

Margaree–Lake Ainslie Canadian Heritage River Monitoring Report

2008–2018



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Margaree-Lake Ainslie Canadian Heritage River Monitoring Report 2008-2018
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Executive Summary

The Margaree–Lake Ainslie river system in Nova Scotia was designated as a Canadian Heritage River in 1998. This report reviews what has happened over the last decade and addresses the state of the river while looking at progress and research. It examines what has happened to the river since designation, determines whether heritage and recreational values are still intact, and reports on the Canadian Heritage River System integrity guidelines. This study also reports on the degree to which river management and goals have been achieved.

Since its designation, collaborative research work has been done by the provincial government and community groups. Projects have addressed improving aquatic habitats and salmon and trout stocks. Research took place on animals and fish populations such as moose, American marten, gaspereau, and striped bass to develop management initiatives. Water quality monitoring on the river was improved through the installation of a hydrometric sampling station. Other heritage projects have been initiated, including a signage project from Margaree–Lake Ainslie Heritage River Society with information on the history of sport fishing on the river.

1.0 Introduction

The Margaree–Lake Ainslie river system is the largest river system on Cape Breton, measuring about 120 kilometres in length. The river runs through a variety of scenic landscapes with a dynamic mix of land uses. The river system is characterized by a unique combination of natural and cultural heritage values that reflect a rich history of human settlement on a mosaic of natural landscapes. Its northeast branch is known for populations of salmon which attract large numbers of anglers. The southwest branch has a provincially significant gaspereau run which is fished commercially.

After years of study, the Margaree–Lake Ainslie river system was designated as a Canadian Heritage River in 1998.

The Canadian Heritage River System is Canada’s program that promotes freshwater heritage conservation and recognizes Canada’s outstanding rivers based on heritage and recreation values. The program is a cooperative effort of federal and provincial/territorial governments. It works to ensure long-term management and conservation of Canada’s river heritage. The program requires annual reports, monitoring, and ten-year reviews to ensure that heritage rivers maintain the values for which they were nominated.

The objectives of this report are to:

- Determine the degree to which the actions outlined in the management plan have been implemented.
- Establish the current condition of the outstanding heritage values based on a review of values for which the river was nominated.
- Determine whether the Canadian Heritage River System integrity guidelines are still being met.
- Describe changes that have occurred in relation to the river over the past decade.
- Review the state of the river and report on the progress or setbacks the river has experienced.

2.0 Background

From the headwaters of Northeast Margaree, located to the south of Cape Breton Highlands National Park, the Margaree River flows south through a steep sided valley complex to Big Intervale. The river then takes a westerly shift and meanders to Margaree Forks. The Southwest Margaree begins at Lake Ainslie, the largest natural freshwater lake in Nova Scotia, and flows north to Margaree Forks to form the Margaree River. The Margaree River continues north to Margaree Harbour and the Gulf of St. Lawrence.

In 1986, the provincial government reviewed 45 rivers and conducted detailed studies on the seven highest rated rivers. In 1988, a study of the Margaree River system was completed and a year later, work began to nominate the river for designation. In 1991, it was accepted for nomination. A strategy was submitted to the Canadian Heritage Rivers System in 1996 and the river was designated in 1998.

The designation work was done by the Department of Natural Resources (now the Department of Lands and Forestry). In 1998, Nova Scotia Environment assumed the lead responsibility for the Canadian Heritage River System program in Nova Scotia.



3.0 Methodology

The main approaches used to gain information about the state of the river and progress that has been made are:

- (i) Reviews of Canadian Heritage Rivers System guidelines, annual reports, and field reports from key stakeholders
- (ii) Secondary sources research
- (iii) Contact with key individuals

Contacting key individuals provided important information on changes, research, and activities that have taken place on and around the river since its designation. Discussions took place among Nova Scotia Environment staff, Department of Lands and Forestry staff, and key stakeholders.

New Canadian Heritage Rivers System frameworks have been developed since the Margaree–Lake Ainslie river system was nominated. This report converts identified values to align with current national frameworks.

The condition of heritage values since designation was discussed along with relevant projects or partnership strategy actions. The conditions of integrity guidelines were also examined to determine whether the river was still worthy of designation.

4.0 Chronology of Events

Table 1: Chronology of Events since Designation

Year	Significant Events, Actions, Research or Studies since 2008
2008	The Department of Agriculture and Fisheries assumed ownership of the Margaree Fish Hatchery.
2009	Nova Scotia Environment initiated a pilot project to digitally map the hydrological features and water resources in the Margaree River Watershed. A program was initiated to electronically track movements, habitat utilization and survival of Atlantic Salmon from the Margaree River.
2010	GPS technology was used to track the natural movement/migration of the stream bed and banks in the Margaree River over time.
2011	The Margaree Landowners Group formed to advocate for the coordinated management and maintenance of the river, associated infrastructure (bridges, culverts, etc.) and adjacent lands impacted by seasonal flood events.
2013	Inverness county council banned fracking after a proposal on Lake Ainslie.
2014	Designation of Mason's Mountain Nature Reserve, north of Lake Ainslie (831 hectares).
2015	Designation of the Black River Bog Nature Reserve, West Lake Ainslie (109 hectares). Designation of the Ruiss Noir Wilderness Area (1602 hectares). Designation of the Chimney Croner Nature Reserve (750 Hectares).
2016	Expansion of the Trout Brook Wilderness Area (186 hectares). Expansion of the Margaree Wilderness Area (2140 hectares).
2017	Margaree–Lake Ainslie Heritage River Society developed a billboard in front of the library in Margaree Forks detailing the river's history. The society developed a series of four pull-up panels detailing the nature of the river system and elements of designation. They society also developed a series of panels that outlined the history of salmon sport fishing, and panels detailing the history of the gaspereau fishery in south-west Margaree.
2018	The society developed 13 road signs and a brochure with a map and historical photograph. Nova Scotia Environment and Canadian Heritage River System began work to create an online story map to showcase natural, cultural and recreational features along the Margaree River.

