <p>2 0 0 6</p> | <ul style="list-style-type: none"> • Nature Trust of NB receives a donation of the Gleason Point easement on the upper St. Croix River, covering 930ha of land and 3.6km of riverfront http://www.naturetrust.nb.ca/en/preserve-macnichol-easement • International Joint Commission produces harmonized hydrography and resource maps for the St. Croix watershed. Resource: see maps at http://www.ijc.org/conseil_board/st_croix_river/stcroix_pub.php?language=english. Hydrography: see http://www.geobase.ca/geobase/en/browse.do?produit=nhn&decoupage=units&map=021G for map shapefiles 01AR000, 01AR001 • New Brunswick and Waterway Commission unveils a fourth St. Croix Canadian Heritage River plaque, at Spednic Lake Provincial Park • St. Croix Atlantic salmon restoration program ends due to lack of funding and diminishing results, due in part to in-river competition with smallmouth bass • Passamaquoddy Tribe produces a DVD on the tribe's history in the St. Croix watershed: <i>N'tolonapemk – Our Relative's Place</i> • International Joint Commission updates its 1998 <i>Unsafe Dams?</i> report, indicating that the Maine, but not the New Brunswick, side of St. Croix dams are regularly inspected. (The IJC annually inspects four of the five St. Croix boundary dams.) http://www.ijc.org/php/publications/pdf/ID1592.pdf | | |

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|------|---|--|--|
| | <ul style="list-style-type: none"> • Calais LNG Project proposes a second liquid natural gas import terminal on the St. Croix estuary, proceeding with US permitting, intermittently, into 2012 in spite of Canadian opposition • Pulp mill at Baileyville, Maine, upgrades its primary clarifier, improving wastewater system performance • Maine Rivers releases report on 2004-2005 St. Croix alewife and smallmouth bass studies, showing that these fish species can co-exist in the St. Croix system www.ijc.org/rel/boards/saint/MaineRiversStCroixReportFinal.pdf • National Film Board releases documentary on the Ste-Croix 2004 commemoration, <i>Life after Île Ste-Croix</i> • U.S. Federal Energy Regulatory Commission relicensing of the St. Croix's international Forest City dam resumes • Village of McAdam restores three large rooms in the McAdam Railway Station for their original dining and meeting purposes and makes these available for public functions • 25 properties in the Town of St. Stephen are entered in the Canadian Registry of Historic Places http://www.historicplaces.ca/en/results-resultats.aspx?m=2&ProvinceId=100036&Location=St.%20Stephen | | |
| 2007 | <ul style="list-style-type: none"> • Waterway Commission issues St. Croix Management Plan review, begins consultations on revisions • International Joint Commission restructures its St. Croix board as the IJC's first International Watershed Board • New Brunswick establishes the 5.6ha St. Croix Provincial Park at Bayside, providing permanent view protection and public access between Parks Canada's St. Croix Island International Historic Site and the St. Croix shoreline • Master plan for the International Roosevelt Trail is completed, designed to circle the coastal area in both countries • Waterway Commission and partners host <i>Changing Borders</i>, a conference that draws 175 people from business, government and community sectors to find solutions to St. Croix border crossing issues • A new transboundary 345 megawatt power transmission line is installed across the St. Croix River, with shoreland buffers to minimize visual and environmental impacts • Nature Trust of New Brunswick acquires 9.7ha on Navy Island, in the St. Croix estuary; over the next two years eventually acquires ownership of 19.7ha and easement on 5.3ha http://www.naturetrust.nb.ca/en/node/527 • Additional islands are added to the province's Spednic Lake Protected Natural Area • Construction begins on a \$44.8 million upgrade to the federal St. Andrews Biological Station that will house new facilities for national marine research and development. (The St. Andrews Biological Station was established in 1908) • Cotton Mill Workers' Monument unveiled on St. Stephen's Milltown waterfront, commemorating those who worked in Canada's second largest cotton mill, 1882-1957. • 20 properties in the of Town of St. Andrews, and eight in the Town of St. Stephen, are entered in the Canadian Registry of Historic Places http://www.historicplaces.ca/en/results-resultats.aspx?m=2&ProvinceId=100036&Location=St.%20Andrews http://www.historicplaces.ca/en/results-resultats.aspx?m=2&ProvinceId=100036&Location=St.%20Stephen • Waterway Commission hosts St. Croix tour for the Canadian Heritage Rivers Board and Canadian Parks Council | | |
| 20 | <ul style="list-style-type: none"> • Quoddy Learning Centre opens at Ganong Nature and Marine Park, on the St. Croix estuary | | |

| | | | |
|------|--|--|--|
| 08 | <ul style="list-style-type: none"> • International Joint Commission issues its first State of the St. Croix Watershed report, with assessments of ten quality indicators. http://www.ijc.org/re/boards/saint/watershed_report.pdf • Responding to fisheries studies in 2004-2005, the State of Maine allows alewives to pass one of the state's dams to reach limited spawning habitat; this fish stock begins a minor recovery. • New Brunswick issues new 10-year operating permits for a granite quarry on the estuary waterfront at Bayside. Since 1998 this quarry has been extracting rock aggregate to expand a provincial industrial park and marine terminal at this site. In 2008, the quarry operator also applies to New Brunswick to more than double quarry size over the next 40 years • 12 properties in the Village of McAdam are entered in the Canadian Register of Historic Places http://www.historicplaces.ca/en/results-resultats.aspx?m=2&ProvinceId=100036&Location=McAdam • A transboundary natural gas pipeline under the St. Croix River is twinned by underground tunnel, with no impact on the river or shoreland • A 1200-page Passamaquoddy/Maliseet – English dictionary is published; a cultural work 30 years in the making • Downeast Heritage Museum closes due to financial difficulties | | |
| 2009 | <ul style="list-style-type: none"> • “<i>Preferred Future for the Bay</i>”, a plan for integrated marine resource management in Southwestern New Brunswick, including the St. Croix estuary, is submitted to federal and provincial agencies for review. See http://bofmrp.ca/home/index.php/site/reports2/ • Tightened international border enforcement affects traditional recreational use of the St. Croix: new campsites are added in New Brunswick and Maine over the next two years to facilitate ‘one-country’ travel • New Brunswick adopts a Bayside Rural Plan that retains 1995 St. Croix shoreland development setbacks and preserves rural character • New Brunswick turns down an application for a major expansion of the granite quarry at Bayside, based on inconsistency with the new Bayside Rural Plan • Conservation and fisheries groups in Canada and the U.S. petition the International Joint Commission to open all St. Croix dams to migrating alewives. The IJC asks the interagency St. Croix Fisheries Steering Committee to develop an adaptive plan for managing alewife and smallmouth bass together in the mid-section of the watershed • Waterway Commission and International Joint Commission collaborate with the US Geological Survey and the New Brunswick Community College system to develop a harmonized protocol for mapping impervious surfaces across the US/Canada border, to assist with climate change and coastal development planning • U.S. Geological Survey prepares a new bathymetric map of St. Croix’s Spednic Lake, as an initial step in assessing smallmouth bass habitat as a function of lake level. Study results are released in 2011. http://pubs.usgs.gov/sir/2010/5255/ • Environment Canada establishes a continuous water level and water quality monitoring station at Milltown, to support and supplement data from two U.S. Geological Survey stations also on the lower river segment • Village of McAdam makes wastewater treatment plant upgrades to reduce overflows • Four additional properties in the Town of St. Andrews are entered in the Canadian Register of Historic Places | | |

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|-------------------|--|--|--|
| 2010 | <ul style="list-style-type: none"> • A new St. Stephen/Calais international border crossing opens, relieving chronic congestion in the downtowns and allowing the communities to begin revitalization plans • New Brunswick adopts a St. David Parish Rural Plan that highlights St. Croix Management Plan values and retains 1995 St. Croix shoreland development setbacks • Town of St. Andrews adopts a new municipal plan containing shore buffer, trail and heritage provisions from the St. Croix Management Plan http://www.townofstandrews.ca/form/Municipal%20Plan%2010-3-Full%20Pkg.pdf • Two river campsites (Gravel Island and Scott Brook) become new provincial parks • Construction begins on the Fundy Discovery Centre, a \$8 million state-of-the-art aquarium, at the Huntsman Marine Science Centre in St. Andrews, to open in 2011 • Calais LNG Project loses its financial backers and proposed site but continues U.S. permitting for a liquid natural gas import terminal on the Maine side of the St. Croix estuary • International Joint Commission releases a draft adaptive management plan for St. Croix alewife and smallmouth bass and calls for input. Over 140 written and verbal comments are received. Based on this response, the IJC continues consultations toward the plan's implementation by governments. http://www.ijc.org/rel/st-croix-alewife/ • A 180mm rainfall on December 13 causes significant flooding along area rivers but not on the St Croix mainstem, due to exceptional water management by dam owners • CBC-Maritimes films a documentary on the St. Croix's international alewife controversy, to air in early 2011 | | |
| 2011 ⁵ | <ul style="list-style-type: none"> • Canada announces a new international water-border reporting policy that makes future recreational use of the upper St. Croix River illegal without major infrastructure and communication changes • U.S. Federal Energy Regulatory Commission relicensing of the St. Croix's international Vanceboro dam resumes; the owners advise that licensing costs may cause them to cease operating the dam⁶ • New Brunswick discontinues its water classification program in favour of developing a new land-and-water classification system at a future date. The St. Croix's lakes, ponds and drinking water supplies retain their Class A status but river sections remain without provincial protection • Fundy Discovery Aquarium opens at the Huntsman Marine Science Centre in St. Andrews • Town of St. Andrews commissions its new wastewater treatment plant, replacing an outdated facility • Additional newly-restored rooms are opened to the public at the McAdam Railway Station, a national historic site | | |

⁵ Many items contained in the 2011 summary are unresolved and their future uncertain. It should be noted that these will be addressed more closely in the next 10 year report for the CHRS board.

⁶ In 2012 after a meeting with the dam operators this option is no longer considered valid. There is no more discussion at this point in time regarding de-commissioning the dam. The re-licensing process will proceed. All those involved agreed that de-commissioning is not a viable option.

- | | | |
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| <ul style="list-style-type: none"> • Maine drafts a long-term management plan for its St. Croix recreational facilities, setting policy directions that support the St. Croix’s international management plan and encouraging New Brunswick collaboration • New Brunswick completes a draft management plan for its Spednic Lake Protected Natural Area; this is undergoing internal review before public consultation. • Downeast Heritage Museum in Calais is re-opened by Maine Indian Education as the Wabanaki Cultural Center, with many of its international St. Croix natural and cultural exhibits retained • U.S. conservation interests act to conserve 12,000 acres along the St. Croix’s East Grand and North Lakes in Maine that will directly support St. Croix Management Plan goals • Town of St. Stephen adopts a new municipal plan containing shore buffer, trail and heritage provisions from the St. Croix Management Plan; it also includes a policy encouraging partnering with and support for the Waterway Commission http://www.town.ststephen.nb.ca/admin/assets/MunicipalPlan.pdf • A 20-turbine wind farm is proposed for Danforth, on the Maine side of East Grand Lake. If developed, this will have visual and audial effects on the St. Croix’s CHRS designated area. • Organizations and agencies on both sides of the St. Croix border begin planning for War of 1812 bicentennial events in the coming year. Canada announces facility improvements to its 1812 Blockhouse in St. Andrews | | |
|--|--|--|

3.1 Chronological Highlights of Significant Events St. Croix River 2001-2011

Numerous events took place during this reporting period. All significant events are provided in the table above; however, a brief summary of chronological highlights is provided below:

On an ongoing basis the St. Croix continues to advocate for boundary water quality/quantity monitoring by agencies, organizations and volunteers. The operational dams that exist on the St. Croix River continue to be monitored by the International Joint Commission under their jurisdiction and other US regulatory agencies. As well, the St. Croix International Waterway Commission continues to collaborate with the State of Maine and the Province of New Brunswick and work on the delivery of the long-term Management Plan for the St. Croix River. Additionally, the SCIWC maintains the only consistent long-term periodic baseline studies on lake quality monitoring in the St. Croix watershed. This is an ongoing collaboration involving the Commission, the New Brunswick Department of Environment, the State of Maine, the Passamaquoddy Tribe and local lake associations that has been in progress since 1992. Sampling occurs approximately every 5-6 years in 20 of the major lakes in the St. Croix watershed.

In 2005 the SCIWC was selected as one of five finalists for the Thiess International River Prize for outstanding river management. The other four finalists, from the US, France and China, are multi-million-dollar government led programs. This award is a shining example of the dedicated, loyal, hard-working and excellent quality of management produced by the SCIWC over this decade, and the past decades reporting period.

2001-2011

3.2 Natural Heritage Significant Events 2001-2011

Media:

In 2001, significant media attention was aimed at the St. Croix River when the Discovery Channel Canada featured it as part of its *Great Canadian Rivers* series, highlighting the many significant and unique natural features of the river that attracts people world-wide⁷. This series continues to be aired and promoted today. The videos were stocked in regional community libraries as an educational resource in 2002.



Figure 4 Navy Island Protected Area

Land Conservation and Parks:

In 2001, New Brunswick established the Spednic Lake Natural Protected Area, the provinces largest eco-reserve with over 255 square kilometers of boundary lands and waters. In 2003 the State of Maine acquired 50 miles of shoreland on Spednic Lake and the upper St. Croix River protecting this natural area in both countries. In 2007 and 2010 additional islands are protected in Spednic Lake Protected Natural Area and two more sites Gravel Island and Scott Brook become Provincial Parks, respectfully Also, in 2007 the Province established the 5.6ha, St. Croix Provincial Park at Bayside which protects the visual protection and public access between Parks Canada's St. Croix Island International Historic Site and the St. Croix shoreline. In 2011, U.S. conservation groups began acting to conserve approximately 12,000 acres along two more of the Lakes in the St Croix system- East Grand and North, which will continue to reflect the management goals in the St. Croix Management plan.

Additionally, in 2002 the St. Croix Estuary Project created a 330 acre called Ganong Nature and Marine Park which is on the estuary, and in 2004 Maine created a 330 acre conservation area at Devil's Head which is facing the Ganong Nature Park. The town of St. Stephen also established a public park along the St. Croix waterfront in the town in 2002.

⁷ GoodEarth Productions Inc.

<http://goodearthproductions.com/viewshows.cfm?series=Great%20Canadian%20Rivers&season=Season%201&episode=8> Accessed March 14, 2012.

2001-2011

The New Brunswick Nature Trust received 1068ha of land in the Upper St. Croix River region between 2001 and 2006, additionally in 2006 3.6 km of riverfront is acquired and by 2009 it further acquires ownership of 19.7 ha of land and an easement of 5.3 ha of land in the St. Croix estuary. The on-going protection of lands and waters in the St. Croix region supports the St. Croix International Waterway Commission's Management Plan.

Water:

Water Quality:

In the early 1990's New Brunswick's *Clean Water Act, SNB 1989, c C-6.,1* came into effect and had a significant impact on the previous decade's regulations for municipal and industrial waste discharges, this promoting significant improvements to water quality within the lower regions of the river. Additionally, the Province initiated a proposed *Water Classification System* and did extensive research and consultations for the purpose of developing a new legal regulation which came into force during the current reporting period. In 2001, water quality assessments began on the lower portions of the River to and assist New Brunswick and Maine to implement compatible water quality standards and regulations. In 2002 New Brunswick adopted its Water Classification Regulation, immediately classifying all its drinking water supplies, lakes and ponds in the highest classification and committed to giving the St. Croix River and streams priority to be classified and proceeded to host consultations with stakeholders along the River in 2003 ending in 2004. Additionally, in 2003 Maine revised its classification of the St. Croix headwaters to match New Brunswick's proposal for consistency purposes. As well, in 2004 Maine began studies of dissolved oxygen levels in the lower portion of the River towards an initiative to continue to seek water quality improvements. In 2006, the pulp mill in Baileyville, ME upgrades its primary clarifier which improves overall water quality in the River system. The Town of St. Stephen builds a new wastewater treatment plant which replaces two outdated facilities in 2005, the Village of McAdam makes wastewater treatment upgrades in 2009, and in 2011 the Town of St. Andrews commissioned a new treatment plant. In 2009, Environment Canada establishes a continuous water level and water quality monitoring station at Milltown, to support and supplement data from two U.S. Geological Survey stations which are also located on the lower river segment.

In 2011, the New Brunswick government discontinues its Water Classification program with little explanation. The new program will be for land and water classification, this classification regulation remains in early stages with little opportunity at this stage for stakeholder input despite requests by watershed groups. The St. Croix's lakes, ponds, and drinking water supplies remain classified under the previous regulations, but the River segment remains without provincial classification and thus without protection. This is another issue that is likely to unfold over the next decade, and will be more closely examined in the next decade CHRS report.

