



St. Croix International Waterway: A Heritage — A Future

**Plan for Long-term Cooperative Management
of the St. Croix International Waterway**

**Province of New Brunswick
Canada**

**State of Maine
United States of America**

October 1993

St. Croix International Waterway Commission
St. Stephen, New Brunswick, Canada Calais, Maine, U.S.A.

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The St. Croix International Waterway Commission was established by the Province of New Brunswick and the State of Maine to develop and facilitate the implementation of an international plan to protect, manage and develop the heritage resources of the St. Croix boundary corridor.

Further information on the Commission, this Plan and the St. Croix International Waterway is available from:

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HIGHLIGHTS

This Plan was developed by the St. Croix International Waterway Commission in accordance with a Memorandum of Understanding and legislation by the Province of New Brunswick and the State of Maine to jointly manage shared heritage resources along the portion of their common border defined by the St. Croix River system. It establishes international **goals** and **policies** for management that seek to preserve and celebrate a corridor heritage, maintain environmental integrity and support the region's resource-based economy. It also recommends **actions** by which Maine, New Brunswick and others may begin to implement these policies.

The Plan most notably outlines steps to:

- 1) Recognize the St. Croix as an International Heritage Waterway, setting this theme for future corridor development and management.
- 2) Agree on high, international water quality goals, with coordinated action to pursue them.
- 3) Retain a natural shoreland area along the waterfront as an environmental and visual asset.
- 4) Enhance recreational uses of the St. Croix, including back-country canoeing and a restored Spednic Lake bass fishery.
- 5) Encourage continued economic development that complements the Waterway's international strengths in forest resources, tourism and transportation in ways compatible with environmental goals.
- 6) Implement special management for Spednic Lake and the upper St. Croix River as an international Conservation Area, to preserve their outstanding natural and recreational assets.
- 7) Coordinate governmental planning to address on-going management issues, particularly water quality and use, fisheries, recreation and growth management.
- 8) Facilitate a greater local role in Waterway planning and management through increased public involvement and through an on-going, locally-based Waterway commission.

The Plan establishes the framework for a long-term process that is unique in the Canadian-American setting. Its implementation by Maine and New Brunswick in cooperation with other levels of government and the private sector sets new directions for future integrated management.

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INTRODUCTION

The St. Croix River system is shared for its full length by the Province of New Brunswick, Canada and the State of Maine, USA. Shared too are the natural, historical and recreational resources that support its communities and economy. Because of these resources, the St. Croix has been designated by Canada and New Brunswick as a Canadian Heritage River and recognized by Maine as one of the state's twenty Outstanding Rivers.

To maintain this common heritage and encourage appropriate regional growth, Maine and New Brunswick entered into a Memorandum of Understanding in 1986 to jointly protect and manage the St. Croix boundary corridor, designated the St. Croix International Waterway. In accordance with the Memorandum and enabling legislation, the St. Croix International Waterway Commission was established to plan and facilitate this management process in cooperation with the Waterway's residents, users and all levels of government.

Between January 1989 and June 1990, the Commission consulted local and governmental interests to set future directions for the Waterway. This culminated in a 141-page **Preliminary Plan for Long-term Cooperative Management of the St. Croix International Waterway** which underwent both governmental and public review in the ensuing months, without recommendation for substantive change.

The Preliminary Plan was accepted in principle by the Governor of Maine and the Premier of New Brunswick in 1990 and has been the basis for voluntary action by governmental and nongovernmental interests in both countries since that time. It contains detailed information on the Waterway area and the management planning process that is a recommended reference to this document.

In 1993 the working components of the Preliminary Plan underwent a second provincial and state review, with concurrence, and were incorporated into this document with a brief supporting text as the formal Management Plan for the Waterway.


In 1994, this document was adopted by New Brunswick (by Order-in-Council 94-7) and accepted by Maine (by Executive Order #2, FY94/95) for on-going implementation by these sponsoring governments.

The Plan defines a framework of international goals and policies to be pursued cooperatively by all interests, but most specifically the Province of New Brunswick and the State of Maine, by available means over the long term.


It encourages a flexible, strategic delivery process that accommodates existing differences in the mandates and structure of governments and in the constantly changing capabilities of all participants. In this way some Plan components can and are being addressed quickly, with opportunity, while others develop at a slower pace. The Plan's regular review and long-term coordination by a single, transboundary waterway commission ensure that shared objectives will continue to be met.

This cooperative management process is unique in North America and yet is very appropriate to the St. Croix. Why? The actions on one side often significantly affect both, making shared goals a common best interest. Also, as development now accelerates along the system, residents and governments agree that the St. Croix must be managed to prepare for, rather than react to, change in order to retain its best qualities and opportunities.

By working together, Maine and New Brunswick neighbors can continue to enjoy the rich benefits of an internationally significant Waterway and maintain a heritage that is a vital part of their future.



David C. Walker
New Brunswick Co-Chair



Francis A. Brown
Maine Co-Chair

THE ST. CROIX REGION

The St. Croix River basin covers 1640 sq mi/ 4235 sq km of southwestern New Brunswick and northeastern Maine. From the source of Monument Brook in Aroostook Co. (ME) and York Co. (NB) to Passamaquoddy Bay in Washington Co. (ME) and Charlotte Co. (NB), it straddles the US/Canada border for 110 mi/185 km. The boundary waters fall into three principal subregions: the Chiputneticook Lakes (North, East Grand, Mud, Spednic and Palfrey), the river corridor and a major estuary. A west branch of the St. Croix lies entirely within the State of Maine, joining the boundary waters at Grand Falls.

The 23,000 Canadians and Americans living along the St. Croix border share a rural lifestyle, resource-based economy and social ties that have persisted for centuries. Nearly 40% of the local residents live in the twin communities of St. Stephen, NB and Calais, ME. There are eleven incorporated municipalities. The state and provincial governments directly administer the remaining unincorporated areas comprising more than 60% of the Waterway area.

The region was first occupied nearly 11,000 years ago by post ice-age peoples and has served a succession of native cultures since, including the present day Passamaquoddies. European settlement began in 1604 when the explorers Sieur de Monts and Samuel de Champlain chose St. Croix Island for the New World's first permanent Acadian colony. They were followed by French fur traders, English homesteaders, Loyalists after the American Revolutionary War and others who developed an active economy based upon timber harvesting, manufacturing, transportation and tourism.

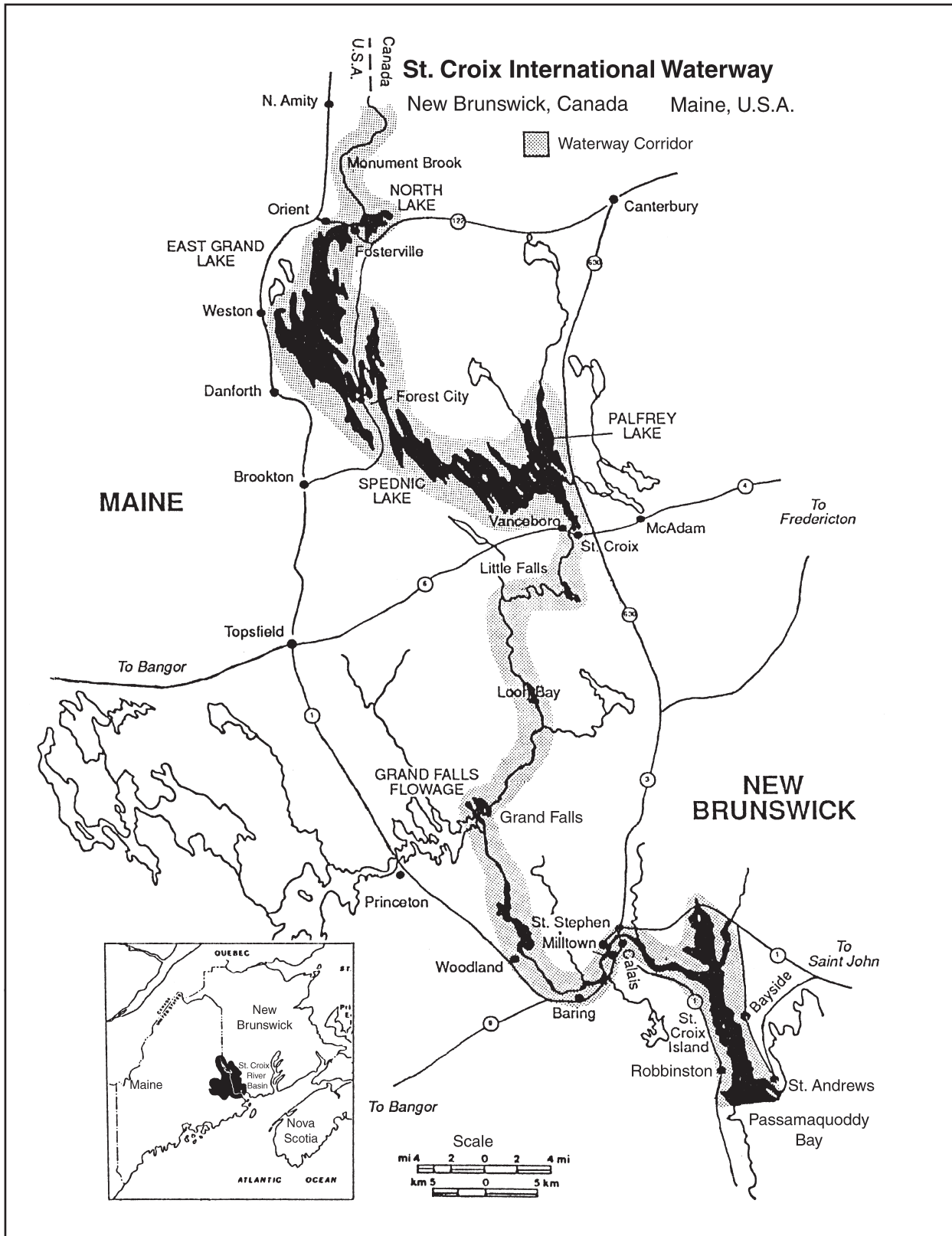
This same economy continues today in modern form, maintaining a strong reliance on the Waterway's natural resources and strategic location. Wood products manufacturing, local commerce, tourism and government services employ the majority of the 9800-person labor force. A regional port and an international transportation corridor enhance future opportunities.

Land use within the watershed reflects the undeveloped nature of the area. Roughly 80% of the land base is forested, mostly managed in commercial wood production. Other areas are utilized for wetlands (8%), agriculture (5%) and urban, residential or other uses (7%).

The St. Croix's shores support important bald eagle, osprey and rare plant populations as well as significant archaeological, geological and ecological sites. They are also becoming increasingly popular for residential and commercial development. The waters serve a wide range of multiple uses including power production, recreation, waste dilution, industrial processing, navigation, fish habitat and visual enjoyment.

The Waterway Plan seeks a balance between all aspects of the St. Croix's use to ensure that its heritage, environment, culture and growth opportunities continue to benefit harmoniously its American and Canadian residents.

St. Croix International Waterway, New Brunswick, Canada and Maine, USA



WATERWAY DEFINITION & GOALS

The St. Croix boundary waters and immediate shorelands form an international corridor through the St. Croix watershed. New Brunswick and Maine seek to manage and preserve the heritage of this corridor while maintaining exclusive management of the land and waters that lie beyond it. To do so requires clear definition of the bounds and goals of joint management.

During the management planning process, the original Waterway boundaries established by Maine and New Brunswick were redrawn for this Plan to better focus on a uniform corridor of international waters and adjacent shorelands.

This removed from the Waterway's formal management area approximately 225 sq mi/ 583 sq km of New Brunswick forestland adjacent to the boundary lakes and 1.3 mi./ 2 km of Maine shoreland below the estuary which might better be managed along existing jurisdictional lines.

The revised boundaries are defined and described on the opposite page. An amendment to existing legislation will be made to reflect this revision.

The goals of management were established through a year-long consensus process involving the Waterway's residents, users and managers. In spite of differences in location, interests and nationality, it was remarkable to find that those who participated in this process shared common ideas about the St. Croix's values.

All recognized the Waterway's unspoiled scenic character and abundant natural resources as its primary assets. All gave highest priority to maintaining clean water, managed for public benefit, and to preserving natural shorelands. This was followed by the desire for appropriate economic growth, additional outdoor recreation opportunities and recognition of the Waterway's history.

Through these consultations arose a shared vision and clear goals for the Waterway's Management Plan. The goals are stated on the facing page.