5.0 Natural Heritage Values

5.1 Background

The designation of the Margaree–Lake Ainslie river system was based on the following key natural heritage features:

- A unique alkaline bog on Black River is recognized under the International Biological Program and is under consideration for official designation under the Special Places Protection Act. The bog also contains at least five plants that are rare in the province.
- The history and visibility of geological strata and features associated with the river system provide excellent opportunities for interpretation of the complex geology of the region.
- The entire river is an outstanding representation of continuous fluvial geomorphological processes.
- Outstanding examples of faulting and escarpments depict significant events in Nova Scotia’s geological history.
- It is one of the most noted salmon producing rivers in Nova Scotia and is renowned for its spring and fall runs of salmon.
- The river is also a provincially significant gaspereau run.
- Provincially significant wetlands on the Southwest Margaree and Lake Ainslie have outstanding wildlife values.
- The Second Fork Brook International Biological Program site is a remnant of an old growth sugar maple stand.
- Remnant maple and elm floodplain forests contain at least five plants that are rare in the province.
- Four mammals that are rare in the province live in the steep-sided valley complex of Northeast Margaree.

The Canadian Heritage Rivers System is currently using the Framework for the Natural Values of Canadian Heritage of Canadian Heritage River 2nd edition (2001). It differs from the original framework that was in use at the time of the Margaree–Lake Ainslie river system’s designation in 1998. The values for which it was nominated are summarized in Table 2 according to the 2001 framework.

5.2 Natural Heritage Values Since Designation

Water quality monitoring began on the Margaree River system the implementation of a water sampling station in 2000 and has been ongoing since. The river is part of Nova Scotia's Automated Water Quality Monitoring Program.

There have been changes to the general area including the expansion of the Margaree River Wilderness Area which improves protection of water quality and mixed wood forests.

NewPage paper mill became Port Hawkesbury Paper in 2011 and is committed to using pulp that was acquired from forests that are managed in accordance with the Forest Stewardship Council's principals and criteria.

Since 2008, Nova Scotia Environment has been involved in watershed management planning for the area. This includes investigating how to implement current policy in collaboration with communities.



Table 2: Natural Heritage Values Since Designation

Canadian Heritage Rivers System Natural Framework (2001) Themes and Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1 HYDROLOGY			
1.1 Drainage basins	Atlantic Ocean Basin Stream number 1		None
1.2 Seasonal variation	Period of highest flow is May. Period of lowest flow is May to September.		None
1.3 Water content	An average pH level of 7.03 between 2008 and 2018. An average temperature of 7.63 degrees between 2008 and 2018.		
1.4 River size	Small river or <85 m ³ /sec. Length is <500 km.		Rainstorms and major flooding in December 2010 deteriorated some parts of the river by up to 30 metres.
2 PHYSIOGRAPHY			
2.1 Physiographic regions	Appalachian Acadian uplands		None
2.2 Geological processes			None
2.3 Hydrogeology	Porous bedrock with surficial unconsolidated materials of low porosity (fine grained clay and silt)		None
2.4 Topography	Significant gradient (2–5 m/km). Height above sea level is 0–400 metres.		None

Canadian Heritage Rivers System Natural Framework (2001) Themes and Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
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3 RIVER MORPHOLOGY			
3.1 Valley types	Concave-walled valleys (rounded interfluves with significant floodplain)		None
	Straight-walled valleys (flat/rounded interfluves with significant floodplain)		
3.2 Channel types	Stream configuration: meandering	Margaree Salmon Association conducts inventory of flow characteristics.	Improve/maintain ecological integrity.
	Lake systems: feeder lake		
3.3 Channel profile	Pool and riffle		None
3.4 Fluvial landforms	Depositional landforms: oxbows	Stream bank stabilization and erosion control through Margaree Salmon Association and Department of Fisheries and Oceans projects.	Protection from erosional processes.
	Erosional landforms: undercuts and gorges		
4 BIOTIC ENVIRONMENTS			
4.1 Aquatic ecosystems	Riverine systems: lowland zone	Amendments to the Special Places Protection Act streamline the process to identify and designate significant ecological sites on private and Crown lands.	Provides an effective tool for considering additional designations in the Margaree–Lake Ainslie area, which could contribute to protecting important ecological values.
		Planning for a comprehensive system of protected areas.	Protection of important natural lands as wilderness areas or nature reserves.
		Planning for a comprehensive system of protected areas.	Protection of important natural lands as wilderness areas or nature reserves.
		Moose research in Cape Breton Highlands.	Maintain healthy wildlife populations to ensure ecological integrity.
		Continued litter and garbage pickup.	Helps improve ecological integrity.
		Margaree Salmon Association has continued the stream habitat improvement project (bank stabilization and pool enhancement).	Improved quality of aquatic habitat through armor rock bank stabilization.
		In 2008, the Department of Agriculture and Fisheries assumed ownership of the Margaree Fish Hatchery.	Helps maintain fish population while offering opportunities for public education and scientific research

Canadian Heritage Rivers System Natural Framework (2001) Themes and Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
4.2 Terrestrial ecosystems	Ecozone: Atlantic Maritime	Amendments to the Off-highway Vehicles Act. Moose Research in Cape Breton Highlands continued in 2018. Research on American marten continued in 2018.	Helps protect sensitive ecosystems and biodiversity.
5 VEGETATION			
5.1 Significant plant communities	Aquatic/riparian plants: Black River International Biological Program site (carex and salix species). Trees: dynamic old growth sugar maples	Margaree Salmon Association inventory of stream-side vegetation.	Helps maintain/improve ecological integrity.
5.2 Rare plant species	Provincially rare: <i>Sclerophora peronella</i> , <i>Rhynchospora capillacea</i> , <i>Carex gynocrates</i> , <i>Salix candida</i> and <i>Caltha palustris</i>	<i>Sclerophora peronella</i> listed as special concern by Committee on the Status of Endangered Wildlife in Canada. <i>Salix candida</i> listed as an endangered species in 2013.	Designation of wilderness areas within the river's watershed helps protect two of the three <i>Sclerophora peronella</i> sites in Canada.
6 FAUNA			
6.1 Significant animal populations	Fish: Atlantic salmon and gaspereau	None	None
6.2 Rare animal species	Regionally rare mammals: American marten and lynx	Research on American marten.	None

6.0 Cultural Heritage Values

6.1 Background

While the Margaree–Lake Ainslie river system was not nominated based on its cultural (human) heritage values, both the nomination document and the designation document recognized the rich cultural heritage of the region and the strong cultural ties to the river. These include:

- Mi'kmaq use
- European settlement
- Natural resource use
- Cultural attachments to sporting and recreation

A variety of cultural values are summarized in the following table according to the new cultural values framework. The table also outlines significant actions over the past ten years, and any changes to cultural heritage values.