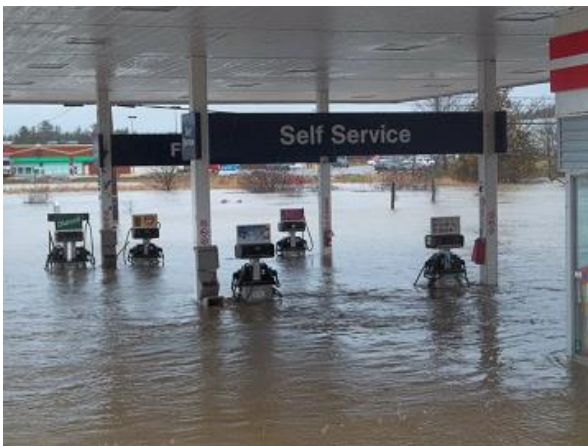
Estuarine Zone:

2001-2011

In the previous decade report it was noted that after a fifty year closure the Oak Bay area soft-shell clam fishery re-opened in 1999 due to significant improvements in coliform pollution reduction. The St. Croix Estuary Project (SCEP) began on-going bacterial testing at sites within the St. Croix estuary in 2003 until 2010, issuing annual reports addressing pollution problems and preventative measures that should be undertaken to reduce and eliminate bacterial pollution in the estuarine zone of the St. Croix. Furthermore, in 2004 the St. Croix Estuary Project issued a major review of estuarial species and indicators: *The St. Croix Estuary 1604 – 2004: the Environmental Health of the St. Croix Estuary after 400 years*, with a particular focus on trends 1978-2001.

In 2005 a committee was established that included federal, provincial and local fisheries interest groups in an effort to work together and create an integrated marine resource management plan for Southwestern New Brunswick which includes the St. Croix estuary. In 2009, the Southwestern New Brunswick Marine Resources Planning issued the integrated resource management document, “*Preferred Future for the Bay*”, which was submitted to federal and provincial agencies for review.⁸ Additionally, in 2009 the SCIWC partnered with the IJC, the US Geological Survey and the New Brunswick Community College system to develop a cohesive protocol for mapping of impervious surfaces across the US/Canada border in order to assist with future climate change and coastal development planning. Additionally, in 2009 New Brunswick adopted a Bayside Rural Plan that retained 1995 St. Croix shoreland development setbacks and preserved rural character, and due to this plan being in place it stopped an expansion proposal for the quarry located at Bayside.

Charlotte County Flood December, 2010:



⁸ Southwestern New Brunswick Marine Resources Planning website <http://bofmrp.ca/home/index.php/site/reports2/>. Accessed March 7, 2012.

2001-2011



Figure 5 Milltown Outflow December, 2010



Figure 6 Moosehorn Creek, ME December, 2010

Another very noteworthy event that occurred during this decade report is the natural disaster that occurred during the winter of 2010. Referenced as 100 year storm, the region around the St. Croix River received over 180mm of rainfall in the middle of December, 2010 resulting in flooding in many communities in the region. This flood caused extensive damage to homes and businesses, shorelines along many rivers and roads and other infrastructure. New Brunswick Premier Alward described the damage as, “beyond imagination... and sad... many homes covered up to their rooftops, vehicles underwater, and many people displaced”.⁹ Due to exceptional water management by the dam owners on the St. Croix River mainstem it was the only place in the region that neither flooded nor caused significant damage. Unfortunately, this could not be said for other watersheds in the region.

Fisheries:

Atlantic Salmon:

In the previous decade report it was noted that significant efforts were underway to restore the native populations of Atlantic salmon to the St. Croix. A native salmon restoration project was initiated in 1993, rearing tanks installed along the river at Milltown in 1999 and in 2000 an adult stocking program was activated; however, despite these efforts the stock continued to decline to as few as 18 counted at the Milltown fishway in 2000. Efforts continued throughout this next decade and stocked adults and juveniles are studied until 2006 when the study and re-stocking program were abandoned due to reduced funding and poor results.

Alewives/Gaspereau:

The St. Croix has been the site of a very contentious issue surrounding alewives which began in the early 1990's when the upper regions of the River and the Chiputneticook Lakes were closed to the native fish species of gaspereau/alewives. This blockage is a legislated order by the State of Maine to

⁹CBC News New Brunswick December 18, 2010. <http://www.cbc.ca/news/canada/new-brunswick/story/2010/12/17/nb-flood-waters-receding-in-southwestern-nb.html>. Accessed March 12, 2012.

2001-2011

block the river spawning of the species in an effort to protect the economically significant small mouth bass population in the region. In 2001, the Department of Fisheries and Oceans Canada began to seek alternative ways to help the native alewife gain access to its natural habitat by physically trucking them around the State barrier. Despite these efforts the fish species continued to decline. In the early parts of the 1990's the alewives counted in the millions, by 2002 the count was down to 900.

In 2004 it was obvious that this issue needed to be resolved through international relations between Canada and the United States and studies began to examine the interaction between small mouth bass and the alewife fish species in order to find a resolution to this on-going issue. The International St. Croix River Watershed Board, a body of the International Joint Commission (IJC) whose mandate is to be proactive in assisting to and prevent and resolve disputes regarding the boundary waters of the St Croix River by working with local stakeholders.¹⁰ The IJC began to work with stakeholders to analyze and resolve this problem. In 2006, studies were issued that show that these two fish species can co-exist within the River with little to no negative impacts to either species. In 2008, in response to the studies, the State of Maine allowed alewives to pass one of the state's dams to reach a small overall percentage of their spawning habitat, and the fish species responds well showing a minor recovery in numbers in subsequent years. In 2009, conservation and fisheries groups on both sides of the border petitioned the International Joint Commission to open all the St. Croix dams to allow alewife passage. As a result in 2010, the IJC completed an adaptive management plan with the help of the St. Croix Fisheries Steering Committee and this management plan, received over 140 written and verbal comments. Based on this response the IJC continues in its methods of consultation toward the plan's implementation. This issue remains unresolved; alewife passage still hindered by the blockage of the fishway by the Maine government. Studies and fish counts are on-going, and this issue has been brought to the federal by conservation groups. Additionally in 2010 the Canadian Broadcasting Corporation (CBC) Land and Sea program produces a documentary on this controversial international issue which aired in early 2011, drawing national media attention to this fisheries dispute.¹¹ As well, the fish species is under review with the United States and Canadian governments for their subsequent endangered species status. It is hoped that by the time the next decade report is issued for the CHRS that the fish will have been reviewed and a status given under each government's legislative endangered species act and this issue will finally be resolved and all parties involved will be content with the decision.

¹⁰International St. Croix River Watershed Board website.

http://www.ijc.org/conseil_board/st_croix_river/en/stcroix_mandat_mandat.htm. Accessed March 7, 2012.

¹¹Land and Sea. Alewives: A Border Dispute <http://www.cbc.ca/landandsea/2011/07/alewives-a-border-dispute.html>. Accessed March 7, 2012.

3.3 Cultural and Historical Heritage Significant Events 2001-2011

Boundary Water and Cross-Border Relations:

The September 11, 2001 attacks altered the course of history in many ways; relevant to the St. Croix and the border communities along the river. This has since shown to have significant impacts to border crossings and international policies in relation to boundary waters and uses. Traditionally local family, cultural, and community bonds transcend the US/Canada border at St. Stephen/Calais, McAdam/ Vanceboro, Forest City, Fosterville/Orient; however, tighter regulations on border crossings have contributed a shift away from the traditional toward 'one country, one community' relations. The Western Hemisphere Travel Initiative effective as of June 1, 2009 by the United States and Canada which now requires passports in order to enter or leave the countries, and new gates and re-enforced border crossings were added to the US border crossings. The SCIWC addresses this as it relates to recreational use, by creating new campsites in both New Brunswick and Maine to facilitate 'one country' travel and recreation use along the St. Croix River. In 2007, the SCIWC in partnership with others hosted a conference titled '*Changing Borders*' that drew 175 people from businesses government and communities to find solutions to the St. Croix border crossing issues. In 2011, Canada announced its intention to more rigidly enforce boundary water regulations and reporting. The newly enforced regulations state that all recreational boaters are required to present themselves upon their arrival in Canadian waters as per the *Customs Act (CA)* and *Immigration and Refugee Protection Act (IRPA)*. This includes all foreign boaters entering Canada, as well as private boaters who depart Canada and enter foreign waters, and subsequently return to Canadian waters.

This obligation exists regardless of their activities while outside of Canada or their planned activities while in Canada. Arrival in Canada occurs when the pleasure craft crosses the international boundary into Canadian waters.¹² While the impact to the St. Croix River is currently unknown, this issue is likely to have significant impacts on the users of the St. Croix River, and unless substantial infrastructure and communications are installed this will make future recreational use of the St. Croix very difficult and in some cases illegal. This issue is likely to be addressed in the next decade's report for the CHRS.

The 400th Anniversary of French Settlement at Saint Croix Island:

¹²Canadian Border Services Agency: 'What's New 2011' <http://www.cbsa.gc.ca/new-neuf/menu-eng.html>. Accessed March 13, 2012.

2001-2011

Three major cultural and historic events took place during the timeframe of this report. The first was the 400th anniversary of the first French settlement north of Florida at Saint Croix Island. Preparations for this major event began in 2002 under the direction of the SCIWC, and in 2003 Parks Canada and the U.S. National Park Service upgraded interpretation at the previously established parks on both sides of the border which faces Saint Croix Island. In 2004 the U.S. National Parks Service hired a permanent Park Ranger for the International Historic Site. The 400th anniversary occurred in 2004. Events took place throughout the year to commemorate the first French settlement in 1604 at Saint Croix Island; however, the main event was a 10 day long celebration which attracted approximately 47,000 people and involved four nations. Also during the 400th anniversary the Canadian-American Centre at the University of Maine at Orono collaborated with the SCIWC to produce and distribute 2,200 maps that exhibited Samuel Champlain's North American travels between 1604 and 1606. Additionally, the SCIWC and the U.S. National Park Service produce and place *Ste-Croix 1604* educational kits in 200 New Brunswick and Maine schools. Concluding these major events, in 2006 the National Film Board released a documentary on the Ste-Croix 2004 commemoration, *Life after Île Ste-Croix*.

Downeast Heritage Museum:

The second major cultural event began in 2002 when the ground is broken for the new Downeast Heritage Museum in Calais, Maine. The museum was to provide exhibits on the natural and cultural resources in the St. Croix region, it opened in 2004 to much celebration and acclaim; however, the museum was short-lived and closed its doors after only four years due to financial difficulties. The doors are re-opened in 2001 by Maine Indian Education as the Wabanaki Cultural Center, and thankfully many of its international St. Croix natural and cultural exhibits were retained.



Figure 7 Ste-Croix Island Celebrations, 2004

McAdam Railway Station:

The third major cultural and historical achievement involves the McAdam Railway Station, a National Historic Site. The station's regular use, dating to 1901, was discontinued in the early 1990s and the facility deteriorated until the Village of McAdam established a charitable trust in the late 1990s to purchase it and begin its restoration. Between 2002 and 2011, nine rooms in the station have been restored to their historic 1901 status and are now actively used for heritage interpretation, visitor centre and community events.

Historic Recognition:

Additional noteworthy events that occurred in this time frame include:

- 1 Properties in St. Stephen, St. Andrews and McAdam are entered into the Canadian Registry of Historic Places, recognizing their historical significance to the St. Croix region.
2. St. Andrews and St. Stephen enact municipal plans that set goals and policies supporting St. Croix heritage structures and character.
3. In 2007, a Cotton Mill Workers Monument is erected on the St. Stephen/Milltown waterfront that commemorates those who worked in Canada's second largest cotton mill from 1882-1957.
4. In 2011 organizations and agencies on both sides of the St. Croix border begin planning the bicentennial commemoration of the War of 1812, including an announcement from Canada that upgrades are to take place to the St. Andrews's Blockhouse.

The town of St. Andrew's also receives funding to build a state of the art aquarium at the Huntsman Marine Science Centre, and funds to upgrade the St. Andrew's Biological Station that facilitates national marine research and development in the St. Croix estuary and extending marine water bodies. The aquarium opened its doors in 2011. In St. Andrews, the Charlotte County Archives and Ross Memorial Museum expand their St. Croix collections which are available for public use, and in St. Stephen, the Charlotte County Museum continues to add to its St. Croix heritage collection

Aboriginal Events:

Also, a few significant events occurred within the aboriginal nations in the region. The Passamaquoddy Tribe produced an interactive DVD of place names for the St. Croix region in 2004, and produced a book and CD titled *I can speak Passamaquoddy/Maliseet (Nibtawi-Skicinuwatu)*. Furthermore, in 2006 the Passamaquoddy Tribe produces a DVD on the tribe's history in the St. Croix watershed: *N'tolonapemk – Our Relative's Place* and in 2008 a 1200 page Passamaquoddy/Maliseet – English dictionary.

2001-2011

3.5 Recreational Heritage Significant Events 2001-2011

In 2002 the SCIWC assumed the operation In 2002 the SCIWC assumed operation of 40 New



Figure 8 Heritage River Staff "going to work"

Brunswick provincial campsites and water access sites along the St. Croix River, under contract with the Province. In 2003, the SCIWC assumed formal management of Maine St. Croix River campsites that h created formal cross-border consistency in their management. As well, the SCIWC assumed operational management of Spednic Lake Provincial Park in the same year, preventing its closure, and continues to operate it to this day.. The SCIWC operates New Brunswick and Maine recreational sites from the beginning of May until late September/early October. Operational duties for the recreation programs for Maine and New Brunswick consist of field staff trained

to accomplish on-site campsite maintenance, removal of waste, cleaning and general tidying of sites, handling of reservations and payments at the provincial park sites, offering of leadership and river stewardship activities, interpretation and education to groups and individuals,, work with local agencies, outfitters and enforcement to ensure the safety and legality of the campsites on both sides of the international river. Today the SCIWC maintains 43 sites for the N.B. Department of Natural Resources and 22 sites for the Maine Bureau of Parks and Lands and Department of Inland Fisheries and Wildlife. The SCIWC continues to receive praise and acknowledgement for their hard-working and dedicated staff that ensures the recreational heritage of the St. Croix River is not only maintained, but continues to improve as opportunities arise.

Additionally, the SCIWC created a recreational map in 2004 which is a large, colourful map and provides information to users on both sides of the river for access sites, portage trails, boat launches, and campsites. In an effort to maintain good relations and open communication, the SCIWC since 2005, has annually hosted the St. Croix Water Forum which brings together users and managers to discuss the multiple uses of the St. Croix River.

During the period of this report there were a few significant planning activities. A large-scale plan for the International Roosevelt Trail was finalized in 2007. The trail will be an over 100 mile long coastal trail system along Passamaquoddy Bay, the St. Croix estuary into the River stem. The trail is aimed at being a world class system and is currently underway on a slow timeline. Also, in 2011 Maine drafted its long-term management plan for the St. Croix recreational facilities and policies that are in harmony with the St. Croix's international management plan, and support collaboration with New Brunswick. The Province of New Brunswick completed its draft management plan for Spednic

2001-2011

Lake Protected Area, and it is currently undergoing internal review before it is revealed to the public for consultation.