INTERNATIONAL WATERWAY BOUNDARIES

Definition: *Within this Management Plan the St. Croix International Waterway shall be defined as:*

The waters of Monument Brook, North Lake, East Grand Lake, Forest City Stream, Mud Lake, Mud Lake Stream, Spednic Lake, Palfrey Lake, the St. Croix River (including the boundary waters area of Grand Falls flowage) and the St. Croix estuary (including the portions of Oak Bay and the Waweig estuary lying south of Route 1) to the southernmost point of St. Andrews, in New Brunswick, thence by straight line to the easternmost point of Navy Island, and thence by straight line southwesterly to the town line between Robbinston and Perry, in Maine:

and also all islands within these waters;

and also all adjoining shorelands in Maine and New Brunswick to a distance inland from mean high water of 75 meters in New Brunswick and 250 feet in Maine;

and also any lands beyond this corridor recognized jointly by New Brunswick and Maine as held or managed for the purposes of the Waterway.

PRINCIPAL MANAGEMENT GOALS

Goals:

- 1) Protect and enhance the Waterway's natural heritage: its scenic landscapes and waterscapes; its fish, wildlife, forest and plant 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.

MANAGEMENT DIRECTIONS & POLICIES

The Waterway planning process identified and addressed seven principal themes. The following pages briefly introduce these themes in their St. Croix context and state the international policies established for their management. Also presented are actions recommended as means to implement these policies over the long term, as resources allow.

Maine and New Brunswick have requested these policies and are clearly identified in the policy statements. However it is intended that all St. Croix interests, both governmental and nongovernmental, will adopt and pursue these directions.

INTERNATIONAL HERITAGE WATERWAY

Linked by a shared watercourse, resource-based economy and history, the St. Croix communities are uniquely international. The Waterway Plan recommends that this special identity be acknowledged by formal recognition of the St. Croix as an **International Heritage Waterway**.

The St. Croix's international heritage is an important part of its future. This concept runs as a common thread throughout the Plan, offering ways for governments and local interests to preserve the best qualities of the St. Croix, past and present, and draw upon these to develop new opportunities.

In the last decade, Maine and New Brunswick have each given separate recognition to the St. Croix's heritage. Canada and New Brunswick have designated the Waterway as Canada's twelfth Canadian Heritage River, the first river in Atlantic Canada to be so recognized. Maine has named the St. Croix as one of its twenty Outstanding Rivers and given the remote river sections special protection. Together these governments have made a long-term commitment to heritage preservation through the 1986 Memorandum of Understanding creating the St. Croix International Waterway.

The International Heritage Waterway concept establishes a theme for future development of the St. Croix as a place where a strong heritage identity actively supports its economic, environmental and cultural well-being. Setting this focus takes an important first step in meeting the Waterway's long-term goals.

INTERNATIONAL HERITAGE WATERWAY POLICY

Policy #1: Develop the St. Croix's identity as an International Heritage Waterway

Maine and New Brunswick will jointly recognize the St. Croix as an International Heritage Waterway, carrying this concept forward through the recognition and interpretation of the Waterway's heritage identity.

Recommended actions:

1.1 Establish an International Heritage Waterway

- New Brunswick and Maine should jointly recognize the St. Croix International Waterway as an International Heritage Waterway. The five Waterway management goals identified by this Plan should be adopted as the initial principles for Waterway management by these governments, local interests and other management agencies.

1.2 Create a Waterway image

- New Brunswick and Maine should adopt a common description, logo and interpretive format for the Waterway.

1.3 Initiate an International Heritage Waterway information and interpretation program

- Maine and New Brunswick should support the International Heritage Waterway concept with a thoughtful interpretive program, developed over the long term. This could include commemorative plaquing, interpretive literature and heritage displays developed by cooperative public/private means, following recommendations in the Heritage sections of this Plan.

1.4 Incorporate the International Heritage Waterway concept into local awareness and planning efforts

- Communities should, as part of their community plan, adopt heritage preservation objectives for significant natural, recreational and historical resources within their Waterway shorelands.
- Governments should address the Waterway's heritage-oriented goals and priorities in planning future resource use and regional development.
- Landowners, business interests and Waterway users should each seek ways to include Waterway heritage conservation or development concepts in their plans for use of the Waterway's shores and waters, as suggested in this Plan.

1.5 Develop a heritage resource inventory

- Maine and New Brunswick, in cooperation with local communities and other interests, should establish a joint inventory of the Waterway's significant natural, historical, recreational and visual resources, for reference in heritage planning and interpretive program development. This should continue to be expanded through future public and private research.

ENVIRONMENTAL SETTING

The St. Croix is noted for its beauty, diversity and natural abundance. The region's sparse settlement and forestry economy have kept it relatively unaffected by the development pressures that have altered many New England and central Canadian waterways. However this is beginning to change.

All Waterway interests rated the St. Croix's long-term environmental quality as **the most important** management issue. Constructively channeled, this interest can protect the St. Croix's natural environment, with cultural and economic advantages, while other waterways are compromised by less thoughtful development.

OVERVIEW

Water Quality

The St. Croix enjoys very high water quality for most of its length. The waters of the lakes are clear and relatively unaffected by human use. Color and oxygen demand increase due to shoreland bogs and bottom log debris along the undeveloped upper river corridor but the waters remain naturally clean. At Woodland and below, however, water quality and chemistry are affected by the outflows from a pulp and paper mill, three major communities and lesser residential and commercial sources.

In 1975, few fish inhabited the lower river. Treatment system upgrades by the mill and the river communities have now greatly improved water quality, allowing for the restoration of Atlantic salmon. Bacterial pollution caused by human and animal waste, measured in fecal coliform levels, has dropped ten-fold but still is too high in the St. Stephen/Oak Bay and Calais areas for the direct harvest of clams. Shoreland runoff, residential septic systems and marine activities influence water quality in some locations.

Continuing improvements are being made to treatment systems and management practices to ensure good water quality is maintained in spite of growing system use.

Land Quality

The shorelands have a significant influence on the visual character, natural buffering capacity and biological diversity of the Waterway. At the same time they are the location most favored for human use.

Shoreland use within the Waterway corridor reflects that of the watershed: over 80% of the waterfront is forested. The forest-based economy has served to insulate the area to a degree from development pressures by maintaining large forest areas in their traditional land use. The most significant land quality issues are shoreland erosion, water enrichment and habitat loss due to human activities close to the water's edge. A potential rise in sea level in the next century due to continued sinking of land masses and perhaps to global warming may have an effect on the shoreline of the estuary.

The impacts of forest harvesting have been studied and addressed with varying success through legislation. The impacts of residential development, however, have been incremental and less noticed. In the last fifteen years this development has accelerated on East Grand Lake, the upper river and in the estuary, affecting land use traditions and potentially water quality. Urban, industrial and transportation uses have caused some localized impacts.

Air Quality

With few exceptions the Waterway enjoys a relatively “smokeless” economy and very good air quality. Emissions from the pulp mill at Woodland have been significantly reduced in the last six years although this and a few other industrial sources still draw periodic concern. Acid rain has had little impact on the St. Croix due to the buffering capabilities of local soils and waters.

Biological Diversity and Productivity

The Waterway has a highly diverse environment. Recent studies of its shores have identified unique habitats, rare plant assemblages and old-growth tree stands important to the region’s biological diversity. Others have documented bald eagle, large game and fisheries habitats of state and provincial significance.

The few aquatic productivity studies completed show extremely low nutrient levels in Spednic Lake, attributed to water drawdowns, and good levels in other waters.

Both biological diversity and productivity are recognized as very important to the Waterway’s resource-based economy, particularly forestry and fishing, and to its natural heritage.

Current Management

At present distinct land and water management policies are applied without integration on opposite sides of the Waterway, leaving it vulnerable to incompatible uses and potential quality loss. Means to coordinate environmental management are evolving and need to be applied while the quality of the St. Croix’s waters and shorelands is still exceptionally high.

Water quality management has some common ground in the International Joint Commission’s St. Croix Advisory Board on Pollution Control. This body coordinates water monitoring, has set international objectives for dissolved oxygen and pH, and makes recommendations for quality improvement. Its mandate does not include coordinating policy-setting or regulation by water management agencies.

Spurred by national environmental legislation in the early 1970s, Maine has implemented some of America’s most effective water and shoreland management programs. It sets and enforces quality standards for all fresh and salt waters, under a water classification system, and regulates all potential sources of pollution. It issues licences for all point-source (pipe) discharges and permits for many non-point (diffuse) sources of industrial, commercial, municipal and residential origin. These include on-going requirements for ‘best practicable treatment’ or ‘best practicable management’ of wastes. Cleanup timetables have been set for all major point and non-point polluters.

The state’s shoreland zoning regulations control land uses within 250 ft/76 m of the water’s edge. These specify what development may occur, define minimum structure setbacks and prescribe limitations on clearing or other changes to the shorefront.

The Maine Rivers Act has given special protection to the St. Croix's Maine shore from Vanceboro to Grand Falls Flowage, preventing development within the full 250 ft shoreland zone. State-wide regulations ensure a 100 ft/30 m undeveloped "green buffer" is maintained along the majority of Maine's freshwater waterfronts and a 75 ft/23 m buffer along its salt waters.

Other state laws regarding large developments, natural resource protection, wetland protection, septic system setback, dam construction and pollution also apply within the shoreland area.

In 1990 New Brunswick enacted the strictest water quality legislation in Canada. Regulations under the Province's Clean Water Act currently require a permit for any disturbance of the ground (clearing, filling, etc.) or timber harvesting within 30 m/100 ft of freshwater. The Act also enables the province to develop a water classification system, implement wide-ranging quality protection measures and enter into agreements with others (including Maine) on water quality issues — overcoming previous obstacles to direct interjurisdictional management of St. Croix water quality.

Overall, New Brunswick's shorelands have not yet experienced the same development pressures as Maine's and as a result have fewer protective mechanisms. Community planning, health and watercourse alteration legislation offer limited avenues for waterfront protection on a site-specific basis. At 1993, Navy Island in St. Andrews was the only New Brunswick portion of the St. Croix having a required shorefront setback, although a proposed provincial regulation could create minimum development setbacks for much of the system.

FUTURE DIRECTIONS

Water quality and water management ranked as the highest priorities of Waterway residents, users and managers, with good reason. Water quality, in particular, will influence nearly all future uses of the St. Croix without regard to governmental policies or priorities on either side.

In view of increasing residential, industrial and marine development, it is timely for Maine and New Brunswick to plan now for the highest preferred long-term uses of the St. Croix, while water quality is good and use is still moderate.

To be effective, this must be supported by measurable water quality objectives and enforceable regulations on both sides. It should also target key present and potential pollution sources for specific action in order to ensure future quality while accommodating increased multiple use.

Waterway residents made it clear that they wanted to preserve the natural character and beauty of the St. Croix shoreline, regardless of what development may occur further inland. There was strong support for a protected New Brunswick shorefront area to complement Maine's and for local action to clean up or restore waterfronts. Local involvement in water monitoring and pollution abatement were also highly supported.

ENVIRONMENTAL POLICIES

Policy #2: Establish joint water quality objectives for the Waterway

Recognizing the long-term value of coordinated water quality planning, Maine and New Brunswick will agree upon the future highest quality uses of the Waterway and will cooperatively address the requirements for their maintenance. Both governments will, as a minimum, seek to maintain the present quality of the Waterway's fresh and estuarial waters.

Recommended actions:

2.1 Set cooperative water quality goals

- New Brunswick and Maine should agree upon the highest desired long-term uses of each portion of the Waterway.

2.2 Work toward consistent water quality standards

- Maine and New Brunswick should establish joint St. Croix water quality objectives to support the agreed uses and formulate these at the state/provincial or international level. They should work toward establishing complementary, legally-enforceable, St. Croix water quality standards to ensure these objectives are met.

Policy #3: Maintain the natural character and environmental buffering capabilities of the shorelands

New Brunswick and Maine will maintain a natural area along the St. Croix waterfront to absorb or prevent pollution, maintain valued open space, preserve traditional character and protect important shoreland resources, in the long term public interest.

Recommended actions:

3.1 Maintain a shoreland greenway

- New Brunswick and Maine and the Waterway communities should, in concert, use regulatory means to retain a natural shoreland area the length of the Waterway that will provide, as a minimum:
 - a general **100 ft/30 m setback** of development from the high-water mark, except within the downtown cores of St. Andrews, St. Stephen, Calais and Vanceboro, and except on the Upper River and Spednic Lake as recommended for the Conservation Area (Appendix E of the Preliminary Management Plan), and

- **retention of natural shoreland character** (ie natural vegetation and structure) to a depth that will prevent shoreland erosion and water pollution and reduce the visual impact of development viewed from the water.
- St. Stephen, Calais, Vanceboro and St. Andrews should establish alternate setback and cover standards for their downtown cores, consistent with their heritage character and the need to minimize water pollution.
- All communities and the appropriate government agencies should establish review and permitting processes to allow selective development within the greenway area for uses that are water-dependent and compatible with an area management plan. They should also set effective deterrents to infringements, requiring restoration where possible.

