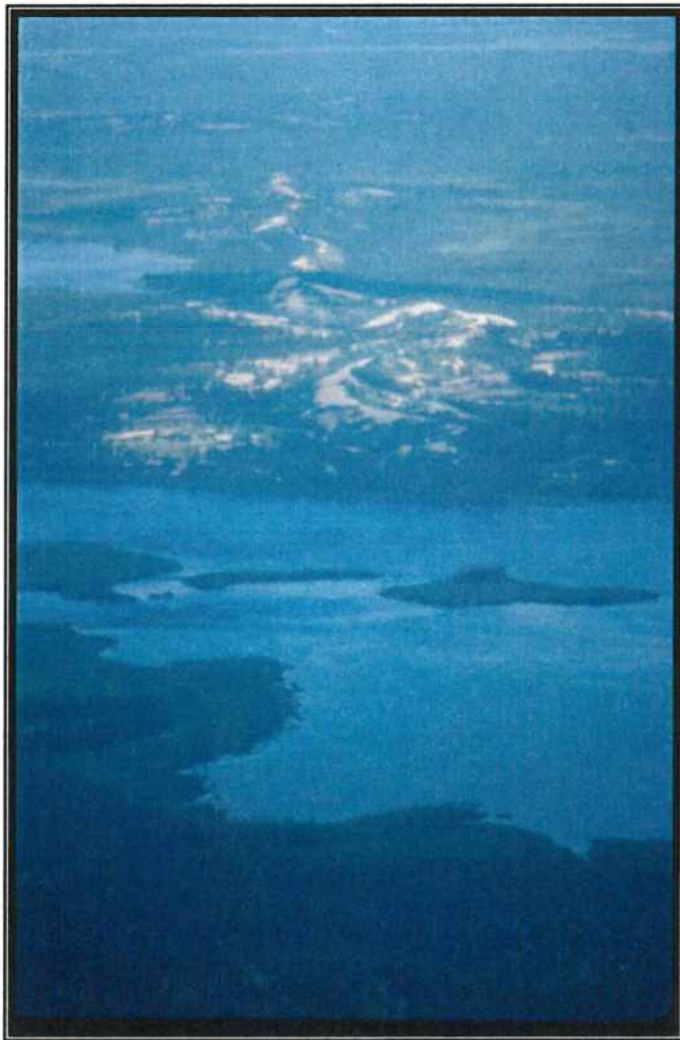


SEAL RIVER MONITORING REPORT



1992 - 2006

Report Prepared for:

Manitoba Conservation,
Parks and Natural Areas
Branch

and

The Canadian Heritage Rivers
System



Submitted by:
Marr Consulting Services Ltd.

**Seal River
Monitoring Report
Executive Summary**

The Seal River in northern Manitoba was designated to the Canadian Heritage Rivers System (CHRS) in 1992. This report describes activities, research and studies which have occurred on the Seal River since designation, and tabulates the current condition of natural heritage values, cultural heritage values, recreational values and integrity guidelines against CHRS frameworks. Management objectives identified in the designation document are also tabulated and the degree of achievement noted.

The very remoteness that has contributed to the outstanding values of the Seal River has also meant that few activities and studies have occurred on the Seal River since 1992. The limited research that has occurred has focussed on recreation, archaeological work, beluga whale counts and snow goose habitat. Most of this research centred on the estuary portion of the river. Recreational use by canoeists and eco-tourists appears to have increased, but overall numbers remain small. The largest change on the landscape was the natural phenomenon of a major fire in 1994.

This report has determined that the majority of the Seal River heritage values remain intact and essentially unchanged in the period since designation in 1992. The conclusion of this report is that the Seal River is worthy of continued designation as a river of national significance within the Canadian Heritage Rivers System.

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1.0 Introduction

On its way to the Hudson Bay, the Seal River in northern Manitoba flows through a pristine landscape of boreal forest grading into taiga, ending at the river's estuary in the vast tundra landscape. The largest undammed river in the province, it offers wild whitewater and unusual geology with vast vistas.

Opportunities for wildlife viewing include barren-ground caribou, polar bears, beluga whales and the namesake seals. Remote and little-travelled, the Seal is highly regarded by those who know it and its natural, cultural and recreational values. In 1992, after a multi-year nomination process, the Seal River was designated a Canadian Heritage River.

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

The four objectives of the Monitoring Report for the Seal River are:

- To describe any major changes that occurred in relation to the river since its designation.
- To review the natural, cultural and recreational values for which the river was nominated and determine if the river still possesses these values.
- To review the integrity guidelines of the river and describe whether the river continues to possess these values.
- To review the recommendations in the designation document *Toward a Management Plan for the Seal Heritage River* and determine the levels to which they have been accomplished.

This report is for information purposes only and is meant to be a concise and informative evaluation.

2.0 Background

The Seal River flows west to east near the 59th parallel in northern Manitoba. It is formed from the confluence of the North and South Seal Rivers, which both flow into Shetane Lake. The west end of this lake is where the designated portion begins, with the river flowing for 160 km to the Hudson Bay. The heritage river corridor encompasses the river and one kilometre on either side.



The river was first nominated in June 1987. Three key documents were prepared in advance of the designation: *The Seal River C.H.R.S. Background Study*; *The Seal River Nomination Document*; and *Toward a Management Plan for the Seal Heritage River*. In June of 1992, the Seal River became the second river in Manitoba to become part of the Canadian Heritage River System.

3.0 Methodology

Two main approaches were used to gain information about activities and changes on the Seal River since designation in 1992: (i) interviews with key individuals, and literature and (ii) Internet