4.0 Table 2. Natural Heritage Values, St. Croix River 2001 – 2011.

| CHRS 2001 Natural Heritage Framework Theme/Sub- Theme | St. Croix Theme Representation in 2000 | Significant Actions, Research and Studies (2001-2011) | Changes or Threats to Designation Values |
|--|--|---|--|
| 1. HYDROLOGY | | | |
| 1.1 Drainage Basins | 4. Atlantic Ocean Basin, Stream order 1 | | None |
| 1.2 Seasonal Variation | <u>Period of highest flow:</u> April <u>Period of lowest flow:</u> 2. May-September (Flows are historically dam-affected) | + St. Croix flows (real-time and historical) are now available online at http://me.water.usgs.gov/stcroix.html Extreme low (2001) and high (2005) rainfall years, along with a 100+ year rainfall event in December 2010, provide data and experience for future water management. | The US Federal Energy Regulatory Committee (FERC) continues to require the US licensing of dams on the River which continues to be a financial strain on the operator. |
| 1.3 Water Content | Minor sediment load; 6. Total dissolved solids are medium (51/100mg/l) | | None |
| 1.4 River Size | 2. Medium flow, >500km in river length | | None |
| 2. PHYSIOGRAPHY | | | |
| 2.1 Physiographic Regions | 4. Appalachian Acadian Highlands | | None |
| 2.2 Geological Processes | <u>Bedrock:</u> 1. Sedimentation (estuarial sandstone/shales); 2. Faulting (Oak Bay) <u>Surficial:</u> 2. Glacial Transport (eskers, drumlins, erratics); 9. Glacial melting (lake gravel deposits) | | None |
| 2.3 | <u>Bedrock:</u> 12. Impervious, | | None |

2001-2011

| | | | |
|-------------------------------|---|--|------|
| Hydrogeology | medium porosity. Plus numerous porous glacial sand & gravel deposits | | |
| 2.4 Topography | <u>Gradient</u> : 1. Shallow; affected by dams (Added note: 7.5m tidal range in estuary) | | None |
| 3. RIVER MORPHOLOGY | | | |
| 3.1 Valley Types | Ill-defined valley; rounded/flat interfluves | | None |
| 3.2 Channel Types | <u>Stream configuration</u> : 6. Estuarine <u>Lake Systems</u> : 9. Feeder lakes (major lakes have been dam-controlled since 1800s) | | None |
| 3.3 Channel Profile | <u>Level water</u> : 3. Pool & riffle <u>White water</u> : 4. Riffle; 6. Rapids <u>Waterfalls</u> : 9. Ledge (Canoose Ledges); 11. Waterfall (Mud Lake Falls) | | None |
| 3.4 Fluvial Landforms | <u>Depositional landforms</u> : 3. Braiding (river gravel bars; Grassy Islands) | | None |
| 4. BIOTIC ENVIRONMENTS | | | |
| 4.1 Aquatic Ecosystems | <u>Riverine systems</u> : 3. Lowland zone <u>Lake systems</u> : 1. Oligotrophic (East Grand); 2. Mesotrophic (Spednic) <u>Estuarine systems</u> : 7. Subtidal Zone (large estuary); 8. Intertidal Zone (over 11km ³ of intertidal land) <u>Wetland systems</u> : 10. Bogs & fens; 12. Swamps | | None |
| 4.2 Terrestrial Ecosystems | 14. Atlantic Maritime | | None |

2001-2011

| 5. VEGETATION | | | |
|--|---|--|---|
| 5.1 Significant Plant Communities | Provincially-significant Cardinal flower, highbush blueberry and various <i>viburnum</i> species are present. St. Croix Islands Ecological Reserve (Grassy Islands) protects plant and other species | + 2003-2010: New provincial Spednic Lake Protected Natural Area, and lands conserved on the river and estuary by Nature Trust of N.B. protect plant and other species habitats + 2001 studies at Spednic Lake PNA identify 3 old growth tree stands and 9 vascular plants listed as provincial Species of Conservation Concern or considered provincially rare or uncommon. | Additional plant communities protected |
| 5.2 Rare Plant Species | No known COSEWIC species at 2000 | + See Spednic Lake PNA entry above + 2000 studies (released 2001) at Gleason Point, on the St. Croix River, identify 6 rare vascular plant species along the shoreline. Protected by Nature Trust of N.B. | Additional protection provided for rare plant occurrences at select sites. COSEWIC and N.B. list more species during this period; more St. Croix examples may be identified in the future |
| 6. FAUNA | | | |
| 6.1 Significant Animal Populations: Fish | <p>1. <u>Population size</u> (smallmouth bass – important recreational species),</p> <p>2. <u>Dynamic</u> (smallmouth bass) and (Atlantic salmon – significant native & recreational species)</p> | <p>+ Depressed Spednic Lake smallmouth bass stock largely recovers due to management initiatives; this species supports an active fishery on St. Croix lakes and river</p> <p>- St. Croix Atlantic salmon restoration programs in 2006 due to lack of funding and diminishing results, due in part to freshwater competition with smallmouth bass. Two small estuarial tributaries may still have remnant Atlantic salmon populations.</p> <p>- The State of Maine’s on-going (since 1995) barriers to native sea-run alewife spawning, in response to a state smallmouth bass fishing lobby, continue to raise international concern and have led this fish population to drop to</p> | <p>Main-stem Atlantic salmon population is believed extirpated.</p> <p>Native St. Croix sea-run alewife population remains at historic low levels due to a State of Maine spawning barrier, with implications</p> |

2001-2011

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| | | <p>historic lows. Canadian, international and resource groups seek Maine's reversal of its ban, with limited success to date. See Tables 1 and 6 for more detail.</p> <p>+ American eel (COSEWIC and NB Species of Special Concern) continues to have a small sustaining St. Croix population</p> | <p>to wider freshwater and marine ecosystems</p> |
| 6.1 Significant Animal Populations: Mammals | <p>Recreationally-significant moose, white tailed deer and black bear populations</p> | | <p>None</p> |
| 6.1 Significant Animal Populations: Birds | <p>11. Dynamic (Bald eagle and osprey – significant breeding populations of each)</p> | <p>+ Bald eagle and osprey populations in the estuary and lower river begin to rebound from 1990s lows, likely due in part to some increase in alewife food source</p> | <p>St. Croix eagle and osprey populations increase during this period</p> |
| 6.1 Significant Animal Populations: Other | <p>16. Dynamic (dragonflies – greatest diversity of species for the region); (softshell clam – significant numbers for New Brunswick)</p> | <p>+ Research continues on St. Croix dragonfly species</p> <p>+ Monarch butterfly (COSEWIC and NB Species of Special Concern) present during migration</p> | <p>None</p> |
| 6.2 Rare Animal Species: Fish | <p>No known COSEWIC species at 2000</p> | <p>+ Striped bass (COSEWIC and NB Threatened) migrate through and feed in St. Croix estuary</p> <p>- Atlantic salmon (COSEWIC and NB Endangered) restoration program on St. Croix discontinued in 2006; main stem population now believed extirpated.</p> | <p>COSEWIC and N.B. list more species during this period; more St. Croix examples may be identified in the future</p> |
| 6.2 Rare Animal species: Mammals | <p>Presence of Eastern panther (undetermined federal status at 2000); harbour porpoise (COSEWIC Threatened at 2000)</p> | <p>- Federal/ provincial status of the Eastern panther is removed, pending further review.</p> <p>+ The provincially-threatened Canada lynx is identified as present in the Spednic Lake Protected Natural Area</p> <p>+ Harbour porpoise continue to be observed in estuary</p> | <p>COSEWIC and N.B. list more species during this period; more St. Croix examples may be identified in the future</p> |
| 6.2 Rare Animal species: Birds | <p>Provincially-threatened Bald eagle and provincial species-of-concern osprey have significant local breeding populations.</p> | <p>See 6.1 re: Bald eagle and osprey. The federally-endangered Golden eagle has now been reliably observed on the St. Croix River's Grand Falls-Upper Mills section.</p> | <p>COSEWIC and N.B. list more species during this period; more St. Croix examples may be identified</p> |

2001-2011

| | | | |
|--------------------------------|----------------------------------|--|---|
| | | | in the future |
| 6.2 Rare Animal species: Other | No known COSEWIC species at 2000 | | COSEWIC and N.B. list more species during this period; St. Croix examples may be identified in the future |

4.1 Summary of Natural Heritage Values 2001-2011

The natural heritage values briefly outlined in the above table provide a quick reference to the positive and negative occurrences on the St. Croix River relevant to its designated natural heritage. The summary will explore both the positive and negative heritage values listed in the above table.

Hydrology:

A re-occurring concern among users and operators on the St. Croix River is the minimum and maximum outflows from the upper regions down through the river main stem. The dam operators are required to work within regulatory operations by FERC, the Maine Department of Inland Fisheries and Wildlife, and the IJC, and also consider recreational users from fishing to water tubing outfitters that all seek minimum and maximum flows at different times throughout the year especially during the summer. There is now a real time and historical database which is available online, St. Croix River Basin Cooperative Hydrologic Network, which is a joint effort by the IJC Environment Canada, US Geological Survey and the dam owners.¹³ This has especially helped to be aware of levels and flows throughout the year to best manage for fish habitat and spawning, recreational users and to meet regulatory operations by various agencies.

Additionally, during the period of this report the St. Croix experienced a 100 year drought in 2001 and a 100 year flood in 2010, and in 2005 another significantly heavy rainfall year which caused some flooding as well. All of these natural events are insight into climate change in the region, and provide experiences learned into water management for the St. Croix River. These events will assist with future management when natural events similar to these occur again. Also, recent upgrades in computer-based water monitoring and modelling tools allow for better multiple-use management and flood control under different hydrologic scenarios to assist with better water management.

¹³ St. Croix River Basin Cooperative Hydrologic Network <http://me.water.usgs.gov/stcroix.html>. Accessed March 12, 2012.

Vegetation:

Within the CHRS designated River corridor there are provincially significant plant species such as the Cardinal flower, highbush blueberry and various *viburnum* species present. As the amount of protected areas has increased in many parts of the river, increasingly more vegetation is benefiting from this protection. The Spednic Lake Protected Natural Area and the St. Croix Islands (Grassy Islands) Protected Natural Area, as well as lands protected by the Nature Trust of New Brunswick have contributed highly to the protection of species and their habitat in the St. Croix River corridor. The Canadian Species at Risk Act was passed during the timeframe of this report; previously there were no known species at risk prior to 2000. However, a study completed for the Spednic Lake Protected Natural Area identified three old growth forest stands, and 9 vascular plants listed as Provincial Species of Concern. Another study completed at Gleason Point, on the St. Croix River, identified six rare vascular plant species along its shoreline, this area is part of the area protected by the Nature Trust of New Brunswick. Additionally, protection is provided for rare plant occurrences at select sites along the River. As the Province of New Brunswick and the Committee on The Status of Endangered Wildlife In Canada (COSEWIC) continue to identify more species, it is likely this will continue to be reflected in the protected natural areas along the St. Croix River.



Figure 9 Cardinal Flower

Fauna:

In the previous sub-themes there have only been positive occurrences to discuss. Under the fauna theme there are a few of both. This section identifies the small-mouthed bass and Atlantic salmon as significant fish species, for recreational purposes and native recreational species of significance, respectfully. The smallmouth bass has recovered significantly in Spednic Lake since the last report was issued; however, Atlantic salmon are now considered to be extirpated from the St Croix River mainstem and are listed as endangered in the region. Additionally, during the period of this report the alewife continues to be blocked from its spawning ground by Maine legislation, and has reached an all-time low in population. The holistic impact of this fish species decline is speculated to have an effect on both freshwater and marine ecosystems within the region. These issues are addressed in more detail above under the chronological highlights section. Another fish of special concern by the Province of New Brunswick and COSEWIC is the American eel which continues to maintain a small population in the St. Croix River system. Also, the striped bass a N.B. and COSEWIC threatened species continues to sometimes feed and pass through the St. Croix estuary. It is likely that as more species are listed by the Province and COSEWIC that this will be represented in the St. Croix River system.

Significant mammal species that are found within the St. Croix corridor are recreationally significant moose populations, white tailed deer and black bears. In our last periodic report we identified the presence of the rare Eastern panther in the area; however, this mammal has since been removed from the

Provincial and COSWEIC listed pending further review. However, the provincially threatened Canadian lynx have since been found in the River system at Spednic Lake Protected Natural Area; as well, the COSEWIC threatened harbour porpoise continues to be sighted within the St. Croix estuary.

Significant populations of dynamic bird species such as the provincially threatened bald eagle and provincial species-of-concern osprey have significant breeding populations within the River corridor. Their populations have since rebounded from early 1990 levels. As well, the federally endangered Golden eagle has been observed at the St. Croix River's Grand Falls-Upper Mills section. It is likely that as more species are listed by the Province and COSEWIC that this will be represented in the St. Croix River system.



Figure 10 Bald Eagle

Other significant species are the dynamic dragonfly species within the St. Croix River system which exhibits the greatest species diversity in the region. Research regarding the dragonfly species continues. As well as, the migratory Monarch butterfly which is a provincial and COSEWIC species that is found during its migration at the River. Furthermore, in the estuary soft-shelled clams are numerous for New Brunswick

Other significant themes such as Physiography, River Morphology and Biotic Environments have received no significant research or developments during this reporting period.

While the St. Croix has experienced losses in fish populations over the past reporting period, and is likely to continue unless new programs for re-stocking of Atlantic Salmon are initiated, and while the debate goes on at an international level regarding the alewives, their populations will likely continue to decline unless a solution is found soon. Overall, the St. Croix remains a pristine and natural area with a wide range of species and diversity.

5.0 Table 3: Cultural Heritage Values 2001-2011

| CHRS 2000 Cultural Heritage Framework Theme/ Sub-Theme | St. Croix Theme Representation in 2000 | Significant Actions, Research and Studies (2001-2011) | Changes or Threats to Designation Values |
|--|--|---|--|
| 1. RESOURCE HARVESTING | | | |
| 1.1.3 Commercial fishing | Historic herring weirs in the estuary, now | | None |

2001-2011

| | | | |
|-----------------------------------|---|---|--|
| | intermittently outfitted and used due to lack of inshore herring | | |
| 1.1.4 Collection of shellfish | Two aboriginal shell middens in the estuary; Oak Bay clam harvest opened in 1999 after a 50-year closure, following bacterial pollution reduction | - Clam harvesting in much of provincial side of the estuary now limited to commercial operations that purify clams of potential bacteria before consumption, as a human health precaution. | None |
| 1.3.4 Industrial Water Extraction | 1881 rope-drive hydroelectric generator still operating at Milltown dam, province's oldest hydropower facility | -/+ Operation of rope drive generator discontinued in 2005; rope removed but generator remains in place with interpretive sign. | None |
| 2. WATER TRANSPORT | | | |
| 2.1.3 Powered commercial freight | Remnants of 1700s-1800s shipping wharves along the estuary | | None |
| 2.1.4 Surface bulk transportation | Log driving, late 1700s to 1965: sunken logs, a log sluice and remnants of boommoorings, landings and wing dams present | | None |
| 2.2.2 Navigational improvements | Trails to and from North Lake and East Grand Lake: part of aboriginal route between St. John and Penobscot watersheds | + Route documented most recently in 2005. Trail website (http://www.malissetrail.com/) created in 2008. | None |
| 2.3.1 French exploration | Saint Croix Island (Île Ste-Croix), French settlement in 1604-05. International historic site; interpretation at Canadian and American mainland sites | + 400 th anniversary of the 1604 settlement and its importance to French exploration and culture in North America celebrated in 2004-2005. Parks Canada and U.S. National Park Service expand interpretive facilities at mainland sites in 2003; NPS employs fulltime interpretive staff, beginning in 2004. | Interpretive signage has been increased. American park ranger available to assist, as time permits, with interpretive efforts on Canadian side |
| 3. RIPARIAN SETTLEMENT | | | |

2001-2011

| | | | |
|--|---|--|---|
| 3.2.1 Permanent Shoreline Aboriginal Settlements | Paleo-Indian (22 known sites) and Late Archaic (27 known sites) cultures represented | | None |
| 3.2.3 River Industry-Based Communities | <p><i>St. Stephen</i> (shipping, milling, manufacturing), notable representations:</p> <ol style="list-style-type: none"> 1. Ganong Bros. chocolate factory (est. 1875) beside waterfront; converted to new uses and museum. 2. Site of Canada's second largest cotton mill (1882-1957), now a municipal park. Mill operated on hydropower from Milltown dam, this still generating power. <p><i>St. Andrews</i> (shipping, tourism, tourism, marine research), notable representations:</p> <ol style="list-style-type: none"> 1. National Historic District 2. Algonquin Hotel 3. St. Andrews Biological Station | + Cotton Mill Workers' Monument unveiled on St. Stephen's Milltown waterfront, overlooking the mill site, in 2007 | Cotton mill site now has riverside interpretation |
| 3.3.3 River-influenced Roads and Railways | International road and rail bridge sites in continuous use at St. Stephen/Milltown (from 1800s) and St. Croix (from early 1900s); road bridges at Forest City and Fosterville (from 1800s). Construction of N.B.'s first rail line, to St. Andrews for shipping and tourism, begun in 1847; part of | + A third St. Stephen/Calais international border crossing opens in 2010, relieving chronic congestion in the downtowns and allowing the communities to begin revitalization plans | None |