3.2 Take local action to maintain and restore natural shore areas

- Landowners, community organizations, youth groups and others should plan and participate in environmental activities benefiting the St. Croix. These may include Waterway cleanups, habitat or shorefront restoration projects, quality monitoring and education activities. Conservation organizations and government agencies should assist with information and technical advice, when possible.

Policy #4: Manage pollution to maintain environmental quality under increasing resource use

Maine and New Brunswick will act to more effectively and more equitably control sources of water, land and other pollution to ensure that uses of Waterway resources having transborder impacts will maintain levels of environmental quality acceptable to both jurisdictions.

Recommended actions:

4.1 Manage future pollution to reduce impacts

- New Brunswick and Maine should require all major project developers to provide information sufficient to assess the impacts of their proposed project on land, water or air use within or directly affecting the Waterway, and preferentially approve those projects that maintain the quality and natural character objectives for the system. Transborder comment should be invited as part of this process.
- Maine and New Brunswick should review environmental quality criteria applied within the Waterway with a view to seeking mutually acceptable performance standards for land, air, visual and sound quality.

- New Brunswick and Maine should cooperate in targeting and controlling primary future pollution sources. As part of this strategy, Maine should continue to maintain high quality standards, applying best practicable treatment and management concepts. New Brunswick and Canada should identify means to more equitably limit pollution from future New Brunswick sources.

4.2 Create an action plan to reduce present pollution

- New Brunswick and Maine should identify and prioritize principal sources of Waterway point and non-point pollution, and should consult in establishing programs and appropriate timetables for reduction. When available, government assistance and technical resources should be used to accelerate the cleanup process.

4.3 Enforce environmental regulations

- Maine, New Brunswick and the Waterway communities should, as resources allow, improve enforcement of current land and water use regulations within the Waterway and its tributaries. Volunteer monitoring efforts should be encouraged and supported.

4.4 Involve local interests in quality improvement

- Municipalities, businesses, landowners and Waterway users should each seek out simple means to reduce their individual impact on land and water quality. These can include such activities as alternate disposal of chemicals, wastewater system improvements, erosion control and litter pickup. Businesses with airborne discharges should adopt a similar challenge to reduce their net impact on air quality.
- Area environmental interests should consider ways to implement education, action and monitoring activities at the community and school level.

Policy #5: Maintain biological productivity and diversity within the Waterway

Recognizing the essential importance of these factors in maintaining present natural and economic uses of the Waterway and in preserving future use options, New Brunswick and Maine will manage resources in ways that will support continued biological productivity and diversity.

Recommended actions:

5.1 Monitor, and as practicable manage, the natural productivity of the Waterway

- Maine, New Brunswick and other monitoring agencies should carry out productivity assessments of the Waterway's fresh and estuarine areas, with priority to East Grand and Spednic Lakes, to establish background data for resource planning.

- New Brunswick, Maine and federal agencies should identify means to preferentially approve and support Waterway uses that maintain natural productivity while offering sustainable benefits. They should also, as possible, support activities that will restore or enhance productivity, particularly of forestry and fisheries resources, in complement to sustainable development goals.

5.2 Monitor and support ecological diversity within the Waterway

- Maine and New Brunswick should maintain a common inventory of significant ecological features within the Waterway, as a baseline for management.
- New Brunswick, Maine and other resource managers should include in their use and development plans an assessment of diversity/productivity impacts and a provision to protect representative samples of natural diversity.

HUMAN HERITAGE

The St. Croix's unique role in North American history and its international culture are part of a rich Waterway heritage that are an exceptional asset to New Brunswick and Maine.

OVERVIEW

History

More than 10,000 years of human history are chronicled in St. Croix artifacts and records that offer an exceptional insight into the early development of North American cultures.

The St. Croix's most significant impact on North American history dates from 1604, when the explorer Sieur de Monts, accompanied by cartographer Samuel de Champlain and a ship's crew, selected St. Croix Island as the site of France's first permanent New World colony.

Ill-prepared for one of the worst winters in history, the survivors relocated to Nova Scotia in 1605. Nevertheless, Champlain's detailed description of the river gave the St. Croix prominence in the records of the time and led to its early use as a jurisdictional boundary, now the United States-Canada border.

By the late 1700s the St. Croix watershed was one of North America's most significant timber exporting areas. During this period, settlements developed upstream for lumbering or log-driving and downstream for milling, manufacturing, shipbuilding and commerce, setting economic patterns that persist today.

In the 1800s the population of the St. Croix Valley equalled today's. Little evidence remains of many of the more fascinating enterprises of this time, particularly in shipbuilding, wood milling, tanning and soap and cotton cloth manufacture.

A few events of the 1800s did have lasting visible impact. In 1835, St. Andrews residents chartered the construction of New Brunswick's first railway: a link to Quebec City. A strong regional tourism industry, a rail-served port and the McAdam Railway Station, a national historic site, are part of this railroad's legacy.

During the same period the St. Croix lakes gained prominence as a sportsmen's haven and the Ganong brothers opened one of Canada's major candy factories in St. Stephen.

By the early twentieth century the lumbering and shipping era had begun to fade, reducing the regional importance of St. Croix enterprise. Emerging in its place was a strong wood products industry focused on a major pulp mill (built at Woodland in 1904-05), tourism and local commerce. These sectors are a vital part of the present economy.

Culture

The St. Croix represents a unique international community in which residents of two countries maintain a reliance on a common Waterway culture.

Throughout the Waterway's formative years, people, goods and investment moved freely across the river and many prominent businessmen had enterprises on both sides. The early railroads, the pulp mill, cotton mill and lumber industry were all international efforts. National concerns were frequently disregarded in favor of local interests. In the War of 1812, for example, St. Stephen loaned gunpowder to Calais for their Fourth of July celebration.

The degree of continuing interdependence is seen best in the unique relationship between Calais and St. Stephen. These communities have historically shared many local services, including a common water supply.

There is also a strong link to the natural environment borne of necessity in earlier centuries and now pursued by choice. People frequently move to the St. Croix or remain because of its high quality of life, in spite of opportunities elsewhere. This commitment is reflected in the local emphasis on environmental quality and rural character within regional planning.

FUTURE DIRECTIONS

Historical interpretation deserves an active role in the cultural and economic development of the Waterway. There are excellent opportunities to explore the region's early settlement, culture, enterprise and architecture at the community level and to link these within the Waterway's heritage theme.

The tidal communities collectively contain the majority of the area's 27 national and regional historic sites and other locally-plaques heritage sites. Inland, historic places are commemorated by oral tradition with little visible sign. The early industries and native cultures of the Waterway have little commemoration anywhere within the area.

Development of the Waterway's historic identity should focus on community initiatives to recognize heritage sites, preserve historic place names or structures and celebrate events and traditions. It should also highlight the distinctive streetscapes, townscapes and rural landscapes that link the area's human and natural heritage.

While much can be done with local resources, a simple but effective Waterway-wide interpretive program must be developed to present the International Heritage Waterway theme. Technical and financial support from government sources will be needed to achieve this aim.

St. Croix Island deserves exceptional attention. Although it is the only international historic site shared by the U.S. and Canada, agreements for its interpretation have yet to be fulfilled, to the concern of residents and the puzzlement of visitors. Significant archaeological sites also deserve special study and interpretation.

The Waterway's modern international culture is a day-to-day affair for residents and a unique attraction for visitors. Its survival is largely dictated by the availability of border crossings, which have been declining since the 1940s. Crossings and community bonds are maintained best at St. Stephen/Calais and Vanceboro/St. Croix/McAdam. Elsewhere restricted crossing hours on East Grand Lake have limited social ties and economic development, and discontinued links lower on the system have ended exchanges between facing communities.

As a result the St. Croix communities must now seek new means to keep traditional ties alive in order to sustain the area's unique international identity and working relationships.

HUMAN HERITAGE POLICIES

Policy #6: Preserve and interpret the Waterway's history and culture

New Brunswick and Maine will act cooperatively to preserve and interpret the Waterway's international history and culture for the continuing benefit of the people of both nations.

Recommended actions:

6.1 Establish facilities and programs to effectively interpret

St. Croix Island

- Canada, New Brunswick and the United States should act with urgency to fulfill past agreements for the interpretation of St. Croix Island. In particular they should develop facilities and written and audiovisual materials interpreting this designated international historic site.

6.2 Expand interpretation of the Waterway's history

- Maine and New Brunswick should develop an interpretive brochure on the Waterway's history, including its native and early European heritage, and the historic sites and locations that can be seen along the Waterway.
- New Brunswick and Maine should initiate a common-format network of simple public displays to interpret this history within the Waterway communities.
- Communities, businesses and organizations should continue to preserve and interpret local historic buildings and sites, with additional focus on sites significant to the Waterway's development.
- Communities, businesses, organizations and schools should develop new ways to celebrate the Waterway's past, including its pre-European history and its roles in early lumbering, milling, shipbuilding, railroading and tanning industries.
- Existing government programs should give high priority to support for the development, delivery and recognition of these historic preservation and interpretation initiatives.

6.3 Study, interpret and protect significant archaeological sites

- Maine and New Brunswick should continue to study the early prehistory of the Waterway area. In particular, New Brunswick and Maine should research the most significant and vulnerable Waterway archaeological sites.
- New Brunswick and Maine should, when appropriate, legally protect significant archaeological sites.

- Maine and New Brunswick should work cooperatively with local interests to interpret archaeology within the Waterway area. Consideration should be given to on-location interpretation of suitable sites.

6.4 Maintain transborder cultural bonds

- Communities and organizations should initiate or continue activities that join them more actively with their Maine/New Brunswick counterparts.
- Governments should recognize the value of the Waterway's international culture to the regional identity and economy, encouraging actions that maintain this unique relationship.

NATURAL HERITAGE

The Waterway contains a remarkable diversity of significant geological, natural and visual resources. Within this corridor are over 70,000 acres/28,300 hectares of water surface and 430 mi/ 692 km of lake, river and estuarial shoreline.

OVERVIEW

The geological evolution of this part of North America is clearly demonstrated in sedimentary and igneous rock formations along the Waterway. Fossil deposits and rock overlays in the Oak Bay area reveal 450 million years of geological history.

The area's surface geology has been strongly influenced by the last ice age which carved the lakes, valleys and glacial flood plains. As a result the New Brunswick portion of the upper watershed contains the greatest concentration of lakes in the province. Present day changes are caused by the remarkable 25 ft/ 7½ m tides in the estuary and by the freshwater processes that continue to mold the region's lakes, river corridor and wetlands.

The Waterway's living resources are equally notable. The St. Croix is the primary breeding ground and an important wintering area for Maine and New Brunswick's bald eagle population. It is also a major breeding site for the osprey, an endangered species in New Brunswick. Loons and Canada geese nest in select Waterway areas. Adjacent woodlands provide prime deer and moose habitat and, on the New Brunswick side, habitat for the endangered and elusive eastern panther.

The variety of available habitats has resulted in a rich diversity of local flora and birds, with many species appearing at the northern or southern limit of their range. New Brunswick has identified five potential ecological reserve sites between St. Stephen and St. Croix. One of these, the Grassy Islands, has been designated as a Natural Area Site under the worldwide International Biological Program and is a candidate for protection under the provincial Ecological Reserves Act.

The majority of the watershed is wooded and managed in tree production, ensuring extensive forest habitat for wildlife. Isolated old-growth stands remain along areas of the waterfront, with examples of very large red and white pine, hemlock and cedar.

The fresh waters support regionally-important populations of landlocked salmon, lake trout and smallmouth bass, including an ecologically-significant river population of the latter. The St. Croix was one of the East Coast's more important Atlantic salmon rivers until dams ended the runs in the 1860s. Due to cooperative efforts by governments and industry to provide fish passage and stocking, it now supports a rebuilding Atlantic salmon run.

The Waterway's visual resources are one of its most significant assets. The rugged shorelands, crystal clear lake waters, variety of remote river settings, dramatic tides and red coastal beaches all contribute to a diversity of landscape features within a compact area that is unique within New Brunswick and exceptional in Maine.

The upper river (Vanceboro/St. Croix to Grand Falls Flowage) has been identified as one of the ten most undeveloped river sections in Maine and is recognized as one of the state's Outstanding Rivers. Maine has also given East Grand Lake outstanding, or "gem", status. Spednic is valued as a near-wilderness lake with exceptional natural and recreational assets.

In Canada, the St. Croix's designation as the country's twelfth Canadian Heritage River was based on the system's outstanding natural resources as well as other heritage values.

FUTURE DIRECTIONS

The Waterway's diverse species and environmental settings contribute significantly to the natural heritage of the region. Some resources, like the 25 ft/7½ m tides and ancient rock formations, are highly visible and enduring. Others, like eagle habitat and scenic views, need special management if they are to remain.