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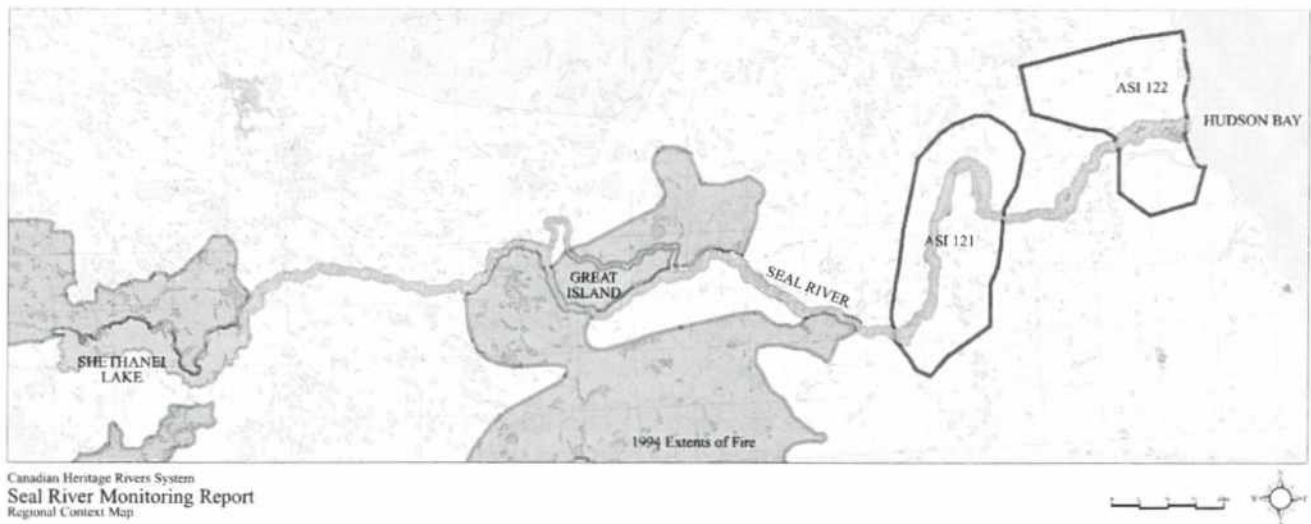
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searches. Several meetings were also held with the Steering Committee regarding the direction of the project.

(i) Interviews with key individuals provided information on activities, studies and changes on the Seal River since designation. Two meetings were held with staff from Manitoba Conservation, one in Winnipeg and one in Thompson. In addition, numerous phone and email dialogues were held with representatives from a variety of agencies.

(ii) A literature search revealed few references to the Seal River. The general database of the University of Manitoba was searched and only five references appeared, none dated post-1992. Several databases were also searched (Geo-Ref, Environmental Science and Pollution Management, Zoological Record, Biological Abstracts and Science Direct). Again, virtually no references were found. Several media and general databases were searched: Globe and Mail, New York Times, ProQuest and High Beam. Several articles were identified, mostly related to mining claims or tourism. Finally, a variety of Google searches were undertaken. The specific phrase "Seal River" with the Boolean "and" Manitoba was paired with a variety of topics. The results are too numerous to list, and have been incorporated into the details of the report. Despite the hundreds of hits, only limited new information came up through the searches. Conversations with key people also identified websites with some information.

A series of tables were developed based on the CHRS natural heritage, cultural heritage and integrity frameworks and the Manitoba recreational framework. The recommended management actions from the document *Towards a Management Plan for the Seal Heritage River* were also tabulated. Information gained from the various sources was summarized and inserted into the tables where appropriate, with a column indicating whether there had been any changes or threats to the values in the monitoring period. A chronology of significant events since 1992 was also compiled.



4.0 Chronology of Events

Table 1 lists specific events, actions, research or studies which have occurred on the Seal River since designation in 1992. General observations that cannot be dated are included in the appropriate sections of the report.

Table 1 Chronology of Events for the Seal River since Designation

Year	Significant Events, Actions, Research or Studies since 1992
Ongoing	Water flow monitoring by Environment Canada (although last data on record is in 2000).
1972 to 2001	Water quality monitoring by Environment Canada.
Various years	Banding of Canada Geese along Hudson Bay shoreline, including Seal River estuary.
1993	Completion of construction of Seal River Heritage Lodge and commencement of eco-tourism operations.
1994	Significant fire burnt approximately 26,600 ha along the Seal River.
1996	Construction of a fenced shelter at the estuary by a local outfitter to provide a safe refuge from polar bears while canoeists wait for the shuttle service back to Churchill.
1997 and later	Satellite tracking of snow goose habitat as part of a larger, ongoing study by the Hudson Bay Project, focused largely on La Pérouse Bay.
1997	Archaeological survey by Northern Lights Heritage Services Inc. at the estuary, commissioned by Seal River Heritage Lodge.
1997	Publication of <i>Night Spirits</i> by Ila Bussidor and Üstün Bilgen-Reinart regarding the Sayisi Dene First Nation, whose traditional use area includes the Seal River.
1998	Publication of <i>Wilderness Rivers</i> of Manitoba by Hap Wilson and Stephanie Aykroyd, including the Seal River.
1999	Identification of Seal River as an Important Bird Area (IBA) by BirdLife International.
1999	Seal Bend Area of Special Interest #121 identified under the Manitoba Protected Areas Initiative. Consultation with forestry and mining completed, and the area has been targeted for future consultation work with First Nations.

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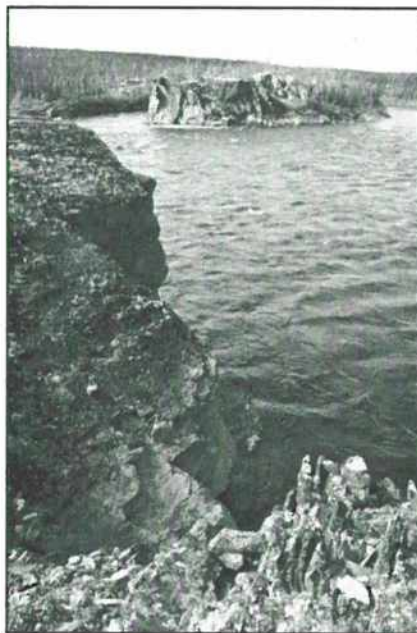
Year	Significant Events, Actions, Research or Studies since 1992
2000	Seal Estuary Area of Special Interest #122 identified (refined from an original proposal called Hubbards Point) under the Manitoba Protected Areas Initiative. Consultation with forestry and mining completed, and the area has been targeted for future consultation work with First Nations.
2002	Production of information kit by Manitoba Conservation for canoeists considering a trip down the Seal River.
2003	Film by Christine Persaud and Production Papillons Lunaires <i>Surfing the Seal</i> (46 min.) won the Adventure category in the 2003 WATERWALKER Film Festival.
2004	Aerial survey of beluga whales in the western Hudson Bay by Pierre Richard of Department of Fisheries and Oceans Canada.
2004	Research conducted locating recreation and camp sites for suitability modelling along the Seal River by Borden Smid and Dr. Michael Campbell of the University of Manitoba.
2005	Mining Exploration Licences (MEL) and claims in the region of the Seal River have increased since about 2002. In January 2005, an extensive MEL was registered in northeastern Manitoba, which covers many water bodies including the Seal River. Interest appears to be for diamonds. No drilling has occurred in the CHRS corridor.
2005	Commencement of Nunavut-Manitoba Route Selection Study to identify a potential all-weather road corridor for future consideration. Consultation has involved Manitoba Conservation, since a permanent bridge crossing would be required on the Seal River. No activities have occurred on the river at this stage.