2001-2011

| | | | |
|--|---|--|--|
| | this line is now a walking trail | | |
| 4. CULTURE & RECREATION | | | |
| 4.2.1 River-related museums, art galleries, commemorative structures | <p><i>St. Stephen:</i> Charlotte County Museum, Ganong Chocolate Museum, 3 plaqued national or provincial historic sites.</p> <p><i>St. Andrews:</i> Ross Memorial Museum, Charlotte County Archives, 8 plaqued national or provincial historic sites</p> <p><i>McAdam:</i> McAdam Railway Station, national historic site</p> <p><i>Other:</i> St Croix Island International Historic Sit; 3 St. Croix CHRS plaques; Diggity Stream monument (aboriginal & logging heritage)</p> | <p>+ <i>St. Stephen:</i> 33 properties entered in the Canadian Registry of Historic Places (municipal category), 2006-2008, a number related to waterway heritage; Cotton Mill Workers' Monument erected, 2007.</p> <p>+ <i>St. Andrews:</i> 24 properties entered in the Canadian Registry of Historic Places (municipal category), 2006-2009, a number related to waterway heritage</p> <p>+ <i>McAdam:</i> 12 properties entered in the Canadian Registry of Historic Places (municipal category), 2008, some related to waterway heritage</p> <p>+ <i>Other:</i> Fourth St. Croix CHRS plaque installed, 2006, at Spednic Lake Provincial Park</p> | |
| 4.2.3 River-based cultural landscapes | Traditional family, cultural, and community bonds transcend the US/Canada border at St. Stephen/Calais, McAdam/ Vanceboro, Forest City | <p>- Sept. 1, 2001 terrorist attacks that kill nearly 3000 in the US dramatically impact family, cultural and community exchanges across the St. Croix, incl. re-enforced and gated border crossings; passport requirements.</p> <p>+ Waterway Commission and partners hold <i>Changing Borders</i>, a 2007 conference that seeks ways to address new border challenges</p> <p>+ Waterway Commission works with border and resource agencies, 2008-present, to develop means for continued historic recreational use of the St. Croix boundary waters</p> | <p>New border requirements hinder historic cultural bonds but not designation values to date</p> <p>If Canada applies its new water border crossing policy on the St. Croix, without providing reporting options, recreational use</p> |

2001-2011

| | | | |
|-------------------------------------|---|---|---|
| | | - In 2011 Canada issues a new border crossing policy that requires recreational users immediately report their entry into Canadian waters. Large sections of the St. Croix have no cell phone or other reporting options, making compliance problematical. Discussions are proceeding on how to address this. | could be severely restricted. |
| 4.3.1 Early recreational boating | Significant recreational canoeing river (early 1900s-present) | + Cross-border land conservation (see Natural Heritage table) and recreational management (see Recreational Heritage table) initiatives preserve traditional canoe sites and cultural experience | Increased protection of this cultural value |
| 4.3.2 Early recreational angling | Lakes have been a popular angling destination since 1800s | + Fisheries management initiatives work to retain, improve sport fishing quality | None |
| 5. JURISDICTIONAL USES | | | |
| 5.1.3 European Intermecine Conflict | <i>1600s French/British conflict:</i> French 1604 settlement on St. Croix Island as defence against British assault <i>American War of Independence:</i> St. Andrews (town, seaport) est. 1873 by Loyalists with land grants from King George III; significant number of original Loyalist buildings <i>American Civil War:</i> Skeddadle Ridge at Spednic Lake, an American Civil War refuge | + 400 th anniversary of 1604 French settlement commemorated in 2004; additional permanent interpretation (see 2.3.1) + Skeddadle Ridge is included in the new Spednic Lake Protected Natural Area, but not interpreted | None |
| 5.2.1 International borders | Entire length of the St. Croix agreed as the boundary between English and English territories by the 1783 | + International boundary markers are maintained by the U.S./Canada International Boundary Commission | None |

2001-2011

| | | | |
|--|---|---|---|
| | Treaty of Paris; its location formally resolved as the present Canada/US boundary by the 1842 Webster–Ashburton Treaty. International boundary markers placed along its full length in 1927-1929. | | |
| 5.3.2 Improvements in Water Management | Main-stem dams employed for multiple use management beginning in 1905. River flows and lake levels monitored, ongoing, at various locations beginning in 1919 | + Recent upgrades in computer-based water monitoring and modelling tools allow for better multiple-use management and flood control under different hydrologic scenarios | None |
| 5.3.3 Improvements in Aquatic Ecosystem Management | <i>Fishways</i> : early dam fishways in the 1800s; since replaced. <i>Native fish stocks</i> : Atlantic salmon population is dwindling; alewife population is at risk due to Maine spawning barriers <i>Sport fish stocks</i> : Smallmouth bass population in Spednic Lake is rebuilding from 1980s low | - St. Croix Atlantic salmon restoration programs in 2006; main-stem population is now believed extirpated. - Maine removes alewife spawning barrier at one dam but not at a second: fish population grows slightly but is still the subject of international concern. See Tables 1, 2 and 6 for more detail + Studies show that the Spednic smallmouth bass stock has largely recovered due to management initiatives | Sea-run Atlantic salmon no longer present |

5.1 Summary of Cultural Heritage Values 2001-2011

The St. Croix River was designated as a Canadian Heritage River based on its many significant cultural values which can be found in the Introduction. This summary section will review the information found in the above table.

Resource Harvesting:

2001-2011

There have been several commercially significant cultural activities related to natural resources along the St. Croix. Within the estuary there has been significant commercial fishing occurring historically and somewhat remain today. Within the estuary there was a herring weir fishery; however, there has been a significant decline in inshore herring fish stocks so this activity has dwindled, and no significant actions or studies have occurred in the last decade. In the previous report it was noted that a long since closed clam fishery had re-opened due to improvements in water quality; however, as standards have risen and new technology has been developed to scrub the clams for bacterial pollution, the traditional method of collection and consumption has diminished.

Industrial water extraction historically has occurred at the Milltown dam, where a rope-drive generator was in operation since 1881, making it the Province's oldest hydroelectric facility. In 2005 this generator was de-commissioned and the rope removed, however it is marked by an interpretative sign that notes its historical importance.

Water Transport:

The St. Croix River system has a long history of use and importance that dates back for centuries. There are remnants of old wharves from the 1700-1800 along the estuary, as well as, remnants of the log drive that occurred on the River from the 1700's-1965 which includes sunken logs, a log sluice and remnants of boom moorings, landings and wing dams. In the upper regions of the Lakes on East Grand and North Lakes, the traditional trail routes by the aboriginals to and from the St. John River and Penobscot Rivers has been documented, and a website created in 2008 to promote the history and cultural significance of this trail.¹⁴ As well, during the period of this report the region on both sides of the border celebrated the 400th Anniversary of the first French Settlement north of Florida at St. Croix Island. This event is explained in further detail in the chronological highlights section above.

Riparian Settlement:

Along the St. Croix River corridor there are a number of known Paleo-Indian sites (22 known sites) and Late Archaic sites (27 known sites) represented. Historically, these two communities (though not exclusively) along the St. Croix were tied to the River both St. Stephen and St. Andrews. St. Stephen was a shipping, milling and manufacturing town. During the period of this report St. Stephen's famous Ganong Bros. Chocolate Factory which was established in 1875 was converted into new uses and a museum where you can take an interpretive tour through the history of the Ganong Brother's chocolate manufacturing, and watch hand dipped chocolates being made, and get free tasty samples. As well, the site of Canada's second largest cotton mill is in St. Stephen. It operated from 1882-1957, and has since been transformed into a municipal park. As well, in 2007 a Cotton Mill's Worker's Monument was unveiled on the St. Stephen waterfront which overlooks the former Mill's site and has riverside interpretation signs. The

¹⁴ The Maliseet Trail <http://www.maliseettrail.com/> Accessed March 13, 2012.

2001-2011

Milltown dam once supplied the hydropower to the cotton mill, and today still provides hydropower to the grid system for New Brunswick.

The Town of St. Andrews has long been a shipping town, attracting tourists and a known location for marine research. The downtown area has been designated as a National Historic District because: *“it is a rare and fine example of a Canadian town that retains key*

*elements of an 18th-century British colonial town plan; it is distinguished by a fine collection of commercial and residential buildings spanning the history of the community and consistent in the use of classicism in their design; and the retention of the original grid layout, the consistent character of the architectural resources and the division of blocks into generously sized lots have resulted in a community with a distinctive appearance and feel.”*¹⁵ Notable representations for tourism are the tour operations in place, but most notably is the Algonquin Hotel built in the late 1800’s which draws visitors from around the world; and the St. Andrews Biological Station which has been conducting research since the early 1900’s making it Canada’s first marine research station. This historic research station received funding for upgrades and the adjacent Huntsman Marine Science Centre completed a major capital campaign to build a new aquarium for public interaction during the period of this report, helping them to continue to do exemplary research that is internationally renowned.



Figure 11 Historical Picture of Cotton Mill St. Stephen

River Influenced Roads and Railways:

Since the 1800’s there have been international road and rail bridge sites in continuous use at St. Stephen/Milltown and St. Croix. There were road bridges at Forest City and Fosterville (from 1800s and onwards). As well, the construction of New Brunswick’s first rail line, to St. Andrews for shipping and tourism, was begun in 1847; part of this line is now a walking trail. A third St. Stephen/Calais international border crossing opened in 2010, relieving chronic congestion in the downtowns and allowing the communities to begin revitalization plans.

Culture and Recreation and Jurisdictional Uses:

Much of the information contained in this segment has already been summarized in the chronological section. Please review that section for more information.

6.0 Table 4: Recreation Values 2001-2011

¹⁵Canada’s Historic Places <http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=7785>. Accessed March 13, 2012.

2001-2011

| CHRS Recreational Theme | St. Croix Theme Representation at 2000 | Significant Actions, Research and Studies (2001-2011) | Current Situation | Changes or Threats to Designation Values |
|----------------------------------|--|--|---|---|
| Boating | Public and private accesses to the water and shores are found at points along the length of the waterway. The lakes, flowages and estuary are all regularly used by boaters | <ul style="list-style-type: none"> + Towns of St. Stephen and St. Andrews further upgrade public their wharf facilities for boaters + Improvements made to some N.B. boat accesses on lakes and river | Boating use seems to be relatively stable; current facilities address present needs. | Improvements made to facilities meet current and anticipated needs. |
| Canoeing/ Kayaking/ Tubing | Lakes, river and estuary provide three different experiences. An estimated 5000 canoeists use the upper river annually; many canoeists and kayakers use other parts of the system. | <ul style="list-style-type: none"> + Results of a 1999 user preference study, issued in 2001, show paddlers give high rating to the St. Croix River natural experience & facilities -/+ Tightened international border policies after Sept 2001 eliminate the traditional practice of using campsites on both sides of St. Croix; in 2008-2010, additional N.B. and Maine sites are created to allow for 'one country' use of the waterway + By 2010, the Waterway Commission is operating 43 New Brunswick and 22 Maine recreation sites on the St. Croix (campsites, parks, portages and boat accesses) under consistent signage and maintenance guidelines. + Canoe use of the upper River continues to increase, estimated at 10,000 users annually by 2010, without significant effect to date on the river experience -/+ Inner tube floating between N.B.'s Scott Brook and Gravel Island river sites becomes a popular commercial and group activity, adding over 1500 users to this river segment and placing a strain on site facilities - In 2011, Canada announces a new | <p>Canoe use of the upper river continues to increase, on an international basis. The St. Croix lakes and river continue to attract canoe-trippers from North America and abroad.</p> <p>Tubing has become a new recreational activity on the provincial side of the upper river, with some site use implications.</p> <p>Kayaking on the river and estuary remains roughly constant.</p> | <p>If upper river use continues to grow, additional planning and management will be needed to maintain the quality of experience and preserve the river environment</p> <p>If Canada applies its new water border crossing policy on the St. Croix, without providing reporting options, recreational use could be severely restricted.</p> |

| | | | | |
|----------------------|--|--|--|--|
| | | <p>international water-border reporting policy that makes future recreational use of the upper St. Croix River illegal without major infrastructure and communication changes</p> <p>+ In 2011, Maine drafts a long-term management plan for its St. Croix recreational facilities, setting policy directions that support the St. Croix's international management plan and encouraging New Brunswick collaboration</p> | | |
| Camping | <p>80 campsites available at North Lake and Spednic Lake provincial parks, other sites available at 3 private or privatized campgrounds on the estuary and one campground in McAdam. NB operates 22 water access remote sites, 3 drive-in sites.</p> | <p>- Due to on-going general operating difficulties, North Lake Provincial Park is leased for private use</p> <p>+ In 2003, the Waterway Commission assumes operation of Spednic Lake Provincial Park to prevent its closure; it subsequently upgrades staffing and facilities</p> <p>+ Two river drive-in sites (Scott Brook and Gravel Island) get environmental remediation and facilities upgrades in 2006-2009 and are converted to small provincial parks in 2010. A nearby drive-in site is converted to walk-in and water access, to serve alternate users</p> <p>+ Campgrounds at St. Andrews, Bayside and McAdam expand their number of sites.</p> <p>+ At 2010, the Waterway Commission maintains 3 provincial parks and 33 additional campsites plus 21 state campsites on the St. Croix boundary waters</p> | <p>Camping opportunities decrease on the lakes, but increase elsewhere.</p> | <p>Future evaluation would determine whether more camping facilities are warranted on the lakes; elsewhere supply appears to balance demand.</p> |
| Angling/ Clamming | <p>There is an historic smallmouth bass fishery</p> | <p>+ Fish surveys continue to document the recovery of Spednic</p> | <p>Due to good stock recovery, consideration is now being given to Spednic Lake catch-and-keep</p> | <p>None</p> |

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| | <p>on Spednic Lake.</p> <p>Many fish species are angled in the lakes and river.</p> <p>Clam digging in Oak Bay limited to companies who purify clams of bacteria.</p> | <p>Lake bass stocks: catch-and-release fishing has only been allowed in the interim</p> <p>+ There is a significant recreational smallmouth bass fishery in all lakes, flowages and the river mainstem. Lake trout, landlocked salmon and white perch offer other prime sport fisheries</p> <p>+/- Oak Bay opened briefly to public clamming in 2000-2001 but now limited to operators who purify clams, due to recurring bacteria issues</p> | <p>bass fishing in N.B. and Maine.</p> <p>St. Croix fisheries attract anglers from other regions, support local outfitters and provide local recreation.</p> <p>Limited harvesting by commercial operators at present, due to bacteria issue</p> | |
| Hiking | <p>Marked trails at Spednic Lake Provincial Park and in the Towns of St. Andrews and St. Stephen.</p> | <p>+ Additional trails are constructed along or near the waterway at Spednic Lake Provincial Park, Todd's Point, Bayside and in municipalities of St. Stephen, St. Andrews and McAdam</p> <p>+ Master plan is developed for an International Roosevelt Trail, which would encircle the St. Croix estuary and nearby Passamaquoddy Bay</p> | <p>Expanded opportunities for public hiking and waterway viewing have been implemented; more are being developed as resources permit</p> | <p>Hiking opportunities have increased along and near the waterway</p> |
| Natural Heritage Appreciation | <p>Potential for interpretation of wildlife and landscapes throughout the system.</p> <p>Nature trails exist at St. Andrews and Spednic Lake Provincial Park.</p> <p>Huntsman Marine Aquarium, Science-by-the-Sea kiosk and Kingsbrae Garden interpret natural heritage in St. Andrews.</p> <p>Huntsman Marine Science Centre offers university-level courses</p> <p>Whale-watching boats at</p> | <p>+ Sunbury Shores Arts & Nature Centre in St. Andrews and the Quoddy Learning Centre at Ganong Nature & Marine Park now deliver seasonal interpretive talks and courses</p> <p>+ Interpretive panels are installed at Ganong Nature & Marine Park at Todd's Point</p> <p>+ A St. Croix Canadian Heritage River plaque is installed at Spednic Lake Provincial Park</p> <p>+ New Brunswick creates a 5.6ha St. Croix Provincial Park at Bayside. While this has yet to be developed, it has the potential for natural heritage interpretation to complement cultural heritage</p> | <p>Previous trail and interpretive opportunities have been enhanced by programs and facilities listed at the left</p> | <p>Interpretation of the St. Croix's natural heritage has increased through added facilities and programs.</p> |

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| | <p>St. Andrews offer marine interpretation of the area</p> | <p>interpretation at the adjacent St. Croix Island International Historic Site.</p> <ul style="list-style-type: none"> + Downeast Heritage Museum, now the Wabanaki Cultural Center, on the river in Calais, Maine, features St. Croix region natural and cultural exhibits + Waterway commission staff offer interpretive presentations to youth groups canoeing the St. Croix + Construction begins on a \$8million Fundy Discovery Aquarium that will replace the Huntsman Marine Aquarium in 2011 | | |
| <p>Cultural Heritage Appreciation</p> | <p>Historic buildings, monuments and plaques in St. Andrews, St. Stephen and McAdam.</p> <p>Live interpretation provided seasonally at some St. Andrews heritage sites; self-touring information available in both towns.</p> <p>Charlotte County Museum offers heritage exhibits in St. Stephen.</p> <p>Books are published on local heritage topics</p> | <ul style="list-style-type: none"> + Parks Canada and the U.S. National Park Service add to interpretation at their matching Saint Croix Island International Historic Sites on the estuary, in advance of the <i>Ste-Croix 2004</i> commemoration + St. Croix communities embrace new N.B. municipal heritage program; conduct building surveys and place 61 buildings (to date) on the web-based Canadian Register of Historic Places, for public viewing. + The McAdam Railway Station, undergoing restoration to its 1900 origins, now provides extensive public exhibits and interpretation of the St. Croix's railroad history + Eight new books and one video on St. Croix heritage topics are published in this period + Five Passamaquoddy DVDs and books are released in this period, increasing awareness of the St. Croix's native culture + A new riverside monument commemorates 1882-1957 St. | <p>The St. Croix's 13 international, Canadian and New Brunswick historic sites and districts continue to be maintained and recognized; all have some level of interpretation.</p> <p>Historic plaquing and self-touring information programs continue in all St. Croix municipalities</p> <p>Additional St. Croix sites now offer heritage interpretation for residents and visitors. Additional books are available on this subject.</p> <p>More web-based information is now available on the St. Croix's international, national, provincial and municipal heritage sites.</p> | <p>Interpretation of the St. Croix's human heritage has increased through additional facilities and programs.</p> <p>There is growing local and governmental awareness of the values of preserving and interpreting this heritage</p> |

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| | | <p>Croix Cotton Mill workers in St Stephen</p> <p>+ In St. Andrews, the Charlotte County Archives and Ross Memorial Museum expand their St. Croix collections, available for public use. In St. Stephen, the Charlotte County Museum continues to add to its St. Croix heritage collection</p> | | |
| Recreational Heritage Appreciation | <p>N.B. issues a St. Croix recreation map and provides information to residents and visitors on St. Croix angling, paddling, camping and recreational heritage resources.</p> | <p>-/+ N.B. discontinues its provincial St. Croix recreation map in 2002. The Waterway commission fills the ongoing need by issuing a new St. Croix recreation map in 2004 and updating this in 2009, with current N.B. and Maine recreational information.</p> <p>-/+ Many New Brunswick St. Croix recreational information functions devolve to the Waterway Commission during this period, with the exception of hunting and fishing information.</p> <p>+ Web-based sources now offer access to information on past and present recreational use of the St. Croix</p> | <p>Information on recreational heritage and resources is available from the Waterway Commission, some historical societies and resource agencies, and from web-based sources</p> | <p>More recreational heritage information is now available, largely from non-governmental sources</p> |

6.1 Summary of Recreation Values 2001-2011

There is a rich history of recreational use on the St. Croix River that continues today. It is a well-loved, appreciated and celebrated location for people around the world who visit and to the locals.