The development of a heritage resource inventory would create a basis for resource conservation and interpretation within the Waterway. Further action will be required to protect rare and fragile resources, to preserve natural areas and to maintain scenic quality.

Scenic Character

The scenic landscapes of the St. Croix are among its most outstanding features. While the proposed shoreland greenway (Policy #3) will help to maintain natural waterfront scenery, additional attention is needed to identify and maintain notable views which rise beyond the 250 ft/75 m Waterway corridor.

Means that can be considered to retain important visual features include the clustering or screening of residential development; use of aesthetic guidelines in timber harvesting and industrial development; tax incentives; and private conservation initiatives. Conservation easements have come into increasing use in Maine, other US states and Ontario but as yet have limited application in New Brunswick law. These could be studied by the Province for early application on the St. Croix.

In Maine, private land trusts and the State's \$35 million Land for Maine's Future program have supported land conservation efforts.

Conservation legislation and networks are still evolving in New Brunswick but in time can play an important role in cooperative programs.

Resource Protection

Many St. Croix species and habitats have significance to the Waterway's heritage because of their ecological, economic or interpretive values.

Eagles, rare plants, old growth tree stands, productive wetlands and potential ecological reserves need special attention because of their rare or fragile nature. Fish and game species need to be managed for sustainable harvest in light of their contribution to the Waterway's lifestyle and economy.

The interpretation of the Waterway's natural heritage can expand human appreciation of the natural world and give strong support for its conservation. Additionally, features considered commonplace by local residents — the tides, ospreys and loons, lake eskers and coastal mud flats — hold a fascination for visitors that can heighten awareness of the St. Croix's special heritage. Natural interpretation should be an integral part of the International Heritage Waterway program but should also be supported by projects at the local and community level.

A Special Natural Area

The greatest concentration of the St. Croix's fragile and outstanding resources lie within the Spednic Lake/Upper River section of the Waterway. This area is the largest undeveloped expanse of international waterway east of the boundary waters of Minnesota and Ontario. It contains for the Waterway:

- The prime concentration of rare plant habitats, old growth tree stands, potential ecological reserves and archaeological sites.
- A major share of the critical habitat for bald eagle, loon, deer, moose, smallmouth bass and Atlantic salmon.
- Exceptional undeveloped shorelands, geological features and lake vistas.
- The Waterway's most diverse back-country canoeing and angling waters.

Area residents, Waterway users and many resource managers feel strongly that the undeveloped nature and fragile resources of this special area must be protected and sensitively managed. Nearly all requested strict regulation of development, damming and timber harvesting to protect the wilderness-like nature and shoreland ecology of the area. Equally supported were recreational management initiatives to control public access and protect traditional recreational pursuits.

Many means of achieving these ends were suggested, including the creation of an international park or nature reserve. Most in keeping with the Waterway's cooperative, multiple-use goals was the creation of a **Waterway Conservation Area** wherein future development would be set back and screened from the shore and cooperative agreements would be developed with private landowners for recreational management.

Some steps in this direction have already been taken. In 1983, Maine restricted development within 250 ft/76 m of the upper river and placed conditions on new dam construction. In 1986, New Brunswick entered into a 10-year agreement with the Georgia-Pacific Corporation for public recreation management on that company's extensive New Brunswick shorelands. These actions form the basis for a more complete management program that can make this area a primary focus for the heritage waterway concept and protect long-term opportunities for wilderness recreation and study.

NATURAL HERITAGE POLICIES

Policy #7: *Preserve the visual landscape*

New Brunswick, Maine and Waterway residents will seek to conserve the visual character and scenic assets of the Waterway, which are an important part of its natural heritage.

Recommended actions:

7.1 Inventory visual resources

- New Brunswick, Maine and the Waterway communities should include a survey of significant visual landscapes and scenic places in the Waterway's heritage resources inventory and should identify the visual resources of greatest importance.

7.2 Conserve visual character and scenic places

- Maine, New Brunswick and local interests should, as warranted, support or take action to protect highly-valued views and places.
- Conservation interests and government agencies should inform communities and landowners about available options for visual and land conservation.
- Governments should review the potential for public incentives for land conservation within the Waterway.

Policy #8: *Conserve and interpret the Waterway's natural heritage*

Maine and New Brunswick will conserve significant components of the Waterway's natural heritage and encourage their continuing interpretation and study.

Recommended actions:

8.1 Protect rare and significant species and habitats

- New Brunswick and Maine should cooperate with local interests in expanding the natural resources component of the Waterway's heritage resource inventory.
- Maine and New Brunswick should support appropriate action to protect or conserve significant sites or species. This should include New Brunswick's designation of the Grassy Islands as an ecological reserve.
- Maine and New Brunswick should cooperatively assess long-term bald eagle habitat requirements within the Waterway and act bilaterally to meet these needs.
- New Brunswick and Maine should continue to manage economically-significant species on a sustainable basis, cooperating on research and harvest management programs for species moving between jurisdictions.

8.2 Expand natural heritage interpretation

- Maine and New Brunswick should include information on significant natural features in the International Heritage Waterway interpretive materials. They should also explore means to develop interpretive signage or facilities at appropriate sites along the Waterway as part of the International Heritage Waterway program.
- Communities and local organizations should seek out means to better interpret the special natural features of their areas for the benefit of residents and visitors.
- Educational and research interests should more actively use the Waterway area for natural study and assessment programs.

Policy #9: Establish a Conservation Area protecting the resources of the upper river and Spednic Lake

New Brunswick and Maine will develop a cooperative land use and resource management program for Spednic Lake and the upper river that will give long-term protection to this area's outstanding natural and traditional recreational resources.

Recommended actions:

9.1 Protect the natural character of the waters, shorelands and major views

- New Brunswick, Maine and local communities should act collectively to establish a resource protection zone restricting future development and high-impact uses within 250 ft/75 m of the shores of the upper river and 500 ft/150 m of the shores of the lake, with limited exceptions.
- Maine and New Brunswick should minimize future pollution and prohibit further impoundment of these waters.
- New Brunswick and Maine should act to preserve the character of the views of surrounding areas.

9.2 Protect and interpret heritage resources

- Maine and New Brunswick should plan long-term for the conservation and interpretation of natural and archaeological resources within this area.

9.3 Manage use to preserve environmental and recreational quality

- New Brunswick and Maine should prepare a recreational management plan for the area that will maintain and enhance traditional types of recreation, provide a high-quality back-country experience, manage access and establish guidelines for use in order to accommodate increased area recreation while protecting the Waterway environment.
- Maine and New Brunswick should enter into arrangements with landowners in this area for the management of public recreation within 500 ft/150 m of the lake and 250 ft/75 m of the upper river in order to carry out the recreational management plan.

RECREATIONAL HERITAGE

The Waterway offers a variety of recreational opportunities and natural settings exceptional for such a concise area. It lies within a day's drive of 32 million people in New England and Eastern Canada, and is passed through or visited annually by over 1½ million travellers and vacationers, most of whom enjoy recreational activities.

The potential to tap these and wider specialized markets underlines recreation's long-term economic value to the Waterway area. Its cultural value lies in its consciously maintained traditional, quality-oriented character that set it apart from other locations and complement its natural heritage.

OVERVIEW

In the freshwater portion of the Waterway, recreation follows wood products as the most important industry. It annually generates more than one million user-days and according to one study contributes over \$38 million (US) to the Maine and New Brunswick economies, \$10 million of which remains in the local area. Significantly, 95% of this activity is by users who travel to, or own cottages on, the Waterway specifically for outdoor recreation, most often for fishing, boating or canoeing.

In the estuary, recreation has a different more land-based focus. Sightseeing and interpretive programs are an attraction for tourists. There is no current measure of the economic impact of this recreation but it is believed to be considerable.

Outdoor recreation is served by a small core of developed facilities and services and a network of informal accesses. These are often inadequate for current demands and will need to be expanded if greater recreational usage, and attendant economic benefits, are to be realized.

Nearly 63% of all visits to the lakes and river are primarily for angling, most often for smallmouth bass or landlocked salmon. Until management conflicts contributed to its decline and closure in the 1980s, Spednic Lake's world-renowned bass fishery was one of the Waterway's primary recreational attractions. In other lake and river areas bass are still a mainstay summer fishery.

Landlocked salmon support a \$1 million annual fishery on East Grand Lake and additional harvest on Spednic Lake and the lake outflows. Atlantic salmon offer a small river fishery with long-term potential. Other cold and warm-water species contribute to an often under-utilized fishery mix. Winter flounder, once the estuary's prime sport fish, have inexplicably declined.

Canoeing is the fastest-growing and most publicized Waterway sport. Good summer flows, safe paddling and a remote setting have led to the upper river's recognition as one of the Northeast's best back-country canoe excursions. A 5-month season for novice and intermediate canoeists and shoulder seasons for white water enthusiasts draw users from a wide area. The 33 mi/53 km Vanceboro-Grand Falls section is one of the most heavily used canoe runs in Maine and New Brunswick.

Other sections of the Waterway offer significant but lesser known canoeing opportunities. Tripping on the lakes and travelling the full waterway are gaining popularity. Improvements in water quality on the the lower river have generated new interest in canoe recreation there.

The estuary supports two yacht clubs and is popular with coastal sailors. A New England and Eastern Canada yachting fleet of over 48,000 craft lie within vacationing distance.

Along the shorelands, sightseeing, swimming, picnicking and camping are primary resident and visitor activities. The Waterway's campgrounds, including three provincial parks, offer over 300 serviced and unserviced sites and can experience high use in the summer months. Hunting has supplanted angling as the mainstay of New Brunswick's St. Croix outfitters since the collapse of the Spednic bass fishery. While most of this takes place inland, duck hunting is a traditional shoreland sport.

The Waterway has an excellent potential for a wide range of nature enjoyment and interpretation activities, but there has been little development of these. Interpretive programs focus on St. Andrews in New Brunswick and Moosehorn National Wildlife Refuge in Maine. Elsewhere there are informal opportunities for hiking, biking, cross country skiing, birdwatching, photography and nature study at locations only awaiting discovery by the adventurous.

Ice fishing and snowmobiling are the predominant winter sports. About 13% of all angling on East Grand Lake and a portion of that on Spednic Lake takes place in the winter. A state-wide snowmobiling program supports the activities of four clubs on the Maine side of the Waterway.

FUTURE DIRECTIONS

Traditional Values

Residents have stressed that future recreational management should retain the St. Croix's traditional recreational quality and natural setting while providing a range of sustainable recreation opportunities.

This direction offers the highest cultural and economic benefits to the Waterway.

There is vocal concern that the traditional recreation base has no protection from accelerated development or alternate use of the Waterway's resources. Anglers worry about incremental loss of traditional fisheries to other fisheries and water priorities. Canoeists fear erosion of the upper river's recreational quality through unmanaged use. Residents and outfitters are concerned that "popularization" of the St. Croix will result in user management problems that will take away from their quality of life. Residents notice the decline in traditional access. These and other concerns need to be addressed through cooperative, integrated management.

Access

In the past, traditional access across private roads and shorelands met most recreational needs. However, changing landowner policies and land uses dictate that future use will increasingly depend upon public rights-of-way. On the Maine shore less than 1% of the St. Croix waterfront is publicly owned and there is no secure access to the prime canoe waters. On the New Brunswick side 20% of the shore is publicly owned, two-thirds of this in narrow Crown reserves along the lakes and river.

The most urgent need is for improvements to existing access on the upper river, particularly at heavy-use areas such as Vanceboro, Little Falls, Loon Bay and Grand Falls, and for a campsite network capable of handling the large number of overnight users. At the same time long-term protection of Spednic Lake and the upper river's back-country reputation will require cooperation by Maine and New Brunswick to manage public access and recreation along these waters.

Elsewhere on the Waterway, a shortage of developed access has inhibited a desirable increase in public recreation. This is particularly true on the lower river, the estuary and the New Brunswick side of East Grand Lake. These waters have the capacity for additional water recreation, if they can be accessed.

The need for additional shorefront areas for swimming, picnicking, walking and viewing is beginning to be addressed by some communities and will gain importance in the next decade. To better realize the potential, these access programs should be linked within a Waterway-wide plan that can address inter-community needs the length of the St. Croix.

Information

The lack of information on recreational opportunities and on the dual regulations applicable to boundary waters hinders recreational use and development. A Waterway map produced by New Brunswick is presently the only available international literature.

A program offering consolidated international information is needed to support the traditional recreational uses of the Waterway and encourage participation in new activities compatible with the heritage concept. Care must be taken that this does not promote over-use of heavily-trafficked canoeing and fishing areas, a particular concern of present users and residents.

Integrated Planning

One of the St. Croix's attractions is its ability to support a wide range of high quality, traditional recreational activities. Meeting future demands for these will need to incorporate integrated planning that can balance demands for recreation and fish production with each other and with water requirements for hydropower and minimum river flows. Without integrated planning it is likely that decisions in the interest of some uses will not take into account impacts on other uses. For example, lake drawdowns prompted by biologists for lake trout spawning affect fall boaters and weekend water releases requested by canoeists upset river bass fishing.