5.0 Natural Heritage Values

Background

The designation of the Seal River to the CHRS was based on the following key natural heritage features:

- The Seal is the largest remaining un-dammed river in northern Manitoba.
- The river valley contains excellent representation of the sub-arctic boreal forest of the Precambrian Shield, and the arctic tundra of the Hudson Bay Lowlands.
- The valley is habitat for 33 species of plants which are rare in Manitoba, and supports some unusually large white spruce and tamarack.
- Glacial features including northern Manitoba's largest drumlin fields, extensive boulder fields, and 300 metre-wide eskers extending up to several hundred kilometres in a north-south direction, sometimes as lake peninsulas or submerged landforms. .
- The estuary area is rebounding from the weight of the glaciers at a rate of about 53 cm per century, among the fastest in the world.
- Undisturbed habitat for wildlife populations such as moose, black bear, wolf, fox, snowshoe hare, ptarmigan, Canada goose, ducks, otter and beaver. Wolverine, golden and bald eagle, osprey, and polar bear are also found. The river's estuary is the calving and feeding grounds for 3000 beluga whales, part of the largest concentration in the world and the Seal is winter range for part of the 400,000 strong Qamanirjuaq caribou herd.



Condition of Values since Designation

Very little research or other activity connected to natural heritage has occurred on the Seal River since its designation as a heritage river in 1992. Available information suggests that no significant changes have occurred to the natural heritage values. The following sections provide a description of significant research, studies and activity linked to natural heritage values, which are summarized in Table 3.

Water flow data has been collected on the Seal River below Great Island since 1955. Since designation, annual volume has been calculated for five of the 12 years, with the last data for 2000. For the years in which data is available, the annual volume data is within the minimum and maximum recorded for the river. Mean monthly discharge data (cms) is not available for every month of every year (due to the remoteness of the station, equipment problems cannot be readily addressed), but June typically is the month of highest flow. The exception was 1995, when maximum flows were recorded in September. Flows for that month and also

August and October of that year were the highest ever recorded on the Seal.

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Limited water quality sampling has occurred on the Seal River since designation and the program was discontinued in 2001. An assessment of Seal River water quality (Manitoba Water Stewardship 2000), based on 48 samples since 1972, found that for most measurements, the values were below guidelines, with the exception of trace metals. The State of the Environment report for 1997 indicates that the Water Quality Index is "fair" and had remained relatively constant over the five years. This assessment does not necessarily mean that the water quality of the Seal is not good or even excellent, given its remote location and the absence of sources of potential pollutants. The "fair" assessment may be an artefact of lack of data and individual exceedances of only a few variables. Water quality may also have been impacted by the fire of 1994.

Sturgeon (*Acipenser fulvens*) has not previously been noted in any documents on the Seal River, either prior to nomination or subsequently. However, evidence suggests that sturgeon may be found as far north as the mouth of the Seal River. Several general references were found: one a scientific journal article (Ferguson and Duckworth, 1997); a document from the COSEWIC website; "Underwater World" prepared by Fisheries and Oceans Canada and several student graduate theses. It is believed that these stem from a single unconfirmed report and DFO is investigating. If the presence of sturgeon is confirmed, it is significant for several reasons. Firstly, it would become the most northerly record of the fish in Manitoba (presently the Churchill River is the most northerly). Secondly, if the sighting was in fact at the mouth of the Seal, this would suggest a greater salt tolerance than normally associated with this species.

The Seal River estuary is considered globally significant for migrating Black Scoters, with over 1% of the North American population present. The estuary was identified in 1999 as an Important Bird Area or IBA, site number MB013. The IBA program is an international conservation initiative co-ordinated by BirdLife International. An Important Bird Area (IBA) is a site providing essential habitat for one or more species of breeding or non-breeding birds. These sites may contain threatened species, endemic species, species representative of a biome, or highly exceptional concentrations of birds.

The estuary of the Seal River has also been included to a limited extent in the long-term and on-going research work conducted by the Hudson Bay Project. The research is a collaboration among many institutions, including the American Museum of Natural History in New York. While research had focused on snow geese populations and changes to their habitat at La Pérouse Bay near Churchill, satellite imagery has been used to monitor vegetation changes between the Seal and Knife Rivers. Areas of habitat degradation at the Seal estuary have been identified, linked to very high population numbers, although the extent of the degradation appears to be less than in the vicinity of the Knife River. This is a regional issue, with populations of snow geese in the Hudson and James Bays tripling to nearly six million in the past 30 years. The Canadian Wildlife Service indicates that geese populations are monitored in the eastern and central arctic, where there is greater concern than at the Seal River estuary.



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Recently, a new species of Canada Goose has been recognized. Based on genetics and distribution, the original species has been divided into two species, a large and a small. The Seal River is the location where both overlap, in increased numbers. In August of 2006 a limited research project on the genetics of the two species will be undertaken by the Canadian Wildlife Service at the Seal River.

Polar bears are generally found only at the estuary, but in 1999 a polar bear was filmed at Wollaston Lake in Saskatchewan. Although no data is provided, this is attributed to a bear “wandering too far up the Seal River in Manitoba in search of supper!” No research has specifically been undertaken at the Seal. Populations in Churchill are experiencing declines in body condition and cub production, but the population appears to be stabilized (Lunn and Stirling, 2001). Personal observation by tour operators on the Seal suggest an increase in polar bear numbers, perhaps reflecting a more northerly shift in populations, and “no skinny bears”.



Several individuals who canoe or raft the river regularly report an increase in seal sightings, both in terms of numbers and how far upstream they are observed. Caribou populations in the region appear to be healthy. A survey of caribou in the region is scheduled for 2007. Beluga numbers appear to be stable and high. Aerial surveys for beluga whales were flown by Department of Fisheries and Oceans in 2004 in the Hudson Bay, including the Seal River estuary (Richard 2005). The report concluded that the estimated 2004 near-surface

populations in the Churchill-Seal and Nelson Rivers area of 27,200 was essentially unchanged from the estimated population of 25,100 whales in 1987. Two photo counts estimated groups of 4,074 and 5,253 whales in the Seal River estuary.

Canoeists and outfitters have observed bow-head whales, killer whales and barren-ground grizzlies in the area of the Seal River estuary. Arctic ground squirrels have been seen at the southern end of their range at the Seal River.