Boating/Canoeing/Tubing and Kayaking:

Public and private access to boating and boat launches are at intervals along the river, the lakes and, flowages, and are regularly used by boaters. The towns of St. Stephen and St. Andrews upgraded their wharves for boaters, and some improvements were made to the New Brunswick sites along the

lakes and river. The facilities that are currently in place are sufficient for the current and future anticipated needs of users. The lakes, river and estuary provide a different experience for recreational users, an estimated 10,000 canoeists use the upper segment of the river each year and this number has continued to climb, and is anticipated to continue in the future, and users come from all across North America, and abroad. The lower regions of the river are also frequented by both kayakers and canoeists. Additionally, during the period of this report several outfitters on the New Brunswick side have started commercial businesses for inner tubing down the St. Croix, launching from Scott Brook to Gravel Island. This has increased user numbers by approximately 1500 in this segment of the river; which has placed some strain on the current facilities available at these sites to accommodate this influx of users. As usage of the upper river continues to grow in, additional management and planning efforts will need to be put in place to accommodate the users, and maintain the high quality standards the St. Croix River is known for, as well as, protect the natural integrity of the area. In 2011, Maine drafted a long-term management plan for its St. Croix River and Spednic Lake recreational sites, which encourages collaboration with New Brunswick and sets policies and management goals that are in line with the St. Croix's international management plan. Further detailed information regarding the events and occurrences described in this table can be found in the chronological section of this report.

Camping:

In the previous 10 year report covering 1991-2000 the St. Croix was home to 80 campsites available at North Lake and Spednic Lake provincial parks, with other sites available at three private or privatized campgrounds on the estuary and one campground in McAdam. New Brunswick provides 22 water access remote sites, 3 drive-in sites. Currently, the previous sites at North Lake Provincial Park are now leased for private use due to operational difficulties; and in 2003 Spednic Lake Provincial Park was assigned to the SCIWC for operations in order to prevent its closure. River access sites at Scott Brook and Gravel Island received environmental remediation and facilities upgrades during 2006-2009 and were converted to provincial parks in 2010. Camping opportunities on the lakes have been reduced, but have increased along the river due to efforts by government agencies and the SCIWC. Future evaluation and discussion in line with the recreational management plan for Maine and guidance from the Province of New Brunswick will determine the outcome of the recreational use of the St. Croix. Further information can be found in the chronological highlights section.



Figure 12 Campsite at East Grand Lake

2001-2011

Recreational Fishing/Angling:

Historically a smallmouth bass fishing industry has operated on Spednic Lake, and continues today; however, an active recreational fishing industry has persisted in all of the lakes and the River mainstem that includes Lake trout, landlocked salmon and white perch offer other prime sport fisheries. A catch and release program is in place for Spednic Lake only for smallmouth bass in order to protect the population. The recreational fishing industry in the region is a prime source of seasonal income for many in an economically depressed region. The St. Croix fisheries attract anglers from other regions, and support the local industry. Further information on fishing activities on the St. Croix can be examined more closely in the chronological section of this report.



Figure 13 Catching Fish on Spednic Lake

Hiking:

During the period of this report, additional trails have been added to the River system. Previously there were only marked trails at Spednic Lake Provincial Park and in the towns of St. Stephen and St. Andrews. Today the trail system has expanded, as resources have permitted, to create more opportunities for public use. Additional trails have been established at Spednic Lake Provincial Park, Todd's Point, Bayside and in the municipalities of St. Stephen, St. Andrews and McAdam, all along the waterway. Furthermore, an International Roosevelt Trail is proposed that would encircle the St. Croix estuary and Passamaquoddy Bay.

Natural Heritage Appreciation:

A number of activities have occurred during the period of this report which has exhibited the region's appreciation of its natural heritage, and as the programs have been developed and interpretation provided the St. Croix's natural heritage has been enhanced.

Sunbury Shores Arts & Nature Centre in St. Andrews provides interpretive walks along the ocean floor at low tide in the estuary, and a nature trail through a secondary succession re-growth area. The Quoddy Learning Centre at the Ganong Nature and Marine Parks also now deliver seasonal interpretive talks and courses, and interpretive signs have been installed along the hiking trails and throughout the Nature and Marine Park at Todd's Point. The St. Croix Provincial Park at Bayside has yet to be developed, but has potential for natural heritage interpretation that would complement the cultural heritage interpretation at the adjacent St. Croix Island International Historic Site. At Spednic Lake Provincial Park a St. Croix Heritage River plaque was installed, and the Heritage River staff offer interpretive presentations and naturalist talks to youth groups who are recreational users of the St. Croix, and also provide information to all users when necessary.

2001-2011

As well, although the Downeast Heritage Museum closed during the period of this report, it has been re-opened as the Wabanaki Cultural Centre which is along the waterfront in Calais, Maine. The centre still highlights the St. Croix region's natural and cultural heritage in many of its exhibits. As well, the completed \$8 million Fundy Discovery Aquarium, located at the Huntsman Marine Science Centre in St. Andrews, opened in 2011. The aquarium provides information on the East coast marine ecology and how this has influenced the economy of the region. It offers guided tours and many opportunities for educational learning in regards to the marine environment; it is open year-round.

Cultural Heritage Appreciation:

Interpretation of the St. Croix's human heritage has increased through additional facilities and programs. The St. Croix's 15 international, Canadian and New Brunswick historic sites and districts continue to be maintained and recognized; all have some level of interpretation. Historic plaquing and self-touring information programs continue in all St. Croix municipalities. Additional St. Croix sites now offer heritage interpretation for residents and visitors. Additional books are available on this subject. As well, more web-based information is now available on the St. Croix's international, national, provincial and municipal heritage sites. There is growing local and governmental awareness of the values of preserving and interpreting this heritage. Further information can be found in the chronological highlights section of this report.

Recreational Heritage Appreciation:

Information on recreational heritage and resources is available from the Waterway Commission, some historical societies and resource agencies, and from web-based sources. More recreational heritage information is now available, largely from non-governmental sources. Discussions continue regarding the need for more accessible information for the general public among government agencies and the SCIWC. Currently the majority of the information is not easily accessible and the SCIWC maintains year-round inquiries for recreational activities with the exception of hunting and fishing. However, web-based sources now offer increased access to information on both the past and present recreational use of the St. Croix. In 2002, when the New Brunswick government discontinued its provincial recreation map, the SCIWC filled the gap by creating a new map in 2004 and updated it again in 2009 with both current New Brunswick and Maine recreational information. Further details on recreational heritage information can be found in the chronological section of this report.

7.0 Table 5: Integrity Guidelines 2001-2011

| CHRS Integrity Guidelines (2000) | Changes or Threats to CHRS Designation Integrity since 2000 |
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| | |

2001-2011

| 1. NATURAL INTEGRITY GUIDELINES | |
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| 1.1 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 natural processes, features, or other phenomena which give the river its outstanding natural value. | <ul style="list-style-type: none"> + 2001: New Brunswick establishes the Spednic Lake Natural Protected Area – the province’s largest eco-reserve with over 655 km² of boundary lands, waters and islands in and around the CHRS designated area. It reconfirms the 1994 designation of the St. Croix’s Grassy Islands as a Class 1 Natural Protected Area + 2001-2007: Nature Trust protects over 1000ha of lands, in and around the CHRS designated area + 2002: St. Croix Estuary Project creates Ganong Nature & Marine Park in CHRS designated area + 2003: Maine acquires 50 miles of shoreland on Spednic Lake and the upper St. Croix River, largely completing cross-border protection of this portion of the CHRS designated area. |
| 1.2 The nominated area contains those ecosystem components required for the continuity of the species, features or objects to be protected. | <ul style="list-style-type: none"> +/- 2001-2011: State of Maine continues to block sea-run alewives from most of their St. Croix spawning grounds, at Grand Falls dam, but allows fish passage at the lower Woodland dam beginning in 2008. Following 2004-2005 studies that indicate alewives will not reduce the St. Croix smallmouth bass fishery, and under petition from conservation and fisheries groups, the International Joint Commission prepares a co-management plan for St. Croix alewife and smallmouth bass, asking governments to act on it. + All municipal and major industrial wastewater treatment facilities on both sides of the St. Croix are upgraded or replaced in this period, improving lower river water quality and aquatic indices. - 2006: Atlantic salmon restoration program ends due to lack of funding and diminishing results, due in part to in-river competition with smallmouth bass. |
| 1.3 There are no human-made impoundments within the nominated area. | Not applicable; designation preceded this guideline. |
| 1.4 All key elements and ecosystem components are unaffected by impoundments located outside the nominated area. | Not applicable; designation preceded this guideline. |
| 1.5 Natural values for which the river is nominated have not been created by impoundments. | Not applicable; designation preceded this guideline. |
| 1.6 The water of the nominated area of the river is uncontaminated to the extent that its natural aquatic | <ul style="list-style-type: none"> + Ongoing water quality studies show continued high water quality throughout most of the watershed |

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| <p>ecosystem is intact.</p> | <ul style="list-style-type: none"> + All municipal and principal industrial wastewater treatment facilities on both sides of the lower St. Croix are upgraded or replaced in this period, improving lower river water quality and aquatic indices. + 2001-2010: In 2001, New Brunswick's Water Classification Regulation immediately classifies all St. Croix lakes, ponds and drinking water supplies as Class A in 2001. Maine and New Brunswick continue to collaborate on shared classification of the St. Croix River mainstem. - 2011: New Brunswick suspends its water classification program without classifying the St. Croix River. |
| <p>1.7 The natural aesthetic value of the river is not compromised by human developments.</p> | <ul style="list-style-type: none"> + New municipal and rural plans on the developed lower St. Croix maintain shoreland development setbacks established under the 1995 St. Croix Corridor Zoning Regulation +/- An on-going waterfront granite quarry at Bayside, on the estuary, is a continuing aesthetic intrusion. However a proposed 40-year major quarry expansion is turned down by the province in 2009. -? Maine-side proposals for two liquid natural gas import terminals, if either is developed, would have a significant aesthetic impact on the estuary. -? 2011 Maine-side proposal for a 20-turbine wind farm at Danforth, within 1200m of the boundary waters, if developed, would impact aesthetic values on East Grand Lake. |
| <p>2. CULTURAL INTEGRITY GUIDELINES</p> | |
| <p>2.1 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 features, activities or other phenomena which give the river its outstanding cultural value.</p> | <ul style="list-style-type: none"> + This guideline continues to be met. Actions in Table 3 illustrate continuing support for the St. Croix's cultural integrity. |
| <p>2.2 The visual appearance of the nominated area of river enables uninterrupted appreciation of at least one of the periods of the river's historical importance.</p> | <ul style="list-style-type: none"> + New municipal and rural plans on the developed lower St. Croix maintain shoreland development setbacks established under the 1995 St. Croix Corridor Zoning Regulation, preserving visual character + New St. Andrews municipal plan sets goals and policies to conserve heritage structures and character |
| <p>2.3 The key artifacts and sites comprising the cultural values for which the river is nominated are unimpaired by impoundments and human land uses.</p> | <ul style="list-style-type: none"> Impoundment criteria is not applicable as designation precedes this component + The three municipalities all designate local buildings to the Canadian Register of Historic Places, encouraging their preservation + Village of McAdam continues its efforts to restore the McAdam Railway |

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| | Station for public use |
| <p>2.4 The water quality of the nominated area does not detract from the visual character or the cultural experience provided by its cultural values.</p> | <p>+ Ongoing studies show continued very high water quality throughout the watershed except at very localized municipal and industrial sites on the developed lower river section. Improvements here are on-going.</p> |
| <p>3. RECREATIONAL INTEGRITY GUIDELINES</p> | |
| <p>3.1 The river possesses water of a quality suitable for contact recreational activities, including those recreational opportunities for which it is nominated.</p> | <p>+ Ongoing studies show water quality is suitable for contact recreation throughout the watershed except at very localized lower river sites where contact recreation is atypical. See 1.6 re: municipal and industrial wastewater system upgrades; additional improvements are on-going.</p> |
| <p>3.2 The river's visual appearance is capable of providing river travelers with a continuous natural experience or a combined natural and cultural experience, without significant interruption by modern human intrusions.</p> | <p>+ Over this period, concerted efforts by governments and conservation groups now permanently protect over 650km³ of land and 270km of shoreline along the near-wilderness Spednic Lake/Upper St. Croix River section of the waterway, along with critical other lands on the St. Croix's lakes and estuary.</p> <p>+ New municipal and rural plans on the lower St. Croix maintain shoreland development setbacks established under the 1995 St. Croix Corridor Zoning Regulation, preserving environmental and visual character</p> <p>- An on-going waterfront quarry at Bayside continues to interrupt the traditional visual experience; in 2009 the owners contract a landscape design to mitigate this impact but do not act on it</p> <p>-? Two liquid natural gas import terminals proposed for the Maine side of the estuary would, if developed, impact the current recreational experience</p> <p>-? 2011 A wind farm proposed on the Maine side of East Grand Lake would, if developed, impact the current recreational experience</p> |
| <p>3.3 The river is capable of supporting recreational uses without significant loss or impact on its natural, cultural or aesthetic values.</p> | <p>+ The Waterway Commission now maintains all New Brunswick and Maine recreational facilities on the near-wilderness Spednic Lake/Upper St. Croix River section of the waterway, under transboundary operational guidelines that directly support the St. Croix's CHRS values.</p> <p>+/- Tightened international border enforcement now eliminates traditional cross-border recreational use of the St. Croix: new campsites are added along the Spednic Lake/upper St. Croix River section in 2009-2011 to facilitate 'one-country' canoe and fishing trips on both the New Brunswick and Maine sides</p> <p>- Responding to a smallmouth bass fishing lobby, the State of Maine continues to block alewives (an ecologically important native sea-run fish) from 98% of their historic St. Croix spawning grounds on the presumption that they reduce local smallmouth bass populations. While</p> |

2001-2011

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| | <p>scientific evidence and a draft management plan suggest that the native alewife and introduced smallmouth bass can thrive together, no progress has yet been made.</p> <ul style="list-style-type: none"> + Owner of the transboundary Forest City and Vanceboro dams continues to manage St. Croix lake levels and river flows to benefit recreational and natural resource values -? In 2011, the Vanceboro damowner advises that U.S. re-licensing costs may cause it to cease operating this dam by 2016, with potentially significant impacts on recreation, riverine species and flood control - In 2011, Canada issues a federal policy that requires all persons crossing its water boundary to <u>immediately</u> report their entry in person or by phone. As most of the St. Croix River cannot be canoed without crossing the international boundary, and Canada provides no cell phone or on-site reporting options, traditional recreational use of this river corridor is now technically subject to federal prosecution. Solutions are being sought but are not available at this time. |
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7.1 Summary of Integrity Guidelines 2001-2011

The St Croix River's CHRS boundaries contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the natural processes, features, or other phenomena which give the river its outstanding natural value. A number of items listed in the table are not included since the designation of the St. Croix preceded this inclusion of these factors in the CHRS designation.