Conflicts between growing recreational uses may be anticipated, particularly between low-impact and motorized recreation, anglers and canoeists, and lure and fly fishermen. By planning use to minimize these conflicts, the St. Croix can reach its recreational potential while maintaining its quality and character.

Sport Fishing

The waters of the St. Croix are capable of supporting additional fisheries and expanding the recreational economy of the region, with some management planning.

The Waterway's existing prime sport fisheries for smallmouth bass and landlocked salmon are a local priority. Integrated international management plans are needed to ensure sustained returns from these resources. The vulnerability of fish stocks without such management was demonstrated by the decline in Spednic Lake's bass fishery in the mid 1980s, attributed in part to the introduction of a competing species.

Fisheries for the lesser-known sport fish should be encouraged to increase angling opportunities from present resources, as an adjunct or alternate to the prime stocks. The flounder stocks of the estuary should be evaluated for a renewed sport fishery.

There is excellent potential for two renewed high-profile fisheries: Spednic Lake bass and Atlantic salmon. The Spednic bass fishery could result in up to 25,000 angler-days and \$1 million (Cdn) for the area. An Atlantic salmon restoration program now underway could, if fully realized, re-establish a run of 2,000–5,000 salmon for sport fishing.

In developing international management it will be important to retain the quality of experience and the traditional character which trademark the St. Croix. In a 1986 recreational survey, 98% of the non-resident sportsmen indicated a willingness to return to the St. Croix because of the high quality of their experience, not their catch. Catch-and-release fishing is encouraged.

Canoeing and Other Water Sports

The growing popularity of canoeing in 'remote' areas close to population centers presents a challenge to the St. Croix. Users, outfitters and residents are most interested in keeping the St. Croix experience as it is: a delightful, mildly-challenging, back-country opportunity for canoe-campers, families and small groups. Problems with high use and limited facilities on the upper river show this experience will not survive without management.

There is a particular need to plan for long-term access and canoe-camping facilities and to anticipate future user controls, if necessary, so that management can be implemented when needed, not after serious problems arise. More diversified canoeing excursions on the lower St. Croix and on the lakes must be encouraged to increase recreational use without exceeding the campsite capacities of the upper river.

Outfitters and local residents recommend a more even water flow, weekday and weekend, to encourage better weekly distribution of river use. Users recommend the development of services to support canoe recreation on the St. Croix, particularly canoe rentals, shuttling and instruction, all of which offer area business opportunities.

Interest in boating and swimming within the Waterway will continue to increase and can be sustained at much higher levels, with appropriate access and facilities. There are particular opportunities to increase resident and non-resident boating from the New Brunswick shore on East Grand Lake and from both shores on the lower river and the estuary. A New Brunswick boating study identified St. Andrews as one of the province's top five harbors for future use by non-resident boaters.

The Waterway can support new low-impact water recreation compatible with its outdoor heritage. Scuba diving, kayaking and nature oriented boat tours have been suggested. These and other opportunities should be explored as means of expanding the Waterway's recreation base.

Land-Based Recreation

Far more people enjoy the St. Croix from the land than from the water. There are exceptional opportunities to expand this use, with minimal impact.

Recreational demand studies by New Brunswick for the Waterway and by Maine for the state have noted the need for additional camping, picnicking, day hiking, biking and interpretive facilities within the Waterway area. Noted locally was the need for additional places for water viewing and beach walking.

Attention should also be given to developing facilities and programs that could satisfy or complement the vacation plans for potential visitors. The development of a list of these for community and entrepreneurial action would be an asset to recreational and tourism planning.

One need was clear: Maine and New Brunswick can benefit from focal points for services and programs for the Spednic Lake/Upper River area. The preferred sites for these would be at Spednic Provincial Park in New Brunswick and at Vanceboro in Maine. The creation of these centers would have a significant impact on the managed development of the Spednic Lake/Upper River recreational base.

RECREATIONAL HERITAGE POLICIES

Policy #10: Develop appropriate long-term public land and water access

Maine and New Brunswick will act to ensure adequate public access sites and facilities are developed to meet the long-term recreational needs of Waterway residents and visitors, including those with special access needs.

Recommended actions:

10.1 Develop a long-term access plan

- Maine and New Brunswick should cooperate in the development of a long-term public land and water access plan for the Waterway. This plan should draw upon local recommendations and available findings to guide long-term public/private action to:
 - secure long-term road access to key water recreation and launch sites
 - develop, and sign, appropriate boat/canoe launch facilities
 - secure and develop shorelands and water viewing locations to meet future public recreation and sightseeing needs including parks, trails, lookouts and beach areas
 - limit future road access to Spednic Lake and the upper river in keeping with objectives to maintain back-country character
 - preserve adequate navigable areas and anchorages for future boating in the estuary
- New Brunswick and Maine should coordinate and support cooperative action by governments, communities, interest groups and landowners to implement this plan in a timely manner.

10.2 Maintain an inventory of public access lands within the Waterway corridor

- New Brunswick and Maine should maintain a central inventory of public access areas and other public lands available for access within the Waterway, as a management and planning tool.

Policy #11: Develop a coordinated recreational information program

New Brunswick and Maine will coordinate recreational information services for the Waterway in order to adequately direct and inform Waterway users.

Recommended actions:

11.1 Develop transboundary recreational information

- Governmental or private interests should develop a map of the full International Waterway for all recreational interests, for Maine and New Brunswick circulation.
- Maine and New Brunswick should prepare a simple summary of regulations, local information and border policies for fishermen, canoeists and boaters, for distribution near the Waterway. Local tourism operators and government personnel should become more familiar with this information.

11.2 Develop uniform recreational signage

- Maine and New Brunswick should cooperate in developing simple and uniform recreational signage consistent with the International Heritage Waterway identity to mark primary access points and river sites, warn boaters of major navigation/safety hazards, and encourage wise use.

11.3 Use information to better distribute and manage recreation

- New Brunswick and Maine should use informational means to better distribute recreational use within the Waterway by advising potential users of the range of recreational locations and opportunities available.
- Maine and New Brunswick should not encourage additional use of heavily-utilized canoeing and fishing locations by promoting these outside the Waterway area.

Policy #12: Integrate recreational planning to minimize conflicts

New Brunswick and Maine will better integrate the planning of different forms of St. Croix recreation with each other and with other Waterway uses in order to minimize conflicts and better allocate available resources for increased, high quality recreation.

Recommended actions:

12.1 Integrate recreational water needs

- Maine and New Brunswick should identify, prioritize and integrate the water needs of all water recreation uses for incorporation into water resource management plans.

12.2 Identify and address potential conflicts

- New Brunswick and Maine should include in their Waterway recreational planning a consideration of means to avoid or reduce conflicts, especially between traditional and new uses.

Policy #13: *Manage high quality sport fishing as a primary recreational and economic asset*

Maine, New Brunswick and other government resource agencies, recognizing the recreational and economic importance of high quality sport fisheries to the Waterway, will cooperatively act to develop and manage these on an integrated basis, for sustainable benefits.

Recommended actions:

13.1 Manage existing fisheries for a high quality fishing experience and sustainable yields

- Maine, New Brunswick and Canada should develop cooperative management objectives for present recreational fishery resources in the lake and river areas, with a priority to maintaining sustainable yields and high quality fishing for smallmouth bass and landlocked salmon. Cooperative management plans for these and other species should be developed when warranted.
- New Brunswick and Maine should encourage further development of angling for the Waterway's lesser-known sport fish, within sustainable limits.
- Maine and New Brunswick and federal agencies should study the winter flounder stock to determine the potential for future increased angling.

13.2 Develop high-quality, low-impact fisheries for smallmouth bass in Spednic Lake and Atlantic salmon in the river, as long term opportunities

- Maine, New Brunswick and Canada should cooperate to:
 - Identify and conserve bass and salmon habitat required to meet long-term management goals
 - Develop a Spednic Lake bass restoration plan emphasizing a high-quality, low-quota fishery and take early action toward its implementation
 - Incorporate into the Atlantic salmon management plan objectives to provide appropriate stocking, develop an upriver native population and plan future recreational management.

13.3 Coordinate regulation, enforcement and on-site licensing

- Maine, New Brunswick and Canada should establish uniform seasons, catch limits and fishing regulations for St. Croix recreational fisheries.
- New Brunswick and Maine should better utilize joint or coordinated enforcement when possible to obtain the fullest benefit from available enforcement levels.
- Maine and New Brunswick should improve the availability of fishing information and licenses near key Waterway access points. When feasible they should combine or coordinate the issuance of licenses at these sites.

13.4 Involve the public in fisheries conservation and enhancement

- Fishing groups and local conservation interests should cooperate with fisheries agencies in promoting catch and release fishing and in assisting with stock assessments, habitat improvement and fish stocking.

Policy #14: Develop and maintain quality opportunities for back-country canoe tripping and other water recreation

New Brunswick and Maine will expand opportunities for high quality water recreation on the St. Croix, compatible with the Waterway's heritage character and environmental capabilities.

Recommended actions:

14.1 Monitor, and as warranted manage, canoe recreation on Spednic Lake and the upper river to preserve recreational and environmental quality

- Maine and New Brunswick should give high priority to assessing the current level and impacts of canoe recreation on the Spednic Lake/Upper River area, to establish a baseline for management decision-making.
- New Brunswick and Maine should also assess options for future management and prepare a plan for the proposed Conservation Area, giving preference to joint management initiatives that include local involvement. Thresholds or timetables for management action should be established.

14.2 Manage water releases to provide a more uniform and predictable river canoeing experience

- Georgia-Pacific Corporation should, as a policy, seek to operate the Vanceboro dam in the summer months in a manner that will:
 - provide more uniform flows throughout the week
 - prevent rapid changes in water level and velocity in the upper river by adopting compatible daily or hourly limits on the rate of water flow increase and decrease.
- The Corporation should establish a means of advising users of pre-planned major flow changes.

14.3 Expand canoeing and boating facilities and services

- Maine and New Brunswick should give immediate priority to the upgrading and development of appropriate campsites and access facilities on the river and lakes, consistent with use and environmental objectives. On a longer term, additional water-access camping, picnicking and launching sites should be developed where appropriate as part of the Waterway access plan.

- New Brunswick and Maine should encourage the private or public/private development of:
 - canoeist services (including shuttle, rentals and instruction) on the lakes and river
 - marina services (including gas, pump-out and expanded berthage) in the estuary at St. Andrews
 - boating services (including gas and waste disposal) on the Canadian shore of East Grand Lake.

14.4 Encourage additional low-impact recreation

- Maine and New Brunswick should encourage the private development of additional water recreation compatible with the Waterway’s natural character and setting. Kayaking, scuba diving and nature appreciation by boat have been suggested as some appropriate activities.

Policy #15: Expand land-based recreational opportunities

New Brunswick and Maine will encourage and support the development of additional facilities and programs for outdoor recreation along the Waterway’s shorelands, in conjunction with the Waterway access plan.

Recommended actions:

15.1 Identify and develop outdoor recreation opportunities

- Maine, New Brunswick, local municipalities and recreational interests should cooperatively catalog primary recreational development opportunities in and near the Waterway corridor, consistent with the Waterway’s heritage concept. These should include opportunities for residents and non-residents to pursue outdoor skill development, nature viewing, back-country or coastal touring and casual activities compatible with vacation interests.
- New Brunswick and Maine should encourage the development of priority opportunities identified through this review.
- Maine and New Brunswick should pursue the public or private development of central facilities for recreational services and programs serving the Spednic/upper river area, in New Brunswick at or near Spednic Provincial Park and in Maine at Vanceboro.

15.2 Link with future trail and touring networks

- New Brunswick and the Georgia-Pacific Corporation should review the potential for a provincial snowmobile trail pilot project in the East Grand/Spednic Lake forestlands, to interconnect with Maine’s trail network.
- Maine and New Brunswick should support the inter-connection of future regional hiking, biking and other touring networks with the Waterway area.

ECONOMIC DEVELOPMENT

Through a combination of tradition and necessity the economy of the St. Croix region is focused upon the Waterway. For more than 200 years sectors dependent upon timber, transportation and tourism have dominated the economy and are expected to continue to do so.

Manufacturing closures, out-migration of younger workers and the seasonality of many existing jobs have caused high unemployment in the Waterway region in recent decades. In response, the Maine and Canadian governments began economic recovery programs in the lower watershed in 1987-88 which contributed to an improvement in the St. Croix's economic outlook. However, this has been tempered by a recession and declining pulp and paper markets in the early 1990s.