6.1 Condition of Cultural Values Since Designation

Improvements have been made to the cultural heritage values of the Margaree–Lake Ainslie river system since the 2008 report.

The Margaree–Lake Ainslie Heritage River Society began multiple panel and signage projects between 2017 and 2018. These projects were initiated to awaken interest in the heritage status of the river.

In 2017, the society developed a major billboard in front of the library in Margaree Forks. They developed a series of four pull-up panels detailing the nature of the river system and elements of designation, and a series of panels detailing the history of salmon sport fishing. They also installed a pair of permanent panels at the Southwest Margaree hall exploring the history of the gaspereau fishery in the area.

In 2018, the society developed 13 road signs and a brochure with a map and photograph. The signs and brochure have been very successful in raising awareness within the community of the heritage status of the river.



Table 3: Cultural Values Since Designation

Canadian Heritage Rivers System Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1 RESOURCE HARVESTING			
1.1 Fishing	Artifacts about 3000 to 5000 years old have been found at Margaree Harbour, Margaree, Margaree Forks, and Scotsville.	Computerized inventory of local heritage sites.	None
1.2 Shoreline resource harvesting	Probably used prior to European contact for hunting and fishing.		None
1.3 Extraction of water	Maps from 1864 and 1898 indicate the presences of sawmills along the river system.		None
2 WATER TRANSPORT			
2.1 Commercial transportation	Not discussed at time of designation.		None
2.2 Transportation services	Not discussed at time of designation.		None
2.3 Exploration and surveying	The area was surveyed in 1825 by Joseph Bouchette, the Surveyor General of British North America.		None
3 RIPARIAN SETTLEMENT			
3.1 Siting of dwellings	Artifacts about 3000 to 5000 years old have been found at Margaree Harbour, Margaree, Margaree Forks and Scotsville.	Computerized inventory of local heritage sites.	Improved storage of and access to information on local heritage.
3.2 River-based communities	Not described at the time of designation.		None
3.3 River-influenced transportation	Not described at the time of designation.		None

Canadian Heritage Rivers System Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
4 CULTURE & RECREATION			
4.1 Spiritual associations	Not described at time of designation.		None
4.2 Cultural expression	Not described at time of designation.		None
4.3 Early recreation	Angling for salmon	In 2008, the Department of Agriculture and Fisheries assumed ownership of the Margaree Fish Hatchery.	Improved aquatic life and possibility for improved angling capabilities.
5 JURISDICTIONAL USES			
5.1 Conflict and military associations	Not described at the time of nomination.		None
5.2 Boundaries	Not described at the time of nomination.	Designation of four wilderness areas.	None
5.3 Environmental regulation	Not described at time of designation.	Installation of hydrometric sampling station.	Continued water quality monitoring.

7.0 Recreation Values

7.1 Background and Status

The original nomination and strategy documents for the Margaree–Lake Ainslie river system highlighted a range of recreational values that contributed to its nomination. These include:

- Wilderness – solitude
- Angling
- River travel
- Scenic appreciation
- Hiking
- Camping

There is no national framework for recreational values. Therefore, the activities listed in the Canadian Heritage River System: Red River Background Study, 1998 were used to evaluate and summarize the recreation values for which the Margaree–Lake Ainslie Heritage river system was designated.

7.2 Condition of Recreation Values Since Designation

Improvements have been made to the recreational values of the Margaree–Lake Ainslie river system since the 2008 monitoring report.

Angling continues to be the most popular form of recreation on the river. Salmon, gaspereau and bass continue to be caught by anglers from around the world in more than 54 fishing pools along the river.

In 2017, the Margaree–Lake Ainslie Canadian Heritage River Society developed signs explaining the history of sport fishing on the Margaree River, thereby increasing interest.