Outstanding Natural Value:

During the period of this report, further action has transpired continuing the protection and integrity of the natural area. The Province of New Brunswick established the Spednic Lake Protected Natural Area, the province's largest eco-reserve with over 255 square kilometers of boundary lands, waters and islands in and around the CHRS designated area, and reaffirmed the 1994 designation of the St. Croix's Grassy Islands as a Class 1 Natural Protected Area. Maine acquired 50 miles of shoreland on Spednic Lake and the upper St. Croix River, which provided cross-border protection of this portion of the CHRS designated area. Protection continues with the aid of the New Brunswick Nature Trust protecting over 1000ha of lands in and adjacent to the CHRS designated area. The St. Croix Estuary Project created the Ganong Nature and Marine Park within the CHRS designated area. Further detail on these can be found in the chronological highlights section

Ecosystem Components:

2001-2011

The nominated area contains those ecosystem components required for the continuity of the species, features or objects to be protected. The ecosystem components are in place; however, human actions especially around fish have caused complications and this has had both positive and negative effects on the species. The contentious issue around blocking the sea-run alewives from their natural habitat in favour of the economically significant smallmouth bass population is still under international scrutiny and a solution has not been reached. As this issue continues to be discussed the alewife population continues to decline, but the small mouth bass has recovered from previous population lows. The IJC asked fisheries scientists to prepare a co-management plan for St. Croix alewives and smallmouth bass, and has asked governments to act on it. Unfortunately, despite significant media attention, efforts and discussions, this issue remains unresolved, compromising the ecosystem integrity for the alewife. Additionally, despite significant efforts, the Atlantic salmon restoration program on the St. Croix ended with diminutive results and funding waning. Currently Atlantic salmon are believed to be extirpated from the St. Croix River system. It is possible that future efforts, if resources allow, may re-establish this native species, but currently there are no programs underway. One major improvement to the ecosystem integrity has been in water quality as wastewater treatment facilities on both sides along the waterway have been upgraded in municipalities and industry this has improved water quality and aquatic indices in the lower river. Ongoing water quality studies continue to show high water quality throughout most of the watershed. During the period of this report New Brunswick's Water Classification Regulation classified all St. Croix lakes, ponds and drinking water supplies as Class A, the highest classification and Maine and New Brunswick continued to collaborate on classification issues; however, in 2011 the New Brunswick government announced its intention to move away from the previous Water Classification Regulations in favour of a new combined Land and Water Classification system, whose framework is still in the early stages. The St. Croix River mainstem remains unclassified today, and it is unknown what impact the new classification system may have on the St. Croix River system. It is an issue that will be more closely explored in the next CHRS periodic report.

Aesthetic Value:

The natural aesthetic value of the river is largely uncompromised by human developments. This is in part due to municipal and rural plans that have implemented shoreland development setbacks for the St. Croix, under a 1995 St. Croix Corridor Zoning Regulation and other means. However, before these regulations were in place a waterfront granite quarry was approved and remains in operation at Bayside on the estuary. It undermines the aesthetic value of the estuary, though thankfully a proposed expansion to this quarry in 2009 was declined by the province since the zoning regulations were put in place. Across the border, on the Maine side, proposals for two liquid natural gas import terminals remain in discussion despite significant opposition by Canada; if either liquid natural gas terminal is developed this will further compromise the aesthetic value of the St. Croix estuary. Additionally, in 2011 a proposal for a 20-turbine wind farm at Danforth, which is within 1200m of the boundary waters is under consideration; if this project is approved and developed this would also impact the aesthetic values and recreational experience

2001-2011

of users on East Grand Lake which remains largely pristine and natural, as is much of the St. Croix River system.

Cultural and Recreational Integrity Values:

The cultural integrity values and recreational integrity values have been largely addressed in the chronological and cultural and recreational values section of this report and will not be re-iterated here.

8.0 Table 6: Management Plan Recommendations and Current Status at 2011.

| Policy | Recommended Action | Status | Highlights |
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| 1. Develop an International Heritage identity | 1.1. Establish an International Heritage Waterway | Not pursued | |
| | 1.2. Create a Waterway image | Completed | A St. Croix International Waterway Commission logo is developed and used as the waterway's primary image |
| | 1.3 Initiate a heritage waterway information and interpretation program | Ongoing | A St. Croix International Waterway heritage brochure is developed and widely distributed. Ongoing reference to the St. Croix International Waterway is promoted in community and tourism literature. |
| | 1.4 Incorporate International Waterway concepts into planning | Not pursued | |
| | 1.5 Develop a heritage resource inventory | Initiated | The Waterway Commission initiates a first inventory in the early 1990s, later intermittently pursued by agencies and heritage interests along national lines |
| 2. Establish joint water quality objectives | 2.1 Set cooperative water quality goals | Largely completed | New Brunswick, Maine and federal agencies continue to collaborate on common St. Croix water quality goals, based on shared interests |
| | 2.2 Work toward consistent quality standards | Largely completed, ongoing | New Brunswick and Maine establish complementary surface water quality standards. Maine raises its classification of the St. Croix headwaters and New Brunswick classifies all lakes and flowages to meet cross-border |

2001-2011

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| | | | objectives. New Brunswick has not, to date, classified the river main stem or tributary waters on its side. In 2011, New Brunswick suspends its water classification program, indicating that it will pursue an alternative approach at a later date. |
| 3. Maintain shoreland character and environmental quality | 3.1 Maintain a shoreland greenway | Largely completed, ongoing | New Brunswick adopts shoreland zoning for the St. Croix boundary corridor, similar to Maine's. This requires building setbacks and retention of natural vegetation: a Canadian zoning precedent. |
| | 3.2 Take local action to maintain and restore natural shore areas | Ongoing | St. Croix communities preserve shorefront green space and create waterfront parks and walkways. See also Policy 9. |
| 4. Manage pollution to maintain quality | 4.1 Manage future pollution to reduce impacts | Ongoing | New Brunswick sets stricter monitoring and reporting requirements for licensed dischargers; Maine sets standards for discharge color, odor and foam. Both governments work with communities and industries to reduce future pollution impacts. A St. Croix spill communication workshop establishes a contact network for responding to international waterway spills. Canadian and US Coast Guards hold regular joint training exercises to be able to react to marine spills. |
| | 4.2 Create an action plan to reduce pollution | Ongoing | Eight major municipal and industrial wastewater treatment systems receive significant upgrades. All communities pursue storm and sewer line separations and old discharge connections. Additional work is planned. |
| | 4.3 Improve enforcement of environmental regulations | Ongoing | New Brunswick and Maine agencies act on this. |
| | 4.4. Involve local interests in quality improvement | Ongoing | Municipal councils act on many water quality protection and improvement projects; local organizations host shore cleanups; local volunteers assist with lake and marine water monitoring; Waterway Commission produces a homeowner's septic system maintenance guide and a lake owner's water quality |

2001-2011

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| | | | guide. |
| 5. Maintain biological productivity and diversity | 5.1 Monitor and help manage natural productivity | Intermittent | New Brunswick creates the 25,700 ha Spednic Lake Protected Natural Area and maintains the St. Croix Islands Protected Natural Area, to preserve representative biological diversity and ecological integrity; it conducts periodic monitoring. St. Croix Estuary Project reports on environmental and species trends in the estuary. The International Joint Commission holds a State of the St. Croix Ecosystem Workshop. U.S. Fish & Wildlife Service conducts a 20-year wetland trends analysis on the Maine side of the lower river. |
| | 5.2 Monitor and support ecological diversity | | |
| 6. Preserve and interpret Waterway history and culture | 6.1 Establish facilities and programs for Saint Croix Island International Historic Site | Largely completed | New interpretive facilities completed on the American and Canadian shores for the 400 th anniversary of the island's French settlement, in 2004. Interpretive curricula placed in 200 New Brunswick and Maine schools. US National Park Service employs permanent St. Croix interpretive staff. |
| | 6.2 Expand interpretation of waterway history | Ongoing | Museums and new heritage plaques and brochures tell the St. Croix's story. The McAdam Railway Station, Quoddy Learning Center and Downeast Heritage Museum (now the Wabanaki Cultural Center) all newly open to visitors. New Brunswick's St. Croix communities enter 79 buildings in the Canadian Registry of Historic Places; Calais (ME) enters nine sites in the U.S. National Register of Historic Places. A number of books, DVDs and CDs are produced on various aspects of the Passamaquoddy Tribe's local history and language. Eight books are published on local community history. A provincial St. Croix park study identifies other interpretive opportunities. |
| | 6.3 Interpret and protect archeological sites | Ongoing | Additional archeological sites are protected by land conservation efforts, with little or no interpretation. A new archeological dig on St. Croix Island reveals more about the 1604 French |

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| | | | settlement; the results are reported. |
| | 6.4 Maintain trans-border cultural bonds | Ongoing | St. Stephen and Calais continue an annual International Festival, that celebrates their cross-border ties. These and other border communities work to maintain their traditional bonds in spite of new international border restrictions after September 2001. New cross-border cultural events (art tours, etc.) are emerging. |
| 7. Preserve the visual landscape | 7.1 Inventory visual resources | Initiated | Waterway Commission initiates an inventory but does not pursue it due to other commitments. |
| | 7.2 Conserve visual character and scenic places | Ongoing | Visual character and scenic assets on inland sections receive some protection through conservation initiatives (Policy 9), shoreland zoning (Policy 3) and provincial acquisition of adjacent forestlands. On the estuary, gains from preserving scenic landmarks Devil's Head (ME), Todd's Point (NB) and Navy Island (NB) and other lands at Bayside are tempered by the visual impacts of a waterfront quarry at Bayside (NB), the scale of some residential development and the potential for development of a major marine terminal on the Maine shore. Million Dollar View outlook created at Weston (ME) for panoramic viewing of East Grand and other St. Croix lakes. |
| 8. Conserve and interpret natural heritage | 8.1 Protect rare & significant species and habitats | Ongoing | Achieved principally through actions under Policy 9. St. Croix dragonfly research identifies a new species and key habitats. |
| | 8.2 Expand natural heritage interpretation | Ongoing | Downeast Heritage Museum (now the Wabanaki Cultural Center) and Quoddy Learning Centre open to interpret natural heritage, in 2004 and 2008 respectively. Discovery Channel Canada features the St. Croix in its Great Canadian Rivers series; copies of the video are placed in all local libraries. The Fundy Discovery Aquarium opens in 2011, interpreting local marine resources |
| 9. Establish a Spednic | 9.1 Protect natural character of shores | Largely completed | New Brunswick, Maine, conservation interests and willing sellers collaborate |

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| Lake/Upper River Conservation Area | | | to now protect 93% of this waterway section – over 275 km of shoreland and 21,000 ha of backland – through conservation ownership and easements. |
| | 9.2 Protect and interpret heritage resources | Initiated | Some heritage resources are protected by 9.1 |
| | 9.3 Manage use for environmental and recreational quality | Ongoing | Waterway Commission maintains backcountry recreational facilities for New Brunswick and Maine, with environmental and heritage goals. In 2011, Maine drafts a long term recreation and resource management plan for its side of this waterway section. |
| 10. Develop appropriate public land and water access | 10.1 Develop a long term access plan | Partially completed | A 1991 access inventory by the Waterway Commission raises awareness of needs. Governments, communities and others collaborate to limit access to the Spednic Lake/Upper River section and increase or improve access, where warranted, on other waterway sections |
| | 10.2 Maintain an inventory of public access lands | Partially completed | Waterway Commission prepares a NB/ME public access inventory in 1991, updates it in 1995 but does not maintain it afterwards. Maine inventories its public accesses every five years for its statewide recreational plan. |
| 11. Develop a coordinated recreational information program | 11.1 Develop transboundary recreational information | Ongoing | Waterway Commission produces an international recreation map for the St. Croix; in some years it produces a NB/ME angling regulation summary. |
| | 11.2 Develop uniform recreational signage | Largely completed | New Brunswick and Maine campsites and boat launches now have similar signage. |
| | 11.3 Use information to better distribute and manage use | Ongoing | The St. Croix recreation map and web/telephone information on lake levels and river flows help to distribute use |
| 12. Integrate recreational planning to minimize conflicts | 12.1 Integrate recreational water needs | Ongoing | Water modeling and consultations by the International Joint Commission have studied user interests and the watershed's ability to meet them. Since 1995, dam owners have worked with resource agencies and user groups to better balance lake and river water uses. Since 2005, the St. Croix Water Forum |

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| | | | has given water managers and users an opportunity to review water conditions and user interests. |
| | 12.2 Identify and address potential conflicts | Ongoing | New Brunswick takes steps to reduce motorized vs. non-motorized user conflicts at some of its access sites. Tubing emerges as a new St. Croix river sport: some expanded facilities may be needed to accommodate growing user numbers. |
| 13. Manage sport fishing as a recreational and economic asset | 13.1 Manage for quality experience & sustainable yields | Ongoing | Research, management and regulation are coordinated across the border for most fisheries, toward these goals. Surveys provided new information on the economic value of Maine's St. Croix sport fishery. |
| | 13.2 Develop Spednic Lake smallmouth bass and St. Croix River Atlantic salmon stocks | Ongoing for bass; discontinued for salmon | Initiatives help Spednic Lake smallmouth bass recover from 1980s lows to support an active catch-and-release fishery. Controversy over the impact of sea-run alewives on smallmouth bass closes Maine's St. Croix fishways to alewives beginning in 1995; 2005 studies show that alewives generally benefit bass growth, leading to some re-examination of the closure. An Atlantic salmon restoration program shows initial promise but ends in 2006 after declining results; the run disappears from the St. Croix shortly afterward. |
| | 13.3 Coordinate regulation, enforcement & local licensing | Ongoing | Regulation is generally coordinated through the inter-agency St. Croix Fisheries Steering Committee; enforcement and licensing are conducted along jurisdictional lines |
| | 13.4 Involve local interests in conservation/enhancement | Ongoing | Local interests assist resource agencies with angler surveys, stock surveys, fish stocking and fish habitat improvement. Groups sponsor Fish Friends learning programs in local schools. |
| | 14. Develop, maintain quality opportunities for water recreation | 14.1 Monitor and manage canoe recreation on Spednic Lake and the Upper River | Ongoing |

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| | | | limited accesses, through the Waterway Commission, to handle current use. In 2011, Maine drafts a long term recreation and resource management plan for its side of this waterway section. |
| | 14.2 Manage water releases for more uniform experience | Ongoing | Beginning in 1994, flows at the Vanceboro dam are managed to give more consistent conditions for weekend and weekday river paddlers, while still meeting lake fishery management and recreation needs. |
| | 14.3 Expand facilities and services | Ongoing | Marine boating facilities are upgraded at St. Andrews, St. Stephen and Calais. Two river access sites are converted to small provincial parks. Additional New Brunswick and Maine primitive campsites are created to allow “one-country” canoe tripping under stricter international border crossing regulation. |
| | 14.4 Encourage additional low impact recreation | Ongoing | Sea kayaking and whale watching gain popularity on the estuary, spawning new eco-businesses. Tubing on the New Brunswick side of the upper river emerges as a new recreational activity, giving many people who don’t own a canoe the chance to experience part of the St. Croix’s protected section. |
| 15. Expand land-based recreational opportunities | 15.1 Identify and develop outdoor recreation opportunities | Ongoing | Walking trails are developed or improved at eight locations along or overlooking the estuary and two locations on the Spednic Lake/Upper River section. Mountain biking trails are developed in the St. Andrews area. A provincial St. Croix park study and Maine statewide studies identify additional recreational opportunities. |
| | 15.2 Link with future trail and touring networks | Ongoing | Events at Calais-St. Stephen link national trail systems in the US (East Coast Greenway) and Canada (Trans-Canada Trail). A master plan is completed for an international trail around Passamaquoddy Bay and the St. Croix estuary. Some sections of the NB Trail and snowmobile trail networks approach the St. Croix corridor. |
| 16. Incorporate | 16.1 Apply heritage values to | Ongoing | New utility and transportation crossings |