Table 2 summarizes the condition of Seal River natural heritage values since designation. The framework themes and sub-themes are drawn from *A Framework for the Natural Values of the Canadian Heritage Rivers, Second Edition*. The description of the framework elements in the second column are drawn largely from the same document. Information from the 1998 Nick Coomber document *Canadian Heritage Rivers System Cultural and Natural Theme Representations*, may also be included if it reflects values as they were described at the time of designation. The third column summarizes significant actions, research or studies from the text above. Where specific dates can be identified, they have been listed in the Chronology in Section 4.0

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Table 2 Seal River Natural Heritage Values since Designation

CHRS Natural Framework (2001) Themes and sub-Themes	Seal River Natural Heritage Elements Description (adapted from CHRS 2001 and Coomber 1998)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1 HYDROLOGY			
Sub-theme 1.1 Drainage Basins.	Hudson Bay Basin. Stream number 1.		None.
Sub-theme 1.2 Seasonal Variation.	Period of highest flow is June (summer melt); period of lowest flow is October-April.		None.
Sub-theme 1.3 Water Content.	Upper Seal as insignificant sediment load (0-50 mg/l or <5.0 Jackson Unit) and lower Seal as minor sediment load (51-200 mg/l or 5.1-10.0 JU); entire river rated as low Total Dissolved Solids (0-50 mg/l) .	Sporadic water quality monitoring, with 17 sample dates since 1992. Program now discontinued.	None.
Sub-theme 1.4 River Size.	Flow volume at lowest point of nomination – Medium river or 85-400 m ³ /sec. Length <500 km.	Monitoring has continued (with some gaps). Pattern generally the same, with exception of 1995.	None.
2 PHYSIOGRAPHY			
Sub-theme 2.1 Physiographic Regions.	Canadian Shield – Kazan region and Hudson Bay Lowlands.		None.
Sub-theme 2.2 Geological Processes.	Glacial transport, with typical features such as eskers, felsenmeer; Glacial rebound, with typical features of incised channels, abandoned beaches and deltas.		None.
Sub-theme 2.3 Hydrogeology.	Impervious shield bedrock with surficial unconsolidated materials of low porosity: fine grained clay and silt. Glacio-marine deposits in lower section.		None.
Sub-theme 2.4 Topography.	Moderate gradient (1-2 m/km). Height above sea level 0-400 m.		None.
3 RIVER MORPHOLOGY			
Sub-theme 3.1 Valley Types.	Not described at time of designation.		

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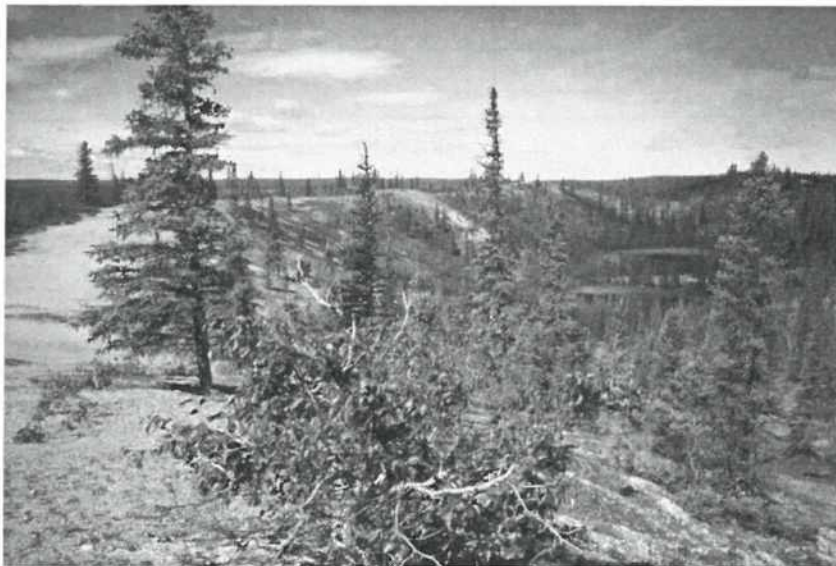
CHRS Natural Framework (2001) Themes and sub-Themes	Seal River Natural Heritage Elements Description (adapted from CHRS 2001 and Coomber 1998)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
Sub-theme 3.2 Channel Patterns.	Large-lake affected river; thermokarst lakes; estuarine.		None.
Sub-theme 3.3 Channel Profile.	White Water: cataract: Deaf Rapids; Cascading rapids, typically long class 2 or short class 3, small chutes and ledges (e.g. prolonged rapids at Great Island).		None.
Sub-theme 3.4 Fluvial Landforms.	Depositional landforms: deltas Erosional landforms: gorges.		None.
4 BIOTIC ENVIRONMENTS			
Sub-theme 4.1 Aquatic Ecosystems.	Riverine systems: Lowland zone and an estuarine system.		None.
Sub-theme 4.2 Terrestrial Ecosystems.	Ecozones: Southern Arctic; Taiga Shield and Hudson Plains.		None.
5 VEGETATION			
Sub-theme 5.1 Significant Plant Communities.	Trees: Extent of jack pine stands in lee of eskers.	Fire of 1994 would have reduced the extent of these stands.	Some minor change due to natural processes.
Sub-theme 5.2 Rare Plant Species.	28 provincially rare species at river mouth.		None.
6 FAUNA			
Sub-theme 6.1 Significant Animal Populations.	Mammals: population size – barren ground caribou Birds: location – cliff swallows Amphibians: location – wood frog.	Forest fire occurred in 1994 – no studies on impact to wildlife. Identification of IBA site for Black Scoters in 1999.	None identified.
Sub-theme 6.2 Rare Animal Species.	Endangered: beluga whale Designated of special concern: wolverine, polar bear Regionally rare: golden eagle, bald eagle.	No changes in COSEWIC designations.	None.

6.0 Cultural Heritage Values

Background

The river and the estuary were and still are used by Aboriginal peoples for hunting, fishing and travelling. The remoteness of the river, its whitewater and inhospitable climate meant that the Seal River was not used to any extent for European travel, trade or settlement. Historical features of interest include:

- The large number of prehistoric artefacts and archaeological sites including fire rings, scrapers, flakes, projectiles and hammers, often exposed on the surface of eskers at campsites and along the caribou trails by the river, between Tadoule and Great Island. The age of these finds spans the Paleo-Indian peoples of 7,000 years ago, to the Taltheili Tradition of 1 A.D. to 1700 A.D.
- The remains of Dene and European trappers' cabins, and 100 year old grave sites marked by picket fences on top of eskers, reflect more recent occupation.
- The association with one European explorer. Samuel Hearne of the Hudson Bay Company left Fort Prince of Wales, near Churchill, in February 1771, on his second of three attempts to locate the copper fields which the Indians said bordered the northern ocean. Hearne followed the Seal River inland on foot to Shethanei Lake.
- An abandoned mining camp on Great Island, which operated during the 1940's and 1950's. Well preserved log buildings, a dynamite storage shack, a drilling platform, and other remnants were scattered throughout the site at the time of designation (note: fire in 1994).