The Maine communities continue to be heavily dependent upon the Georgia-Pacific Corporation's forest products mills, which drive the Maine-side economy. Commercial and tourism-related development are found in Calais and Danforth. Woodland still remains an active mill town but smaller inland communities have continued to face declining woods work and reduced employment opportunities.

On the New Brunswick side, there has been steady, although recently slowed, economic improvement over the last eight years. The manufacturing and transportation sectors have expanded in Bayside, St. Stephen and McAdam. Tourism, commercial/retail and construction sectors have grown in the St. Andrews-St. Stephen corridor.

OVERVIEW

The following are the area's major economic sectors, roughly in order of total employment and/or annual value.

Forest resources are the predominant force in land use and the economy in the Waterway area. Over 70% of the watershed is owned by the Georgia-Pacific Corporation for commercial timber production supplying its three mills at Woodland. The labor force of the three G-P mills accounts directly for one in five jobs in the Maine portion of the Waterway, including 90% of the area's manufacturing employment and 95% of the value of product. The company also purchases high volumes of wood from, and directly employs, New Brunswick residents. On the New Brunswick side, three major wood products firms and 56 smaller businesses employ 600 people.

Tourism is a strong and all-pervasive factor in the Waterway economy and is so often linked with recreation that the two are difficult to separate. On the upper Waterway, recreation-based activity generates over \$38 million (US) annually and is the only long-term economic growth sector identified for that area. In the estuary, a significant tourism industry is dependent upon the region's outstanding scenic and historic resources linked with opportunities for shopping and international experiences.

Recent studies suggest tourism revenues of \$40 million for Washington County and \$33½ million for Charlotte County, a significant share of which remains within the Waterway area. Estuarial tourism focuses on the resort community of St. Andrews which has been a primary tourist destination for a full century.

Government, health and education services employ 1600–1800 people in the Waterway area. In New Brunswick much of this is in St. Stephen, the center of government services for Charlotte County. Public schools and medical and senior care services provide significant employment throughout the Waterway.

Retail and commercial businesses in St. Stephen and Calais serve year-round local and travel markets. Calais benefits considerably from New Brunswickers crossing the border to shop, however businesses on both sides share the benefits of tourism traffic. St. Andrews is a third retail center, sustained by steady local demand and a long tourist season, while Woodland, Danforth and McAdam have smaller business communities. Improvement in the area's overall economy has encouraged business growth on both sides of the Waterway. Retail sales in the greater Calais area (Robbinston to Brookton) increased 51% from 1986 to 1989 while for the same period in Charlotte County (primarily St. Stephen/St. Andrews) they rose 27%.

Other manufacturing is found on the New Brunswick shore, all related in some way to the Waterway setting. The largest and oldest of the local firms is Ganong Bros., a candy manufacturer in St. Stephen. Other New Brunswick firms have been established to manufacture gypsum board, produce fish feed and meet small manufacturing needs.

Until a downturn in world markets caused its closure in May 1990, a major tuna processing plant operated at Bayside, using the adjacent port to receive raw product. On the Maine shore there has been no net manufacturing growth since the establishment of Georgia-Pacific's OSB mill in 1980.

Transportation is an important and historic part of the St. Croix economy. Shipping is being revived through the expansion of a regional port at Bayside. In past this port has served up to 103 ships per year. The St. Stephen/Calais and Milltown crossings handle one third of all Maine/New Brunswick border traffic (a total of 4 million vehicles in 1992) and crossings at Vanceboro/St. Croix, Forest City and Orient/Fosterville serve additional traffic. The three lowermost crossings, offering direct routes between Bangor and Saint John/Fredericton, have had an 81% increase in commercial use in the last eight years.

Five Maine and nine New Brunswick trucking firms and a large number of independent truckers work out of the St. Croix area to serve regional and wood transportation interests. Six brokerage firms operate border offices.

Rail transportation has largely been replaced by road networks but still maintains a trans-continental link through McAdam, now in danger of abandonment. An unusual rail link serving G-P's mills crosses the border four times before connecting south to US suppliers. A recently abandoned spur is still available to serve the Bayside industrial park and port.

Construction businesses, buoyed by increased residential development, major road projects and industrial expansion, employ approximately 1200 area residents.

Fisheries research has been an important part of the estuarial economy since 1908 when Canada's first federal research station was established at St. Andrews.

Agriculture has declined in recent decades and is now limited to blueberries, dairy farming and small scale production of livestock, poultry, hay, market and specialty crops.

Mining activity is limited to sand and gravel extraction, most significantly at Bayside and Oak Bay, but will be of greater importance if New Brunswick begins to extract 90–100 million MT of granite from its industrial park at Bayside.

Commercial fisheries and aquaculture are a predominant factor in the region's coastal economy but have minor impact within the Waterway. The estuary supports limited scallop, lobster, herring and clam harvests that make up a small percentage of the coastal catch.

Power production occurs at the three lowermost dams, serving the G-P mills and the New Brunswick power grid.

FUTURE DIRECTIONS

The St. Croix economy is an integral part of its heritage. From regional prominence in the 1800s through difficult times in this century, enterprises linked to the Waterway's natural and locational assets have sustained its people and way of life. Economic growth and stability are certainly needed in the Waterway area. However, residents have made it clear that this must not come at the cost of important natural and lifestyle values.

Fortunately the area's most significant opportunities lie in traditional directions: forest resources, tourism and transportation. It will be important that economic development and the Waterway complement each other, supporting a balance of uses that offer long-term public benefits.

Preserving Heritage Assets

Earlier recommendations about water quality, a shoreland greenway, access and scenic views build a foundation for preserving the Waterway's character while allowing communities to pursue their own interests. These do not, however, address the need for forethought as to where major development should occur along the Waterway and how this will 'fit in' with the landscape and surrounding uses.

Maine is responding to this need through growth management planning for waterfronts and for whole communities. Shoreland zoning and comprehensive community plans give priority for shorefront use to natural areas, public access and water-dependent uses (a bridge or marina for example). They also require that large developments are sited and developed to not adversely affect existing uses, scenic character or natural resources.

Both sides of the Waterway would benefit from "heritage compatible" development planning that acts to:

- 1) Maintain the visual image of rural open space by avoiding cluttered 'strip development' along the shore and frequent large development within direct view.

- 2) Maintain options for future water-dependent uses, particularly in the estuary, so that the area may rebuild its marine heritage, if it wishes, through appropriately-sited enterprises.
- 3) Retain space for predictable needs such as future municipal infrastructure, public recreation or transborder corridors.

The incorporation of these interests into community plans provides better predictability for planners, developers and landowners — to the benefit of all.

New Brunswick's Champlain Industrial Park at Bayside offers a unique opportunity. Its development is a necessary part of the area's long-term economic strategy and yet its high profile location presents a challenge to scenic preservation and the support of water-dependent and public use opportunities. It is an ideal site for the Province to demonstrate techniques for "heritage compatible" sustainable development.

An International Economy

There are opportunities to improve the economy of the Waterway region through the international development of natural or locational assets. The most significant of these relate to wood products manufacture, tourism, marine shipping and border-location enterprises. Other opportunities arise in community development, fisheries and electrical power generation.

Wood Products

Wood harvesting and processing comprise the Waterway area's largest and most stable industry. Over 20% of the labor force is directly employed in harvesting, transporting or processing wood, with far-reaching spin-offs to the area's overall economy.

The area's mixed hardwood/softwood forest suits diversified wood products manufacturing and this has developed locally. The pulp and paper mill and smaller long-term enterprises have been joined in the last decade by new businesses that have created over 300 local jobs in the production of cedar products, panelling and veneer. These are positioned for further expansion to meet market demand.

Future industry performance will depend upon its ability to compete in global markets in a tight economy, to develop new markets and new value-added products and to maintain an appropriate, sustainable wood supply.

Tourism

Tourism offers the area its greatest opportunity for compatible, sustainable economic growth. The Waterway's natural, recreational and cultural assets, its international status and its strategic travel-corridor location give it a distinct advantage in attracting visitors to Maine's "Vacationland" and New Brunswick's "Picture Province".

While in the past much of the total potential for tourism has been under-valued, communities now see *appropriate* tourism as a means to retain a way of life while creating new employment. To encourage this type of development, two local (and international) organizations formed in the early 1990s: the Quoddy Bay & Fundy Isles Tourism Development Corp. (QBFI), serving the estuary and seaward, and the International Lakeland Trail Committee, for the travel corridor crossing the Waterway at Vanceboro/St. Croix. These may provide a logical structure and means to develop the Waterway's tourism sector and should be supported in doing so.

Past tourism development has been hindered by a lack of focus and a shortage of local capital and expertise. Focus can be provided by the International Heritage Waterway theme, with an initial emphasis on local strengths (history and scenery at the coast and recreation inland) with sufficient diversification into other heritage fields to give variety.

Encouraging the development of quality activities or facilities will happen best by example. A small number of “generator” projects could be developed by cooperative public/private means in key Waterway areas to give hands-on development experience and create a focal point for initial tourist activity. These projects should be capable of generating community support for further local action.

The friendliness of the Waterway’s residents must be supplemented with training in hospitality and business skills if the area is to maintain viable tourism operations. Improvements will also be needed to the local infrastructure – the accommodations, services and signage that support tourist activities. These are fairly well developed in the estuary but inland tourist amenities and information, overnight accommodations (fishing lodges excepted), recreation services and signage are in scarce supply.

Marine Shipping

International shipping through the regional port at Bayside is an emerging economic factor. In re-establishing the Waterway’s marine tradition, the port is creating new import/export opportunities for local businesses and encouraging complementary economic development. These can be linked on an international scale with port development at Eastport, Maine, just outside the Waterway boundary.

An expansion of port facilities in 1988–89 doubled the size of the wharf and increased its handling capacity to roughly 320 ships annually, with up to 30% of that level now utilized. The construction of a cold storage facility in 1990 has enabled the port to expand its options by holding, consolidating and forward-shipping perishable cargoes. The port is also developing new local and regional opportunities in wood, paper, seafood and fish food export and potentially in the export of Bayside granite. Its location within a provincial industrial park encourages the co-development of port-oriented manufacturing, transportation and service industries concurrent with the expansion of shipping.

Local communities support this expansion as a significant addition to the economy but are concerned that the absence of long-term development policies might lead to uses inappropriate to the area.

Border Opportunities and Infrastructure

The Waterway’s location on the principal Atlantic Coast travel corridor offers unique opportunities, one of which is direct tourism. Others arise from the potential to serve the people, vehicles and goods moving between the two countries.

To meet the long-term needs of commercial and tourist traffic, a third crossing is needed in St. Stephen/Calais. Currently bridge replacement and road upgrading is addressing standing needs for the Vanceboro/St. Croix corridor.

St. Stephen/Calais and other communities could better benefit from their border traffic by developing a “gateway” concept for travellers and commerce. A gateway zone at the entry into each country could offer an attractive setting, welcoming signage and facilities to encourage travellers to stop. As a long-term objective this could have an important impact on local revenues and offer wider benefits to New Brunswick and Maine, the United States and Canada, from the positive image presented at their doorstep.

In the current decade, the Canada/US Free Trade Agreement is merging the manufacturing and service sectors of the two nations, increasing the flow of goods and the opportunity for border-location businesses to better serve both sides. Calais and St. Stephen, and to a lesser extent Vanceboro and McAdam, should look to new ways to expand or attract transportation, service and manufacturing businesses to benefit from this.

The Vanceboro/St. Croix crossing, a good connection between Fredericton and Bangor, would be enhanced by a new bridge, now planned and continued Maine road improvements to meet long-term needs for commercial and tourist travel.

Border crossing and transborder economic development in the East Grand Lake area is hindered by the reduced operating hours of the border stations at Forest City and at Orient/Fosterville. Longer hours would support local economic development and historic social ties. The upgrading of New Brunswick’s Route 630 for all-season travel would likewise improve regional ties and shorten the trucking time between the Bayside port, New Brunswick potato exporters and central Canadian markets.

Community Development

The Waterway’s quality of life and natural setting are assets that continue to attract new residents, many of whom bring families, capital and consumer needs. Some also bring or start new businesses or contribute experience to existing firms, all of which support economic renewal.

Carefully promoted, the Waterway’s heritage qualities can be used to attract additional businesses and residents to St. Croix locations, still within close distance of major centers. One component of this should be the creation of downtown waterfronts that emphasize the Waterway location in appropriate business and public space development.

Other Resource Development

Additional development opportunities in commercial fishing and power generation have been identified in area studies.

The harvesting of clams in the estuary offers direct employment and additional multiple-use benefits from recreational digging by residents or tourists. Planned improvements in municipal waste treatment systems, if accompanied by a concentrated effort to overcome other sources of bacterial contamination, may allow the reopening of clam flats on the New Brunswick and Maine shores of the estuary for an estimated \$1½ million annual harvest. At the head of tide, a surplus of gaspereau (alewives) offers the opportunity for export sales to the West Indies or other international markets, or for supply to local lobster fishermen.