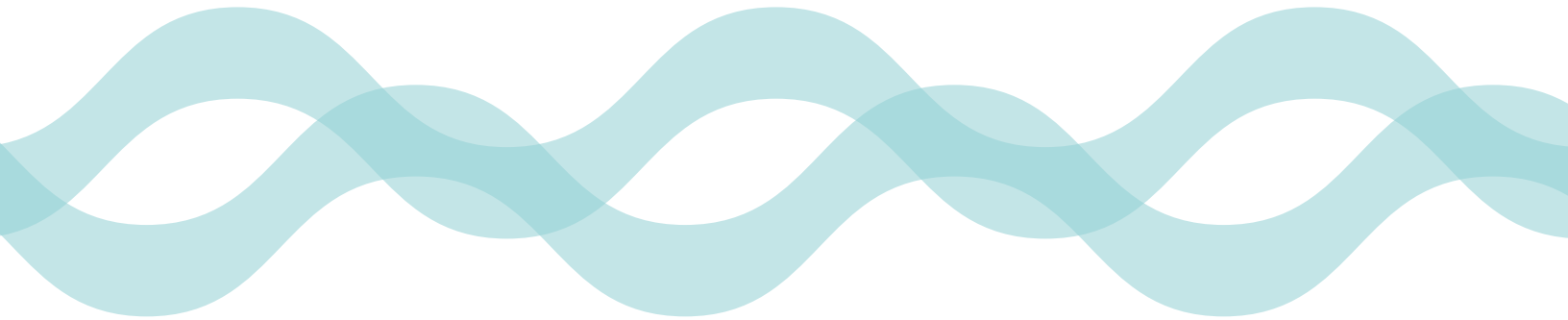


Table 4: Recreation Values Since Designation

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1 BOATING			
1.1 White-water canoeing, kayaking and rafting	People canoe along 80 km of the river corridor. Canoeing ranges from novice to class three intermediate.	None	None
1.2 Extended canoe trips (motor and non-motor)	Not discussed at the time of designation.	None	None
1.3 Day paddling and rowing	People day paddle and paddle board on Lake Ainslie, Southwest Margaree, Margaree, and Northeast Margaree rivers.	Emergence of paddle boarding along the river.	None
1.4 High speed boating	Not discussed at time of designation.	None	None
1.5 Motorized pleasure cruising / houseboats	Not discussed at time of designation.	None	None
1.6 Commercial tour boats	Not discussed at time of designation.	None	None
1.7 Sailing	Not discussed at time of designation.	None	None
2 ANGLING			
2.1 Day angling	There are more than 54 salmon pools on the Margaree River.	Margaree Salmon Association conducts studies and maintains inventory of flow characteristics.	Improve ecological integrity.
2.2 Weekend angling	The area is very well known for its native wild-stock salmon.	Research on bass, gaspereau and brook trout.	Increase in striped bass is encouraging to the closed recreational fishery. The inability for smallmouth bass to breed minimalizes the negative effects on brook trout, gaspereau and landlocked salmon.
2.3 Extended angling vacation	In 1983, non-residents rated it the best salmon angling river in Nova Scotia. Today, it is still renowned for its excellent angling opportunities.	The Department of Fisheries and Aquaculture controls the breeding and stocking programs for the river.	Helps maintain fish populations while offering opportunities for public education and scientific research.
2.4 Fly fishing	The Margaree and Northeast Margaree rivers are fly-fishing only during salmon season, which runs from June to October.	None	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
2.5 Ice fishing	Not discussed at the time of designation.		None
2.6 Specific fish species	Besides salmon, people fish for speckled trout, brown trout, white perch, rainbow smelt, and striped bass.	The Department of Fisheries and Oceans and the Margaree Salmon Association partnered on the installation of a counting trap on the estuary of the Margaree River in October 2017.	An increase in striped bass population.
3 WATER CONTACT/CONTENT			
3.1 Swimming	Not discussed at time of designation.		Water is suitable for swimming.
3.2 Water skiing	Not discussed at time of designation.		None
3.3 Snorkel/scuba	Not discussed at time of designation.		None
4 WATER-ASSOCIATED ACTIVITIES			
4.1 Trail use (hiking, walking, cycling)	There are several provincially significant opportunities for hiking, scenic appreciation, and wilderness travel.	Improved access to local trails.	None
4.2 Camping	There are camping opportunities within the watershed.	The Margaree River Wilderness Area was expanded in 2015.	Improved regional opportunities for low impact camping in protected wilderness areas.
4.3 Hunting	Not discussed at time of designation.	None	None
5 WINTER ACTIVITIES			
5.1 Snowmobiling/dog sledding	Not discussed at the time of nomination.	None	None
5.2 Cross-country skiing	Not discussed at time of designation.	None	None
5.3 Skating	Not discussed at time of designation.	None	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
6 NATURAL HERITAGE APPRECIATION			
6.1 Wildlife	Regionally rare mammals: American marten and lynx Regionally rare birds: bald eagle Fish: salmon, gaspereau, trout and bass	Continued research on moose in Cape Breton Highlands.	
6.2 Vegetation	Aquatic/riparian plants: Black River International Biological Program site (carex and salix species) Trees: dynamic old growth sugar maples	Margaree Salmon Association continues to do inventories of stream-side vegetation.	
6.3 Vistas/scenic quality	Significant scenic opportunities exist through the combination of uplands, lowlands, natural areas, cultivated landscapes, villages and river/ocean views.	Margaree Salmon Association Stream Habitat Improvement Project is ongoing (bank stabilization and pool enhancement).	Improved quality of aquatic habitats.
6.4 Geological features/water features	Faults escarpments, uplands and lowlands with a variety of water conditions ranging from slow meandering to fast with rips and rapids.	Canadian Heritage Rivers System signage to be implemented for Crowdis Crossing, Old Big Intervale Road, Cape Clear, Scotsville, East Lake Ainslie, and West Lake Ainslie.	Increased public awareness.
7 HUMAN HERITAGE APPRECIATION			
7.1 Historic sites	MacDonald House historic site (Lake Ainslie Historical Society)	Computerized inventory of local heritage sites	Improved storage of/access to information
7.2 Cultural landscapes	Not discussed at time of designation.	None	None
7.3 Sporting events/activities	Not discussed at time of designation.	None	None
7.4 Cultural events/activities	Not discussed at time of designation.	None	None

8.0 Integrity Guidelines

Natural, cultural, and recreational integrity guidelines were all considered when the Margaree–Lake Ainslie river system was nominated for its human heritage value.