Condition of Values since Designation

Very little research or other activity connected to cultural heritage has occurred on the Seal River since designation in 1992. Only one study is known: a survey of archaeological sites along the Hudson Bay coast in the vicinity of the Seal River Heritage Lodge (Petch 1997). Seven archaeological sites were identified in the report with tent rings, kayak rests, caches, hunting blinds, chert flakes and a possible grave. A book published by Ila Bussidor and

Üstün Bilgen-Reinart (1997) about the relocation of the Sayisi Dene to Tadoule Lake in 1973 provides background of the cultural heritage related to the Seal River. No new archaeological sites along the river have been added to provincial database, although one outfitter brought artefacts and photographs to the attention of Historic Resources Branch in the 1990's.

Anecdotal information from canoeists who travel the Seal River indicates that there has been some change to the cultural features of the area. For example, the fire of 1994 destroyed the mining camp on Great Island. It may also have destroyed other artefacts, or conversely exposed new ones. Migration by caribou along the eskers is known to disturb artefacts lying on the surface. Travellers along the river may also be damaging or removing cultural artefacts. Several outfitters mentioned disturbance to the birch bark rolls from the shore of Shetanei Lake and the disappearance of woodworking tools, possibly dating from the 1800's from a different site on Shetanei.

Table 3 summarizes the condition of Seal River cultural heritage values since designation. The framework themes and sub-themes are drawn from the 2000 document *A Cultural Framework for Canadian Heritage Rivers, 2nd Edition*. The description of the framework elements for the Seal River are drawn from the 1998 Nick Coomber document titled *Canadian Heritage Rivers System Cultural and Natural Theme*. The third column summarizes significant actions, research or studies from the text above. Where specific dates can be identified, they have been listed in the Chronology in Section 4.0.

Table 3 Seal River Cultural Heritage Values since Designation

CHRS Cultural Framework (2000)	Seal River Cultural Heritage Value(s) (from Coomber 1998)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
1 RESOURCE HARVESTING			
Sub-theme 1.1 Fishing.	Not described at time of designation.		
Sub-theme 1.2 Shoreline Resource Harvesting.	<ul style="list-style-type: none"> Abandoned mining exploration camp on Great Island, c. 1950s. Trapper's cabin. 	One study near estuary (Petch 1997).	Fire of 1994 destroyed this camp. Status of trapper cabin unknown but likely unchanged.
Sub-theme 1.3 Extraction of Water.	Not described at time of designation.		
2 WATER TRANSPORT			
Sub-theme 2.1 Commercial transportation.	Not described at time of designation.		
Sub-theme 2.2 Transportation Services.	Not described at time of designation.		
Sub-theme 2.3 Exploration and Surveying.	Exploration/Prospecting: Samuel Hearne (1770-71) in search of the Arctic copper mines (evidence of campsites).		None.

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CHRS Cultural Framework (2000)	Seal River Cultural Heritage Value(s) (from Coomber 1998)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
3 RIPARIAN SETTLEMENT			
Sub-theme 3.1 Siting of Dwellings.	Aboriginal habitation sites (semi-permanent, prehistoric campsites), evidence of chips, flakes, scrapers, arrowheads, spear points, hammers, cutting stones, fire rings and cores attributed to the Archaic period.	One study near estuary (Petch 1997).	Fire, caribou and other natural events have likely destroyed some artefacts but also possibly exposed others. Some loss of artefacts attributed to travellers on the river.
Sub-theme 3.2 River-based Communities.	Not described at time of designation.		
Sub-theme 3.3 River-influenced Transportation.	Not described at time of designation.		
4 CULTURE AND RECREATION			
Sub-theme 4.1 Spiritual Associations.	Aboriginal grave sites.		None.
Sub-theme 4.2 Cultural Expression.	Not described at time of designation.		
Sub-theme 4.3 Early Recreation.	Not described at time of designation.		
5 JURISDICTIONAL USES			
Sub-theme 5.1 Conflicts and Military Associations.	Not described at time of designation.		
Sub-theme 5.2 Boundaries.	Not described at time of designation.		
Sub-theme 5.3 Environmental Regulation.	Not described at time of designation.		

7.0 Recreation Values

Background

The Seal River is known for its exceptional recreational capabilities, notably wilderness and whitewater canoeing or rafting. Often considered “a trip of a lifetime”, the remoteness, ruggedness, difficulty of access and lack of modern human activity has sustained this river as a premier destination. The quality of the river experience is also enhanced by the diversity of the vegetation and landscape, the quality of the whitewater, the opportunity to see wildlife and to view cultural features. In addition to canoeing or rafting, eskers offer unusual hiking opportunities and fishing is possible.

Condition of Values since Designation

Little research or data has been collected on the Seal River since designation, with the exception of current graduate studies from the University of Manitoba Department of Physical Education and Recreation Studies, under the direction of Dr. Michael Campbell. The student working on this is Borden Smid and the focus of his research is the development and testing of Recreation Habitat Suitability Indices as planning tools and the incorporation of sense of place into modeling. Recreational and especially camp sites were identified with GPS units along the Seal, linked to landscape characteristics, particularly vegetation and enduring features. Results in the boreal have been promising but the field work indicated that the boreal forest models did not apply in the transition ecozone of the Seal River.

Table 4 has been developed from anecdotal information. Key activities since designation remain canoeing and wildlife watching. The attributes which make the Seal such a unique destination have continued to limit the numbers of travellers on the river, and the recreational values remain essentially unchanged since designation.



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Several sources speculated that overall canoeing use had likely declined since designation in 1992, perhaps due to the increased cost to access the Seal. However, individuals who spent more time on the river itself have seen an increase (albeit small) in recreational activity. For example, one tour operator estimated that currently 30-60 canoeists are on the river annually compared to 10-30 around 1992. Numbers tend to fluctuate among years.

One outfitter who canoes the river regularly indicates that the campsites remain in pristine condition. Canoeists on the Seal are likely: individuals who plan their own trips and logistics; commercial operators with groups of clients; and other groups. Apparently a number of the canoeists are American or European.