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| heritage concepts in economic planning | development planning | | minimize their impact on natural and heritage resources. St. Croix communities emphasize heritage and St. Croix River values in their new municipal and rural plans. A waterfront quarry at Bayside develops a scenic landscape plan but does not act on it. |
| | 16.2 Give shoreland priority to heritage and water-dependent uses | Ongoing | Maine (statewide) and New Brunswick (for the St. Croix) incorporate provisions for water-dependent uses into regulations for shorefront development. |
| 17. Capitalize on the Waterway's economic strengths | 17.1 Manage for a sustainable forest product industry | Ongoing | On the New Brunswick and Maine sides, public and private landowners continue to implement sustainable forest harvesting plans. Land trusts become community forest managers on the Maine side, developing integrated plans that link sustainable forestry with a sustainable rural economy. |
| | 17.2 Expand and diversify recreation and heritage tourism | Ongoing | A St. Croix heritage-based business opportunity study identifies 74 opportunities, many of which are pursued. New businesses are developed for sea kayaking and whale watching on the estuary, tubing on the upper river, and bike touring in various locations. New St. Croix heritage facilities (see Policy 6 and 8 Highlights) and downtown heritage revitalization projects generate additional tourism. |
| | 17.3 Develop marine shipping, in balance with other users | Intermittent | Bayside Marine Terminal transitions from federal to local ownership. The province initiates a waterfront quarry in 1998 to expand the Bayside port and industrial park; this operation raises ongoing local concern over environmental, visual and lifestyle impacts that residents hope will be addressed when quarrying ends and locally-compatible businesses are developed on site. Two liquid natural gas marine terminals are proposed for the Maine side of the estuary. Canadian-side governments and interests feel this is inappropriate for the St. Croix; American-side interests are divided. These proposed projects are now in the |

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| | | | U.S. federal permitting process. |
| | 17.4 Develop border opportunities | Ongoing | St. Stephen and Calais continue to explore border tourism and transportation related opportunities. A 2007 <i>Changing Borders</i> conference explores means to reduce negative impacts and develop new opportunities due to tighter international border crossing requirements. |
| | 17.5 Improve transportation infrastructure and border crossings | Ongoing | The international bridge at Vanceboro is replaced; a new (third) international bridge is constructed at St. Stephen-Calais to relieve border congestion in the two downtowns and improve travel on the coast's major north-south highway. After September 11, 2001 American-side border crossings are fortified with barriers and gates and both sides increase border staff and identification requirements; this aids national security but not local travel. However, the smaller St. Croix border crossings remain open at the strong request of residents and politicians. |
| 18. Better integrate, interpret and exchange information | 18.1 Improve inter-agency communication | Ongoing | New Brunswick and Maine governments collaborate on tourism, education and transportation initiatives that benefit the St. Croix area. Provincial, state and federal agencies communicate more regularly on many issues as a result of the Waterway Plan. |
| | 18.2 Improve public communication | Ongoing | Agencies, media and organizations on both sides all increase their St. Croix and cross-border information output. |
| | 18.3 Centralize information services | Intermittent | Waterway Commission serves as a general source of New Brunswick and Maine information re: the St. Croix area |
| | 18.4 Cooperatively address information needs | Ongoing | The International Joint Commission releases a multi-sector State of the St. Croix Watershed report in 2008 and has sponsored a number of information workshops over the years. The Waterway Commission issues an international St. Croix recreation map and has hosted a range of public workshops and conferences on St Croix |

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| | | | issues since 1990. St. Stephen and Calais regularly collaborate on municipal issues and tourist information. |
| 19. Develop effective public/private partnerships for planning and management | 19.1 Increase public and user input | Ongoing | Agencies and organizations increase the form and frequency of their consultations, with more awareness of cross-border interest. Some are noted under Policies 4, 6, 7, 9, 12 and 13. |
| | 19.2 Develop inter-community planning re: waterfronts | Ongoing | St. Stephen and Calais consult and periodically collaborate on waterfront planning |
| | 19.3 Begin cooperative process for East Grand Lake planning | Intermittent | The Waterway Commission initially investigated this but did not find sufficient government interest to pursue it on a cross-border basis. In 2011, conservation interests pursue a major initiative that would better balance development and open space on the Maine side of the lake. Much of the undeveloped New Brunswick side is Crown Land in long term timber license. |
| | 19.4 Support cooperative environmental management for estuary | Initiated | St. Croix Estuary Project develops an environmental management plan for the estuary; some aspects of this are pursued. |
| 20. Address longterm management issues on a proactive, inter-jurisdictional basis | 20.1 Establish a process to coordinate International Heritage Waterway development | Not pursued | |
| | 20.2 Establish a process to integrate water planning and management | Intermittent | The International Joint Commission undertakes periodic reviews and consultations on St. Croix levels and flows that are under its purview. Recent upgrades in computer-based water monitoring and modelling tools allow for better multiple-use management and flood control under different hydrologic scenarios. The International Joint Commission sponsors an international workshop on St. Croix water management. The Waterway Commission hosts an annual St. Croix Water Forum that gives regular opportunity for discussion on water level and flow issues. |
| | 20.3 Establish a process to integrate fisheries planning and | Ongoing | An inter-agency St. Croix Fisheries Steering Committee fulfills much of this |

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| | management | | role. The International Joint Commission has taken now the lead in trying to resolve a longstanding international conflict over sea-run alewife spawning in the St. Croix. |
| | 20.4 Establish a process to coordinate Conservation Area management | Initiated | Waterway Commission involves agencies and user interests in an initial planning exercise in 1996; undertakes both provincial and state recreational site maintenance/management in subsequent years. In 2011, Maine drafts a longterm recreation and resource management plan for its side of this waterway section, with some input from New Brunswick. |
| | 20.5 Address inter-jurisdictional issues through cooperation | Intermittent | Agencies and organizations undertake cross-border discussions and planning on a variety of issues, on an as-needed basis. |
| 21. Maintain coordination through a Waterway Commission | 21.1 Direct the Commission to coordinate plan delivery | Ongoing | Waterway Commission facilitates Plan delivery on an ongoing basis, with core provincial and state funding |
| | 21.2 Identify the Commission's longterm role | Pending | Waterway Commission plans to work with New Brunswick and Maine to align its longterm role with future resources |
| 22. Regularly review management progress and directions | 22.1 Monitor waterway programs | Intermittent | Waterway Commission and others occasionally report on waterway-related programs |
| | 22.2 Review the Waterway Plan every four years | Intermittent | Waterway Commission begins the first review in 2007; its efforts are limited by resources |

8.1 Summary of Management Plan Recommendations and Current Status at 2011

In 1990, the Waterway Commission completed the document “Preliminary Plan for Long-Term Cooperative Management of the St. Croix International Waterway” that enabled the designation of the river to the CHRS. Following consensus on this plan, the Waterway Commission completed the document “St. Croix International Waterway: A Heritage – A Future”, as a co-management plan for both governments and as the basis for managing the waterway as a Canadian Heritage River. This was formally adopted by Maine and New Brunswick in 1994. In 2007 action was undertaken by the SCIWC to update this document through a thorough review and evaluation of the original

management plan; due to the extensive geographical area, process and scope of this work the updated plan remains in progress.

The current management plan contains five main management goals, and out of these five goals developed twenty-two policies under seven theme headings. The five goals are identified as:

- 1) Protect and enhance the Waterway's natural heritage: its scenic landscapes and waterscapes; its fish, wildlife, forest and plan resources; and its quality of air, land and water.
- 2) Preserve and realize additional benefits from the Waterway's cultural heritage: its significant history; its traditional economic and recreational bases; and its rural quality of life.
- 3) Identify and nurture new avenues for recreational and economic development, compatible with the Waterway's natural and cultural values.
- 4) Establish priorities and a balance for growing demands on limited land and water resources along the Waterway, for the greatest long-term public benefit.
- 5) Strengthen government and public/private partnerships for effective planning and management to more equitably share the benefits and responsibilities of Waterway stewardship.

And the seven themes are identified as:

- 1) International Heritage Waterway
- 2) Environmental Setting
- 3) Human Heritage
- 4) Natural Heritage
- 5) Recreation Heritage
- 6) Economic Development and
- 7) Waterway Management.

This section will look at the management plan action items from its establishment until 2011 and will provide a summary of the highlights achieved towards the management goals and policies of the International management plan.

Policy One:

The first policy is to develop an international heritage identify. Progress has been made on three out of the five subsequent action items stemming from this policy. The creation of the St. Croix International Waterway Commission's logo created an international waterway image that people can identify and recognize, completing the action item for creating a waterway image. A e heritage brochure for the Waterway is developed and widely distributed, and the Waterway is promoted in many communities and tourism literature which is an ongoing part of initiating a heritage waterway information and interpretation program. The SCIWC in the early 1990's initiated the first waterway



Figure 14 SCIWC logo

inventory, which was later pursued at intermittent periods by agencies along both sides of the border. This continues to be an ongoing recognizable need, with discussion continuing into 2011 with agencies in the United States regarding the lack of current information. The SCIWC has not pursued to date the establishment of an international heritage waterway or the incorporation of international heritage concepts into planning efforts.

Policy Two:

The second policy is to establish joint water quality objectives. Setting cooperative water quality goals has largely been achieved as mentioned in previous sections; both Maine and New Brunswick continue to collaborate on water quality goals based on their joint interests in the St. Croix. Working toward consistent water quality standards has largely been completed as well, as New Brunswick and Maine have established complementary surface water quality standards. Maine raised its classification of the St. Croix headwaters to coordinate with New Brunswick and New Brunswick classified all of its St. Croix lakes and flowages to meet cross-border objectives. New Brunswick has not, to date, classified the river main stem or tributary waters on its side. This is also not likely to happen in light of New Brunswick's 2011 decision to suspend previous water classification regulations in favour of a new regulatory system that is yet to be revealed. The impact on the River remains unknown and the mainstem of the River itself remains unclassified.

Policy Three:

The third policy is to maintain shoreland character and environmental quality. Maintaining a shoreland greenway remains an ongoing pursuit, though it has largely been completed. Through New Brunswick's shoreland zoning regulations for the St. Croix boundary corridor which is similar to Maine's, the goal has been accomplished. The regulations include building setbacks and the retention of natural vegetation, which is a Canadian precedent. Furthermore the policy action item is to take local action to maintain and restore natural shore areas. Stewardship along the St. Croix has played a vital role in maintaining its natural character. As well, communities along the River continue to preserve the green spaces and waterfront parks along the shores of the St. Croix.

Policy Four:

Policy four is to manage pollution to maintain quality. Managing future pollution to reduce impacts remains an ongoing part of the management plan. New Brunswick has set stricter monitoring and reporting requirements for licensed dischargers while Maine has now set standards for discharge color, odor and foam. Both governments work with communities and industries to reduce future pollution impacts. A St. Croix spill communication workshop established a contact network for responding to international waterway spills. Canadian and US Coast Guards hold regular joint training exercises to be able to react to marine spills. The next action item identified is to create an action plan to reduce pollution, again this is an ongoing objective; eight major municipal and industrial wastewater treatment systems have received significant upgrades. All communities along

the St. Croix have pursued storm and sewer line separations and old discharge connections. Additional work is planned to continue to pursue the reduction of pollution. Improving the enforcement of environmental regulations continues to be an ongoing challenge left to the respective governments to act upon. Lastly, involving local interests in quality improvement remains an ongoing objective as well. Municipal councils have acted on many water quality protection and improvement projects while local organizations have hosted shore cleanups and local volunteers have assisted with lake and marine water quality monitoring. The SCIWC produced a homeowner's septic system maintenance guide and a lake owner's water quality guide in order to support the management plan goals.

Policy Five:

Policy five focuses on maintaining biological productivity and diversity. Monitoring and helping to manage natural productivity in the St. Croix waterway and monitoring and supporting ecological diversity actions have been intermittent in line with resources available and with government collaboration. New Brunswick created the 25,700 ha Spednic Lake Protected Natural Area and maintains the St. Croix Islands Protected Natural Area, to preserve representative biological diversity and ecological integrity and conducts periodic monitoring of these protected areas. The St. Croix Estuary Project issued reports on environmental and species trends in the estuary. As well, the International Joint Commission held a State of the St. Croix Ecosystem Workshop. Furthermore, the U.S. Fish & Wildlife Service conducted a 20-year wetland trends analysis on the Maine side of the lower river. These items all contribute to the overall understanding of biological and ecological diversity.

Policy Six:

The sixth policy states to preserve and interpret waterway history and culture through the establishment of facilities and programs for the St. Croix Island International Historic Site which has mainly been achieved. New interpretive facilities were completed on the American and Canadian shores for the 400th anniversary of the island's French settlement, in 2004. As well, interpretive curricula were placed in 200 New Brunswick and Maine schools and the US National Park Service employed permanent St. Croix interpretive staff. These items have helped achieve this goal. On an ongoing basis the expansion of interpretation of the waterway's history has been accomplished. Museums and new heritage plaques and brochures tell the St. Croix's story to the general public. The McAdam Railway Station, Quoddy Learning Center and Downeast Heritage Museum (now the Wabanaki Cultural Center) all newly opened to visitors and provides the public with information on cultural and historical St. Croix heritage. Additionally, New Brunswick's St. Croix communities entered 79 buildings in the Canadian Registry of Historic Places and Calais (ME) entered nine sites in the U.S. National Register of Historic Places. As well, a number of books, DVDs and CDs are produced on various aspects of the Passamaquoddy Tribe's local history and language. Eight books were published on local community history, and a provincial St. Croix park study identified other

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interpretive opportunities along the waterway. Further actions are being taken to interpret and protect archeological sites along the St. Croix corridor. Archeological sites are protected by land conservation efforts, but with little or no interpretation. A new archeological dig on St. Croix Island revealed more about the 1604 French settlement and the results were reported. Also, efforts have increased on the Maine side of the River as new archaeological sites are discovered and the dam operator's work with local aboriginal groups to research and protect known aboriginal archaeological sites. The last action item in this policy is to maintain trans-border cultural bonds. This has been exceedingly difficult post 9/11 with increased and tightened border crossing policies; however, an annual International Festival persists between Calais and St. Stephen. These and other border communities work to maintain their traditional bonds in spite of new international border restrictions. New cross-border cultural events (art tours, etc.) are emerging in an effort to preserve this trans-boundary cultural identification.

Policy Seven:

The seventh policy is aimed at preserving the visual landscape of the St. Croix International river corridor. The SCIWC initiated an inventory of visual resources in the River corridor; however, was unable to complete this due to conflicting project commitments and limited human resources. Conserving the visual character and scenic places is an ongoing process. Visual character and scenic assets on inland sections of the lakes receive some protection through conservation initiatives (Policy nine), shoreland zoning (Policy three) and provincial acquisition of adjacent forestlands. On the estuary, gains have been made from preserving scenic landmarks Devil's Head in Maine, Todd's Point in New Brunswick and Navy Island in New Brunswick; however, lands at Bayside are compromised by the waterfront quarry at Bayside (NB), the scale of some residential development and the potential for development of a major marine terminal on the Maine side. While a look-off from the main road that has the "Million Dollar View" is created at Weston, Maine for panoramic viewing of East Grand and other St. Croix lakes.



Figure 15 "Million Dollar View" Weston, Maine

Policy Eight:

The eighth policy states to conserve and interpret the natural heritage of the St. Croix River, which is an ongoing process. Through the action of protecting rare and significant species and habitats in the river corridor and the expansion of natural heritage interpretation we have continued to expand on this policy's goals. Through policy nine, explored more in the next paragraph, and supporting the St. Croix dragonfly research we are working to meet the first objective. The second objective has been

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met through the establishment of the Downeast Heritage Museum (now the Wabanaki Cultural Center) and Quoddy Learning Centre, which opened to interpret natural heritage, in 2004 and 2008 respectively. Media attention by the Discovery Channel Canada featured the St. Croix in its Great Canadian Rivers series and copies of this video were placed in all local libraries to encourage further learning and educational resources. As well, recently in 2011 The Fundy Discovery Aquarium opened to year-round visitors, providing interpretation of local marine resources

Policy Nine:

Policy nine asserts the need for an Upper River/Spednic Lake conservation area which is

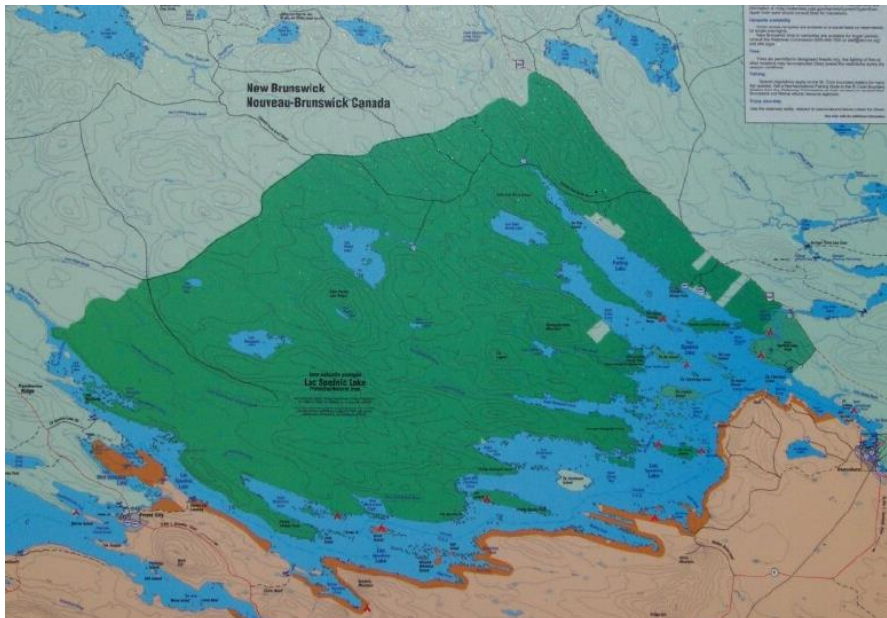


Figure 16 Spednic Park Natural Protected Area

accomplished through the protection of the natural character of the shores and protecting and interpreting heritage resources. The Province of New Brunswick, the state of Maine, conservation interests and willing sellers collaborate to now protect 93% of this waterway section – over 284 km of shoreland and 21,000 ha of backland – through conservation ownership and easements. Additionally, managing uses for

environmental and recreational quality is an ongoing aim. The SCIWC begins and continues to maintain backcountry recreational facilities for New Brunswick and Maine, with environmental and heritage goals. As well, in 2011, Maine drafts a long-term recreation and resource management plan for its side of this waterway section.