Table 5: Integrity Guidelines Since Designation

Canadian Heritage Rivers System Principles, Procedures and Operational Guidelines	Integrity Value(s)	Changes or Threats to Integrity Value(s) Since Nomination
1 NATURAL INTEGRITY GUIDELINES		
1.1 The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the natural processes, features, or other phenomena which give the river its outstanding natural value.	The Margaree–Lake Ainslie river system is 120 km in length and free-flowing with a drainage basin of 116,537.5 hectares. It is the largest river system on Cape Breton, and one of Nova Scotia’s largest river systems.	None
1.2 The nominated area contains those ecosystem components required for the continuity of the species, features or objects to be protected.	The river’s ecosystem is unimpaired and produces abundant fish, wildlife, and flora. It meets water quality guidelines endorsed by the Canadian Council of Ministers of Environment for aquatic life and recreation. In 1998, four wilderness areas were designated in the area.	Water quality monitoring is critical to ongoing assessments of the river’s health. It has been improved through local efforts and the installation of the permanent water sampling station. Expansion of the Margaree River Wilderness Area improves protection.
1.3 There are no human-made impoundments within the nominated area.	The entire river is free-flowing with no impoundments.	None
1.4 All key elements and ecosystem components are unaffected by impoundments located outside the nominated area.	No impoundments exist outside of the nominated section.	None
1.5 Natural values for which the river is nominated have not been created by impoundments.	No impoundments exist in the nominated section.	None
1.6 The water of the nominated area of the river is uncontaminated to the extent that its natural aquatic ecosystem is intact.	Recent water quality data shows the Margaree–Lake Ainslie river system meets Canadian water quality guidelines for freshwater aquatic life.	Continued water quality monitoring indicates that the water remains uncontaminated.
1.7 The natural aesthetic value of the river is not compromised by human developments.	Past and present land uses have never overwhelmed the Margaree. About 30% of the river system is in a wilderness condition.	Expansion of the Margaree River Wilderness Area improves protection.

2 CULTURAL INTEGRITY VALUES		
2.1	The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the features, activities or other phenomena which give the river its outstanding cultural value.	Not discussed at time of designation. None
2.2	The visual appearance of the nominated area of river enables uninterrupted appreciation of at least one of the periods of the river's historical importance.	Not discussed at time of designation. None
2.3	The key artifacts and sites comprising the cultural values for which the river is nominated are unimpaired by impoundments and human land uses.	Not discussed at time of designation. None
2.4	The water quality of the nominated area does not detract from the visual character or the cultural experience provided by its cultural values.	Not discussed at time of nomination. Water quality monitoring is ongoing.
3 RECREATIONAL INTEGRITY VALUES		
3.1	The river possesses water of a quality suitable for contact recreational activities, including those recreational opportunities for which it is nominated.	The Margaree River currently meets water quality guidelines from the Canadian Council of Ministers of Environment. It is also suitable for contact recreation.
3.2	The river's visual appearance is capable of providing river travelers with a continuous natural experience, or a combined natural and cultural experience, without significant interruption by modern human intrusions.	The system provides internationally renowned salmon angling opportunities along with provincially significant wilderness travel and trail opportunities. The entire system is of outstanding scenic value. Canoeing is underused on the system, of which the southwest portion offers 23 to 26 kilometres of uninterrupted canoeing.
3.3	The river is capable of supporting recreational uses without significant loss or impact on its natural, cultural or aesthetic values.	The river system has supported a salmon sport fishery since the 1800s and other recreational uses without significant loss or impact on its natural, historical, or aesthetic values. There is also a significant commercial gaspereau fishery.

Table 6: Designation Document Recommendations and Current Status

Margaree–Lake Ainslie Canadian Heritage River: A Partnership Strategy (1996)		Degree of Achievement	Actions/Notes
		<ul style="list-style-type: none"> • Not yet initiated • Initiated / underway • Completed / addressed • Ongoing 	
1 GEOLOGY			
1.1	Conduct a background study of the earth history of the Margaree–Lake Ainslie watershed to provide an inventory of significant geological features of the watershed area.	Ongoing	The Geological Survey of Canada produced three bedrock geology maps from 1996 to 1997 which cover the Margaree–Lake Ainslie river system (GSC files: 3254, 3253, 3059).
1.2	Protect and manage outstanding geological features and points of interest on Crown Land as necessary to maintain their natural character and integrity, and to enable their interpretation.	Partial	Protected Areas Program gives umbrella protection. There are many geological features and points of interest protected in the wilderness areas within the river’s watershed.
1.3	Inform private landowners of outstanding geological features situated on their property, and encourage the maintenance of their character and integrity through voluntary participation in stewardship programs, and other incentives which might become available.	Initiated	Nature conservation on private land is encouraged in a brochure produced by the Nova Scotia Environment. Nova Scotia Lands produced an acquisitions map in 2013–14.
2 VEGETATION			
2.1	Protect and manage sites with ecologically significant vegetation on Crown land as necessary to maintain their natural character and integrity, and to enable their interpretation.	Ongoing	Second Fork Brook International Biological Program site is a remnant of an old growth sugar maple stand.
2.2	Inform private landowners of significant vegetative features on their property and encourage the maintenance of their character and integrity through voluntary participation in stewardship programs and other incentives which might become available.	Partial/Ongoing	Wilderness areas protect ecologically significant vegetation on Crown land. The protected areas systems planning process has led protection of 12.41% of the province.
2.3	The proposed community-based group responsible for implementation participate in the management planning process for the candidate protected areas.	None	Nature conservation on private land is encouraged in a brochure produced by the Nova Scotia Environment. Nova Scotia Lands produced an acquisitions map in 2013–14.

3 FISH			
3.1	Conduct a comprehensive habitat survey for important commercial and angling fish species in the watershed. The survey would identify the important components of the river ecosystem with respect to fish life and identify critical areas that require protection and restoration to maintain fish populations.	Ongoing	The federal Department of Fisheries and Oceans, the provincial Department of Lands and Forestry, the Margaree Salmon Association, and the Margaree–Lake Ainslie Canadian Heritage River Society worked on stream rehabilitation. Most recently, the Margaree Salmon Association used armor rock to strengthen stream banks.
3.2	Continue and, where possible, enhance the full range of management programs (enhancement, enforcement, assessment, habitat restoration and conservation) to maintain fish species and populations.	Ongoing	The federal Department of Fisheries and Oceans and the provincial Department of Lands and Forestry work towards these ends.
3.3	Continue and, where possible, enhance management policies which allow for sustainable commercial gaspereau fishery and adequate spawning escapement to Lake Ainslie.	Partial	The federal Department of Fisheries and Oceans and the Margaree Salmon Association conducted a fish population survey on the Margaree River in 2017.
3.4	Continue biological sampling for population assessment to determine adequate spawning escapement and studies on the early life history of gaspereau in Lake Ainslie relative to physical, chemical and biological components of the ecosystem.	Ongoing	Margaree Salmon Association continues to study population sizes of fish within the river system.
3.5	Encourage an Adopt a Stream Program or similar initiative to increase public awareness of habitat requirements for trout and other species and to increase community participation in efforts to improve habitats.	Ongoing	Margaree Salmon Association has worked with the Nova Scotia Liquor Corporation's Adopt a Stream Program to clear debris from five tributary streams of the Margaree River Watershed.