Feasibility studies have identified the potential to develop 6.9 MW of new electrical power at existing dam sites, if economic and environmental impact assessments support these initiatives.

ECONOMIC DEVELOPMENT POLICIES

Policy #16: Incorporate heritage concepts in economic development

Maine, New Brunswick and the Waterway communities will support the incorporation of International Heritage Waterway concepts — particularly for the preservation of environmental quality, scenic character, options for water dependent use and public access — into future economic planning and development affecting the Waterway.

Recommended actions:

16.1 Apply heritage values to development planning

- New Brunswick and Maine should support shoreland use and growth management planning within the Waterway corridor that incorporates the International Heritage Waterway concepts.
- Maine, New Brunswick and the Waterway communities should consider land use guidelines for major developments located beyond the waterway corridor but within its view in order to maintain the Waterway's scenic character.
- Landowners and economic developers should seek ways to directly incorporate heritage objectives for scenic character into major land uses, including timber harvesting and land development, within view of the Waterway.
- New Brunswick and Maine should cooperate in identifying preferred locations for future transborder transportation and utility corridors and should ensure these corridors are designed for future expansion or multiple-use, to avoid undue duplication.
- New Brunswick should develop the Champlain Industrial Park incorporating scenic, water-dependent use and public use concepts within the park's development program, compatible with the International Heritage Waterway concept.

16.2 Give waterfront priority to heritage and water-dependent uses

- Maine, New Brunswick and the Waterway communities should, where appropriate, apply regulatory limits to future industrial, commercial and major residential development within 250 ft/75 m of the shore. They should formulate specific guidelines for major developments permitted within this area in order to preserve scenic character and other desirable heritage features.
- Maine, New Brunswick and the Waterway communities should preferentially support water-dependent uses of shorefronts where these are appropriate and compatible with other heritage objectives.

Policy #17: Capitalize on the Waterway's economic strengths

New Brunswick and Maine will support appropriate and sustainable development of economic sectors that are traditional or compatible to the Waterway's natural and locational assets and its way of life.

Recommended actions:

17.1 Manage for a sustainable forest products industry

- Maine and New Brunswick should identify and act upon means to encourage the retention and sustained-yield management of forestlands serving the St. Croix wood products industry.
- New Brunswick should support the development of a long-term wood production strategy for provincial and small lot woodlands serving the St. Croix industries. This should address supply, species mix, retained diversity and other future needs.
- Maine and New Brunswick should preferentially support the development of new wood products businesses in the St. Croix area that better utilize or improve value-added return from local wood resources.
- New Brunswick and Maine should assist local wood products manufacturers to identify and develop new markets for value-added products.

17.2 Expand and diversify international recreation and heritage-based tourism

- New Brunswick and Maine should provide coordinated support for international tourism planning and development within the Waterway through local transboundary tourism organizations. These initiatives should emphasize a high-quality, heritage-oriented focus compatible with local character and capabilities.
- Area tourism organizations should prepare a master list of identified tourism development opportunities consistent with the Waterway's heritage concept and make their findings known to area interests.
- New Brunswick and Maine should support an industry review of primary tourism infrastructure and service needs and encourage community and private initiatives to meet priority requirements.
- Maine, New Brunswick and area tourism organizations should identify and preferentially support a short list of quality tourism projects that can generate tourism development within different areas of the Waterway.
- Tourism and business organizations and appropriate government agencies should cooperatively provide business and hospitality training to tourism operators and workers in the Waterway area.

- Maine, New Brunswick and tourism organizations should use the International Heritage Waterway identity as a low profile focus for local tourism promotion, compatible with Waterway goals and higher profile regional tourism themes.
- Area tourism organizations and Waterway communities should develop international tourist information that includes the Waterway and distribute this on both sides of the Waterway.

17.3 Develop marine shipping in balance with other estuary uses.

- Canada should develop a long-term plan for the development, use and management of the Bayside Marine Terminal, giving consideration to potential impacts on the environment and other estuarial users. This should be undertaken in consultation with New Brunswick, Maine, local communities, other estuarial users and port interests.
- Within the context of the port plan, New Brunswick should establish policies for the future development and management of the Champlain Industrial Park that will preferentially support the growth of port-related businesses and infrastructure, and other businesses suitable to the area. This should be undertaken in consultation with local communities and with consideration to the Waterway’s heritage focus.

17.4 Develop border opportunities

- Waterway communities located at border crossings should pursue a “gateway” concept for business development at crossing locations that will better cluster tourist services and activities at these sites.
- Waterway communities and regional development agencies should encourage the local siting of businesses wishing to develop advantages from the US/Canada travel corridor, Free Trade and the local quality of life.
- Waterway communities should plan, long term, for appropriate additional business and public development facing the water within their downtown waterfronts.
- Maine, New Brunswick and Canadian fisheries agencies should pursue the development of commercial harvests of gaspereau (alewives) and softshell clams.
- Electrical power interests should review the feasibility and environmental impacts of developing additional electrical power capacity at existing dam sites.

17.5 Improve transportation infrastructure and border crossing services

- Maine and New Brunswick should continue to improve existing road systems that connect with the Waterway.
- New Brunswick should plan the upgrade of Route 630 to provide an all-season link along the province’s side of the upper Waterway.

- Maine, New Brunswick and Canadian transportation departments should expedite the construction of an additional border crossing at Calais/St. Stephen and replacement of the crossing at Vanceboro/St. Croix to accommodate projected long-term commercial and travel growth along these routes and meet local interests.
- The United States and Canada should increase border crossing hours at Orient/Fosterville and Forest City on a year-round basis to allow for increased regional development and social exchange in the Waterway lakes region.

WATERWAY MANAGEMENT

The management of the Waterway is highly complex, involving the International Joint Commission, multiple levels of government and private interests in both countries. A recent jurisdictional review concluded that over 70 pieces of legislation and 40 authorities directly affect the St. Croix at the federal, provincial or state level, followed often by local regulation.

OVERVIEW

The International Joint Commission (IJC) is the most senior transborder structure. Under the Boundary Waters Treaty of 1909, this commission serves the US and Canadian governments by approving water uses affecting international levels or flows and by studying or monitoring other matters, such as water quality, referred to it.

In its first role the IJC has issued Orders of Approval for dam construction or modification at Milltown, Grand Falls, Vanceboro and Forest City and maintains a two-member St. Croix Board of Control to monitor compliance with Approval terms. (The Woodland dam requires no approval because it pre-dates the IJC). In its second role the IJC carried out a 1955-57 study of the St. Croix's development potential which resulted in the setting of two international water quality objectives and the creation of a six-member St. Croix Advisory Board on Pollution Control. This Board coordinates international water monitoring and makes recommendations to the IJC for water quality improvement.

The St. Croix International Waterway Commission is another independent international body, established by Maine and New Brunswick to coordinate planning and management on more wide-ranging boundary issues. It has no direct management authority but seeks to develop consensus and coordinate action among existing management interests. It is currently coordinating four major initiatives of this kind in response to this Plan. Public consultation and local involvement are integral parts of its mandate.

International working agreements between specific government departments affect fish management and marine pollution response in the St. Croix. The St. Croix River Fisheries Steering Committee and its long-term management plan are the only direct example of coordinated intergovernmental planning and management. The US and Canadian Coast Guards maintain a joint marine pollution contingency plan for response to spills. Short-term departmental relationships are periodically established for specific projects, currently for fisheries studies, a lake quality assessment and an international bridge project.

Local interests have also taken international planning initiatives. Between 1985 and 1990, the Passamaquoddy Bay Area Planning Workshop provided an annual forum for community administrators to discuss development and planning issues on both sides of the border. The St. Croix Estuary Project, established in 1992, is bringing together tidal interests to address the need for an environmental management plan for the estuary.

The Chiputneticook Lakes International Conservancy, also founded in 1992, is focusing on management and development issues on the upper lakes. The Quoddy Bay & Fundy Isles Tourism Development Corporation and the International Lakeland Trail Committee have been involved in international tourism development. Area Emergency Measures Organizations are developing a joint response plan and two utilities are designing an international electrical transmission corridor.

With few exceptions all other St. Croix planning and management efforts are unilateral, with little communication across the border.

Water Quantity and Quality

In a situation unique along the Canada/US boundary, the levels and flows within the full international watershed are privately managed. The Georgia-Pacific Corporation, the holder of Maine and New Brunswick water rights and owner of all dams within the system except the lowermost, manages the watershed to produce electrical power for its Woodland pulp and paper mill, within operating conditions prescribed by the IJC and others. It voluntarily maintains summer and winter lake conditions for bass and lake trout reproduction, has provided higher weekend flows for canoeists and, when feasible, accommodates lake residents' water preferences.

Five federal and four state or provincial agencies regulate aspects of water obstruction or quality, defined by unilateral legislation. Two have taken action directly affecting the St. Croix:

The US Environmental Protection Agency (EPA) has prescribed a minimum flow at Woodland to maintain adequate dissolved oxygen levels downstream.

The US Federal Energy Regulatory Commission (FERC) has set operating conditions, under license, for the Vanceboro and Forest City dams (Grand Falls and Woodland have presidential exemptions from this process).

Natural Resources

In New Brunswick the Waterway's fishery resources are managed interactively by the federal government (which has legal responsibility for fish management) and the province (which owns the fish). One federal department and two provincial departments are involved. In Maine, three state agencies directly manage St. Croix fishery resources, consulting with federal agencies when required.

Other primary resources (wildlife, forests and minerals) are managed by a single provincial department in New Brunswick and two separate departments in Maine. The wildlife programs are quite similar and forestry management is becoming more so. Mining is regulated rather than managed by similar means in both jurisdictions. All of these departments plan and act independently as a rule, with little transborder contact.

Land Use and Growth Management

The management of land use and growth management is addressed quite distinctly in New Brunswick and Maine.

In Maine, land use pressures advancing from southern New England have led to far-reaching land protection and growth management legislation in the last two decades, particularly for shoreland areas. Land use and growth management are addressed interactively by four agencies who provide timely public information and regular avenues for public comment.

In New Brunswick, land use is managed in a traditional manner by municipalities and environment departments, with the province applying more rigorous standards on its own forestlands. Growth management has not been legislatively addressed, however a rural land use strategy is being developed.

Recreation and Tourism

Tourism development and promotion are a major economic interest of the province: during 1985–1990 it invested more than \$62 million (Cdn) in provincial and cooperative federal funds in these activities. This is directed by the Province’s economic development department.

In Maine the emphasis is on outdoor recreation. More than \$40 million (US) in state and federal funds was directed to public lands acquisitions, recreational access development and recreation programs in 1984–1990. The state has prepared a state-wide comprehensive outdoor recreation plan and a rivers access plan which guide its efforts, implemented through community development and conservation departments. Tourism is one of many roles of the state’s economic and community development department.

In both jurisdictions these departments relate to community governments and special interest groups on an “as needed” basis but have no regular transborder communication.

Local Management

Within the Waterway corridor the management activities of communities, landowners and primary users also have considerable effect on the St. Croix’s future.

Land use and growth management are determined by local government in the incorporated municipalities, with some state and provincial guidance. In Maine, county-based regional planning commissions offer a regular avenue for communities to work together on resource and development issues. In New Brunswick this coordination is most often a local initiative or part of a provincial land use study.

Individual landowners directly affect long-term land use through their application of existing laws. Primary users of the Waterway have wide latitude in setting policy for the management of water, private forestlands (in New Brunswick) and marine shipping.

FUTURE DIRECTIONS

The Waterway’s future will be shaped by the actions of governments, communities, landowners and major users, all of whom have a legitimate role in the management process. Effective management will depend increasingly upon coordinated action based upon cooperative planning and drawing upon public and private resources to meet regional goals.

Sharing Information

In the course of its work, the Commission found the St. Croix to be better studied than most waterways because of its international status and importance to Maine and New Brunswick. Regrettably, only a small portion of this information was collated into a joint perspective of a single waterway.

Developing this Plan required bridging many information and communication gaps.

The Commission assembled New Brunswick and Maine data from many departments, resolving differences in formats and units of measure. It answered the questions of Waterway residents discouraged by the lack of information on programs affecting resources within their view. It informed government managers about their counterpart's programs for adjoining areas of the St. Croix.

Through these efforts it became clear that one-sided information was perpetuating one-sided management. A necessary first step in cooperative management would have to be an integrated information base. The essential second step would be more effective communication among all participants in the Waterway process.

Building Public/Private Partnerships

Because the St. Croix is at the outer limit of government jurisdictions, it is inevitably subject to regulation from a distance. This can result in decisions with long-term, even international, impacts being made with limited knowledge of local interests or inter-regional needs. One important means to overcome this is through greater local involvement in planning and management.