Policy Ten:

The tenth policy says to develop appropriate land and water access through the development of a long-term access plan which has partially been completed. The SCIWC issued an access inventory in 1991 to raise awareness of the needs to meet this goal. Governments, communities and others collaborated to limit access to the Spednic Lake/Upper River section and increase or improve access, where warranted, on other waterway sections. The second action item states to maintain an inventory of public access lands, which like its predecessor, remains partially completed. The

SCIWC prepared a NB/ME public access inventory in 1991, updated it in 1995 but has not maintained it afterwards. Maine inventories its public accesses every five years for its statewide recreational plan, but the goal remains largely un-pursued.

Policy Eleven:

Policy eleven is to develop a coordinated recreational information program by way of developing trans-boundary recreational information, which is an ongoing process. The SCIWC produced and continues to sell an international recreation map for the St. Croix and in some years it has produced a New Brunswick/Maine angling regulation summary. Development of uniform recreational signage is largely accomplished since the SCIWC now maintains these sites for both New Brunswick and Maine; the signs are predominantly uniform for both sides of the River. Information is being used to better distribute and manage use, through the SCIWC recreation map and web/telephone information on lake levels and river flows that help to inform and guide recreational users.

Policy Twelve:

The twelfth policy states to integrate recreational planning in order to minimize conflicts which is achieved by integrating recreational water needs, and identifying and addressing potential conflicts. Water modeling and consultations by the IJC have studied user interests and the watershed's ability to meet them. Since 1995, dam owners have worked with resource agencies and user groups to better balance lake and river water uses. Since 2005, the St. Croix Water Forum has given water managers and users an opportunity to review water conditions and user interests. New Brunswick has taken steps to reduce motorized vs. non-motorized user conflicts at some of its access sites. Recreational inner-tubing has emerged as a new St. Croix River activity and has caused some complications with increased use at certain sites, and facilities may require expansion in order to meet the growing number of users. This objective continues to provide challenges and will be an ongoing process.

Policy Thirteen:

The thirteenth policy is aimed at managing the sport fishery as a recreational and economic asset for the St. Croix region. The sport fishery is to be managed for quality experience and sustainable yields. Research, management and regulation are coordinated across the border for most fisheries, toward these goals. Surveys have provided new information on the economic value of Maine's St. Croix sport fishery. This policy seeks to develop Spednic Lake smallmouth bass and St. Croix River Atlantic salmon stocks: this remains ongoing for smallmouth bass, but efforts for Atlantic salmon have halted. Initiatives have helped Spednic Lake smallmouth bass recover from 1980s lows to support an active catch-and-release fishery. Controversy over the impact of sea-run alewives on

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smallmouth bass caused Maine to close its St. Croix fishways to alewives beginning in 1995. In 2005 scientific studies showed that alewives generally benefit bass growth, leading to some re-examination of the closure, but the closure remains and the issue is still unresolved. The Atlantic salmon restoration program showed initial promise but ended in 2006 after declining results; the run disappeared from the St. Croix shortly afterward and the stock is considered extirpated. Furthermore, coordinating regulation, management and research is generally guided by the inter-agency St. Croix Fisheries Steering Committee; while enforcement and licensing are conducted along jurisdictional lines. Lastly to meet this policy goal, involve local interests in conservation/enhancement. Local interests assist resource agencies with angler surveys, stock surveys, fish stocking and fish habitat improvement. Groups also sponsor Fish Friends learning programs in local schools towards meeting the management of the sport fishery.

Policy Fourteen:

The fourteenth policy focuses to develop and maintain quality opportunities for water recreation through monitoring and managing canoe recreation on Spednic Lake and the Upper River. This has been achieved on an ongoing basis by studies conducted in 1991 and 1999 which track canoe recreation growth and patterns while additional surveys are planned for the future. New Brunswick and Maine have developed and maintained primitive campsites and limited accesses, through the Waterway Commission, to handle current use. In 2011, Maine drafted a long-term recreation and resource management plan for its side of this waterway section. Management of water releases for more uniform experiences has been tackled since 1994, with flows at the Vanceboro dam managed to give more consistent conditions for both weekend and weekday river paddlers, while still meeting lake fishery management and recreation needs. The third action item is to expand facilities and services. Marine boating facilities have been upgraded at St. Andrews, St. Stephen and Calais. Two river access sites have been converted to small provincial parks. Additional New Brunswick and Maine primitive campsites were created to allow “one-country” canoe tripping under stricter international border crossing regulations. The last goal is to encourage additional low impact recreation, which has been achieved as new recreational activities such as sea kayaking and whale watching gain popularity on the estuary, spawning new eco-businesses which remain relatively low-impact. Outfitters on the New Brunswick side of the upper river now offer inner-tubing, canoeing and kayaking on the St. Croix, the first of these giving many people who don't own a canoe the chance to experience part of the St. Croix's protected section.

Policy Fifteen:

The fifteenth policy is to expand land-based recreational opportunities by identifying and developing outdoor recreation opportunities and linking future trails and touring networks in the region with the St. Croix. Walking trails have been developed or improved at eight locations along or

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overlooking the estuary and at two locations on the Spednic Lake/Upper River section. Mountain biking trails have been developed in the St. Andrews area and a provincial St. Croix park study and Maine statewide studies have identified additional recreational opportunities. Events at Calais-St. Stephen have linked national trail systems in the US (East Coast Greenway) and Canada (Trans-Canada Trail). A master plan has been completed for an international trail around Passamaquoddy Bay and the St. Croix estuary. Some sections of the NB Trail and snowmobile trail networks approach the St. Croix corridor. This policy will remain ongoing in the coming decade.

Policy Sixteen:

Policy sixteen states to incorporate heritage concepts in economic planning by applying heritage values to development planning and by giving shoreland priority to heritage and water-dependent uses. This has been achieved by new utility and transportation crossings which minimize their impact on natural and heritage resources. St. Croix communities have emphasized heritage and St. Croix River values in their new municipal and rural plans. The waterfront quarry at Bayside developed a scenic landscape plan but did not act on it. Maine (statewide) and New Brunswick (for the St. Croix) have incorporated provisions for water-dependent uses into regulations for shorefront development.

Policy Seventeen:

Policy seventeen focuses on capitalizing on the Waterway's economic strengths through the following five actions: manage for a sustainable forest product industry; expand and diversify recreation and heritage tourism; develop marine shipping, in balance with other users; develop border opportunities; and improve transportation infrastructure and border crossings. The progress to date on these action items consists of the New Brunswick and Maine sides with public and private landowners continuing to implement sustainable forest harvesting plans. Land trusts become community forest managers on the Maine side, side and begin to develop integrated plans that link sustainable forestry with a sustainable rural economy.

In regards to expanding and diversifying recreation and heritage tourism, a St. Croix heritage-based business opportunity study identified 74 opportunities, many of which have been pursued. New businesses are developed for sea kayaking and whale watching on the estuary, tubing on the upper river, and bike touring in various locations. New St. Croix heritage facilities (see Policy 6 and 8 Highlights) and downtown heritage revitalization projects have generated additional tourism. The development in marine shipping has been intermittent. The Bayside Marine Terminal transitioned successfully from federal to local ownership. The province initiated a waterfront quarry in 1998 to expand the Bayside port and industrial park, but this continues to raise ongoing local concern over environmental, visual and lifestyle impacts that residents hope will be addressed when quarrying ends and locally-compatible businesses are developed on site. Two liquid natural gas marine

terminals have been proposed for the Maine side of the estuary. Canadian-side governments and interests feel this is inappropriate for the St. Croix while American-side interests are divided. These proposed projects are now in the U.S. federal permitting process.

Development for border opportunities remains an ongoing process. St. Stephen and Calais continue to explore border tourism and transportation related opportunities. A 2007 *'Changing Borders'* conference explored means to reduce negative impacts and develop new opportunities in light of tighter international border crossing requirements. Improvements to transportation infrastructure and border crossings also remain an ongoing process. The international bridge at Vanceboro was replaced and a new (third) international bridge was constructed at St. Stephen-Calais to relieve border congestion in the two downtown cores and improve travel on the coast's major north-south highway. After September 11, 2001 American-side border crossings were fortified with barriers and gates and both sides increased their border staff and identification requirements; this aids national security but not local travel. However, the smaller St. Croix border crossings remain open at the strong request of residents and politicians

Policy Eighteen:

Policy Eighteen aims to better integrate, interpret and exchange information by improving inter-agency communication, improving public communication, centralize information services and cooperatively address information needs. Ongoing progress has been made toward three of these four goals and intermittently on the fourth. Inter-agency communication improved as New Brunswick and Maine governments collaborated on tourism, education and transportation initiatives that benefit the St. Croix area. Provincial, state and federal agencies communicated more regularly on many issues as a result of the Waterway Plan. Public communication improved as agencies, media and organizations on both sides all increased their St. Croix and cross-border information output. Cooperatively addressing information needs is met by the IJC's releases of a multi-sector State of the St. Croix Watershed report in 2008 and its sponsorship of a number of information workshops over the years. The SCIWC issued an international St. Croix recreation map and has hosted a range of public workshops and conferences on St Croix issues since 1990. St. Stephen and Calais regularly collaborate on municipal issues and tourist information. Intermittent progress has been made as the SCIWC serves as a general source of New Brunswick and Maine information regarding the St. Croix area and its multi-faceted management plan.

Policy Nineteen:

Policy Nineteen sets to develop effective public/private partnerships for planning and management by increasing public and user input; developing inter-community planning regarding waterfronts; begin cooperative processes for East Grand Lake planning; and support cooperative environmental

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management for the estuary. Public and user input have increased as agencies and organizations increase the form and frequency of their consultations, with more awareness of cross-border interest which are noted more in depth in policies 4, 6, 7, 9, 12 and 13. Progressively, St. Stephen and Calais consult and periodically collaborate on waterfront planning. Occasional progress has been made on cooperative processes for East Grand Lake planning. The SCIWC initially investigated this but did not find sufficient government interest to pursue it on a cross-border basis. In 2011, conservation interests pursue a major initiative that would better balance development and open space on the Maine side of the lake. Much of the undeveloped New Brunswick side is Crown Land in long-term timber licenses; however, without consistent planning the Lake remains open to cottage development and this is becoming a growing concern among residents. The St. Croix Estuary Project develops an environmental management plan for the estuary; some aspects of which are pursued to advance the last management goal of supporting cooperative environmental management in the estuary.

Policy Twenty:

The twentieth policy addresses the long-term management issues on a proactive, inter-jurisdictional basis. The first goal of five in this policy targets establishing a process to coordinate International Heritage Waterway development, which has not been pursued to date. The second is to establish a process to integrate water planning and management, which has had occasional success by the IJC as it undertakes periodic reviews and consultations on St. Croix levels and flows that are under its jurisdiction. Recent upgrades in computer-based water monitoring and modelling tools have allowed for better multiple-use management and flood control under different hydrologic scenarios. The IJC also sponsored an international workshop on St. Croix water management. The SCIWC contributes to this goal by hosting an annual St. Croix Water Forum that gives regular opportunity for discussion on water level and flow issues. The third objective to establish a process to integrate fisheries planning and management has been successful as an inter-agency St. Croix Fisheries Steering Committee fulfills much of this role; while the IJC has taken the lead in trying to resolve the longstanding international conflict over sea-run alewife spawning in the St. Croix. The fourth goal under this policy seeks to establish a process to coordinate Conservation Area management, which to date has been initiated but not completed. The SCIWC sought to involve agencies and user interests in an initial planning exercise in 1996 and undertook both provincial and state recreational site maintenance/management in subsequent years. In 2011, Maine drafted a long-term recreation and resource management plan for its side of this waterway section, with some input from New Brunswick. The fifth goal addresses inter-jurisdictional issues through cooperation, which has had periodic success as agencies and organizations undertake cross-border discussions and planning on a variety of issues, but on an as-needed basis only.

Policy Twenty-One:

The twenty-first policy looks to maintain coordination through a Waterway Commission, which can be directed to coordinate plan delivery and, and to identify the Commission's long-term role. The first is achieved by the SCIWC through facilitation of the plan delivery on an ongoing basis, with core Provincial and State funding. The second item is pending, as the SCIWC plans to further work with New Brunswick and Maine to align its long-term role with future resources.

Policy Twenty-Two:

The last policy, the twenty-second requires regular review of management progress and directions by monitoring waterway programs and reviewing the Waterway Plan every four years. There has been intermittent success with these goals, as the SCIWC and others occasionally report on waterway-related programs, and the SCIWC begins the first review in 2007; its efforts are limited by resources and remain incomplete to date.

9.0 Conclusion

This report focuses on the condition of the natural, cultural, recreational heritage and integrity values that were the basis for CHRS designation within the New Brunswick portion of the St. Croix River System. This document focuses on the changes that have occurred to these values since the last River report was issued in 2000. This report focuses on the existing management arrangements, the status and/or conditions of natural, cultural/historical, recreational/tourism features, and the opportunities and values that form the basis of the St. Croix River for CHRS designation. It has examined the strengths and weaknesses, opportunities and challenges, for heritage conservation, sustainable use, recreation, education and tourism. It should be noted that though the CHRS designation only includes the New Brunswick portion of the River, it also has included many directly relevant activities occurring on the Maine portion of the River, that have shown significant impacts or influences to the New Brunswick portion of the River.

The chronological section of the report provided a table for a year-by-year picture of all positive and negative activities that have occurred during the period of this report. In the highlight section immediately following the report reviewed the significant events that occurred by organizing them into four themes: ongoing, natural heritage, cultural heritage and recreational heritage. A great number of events have occurred during this time, and largely, the events have all been positive and have sought to pursue the St. Croix's international management plan. In recent years, namely in 2011, a few, more negative events have occurred, and since it will take a number of years for these to unfold and the end results known, their impact to the St. Croix remains uncertain.

The cultural heritage section further examined the historical significance and commemorative events, as well as, occurrences that exhibited the cultural heritage of the St. Croix River during the 2001-2011 reporting period. The communities along the St. Croix River continue to appreciate and

celebrate their long history and heritage that is entwined with the River and its historical significance to the region. The communities continue to seek acknowledgment and achieve national recognition for the historic places that are within the River's corridor.

The recreational heritage section continues to expand and through both the table and the summary the report explores the occurrences and issues in more depth. Recreational activities along the River have remained quite steady, and with the St. Croix International Waterway Commission administering the seasonal recreational program on both sides of the River, consistency of management and improvements to the River for recreational purposes have been a significant part of the occurrences on the River during the period of this report.

The integrity values of the river are shown in the next section extensively through the table and then in the summary. The River has largely maintained its outstanding natural, ecosystem and aesthetic values through a series of protected area, legislation, improvements to water quality and management and actions taken to preserve the integrity for which this River was nominated and designated as a CHRS river.

The next section deviates from the rest of the report; it examines the progress to date over the period since the St. Croix's International Management Plan has been in place, assessing the progress and action items under each policy. This section provides an overview of all actions undertaken by stakeholders on the St. Croix River and shows the progress made on the policies under the management plan, and also shows where little to no progress has been made, as well as areas that are in need of improvements.

The St. Croix River still remains one of the most pristine, natural and untouched working rivers in Eastern North America. Its characteristic and notable attributes attract visitors from all over North America and abroad. As agencies on both sides of the river continue to collaborate, and users and those with a vested interest in the river's protection continue to protect, preserve and conserve its natural, cultural and recreational heritage; it is likely that the St. Croix will maintain its outstanding value to the region and to the Canadian Heritage Rivers System.



Figure 17 Simpson's Hill, NB