4 MAMMALS			
4.1	Survey rare mammal populations and their distributions in the watershed and identify associated habitat requirements.	Ongoing	The Department of Lands and Forestry plans to release a report on the American marten in 2018-19. It will determine a new recovery plan or potential change in status.
4.2	Protect and manage rare mammal habitats identified on Crown land.	Partial	Four wilderness areas have been designated around the Margaree Lake Ainslie river system: <ul style="list-style-type: none"> • Jim Campbells Barrens • Sugarloaf Mountain • Trout Brook • Margaree River (expanded)
4.3	Inform private landowners of rare mammal habitat situation on their property and encourage the maintenance of this through voluntary participation in stewardship programs which might become available.	Ongoing	American marten recovery plan has led to changes in forestry activities by Port Hawkesbury Paper (formerly NewPage).
4.4	Continue and where possible, enhance the monitoring of eagle and any other significant bird populations and the protection of nesting sites.	Ongoing	Ongoing monitoring of bald eagles by the Department of Lands and Forestry, local bird watchers, and the 2010 Maritime Bird Atlas.
5 WILDERNESS AND HIKING			
5.1	Inventory and protect outstanding trail opportunities.	Initiated	OHV and hiking trail opportunities within existing protected areas have been inventoried.
5.2	Encourage and support local community groups to take the lead role in trail development in order to take advantage of provincially significant hiking potential in the area. Where private properties offer quality trail opportunities, efforts should be made to obtain permission for trail development from landowners involved. Landowner participation would be voluntary.	Ongoing	A 3-km hiking trail within Sugarloaf Mountain Wilderness Area has been up-graded with community support. The abandoned rail corridor just west of Lake Ainslie is being developed as a multi-use trail.
6 ANGLING			
6.1	Continue efforts to maintain and enhance the high standard of traditional opportunities associated with angling.	Ongoing	Continued research and monitoring of fish stocks, habitats, water quality and information on popular fish pools and locations maintains the quality of angling on the Margaree–Lake Ainslie river system.

7 SCENIC APPRECIATION			
7.1	Conduct a study to identify scenic look-off sites and document areas of particularly high scenic value.	Partial	Viewpoints along the Cabot Trail, which runs through the Margaree Valley, have been opened for the enjoyment of the travelling public.
7.2	Develop information and voluntary guidelines to minimize the potential impacts of activities that could reduce the scenic value of the area.	Partial	Keep it Wild brochure encourages people to leave no trace in wilderness areas.
8 CANOEING AND BOATING			
8.1	Conduct a study to identify appropriate opportunities for safe and convenient access to and egress from the river and lake.	None	There is a boat launch at Margaree Harbour.
8.2	Develop the canoeing and boating infrastructure to provide for access/egress points, and associated signage and brochures for information and educational purposes. Facilities would be established on Crown lands and public rights-of-way where possible, and at priority locations on existing private land through voluntary agreement with the pertinent landowner(s).	Initiated	New signage, panels and brochure developed by the Margaree Lake Ainslie Heritage Society provide historical information on the river system.
8.3	Develop clear and accurate information signage to encourage informed and responsible user activity.	Initiated	<p><i>Keep it Wild</i> brochure encourages people to leave no trace in wilderness areas.</p> <p>Margaree Salmon Association's Angler produced an etiquette brochure.</p>
9 WINTER OUTDOOR RECREATION			
9.1	Continue efforts to develop winter recreational opportunities and associated user information.	Partial	The Margaree Highlanders Snowmobile Club maintains more than 200 km of the snowmobile trail system in the area surrounding the Margaree River.
10 CAMPING			
10.1	Conduct a detailed planning exercise to identify potential high-quality nature-based camping opportunities in the Margaree–Lake Ainslie area.	None	None
10.2	Encourage private initiatives to provide quality nature-based camping.	None	None
10.3	Develop information on codes of etiquette for campers.	Complete	Keep it Wild brochure encourages people to leave no trace in wilderness areas.

Margaree–Lake Ainslie Canadian Heritage River: A Partnership Strategy (1996)

- Degree of Achievement**
- **Not yet initiated**
 - **Initiated / underway**
 - **Completed / addressed**
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Actions/Notes

11 CULTURAL HERITAGE VALUES			
11.1	Conduct a cultural heritage study of the Margaree–Lake Ainslie Area. This study would look at people, historical events, sites and buildings, and develop themes which could be used to interpret the cultural heritage of the area both in schools and in public information programs.	Partial	Computerized inventory of local heritage sites. Series of panels created in association with Margaree Salmon Museum and MacDonald House Museum.
12 INTERPRETATION			
12.1	Conduct a detailed interpretive planning study for the Margaree–Lake Ainslie System.	Partial	None
12.2	Conduct a feasibility study regarding the development of a heritage centre.	Complete	The Margaree Salmon Hatchery Visitor Centre is open to the public.
12.3	Identify and develop educational opportunities associated with the river system.	Partial	Margaree was featured on the Great Canadian Rivers television series which chronicled rivers that represent both the natural and cultural heritage of Canada.
13 OPPORTUNITIES AND IMPACTS OF TOURISM DEVELOPMENT AND MARKETING			
13.1	Prepare a strategic tourism plan and marketing strategy for the Margaree–Lake Ainslie area, with a particular focus on the establishment of opportunities, facilities and services that would enhance and support nature-based tourism or eco-tourism recognizing that facilities must be in place before marketing.	Ongoing	Regional and community development groups are exploring and supporting nature-based businesses including river rafting and low-impact camping operations (eg. Live Life in Tents).
13.2	Community-based implementation group review nationally, provincially and locally produced information on the Margaree–Lake Ainslie Canadian Heritage River.	Ongoing	Information is reviewed by Margaree–Lake Ainslie Canadian Heritage River Society as needed.
14 WATER QUALITY AND QUANTITY			
14.1	Establish a co-ordinated water quality and quantity monitoring program for the Margaree–Lake Ainslie watershed.	Ongoing	A hydrometric sampling station is installed on the river.
14.2	Act on recent decisions to close Kenloch landfill site as soon as possible in order to set aside this source of concern. This action would include monitoring the site once closed and developing alternative methods for solid waste management.	Complete	Kenloch landfill is a transfer station.
14.3	Encourage community-based water quality monitoring, involving, amongst others, local schools, with responsible government agencies facilitating efforts through provision of expertise, equipment and support funding as required.	Ongoing	Hydrometric sampling station is installed on the river.
14.4	Maintain the main stems of the Northeast, Southwest and Margaree rivers as a free-flowing unobstructed system, free from dams and diversions.	No changes	Stems remain obstruction free.