An expanded local role in management has been slow to emerge on the St. Croix for three reasons: lack of communication, lack of international objectives and lack of established involvement mechanisms.

The first two of these have already been addressed elsewhere in this Plan.

The last will require the commitment of governments to develop clearer channels for public input on an international basis. It will also require action by communities and interest groups to better mobilize their own capabilities to influence the Waterway's conservation and development. They have shown a strong desire to do so.

Two significant challenges can only be addressed by innovative planning involving both government and local interests:

East Grand Lake is a developing recreational area with the long-term potential to support excellent sport fisheries, additional recreation and residential and commercial development in a visually outstanding setting.

The St. Croix estuary, highly valued for its beauty and utility, faces escalating pressure to serve the sometimes competing interests of commercial fishing, recreation, tourism, shipping, aquaculture and community and industrial development.

In each case the selection of directions for desirable, sustainable economic growth will take cooperative planning by local communities, major users, landowners and government agencies. Failure to do so is likely to result in the over-use and degradation of these areas, at a long-term cost to the environment, economy and lifestyle. As a result of the Waterway's 1990 Preliminary Plan, local action on these issues is already underway.

Developing Government Partnerships

Because of its international status, the Waterway is served by an exceptional number of provincial, state and federal agencies which *collectively* have the expertise and resources to address its most difficult management issues.

Benefiting from this potential calls for an extension of present-day management, centered now on unilateral monitoring and regulation, to include a degree of coordinated policy-setting, planning and action.

The feasibility of this approach has been demonstrated by three Maine agencies and a Canadian federal department who are cooperatively restoring Atlantic salmon and other sea-going fish to the St. Croix. In the last ten years their joint approach has had visible results: the St. Croix now supports a rebuilding Atlantic salmon run. The program has not been perfect but it has developed international mechanisms to address long-term needs using available resources.

The complex issues of St. Croix water and fisheries regulation need similar proactive approaches. Water, the St. Croix's most important resource, is monitored and regulated according to single-interest concepts (for levels/flows, quality and fisheries) that have no regular avenues for integration. As a result there has been limited success in dealing with the fundamental issues of resource allocation, system management and sustained water quality which all require interactive planning. In its absence Georgia-Pacific is left with the unenviable task of trying to meet diverse, sometimes conflicting, regulations and demands while pursuing its own licensed uses of the river. All might be better served by a proactive management approach, taken in conjunction with Georgia-Pacific, in which resource needs are integrated and prioritized to maximize multiple-use benefits.

Fisheries management has similar fragmentation but into separate marine, diadromous and freshwater components. Marine and freshwater species are additionally managed along national lines, although they freely swim between Maine and New Brunswick.

In the future the Waterway's potential to yield economic and recreational benefits from its fishery resources can be enhanced by cooperative, interjurisdictional, inter-species planning.

Two new long-term initiatives will also call for cooperative intergovernmental action: development of the International Heritage Waterway and management of the Conservation Area. Joint planning and implementation of these initiatives will have far-reaching impacts on the Waterway's economy and character.

Coordinating Waterway Action

Implementing a cooperative management plan for the St. Croix will require the coordination of future collective action and communication among diverse interests in two countries. The Commission's mandate recognizes these roles and offers a means to carry them out on a locally-appropriate basis. Its ability to do so has been demonstrated over the last four years but in the future will depend upon an on-going commitment by New Brunswick and Maine to support its operation.

Adapting to Change

This Plan begins a dynamic, long-term process to better conserve and benefit from the St. Croix's international heritage. Prepared because of a need to adapt management concepts to changing realities, it recognizes that change will continue to occur and that future management must have the flexibility to respond.

The directions recommended in this Plan are a starting point. As they are examined and tried they may be altered to better address needs. Ensuring management continuity through this evolution will require regular monitoring and good communication between all interests, coordinated by the Waterway Commission.

WATERWAY MANAGEMENT POLICIES

Policy #18: Better integrate, interpret and exchange information on an international basis

New Brunswick and Maine will work with all management interests to improve the management and exchange of Waterway information on an international basis.

Recommended actions:

18.1 Improve interagency communication

- Maine and New Brunswick should establish departmental contacts for the regular intergovernmental exchange of policy and management information on St. Croix issues. This should involve state, provincial and federal agencies.

18.2 Improve public communication

- All major interjurisdictional planning and management processes for the Waterway should include a public information component, coordinated by the participating agencies, the Commission or other sponsoring interests.
- New Brunswick and Maine should instruct the Commission to coordinate general public information programs for the Waterway.
- Maine and New Brunswick should consider a biennial summary of Waterway programs (a State of the Waterway Report) for public and governmental distribution.

18.3 Centralize information services

- The Commission should become a central repository for all reports and other information on the St. Croix issued by various sources, and provide appropriate governmental and public access to this material.
- The inventories developed as part of this Plan should be maintained in an international format, filed with the Commission.
- An integrated computer database should be developed over the long-term for high priority resource and management information serving all participating management agencies.

18.4 Cooperatively address information needs

- International Heritage Waterway information and interpretation programs should be developed on an international basis, when possible.
- Maine and New Brunswick should consider joint means to obtain information for waterway inventories.
- New Brunswick and Maine should establish a small working group of government and private information specialists to identify primary Waterway management information needs and to recommend approaches, including incremental cooperative projects, to address these.

Policy #19: *Develop effective public/private partnerships for planning and management*

Maine and New Brunswick will encourage and support active partnerships between the public and private sector and between federal, state/provincial and local governments to address cooperative management interests.

Recommended actions:

19.1 Increase public and user involvement in management

- New Brunswick and Maine should encourage the development of local and public/private partnerships to undertake the cooperative initiatives recommended throughout this Plan.
- Internationally-based Waterway management programs should, as standard procedure, incorporate public and/or user consultation and identify appropriate avenues for public involvement.

19.2 Develop intercommunity cooperation in waterfront planning

- Waterway communities should actively address waterfront planning issues in cooperation with their adjacent and facing neighbors.
- Waterway communities should consult among each other as part of future planning and management programs for the estuary and East Grand Lake.

19.3 Begin a cooperative process for regional planning on East Grand Lake

- Maine and New Brunswick should support cooperative public/private planning for the future use of the shorelands and waters of East Grand Lake to maintain its recreational and environmental quality and its natural character, and to support appropriate economic development. This process should include an active role for the lake's communities and users.

19.4 Support a cooperative process to integrate use and environmental management of the St. Croix estuary

- Maine, New Brunswick, Canada and the United States should support initiatives such as the St. Croix Estuary Project to guide the future use of the St. Croix estuary in ways that will protect environmental quality and natural character and to provide long term public benefits. Such initiatives should include an active role for the estuary's communities and users.

Policy #20: *Address long-term management issues on a proactive, interjurisdictional basis*

New Brunswick and Maine will use proactive, cooperative means to address present and emerging interjurisdictional issues, in partnership with other management interests.

Recommended actions:

20.1 Establish a process to coordinate International Heritage Waterway recognition and development

- New Brunswick and Maine should establish a working process to establish and promote the St. Croix's International Heritage Waterway identity. This process should involve appropriate Maine and New Brunswick departments, the Waterway Commission and others named by New Brunswick and Maine to:
 - facilitate the St. Croix's formal recognition as an International Heritage Waterway
 - establish identity and information/interpretation formats
 - guide International Heritage Waterway interpretation undertaken by public/private means
 - coordinate government interests in International Heritage Waterway development and programming.

20.2 Establish a process to integrate water planning and management

- Maine and New Brunswick should initiate a working process, involving federal, state and provincial water management agencies to plan for all aspects of water management within the Waterway — and to the extent possible within the watershed. This process, recommended in the form of an interagency Steering Committee, should complement the roles of the IJC St. Croix Boards by:
 - drafting an integrated water quality and water regulation plan for the watershed that particularly addresses the conservation of the river environment, sustained productivity of highly valued fishery resources and balanced allocation for industrial and recreational uses, recognizing the continuing importance of hydroelectric power generation
 - acting through appropriate channels to have this water plan appropriately reviewed, implemented and regularly updated
 - facilitating cooperative policy-setting and management action by the participating agencies, on an on-going basis, to meet integrated objectives for water quality and public benefits
 - providing avenues for regular user consultation and involvement, and for public information

- recommending, as appropriate, future International Joint Commission involvement in St. Croix water issues

20.3 Establish a process to integrate fisheries planning and management

- Maine and New Brunswick should initiate a working process involving federal, state and provincial agencies to plan cooperatively for Waterway fisheries management. The process should seek to:
 - coordinate and integrate assessments of fish stocks and habitat
 - integrate St. Croix fisheries resource planning to set international management goals, prioritize fisheries objectives, prevent or resolve conflicts and guide coordinated action
 - provide for regular user consultation and involvement, and for public information

20.4 Establish a process to coordinate Conservation Area planning and management

- New Brunswick and Maine should jointly establish a working process to coordinate the formation, development and management of the proposed Conservation Area. This process should involve New Brunswick and Maine agencies, the Waterway Commission and others named by the two governments to:
 - develop and direct implementation of the land management aspects of a Conservation Area plan
 - develop and coordinate implementation of resource and recreation aspects of the plan
 - develop a long range plan for public and/or private development of appropriate facilities and services
 - provide for regular user and landowner consultation and involvement, and for public information

20.5 Address future interjurisdictional issues by cooperative means

- Maine and New Brunswick should address significant new interjurisdictional issues by cooperative means, establishing additional working relationships as required.

Policy #21: Maintain coordination through a Waterway Commission

Maine and New Brunswick will provide local coordination of the Waterway management plan through an international waterway commission.

Recommended actions:

21.1 Direct the Commission to coordinate Plan implementation

- New Brunswick and Maine should direct the St. Croix International Waterway Commission to coordinate the implementation of this Waterway Plan at the local and intergovernmental level.

21.2 Identify the Commission's long-term role

- Maine and New Brunswick should review the structure, functions and funding of the Commission and agree upon an arrangement that will provide for continued operation at a level appropriate to shared management needs. The primary future roles of the Commission should be to:
 - monitor and facilitate the Waterway management activities of all jurisdictions
 - coordinate the delivery of the International Heritage Waterway concept at the local and inter-governmental levels
 - direct integrated Waterway information and interpretation programs
 - facilitate the creation of working relationships, programs and facilities supporting Waterway management and heritage development

Policy #22: Regularly review management progress and directions

New Brunswick and Maine will ensure that cooperative Waterway management is appropriate and responsive by reviewing management directions and goals on a regular basis.

Recommended actions:

22.1 Monitor Waterway programs

- The Commission should monitor the progress and adaptation of programs initiated under the Plan and should make recommendations to maintain continuity in Waterway management.

22.2 Review the Waterway Plan every four years

- The Commission should review the Waterway management plan at least once every four years, in accordance with Maine and New Brunswick legislation. This review should provide for full public and governmental consultation on Waterway management progress and future directions.

TOWARD IMPLEMENTATION

This Plan delineates policies for the long-term, transboundary management of the St. Croix International Waterway. Its intent is to focus the future actions of Waterway residents and users, the Province of New Brunswick and the State of Maine, the United States and Canada, toward common goals for an outstanding heritage corridor.

International realities — including differences in legislation, policy, governmental structure and resources — dictate that many of these goals will be sought by different means, and sometimes under different schedules, on facing shores. As a result no specific process or timetable for implementation is proposed. Initial actions are recommended with the understanding that more appropriate means may yet be identified and pursued.

This approach is deliberate and should be seen as an asset, not a detriment. The ability to work together flexibly, creatively and often opportunistically in spite of jurisdictional differences has historically marked local St. Croix management. It is now simply being pursued on a larger scale, with success, where a more formal process might well founder.

At this writing, levels of government and local interests have already begun voluntary action toward 13 of the Plan's 22 policies, with particular progress in the areas of water, shoreland and fisheries management and International Conservation Area development. This willing cooperation is creating functional solutions where jurisdictional dichotomies formerly created management voids.

Realizing the goals laid out in this Plan depends upon the following:

- Formal adoption of the Plan by its sponsors, the Province of New Brunswick and the State of Maine (achieved in 1994).
- Formal recognition of the Plan by agencies having St. Croix mandates within other levels of government and by the local municipalities.
- Action on the Plan, as resources allow, by governmental and non-governmental interests, coordinated by the Waterway's international commission.
- Periodic review of the Plan, to ensure its objectives remain relevant and its progress documented.

Cooperative, integrated resource management is not simple, even within single jurisdictions. That it is being actively and internationally pursued along this waterway gives recognition to the St. Croix's exceptional heritage as an important part of the region's past, and its future. All interests are invited to participate in this landmark process.

REFERENCES

Of over 180 documents used in the preparation of this Plan, the following are the most useful in providing general information on the Waterway and relevant resource management issues. They and other references are available for public review in the Commission's library.

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