Since designation wildlife watching opportunities on the Seal River have been promoted by tour operators. As an example, the Seal River Heritage Lodge has added sea-kayaking, swimming with the beluga whales and winter ecology tours.

Several tour operators or outfitters from Manitoba and Saskatchewan are presently running their own trips on the Seal River. Trips are also marketed by a number of private tour operators in the US, Canada, and Australia. Seal River trips are also sold through various on-line adventure sites further adding to the profile of the river.

The Seal River has been promoted as an adventure travel destination since its designation in 1992 through the publication of information by the government, and publication of articles and books which mention or feature the Seal River. Manitoba Conservation Parks has prepared information kits for canoeing the Seal River, as well as the Bloodvein and Hayes Rivers. Two to three kits for the Seal are requested each year, and the kits have been well-received. The Seal River is included and at times featured in marketing material prepared by Travel Manitoba, such as its website, press releases and the Outdoor Adventure Guide.

In 1998, Hap Wilson and Stephanie Aykroyd published *Wilderness Rivers*, which described canoe routes in Manitoba, including the Seal. Although firm numbers are not available, print, internet or other media stories have appeared that have featured the Seal River. A film by Christine Persaud and Production Papillons Lunaires *Surfing the Seal* (46 min.) won the Adventure category in the 2003 WATERWALKER Film Festival. Individual accounts of canoe trips on the Seal have been posted on various websites.

Anecdotal information and searches on the Internet suggest that there is little commercial hunting on the Seal and also little to no traditional use by First Nation peoples. The same is true of fishing, with the exception of canoeists who may fish for food. Since 1991, Travel Manitoba has recorded Master Angler Awards for the province, and sixty-two awards are noted for the Seal River. However, those who know the river are sceptical that the fish were caught on the CHRS section of the river.

Table 4 summarizes the condition of Seal River recreation values since nomination. The framework themes and sub-themes, as well as the capability ratings, are drawn from the 1997 document *Canadian Heritage Rivers System Systems Study of Rivers in Manitoba*. The third column summarizes significant actions, research or studies from the text above. Where specific dates can be identified, they have been listed in the Chronology in Section 4.0. A description of the current situation, drawn from anecdotal comments, is provided in the fourth column, since only a capability rating existed previously.

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Table 4 Seal River Recreation Values since Designation

Recreational Capability Themes and Sub-themes (HTFC 1997)	Original Seal River Recreation Capability Ratings (HTFC 1997)	Significant Actions, Research or Studies	Description of Current Situation	Changes or Threats to Nomination Value(s)
1 BOATING				
Sub-theme 1.1 Whitewater Canoe, Kayak and Raft.	High.	Publication of books and articles as well as government information.	The Seal remains a high quality, remote and wilderness river.	None.
Sub-theme 1.2 Extended Canoe Tripping.	High.	Study by University of Manitoba into Recreation Habitat Suitability Indices.	Same as above.	None.
2 ANGLING				
Sub-theme 2.3 Extended Angling Vacation.	High.		Lack of accommodation, difficulty and expense of access and availability of more accessible fishing areas suggest that extended angling vacations will not occur on the Seal River.	None.
Sub-theme 2.4 Fly Fishing.	High.		Capability remains high; potential is unlikely to be realized due to the remoteness of the river.	None.
Sub-theme 2.5 Ice Fishing.	Low.		The capability and use remains low, due both to the remoteness and ice conditions from the swift current.	None.
Sub-theme 2.6 Specific Species.	Walleye, perch – low; pike – high; grayling, arctic char – high; brook trout – low.		Fishing occurs as secondary activity primarily by canoeists.	None.

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Recreational Capability Themes and Sub-themes (HTFC 1997)	Original Seal River Recreation Capability Ratings (HTFC 1997)	Significant Actions, Research or Studies	Description of Current Situation	Changes or Threats to Nomination Value(s)
3 WATER CONTACT				
Sub-theme 3.1 Swimming.	Low.		The remoteness, cold water and swift current keeps this rating as low.	None.
4 WATER ASSOCIATED ACTIVITIES				
Sub-theme 4.2 Camping.	Low.	Study by University of Manitoba into Recreation Habitat Suitability Indices.	The lack of good and the ruggedness of campsites along the Seal, remains the same, although the existing sites remain un-impacted by increased travel.	None.
Sub-theme 4.3 Hunting.	High.		Although highly rated, actual use is low and unchanged since 1992 due to remoteness.	None.
5 WINTER ACTIVITIES				
Sub-theme 5.1 Snowmobiling.	High.		Although highly rated, actual use is low due to remoteness.	None.
6 NATURAL HERITAGE APPRECIATION				
Sub-theme 6.1 Wildlife.	High.	Forest fire in 1994.	Opportunity to see harbour seals, belugas, polar bears and possibly caribou remains high. Recent sightings of bow-head whales and barren-ground grizzlies.	None.
Sub-theme 6.2 Vegetation.	High.	The 1994 fire impacted trees and vegetation in a relatively small area.	Diversity of vegetation along the length of the river, from boreal forest, through taiga to tundra.	Minor change due to fire.

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Recreational Capability Themes and Sub-themes (HTFC 1997)	Original Seal River Recreation Capability Ratings (HTFC 1997)	Significant Actions, Research or Studies	Description of Current Situation	Changes or Threats to Nomination Value(s)
Sub-theme 6.3 Vistas/ Scenic Quality.	High.		Views from the eskers and the stark beauty of the sub-arctic landscape.	None.
Sub-theme 6.4 Geological Features/ Water Features.	High.		Eskers, cliffs and whitewater features.	None.
7 HUMAN HERITAGE APPRECIATION				
Sub-theme 7.1 Historic Sites.	Low.	Petch (1997) identified seven sites within walking distance of the Seal River Heritage Lodge.	Small number of identified sites, Some changes may have occurred due to natural or human impacts.	None to slight change.
Sub-theme 7.2 Cultural Landscapes.	Low.	Publication of two books will have increased background knowledge by potential visitors (Wilson and Aykrod 1998 and Bussidor and Bilgen-Reinart 1997).	While the interpretive story of the tenuousness of existence in this landscape is strong, the opportunity to be exposed to this experience is low.	Minor change.

7.0 Integrity Guidelines

Integrity was considered at the time of the nomination of the Seal River, and the nomination document states: “The Seal River contains all of the elements needed to demonstrate the key aspects of the processes and activities which give the river its outstanding value”.