15 BUILDINGS AND DEVELOPMENT		
15.1 Inform private landowners of the importance of vegetative buffers along the river with regards to bank stabilization and erosion prevention, and encourage the establishment of buffers on their own initiative through voluntary participation in stewardship agreements, or with the benefit of other incentives which might become available.	Ongoing	This has been done informally through the permitting process for construction and through efforts by the Margaree Salmon Association.
15.2 Manage Crown land parcels directly fronting the river and lake to support the objectives of the Margaree–Lake Ainslie Heritage River. The future of all Crown land in the watershed would be addressed through the designation of protected areas, where warranted, and through the integrated resource management plan.	Complete/Ongoing	There are four wilderness areas designated around the Margaree Lake Ainslie River System: <ul style="list-style-type: none"> • Jim Campbells Barrans • Sugarloaf Mountain • Trout Brook • Margaree River (expanded)
15.3 As a first step towards preparing a municipal strategy, request that the municipality provide more information to the community regarding the process, implications and potential of a municipal planning strategy and land use by-law in supporting river conservation objectives. The municipal planning strategy is a process which is separate and apart from the Canadian Heritage River designation and provides for extensive public consultation.	Initiated	Zoning bylaws required to address residential development on flood plains.
16 AGRICULTURE		
16.1 Continue efforts to foster environmentally sound agricultural practices, and encourage compliance with associated guidelines.	Ongoing	Resources available from the Department of Agriculture: <ul style="list-style-type: none"> • Environmental Regulations Handbook • Codes of Practice for the Application of Non-Agricultural Organic Waste on Agricultural Land • Siting and Management of Hog Farms in Nova Scotia • Manure Management Guidelines
16.2 Develop a comprehensive erosion control plan for the river. This plan would set priorities for highly valued agricultural land, as well as for salmon pools, buildings, structures and roads, while also conserving the natural functions of the river. An important objective of the plan would be to establish criteria and set priorities aimed at ensuring that available erosion control funding can be utilized to maximum advantage.	Initiated/Ongoing	Margaree Salmon Association has initiated a river bank stabilization program using various methods: <ul style="list-style-type: none"> • Vegetation • Deflectors • Armour rock • Gabion baskets and mats • Used tires • Logs and trees
16.3 Continue to address pressing erosion control problems.	Initiated/On-going	Margaree Salmon Association has initiated a river bank stabilization program

17 FORESTRY		
17.1 Prepare an integrated resource management plan to guide land and resource use activities on Crown land within the watershed. This plan would be comprehensive in recognizing all resource values such as forestry, minerals and wildlife, and place a high priority on the maintenance of biological diversity and the ecological integrity of the watershed.	Ongoing	In 2015, Port Hawkesbury Paper implemented their 100-year strategic management plan. The plan adheres to the principles of adaptive forest management and continuous improvement.
17.2 Consider methods in the integrated resource management plan of harvesting aimed at minimizing potential downstream impacts on water quality and quantity in the river system, and consider scheduling of harvesting to ensure that large portions of forest cover are not removed over short periods of time one important aspect in this regard. It is necessary to use harvesting methods that ensure the integrity of the ecosystem.	Ongoing	In 2015, Port Hawkesbury Paper implemented their 100-year strategic management plan. The plan adheres to the principles of adaptive forest management and continuous improvement
17.3 Review the Forest/Wildlife Guidelines and Standards in the integrated resource management plan and establish guidelines as a necessary for maintaining the ecological integrity of steep slopes on Crown lands.	Ongoing	Province sponsored an independent review of forest practices in Nova Scotia. The final report with recommendations was submitted and government responded in 2018.
17.4 Encourage private landowners and land uses to follow existing Forest/Wildlife Guidelines and Standards. Provide them with information on the impact of harvesting on steep slopes as well as general information on the relationship between forest management activity and the integrity of the watershed. Develop new guidelines for management on steep slopes with private landowners consultation. These new guidelines would be recommended for private lands which receive government funding for forest management and encouraged on other private lands.	Partial/ongoing	The Department of Lands and Forestry policy offers regulation and protection to wildlife habitats and watercourses. The department has codes of forest practice and sustainable forestry regulations.