Table 5 summarizes the condition of Seal River integrity guidelines since designation. The framework themes are drawn from the 2000 document *Canadian Heritage Rivers System – Principles, Procedures and Operational Guidelines*. A description of the current situation, drawn from the work during the study and the information in the previous tables, is provided in the second column, since integrity guidelines were not assessed in detail at time of nomination.

Table 5 Seal River Integrity Guidelines since Designation

CHRS Principles, Procedures and Operational Guidelines (2000)	Seal River Integrity Guideline(s)	Changes or Threats to River Integrity
3.3.1 NATURAL INTEGRITY GUIDELINES		
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 Seal River is a pristine, remote river, and the largest undeveloped river in the province. It has unique features found in few other places in Manitoba. The two-kilometre wide corridor and the length of the river captures all or most of the key interrelated and interdependent features.	None.
The nominated area contains those ecosystem components required for the continuity of the species, features or objects to be protected.	The Seal River traverses three key terrestrial ecozones and the size of the corridor addresses this integrity value. The river has the representative diversity of wildlife and vegetation expected with its northern location, but also has populations of barren-ground caribou, polar bears, beluga whales and harbour seals.	None.
There are no man-made impoundments within the nominated section.	No impoundments on the river.	None.
All key elements and ecosystem components are unaffected by impoundments located outside the nominated section.	No impoundments on the watershed of the river.	None.
Natural values for which the river is nominated have not been created by impoundments.	No impoundments on the river nor its watershed.	None.

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CHRS Principles, Procedures and Operational Guidelines (2000)	Seal River Integrity Guideline(s)	Changes or Threats to River Integrity
The water of the nominated section of the river is uncontaminated to the extent that its natural aquatic ecosystem is intact.	While the water quality index for the river suggests fair quality, this is attributed to missing measurements for some of the characteristics. No known local sources of contamination are known.	None. Increased activity along the Hudson Bay shoreline slightly increases risk to the estuary only.
The natural aesthetic value of the river is not compromised by human developments.	Virtually no human developments exist along the river, and those away from the estuary are all historic. The Seal River Heritage Lodge near the estuary was built for eco-tourism purposes.	None.
3.3.2 CULTURAL INTEGRITY VALUES		
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.	The Seal was not nominated primarily for its human heritage values. Within the corridor, artefacts from human occupation can be found, but a comprehensive evaluation has not been conducted.	None.
The visual appearance of the nominated section of river enables an appreciation of at least one of the periods of the river's historical importance.	The river's natural appearance reflects a period of occupation by Aboriginal people prior to European contact and the fur trade era. Several sites are associated with the explorations of Samuel Hearne.	None.
The key artefacts and sites comprising the values for which the river is nominated are unimpaired by impoundments and human land uses.	No impoundments and little human land use occurred prior to the nomination.	None.
The water quality of the nominated section does not detract from the aesthetic appearance or the cultural experience provided by its cultural values.	Water quality does not detract from the cultural values.	None.

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CHRS Principles, Procedures and Operational Guidelines (2000)	Seal River Integrity Guideline(s)	Changes or Threats to River Integrity
3.3.3 RECREATIONAL INTEGRITY VALUES		
The river possesses water of a quality suitable for contact recreational activities, including those recreational opportunities for which it is nominated.	The water quality of the river meets all recreational water quality standards. However, swimming capability is rated as low, given the water temperature and high flows.	None.
The river's visual appearance is capable of providing river travellers with a continuous natural experience, or a combined natural and cultural experience, without significant interruption by modern human intrusions.	The Seal River provides an outstanding recreational whitewater experience, including the aesthetics of the landscape. The aesthetic quality and integrity is based on the diversity of visual experience as well as the quality of the natural and cultural values.	None.
The river is capable of supporting increased recreational uses without significant loss of or impact on its natural, cultural or aesthetic values.	Current levels of recreational use are very low and there are no indications of impacts by recreational users.	None.



9.0 Management Objectives

During the designation process, a preliminary document with management goals and objectives, *Toward a Management Plan for the Seal Heritage River*, was prepared. The document was presented to the Board of the CHRS, allowing the Seal River to be designated in 1992. Table 6 lists management goals and objectives from the document and reports on related activities. It is important to keep in mind that this reporting is measuring against essentially a draft management plan. In some instances, actions on these goals and objectives have been through regional or provincial initiatives rather than Seal River specific initiatives. The third column in the table identifies actions by other agencies or individuals that have contributed to the achievement of the objectives.

Table 6 Seal River Management Plan Recommendations and Current Status

Toward a Management Plan for the Seal Heritage River (1990)	Degree of Achievement (by government actions)	Notes
4.1 HERITAGE RESOURCES		
Proposed Management Goal: Heritage values and resources shall be protected and managed to ensure perpetuation of values basic to Heritage River designation and status.		
Objectives:		
<ul style="list-style-type: none"> To establish guidelines which protect and maintain the significant heritage values found along the river including water, fish, wildlife, geological features, landforms, vegetation, archaeological remains and spiritually significant areas. 	No river specific guidelines have been developed. The Sustainable Development Act and other provincial legislation enacted since 1992 provide some protection through normal permit review activities. Two Areas of Special Interest identified on the Seal River under the Manitoba Protected Areas Initiative, although further consultation and work is needed.	
<ul style="list-style-type: none"> To identify significant heritage resources and recommend site-specific management policies and programs for their protection. 	Anecdotal information and regional studies have identified these to some extent. Cultural heritage features are listed in a provincial database. Work by the Beverley and Qamanirjuaq Caribou Management Board addresses this regionally for one key species.	

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Toward a Management Plan for the Seal Heritage River (1990)	Degree of Achievement (by government actions)	Notes
<ul style="list-style-type: none"> To establish a monitoring system to detect erosion of heritage resources and values, and to identify procedures that restore values when required. 	Some monitoring of activities occurs through permit review processes.	
4.2 RECREATION RESOURCES		
<p>Proposed Management Goal: Appropriate and compatible recreation opportunities which ensure that heritage values and wilderness experiences are adequately protected will be provided so that the public can visit, appreciate, understand and enjoy the resources of the Seal River.</p>		
Objectives:		
<ul style="list-style-type: none"> To establish guidelines which protect and maintain the significant recreation resources found along the river. 	Not done. River information kit assists.	Several outfitters highlighted their concern for the fragility of the environment and how they are addressing this through their business operations.
<ul style="list-style-type: none"> To identify high value recreation resources and recommend site-specific management policies for their protection. 	Not done.	Study by University of Manitoba into Recreation Habitat Suitability Indices.
<ul style="list-style-type: none"> To provide recreational services that facilitate the recreational enjoyment of the river, and are compatible with the river's wilderness character. 	Preparation of the river information kit, including "leave no trace" information. No other proposals received for facilities on the Seal River.	Polar bear-proof compound constructed at estuary to provide a safe refuge while awaiting pick-up.
<ul style="list-style-type: none"> To inform the public of recreational activities and opportunities, heritage values, and facilities and services in order to facilitate use and enjoyment of the river. 	Travel Manitoba identifies the Seal River as a key wilderness river, Preparation of river information kit has occurred.	Internet profile of the river has increased.
<ul style="list-style-type: none"> To promote visitor safety by establishing a central trip registry and preparing an informational brochure which details conditions and hazards? 	River information kit mentions river hazards. Limited number of outfitter licences granted for the river. No formal registry has been established.	