18 MINING		
18.1 Evaluate mineral, petroleum and aggregate extraction and subsequent reclamation proposals to ensure the ecological and recreational integrity of the Margaree–Lake Ainslie Canadian Heritage River and surrounding watershed.	Ongoing	<p>The public and subject matter experts comment on mining proposals via the environmental assessment process.</p> <p>In 2013, Inverness County council banned fracking after a proposal for Lake Ainslie.</p>
18.2 Recognize the values for which the river system was nominated as a Canadian Heritage River in environmental impact assessments undertaken in the watershed.	Ongoing	<p>The public and subject matter experts comment on mining proposals via the environmental assessment process.</p> <p>In 2013, Inverness County council banned fracking after a proposal for Lake Ainslie.</p>
19 COMMERCIAL FISHING		
19.1 Continue efforts to develop voluntary housekeeping guidelines for gaspereau fishing, and associated site maintenance and upkeep.	Ongoing	<p>Regulations governed by the Department of Fisheries and Oceans change based on population analyses.</p> <p>Margaree Salmon Association continues habitat maintenance for salmon, trout and gaspereau.</p>
19.2 Continue the orderly development of aquaculture in the watershed under the provisions and procedures in the Aquaculture Act and the licensing and review process.	Ongoing	<p>The Margaree Salmon Hatchery is controlled by the province.</p> <p>The combined effort from the hatchery and Margaree Salmon Association allows for development of aquaculture.</p>
20 LAND USER AND LANDOWNER INFORMATION		
20.1 All government agencies, land users and landowners work in cooperation to develop and disseminate information to increase the knowledge and understanding of functions and interconnections within the river ecosystem. Increased awareness of impacts and land uses and activities on the river system will enable land users and landowners to make informed decisions regarding day to day activities.	Ongoing	<p>Projects from Margaree Salmon Association have helped raise river awareness. The interpretation at the fish hatchery has also created better understanding.</p>
20.2 Produce clear and concise information for land owners about options for voluntary stewardship agreements to formal management agreements, and to practice conservations on their own initiative.	Initiated	<p>The Margaree Watershed Panel has potential to act on this objective.</p>

Margaree–Lake Ainslie Canadian Heritage River: A Partnership Strategy (1996)

Degree of Achievement

- **Not yet initiated**
- **Initiated / underway**
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Actions/Notes

21 ANNUAL ASSESSMENT OF CANADIAN HERITAGE RIVERS SYSTEM VALUES

21.1 Establish a process to identify and determine significant changes in the heritage value of the Margaree Lake Ainslie River system in order to complete the Canadian Heritage Rivers System checklist for annual report submissions and the ten-year detailed assessment. Results of the assessments are made available to the public.

Addressed

Nova Scotia Environment submits annual reports as appropriate.




9.0 Benefits of Designation

A requirement of the Canadian Heritage Rivers System – Principles, Procedures and Operational Guidelines is for monitoring reports every 10 years to report on conservation, stewardship, economic, and cultural benefits resulting from designation. The greatest benefits from the designation are that, in the past few years, the Margaree–Lake River System has had its history widely recognized through various signage projects, and has continued to maintain a healthy salmon population through the help of stewardship groups such as the Margaree Salmon Association and the Margaree–Lake Ainslie Heritage River Society.

Table 7: Summary of Benefits Since Designation

Type of Benefit	Description
Environmental benefits	<ul style="list-style-type: none"> • Water quality generally improved in recent years. • Salmon, trout and gaspereau populations remain healthy with the combined conservation efforts from Margaree Salmon Association, Margaree Salmon Hatchery, and other stewardship groups. • Expansion of the Margaree River Wilderness Area allows for increased protection of the watershed.
Cultural benefits	<ul style="list-style-type: none"> • Designation has led to improved recognition of heritages sites along the river. • Increased knowledge on Mi'kmaq use of the river. • Information on cultural heritage sites is now widely computerized.
Recreational benefits:	<ul style="list-style-type: none"> • Increased public awareness for hiking, scenic appreciation. • Newer water recreation activities have been initiated, such as paddle boarding and tubing.
Improved knowledge:	<ul style="list-style-type: none"> • General knowledge of the history has improved with the Margaree–Lake Ainslee Heritage River Society signage projects
Monetary benefits (increased access to funding; increased revenue, etc.)	<ul style="list-style-type: none"> • Canada 150 funding allowed for the society's signage projects in 2017-18.
Increased stewardship (increased involvement in stewardship activities, number of activities / events, etc.)	<ul style="list-style-type: none"> • The society became active in 2016 after being defunct for more than 6 years. Since its, revival many signage projects have been completed. • Margaree Salmon Association continues to be a key stakeholder in stewardship efforts.
Have there been any downsides to obtaining the designation?	<ul style="list-style-type: none"> • None

10.0 CHRS Commemorative Plaque Inventory Report

Name/job title of inspector	Dave Williams, Protected Areas Coordinator
Plaque title	Margaree–Lake Ainslie Heritage River plaque
Location	Margaree Forks
GPS coordinates	46.3339, -61.0968
Size of plaque	30" (76 cm) × 35" (89 cm)
Date of installation	1998
Description of location	Plaque is mounted on a large stone slab in the small village of Margaree Forks.
Photo inventory	  

11.0 Summary and Conclusion

The Margaree–Lake Ainslie river system remains a scenic area that is highly valued by local residents and visitors. Much of the activity that has taken place along the river has been focused on aquatic habitat improvements, research, and public education initiatives. The river is well known by anglers because of its Atlantic salmon and gaspereau fishing opportunities, and because of the maintenance done by stewardship groups annually. The river continues to tie together many residents and landowners with growing engagement by the public, government, stewardship groups, and business partners in enhancing the its many positive attributes.

This report has determined that the cultural, natural and recreational values of the Margaree–Lake Ainslie Canadian Heritage River have generally remained intact or have been improved since the first 10-year report. Based on this report, the Margaree–Lake Ainslie River System is deemed worthy of continued designation as a river of national significance within the Canadian Heritage River System.

12.0 References

- Canadian Heritage Rivers System. A Cultural Framework for Canadian Heritage Rivers, 2nd Edition. 2000
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- Canadian Heritage River System Hayes River 10-year Monitoring Report. 2016
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- Port Hawkesbury Paper. Annual Monitoring Report. 2017
- Port Hawkesbury Paper. Long Term Plan. 2015
- Margaree–Lake Ainslie Heritage River Society. “Come Discover” Brochure. 2017
- Margaree–Lake Ainslie Heritage River Society. Heritage River Signposts. 2018
- Margaree Salmon Association. Geomorphic Assessment of Margaree River. 2017
- Margaree Salmon Association. Margaree Watershed Stream Health Report. 2018
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- Nova Scotia Environment. Margaree River Wilderness Area Designation of Additional Lands. 2015