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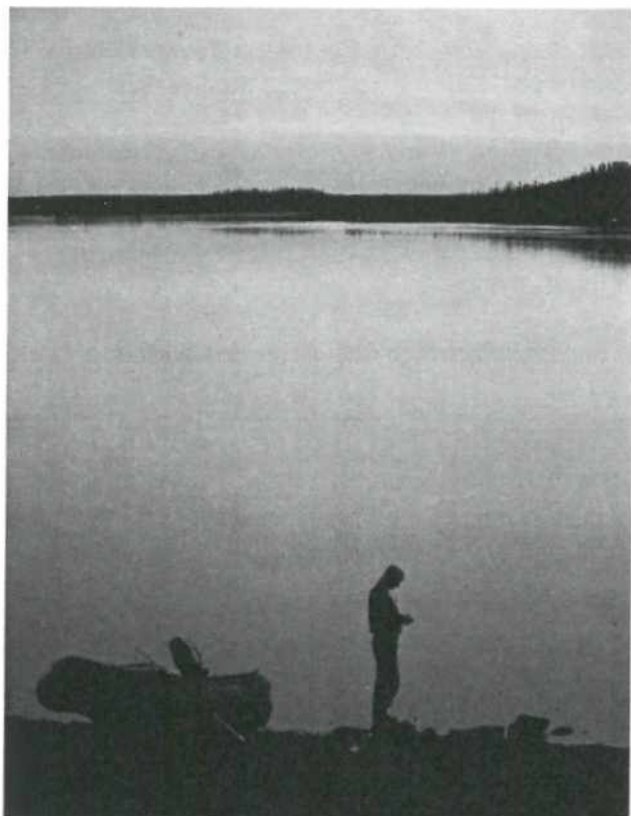
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Toward a Management Plan for the Seal Heritage River (1990)	Degree of Achievement (by government actions)	Notes
<ul style="list-style-type: none"> To establish a monitoring system to detect erosion of recreation resources and recommends actions that restore values when required. 	No formal system has been established. Permit review provides a degree of monitoring.	Post-trip pick-up service provided by a private operator provides unofficial monitoring.
4.3 COMMERCIAL RESOURCE USE		
<p>Proposed Management Goal: Commercial resource use and associated activities will be managed to ensure perpetuation of values basic to Heritage River designation and status. The option to review the Heritage River status in the event of a proposed provincially significant hydro or mining development will be maintained.</p>		
Objectives:		
<ul style="list-style-type: none"> To accommodate commercial utilization of resources where it does not lessen future recreational use potential or unduly compromise the primary purposes of the Heritage River. 	Manitoba Hydro is not contemplating development on the Seal. Current mineral exploration and review of a possible road are in early stages, with potential development many years away.	
<ul style="list-style-type: none"> To establish standards which limit impacts from commercial resource use on significant heritage values to levels which do not degrade these values. 	Government review and consultation processes will be utilized should a proposal be received.	
<ul style="list-style-type: none"> To establish a monitoring system to detect erosion of heritage values and to establish procedures that restore values when required. 	Provincial and federal regulatory review processes will determine need for monitoring and mitigation programs.	
4.4 REGIONAL INTEGRATION		
<p>Proposed Management Goal: Ongoing planning and management of the Seal Heritage River will be integrated with regional concerns and wishes to the greatest extent possible.</p>		
Objectives:		
<ul style="list-style-type: none"> To involve local communities and regional managing agencies in the preparation and implementation of specific management and development programs for the river. 	Sayisi Dene First Nation is advised prior to issuing of any outfitter licences on the Seal.	

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Toward a Management Plan for the Seal Heritage River (1990)	Degree of Achievement (by government actions)	Notes
<ul style="list-style-type: none">To benefit local communities through economic spinoffs associated with Heritage River status – such as employment, tourism or entrepreneurial opportunities – to the greatest degree possible.		Seal River Lodge began operating in 1993; outfitter in Churchill who built cage and transports canoeists from mouth to Churchill.
<ul style="list-style-type: none">To incorporate traditional native use of the area as an integral part of the river's heritage values, and ensure that these uses and future potential uses remain unaltered as a result of Heritage River designation.	Little use presently occurs. This topic would be a significant priority in required provincial and perhaps federal regulatory review, should development become more likely.	



10.0 Summary

The Seal River is a spectacular northern river in Manitoba, the largest un-dammed river in the province. Little activity has occurred on the river since its designation to the CHRS in 1992, largely due to its remoteness. Although well promoted for recreational purpose, especially canoeing and wildlife viewing, use of the river remains low. Most changes and threats are due to natural causes such as forest fires. This report has determined that the majority of the Seal River heritage values remain intact and unchanged in the period since designation in 1992. Based on the findings of this report, the Seal River is worthy of continued designation as a river of national significance within the Canadian Heritage Rivers System.

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Appendix A **Individuals Contacted During the Study**

NAME	POSITION	ORGANIZATION
Brian Barton	Regional Lands Manager	Manitoba Conservation
Yvonne Beaubien	Protected Areas	Manitoba Conservation
Shaun Bobier	District Supervisor	Manitoba Conservation, Churchill
Amar Chadha	Transportation Systems Planning and Development	Transportation and Government Services Manitoba
Bing Chu	Water Quality Specialist	Environment Canada, Saskatchewan
Jan Collins	Consultant, Tourism	Manitoba Culture, Heritage and Tourism
Rob Currie	Owner	Wilderness Spirit
Gary Dickson	Co-Manager	Manitoba Culture, Heritage and Tourism
Tom Ellis	River traveller	Thompson
Nicole Firlotte	Conservation Data Centre	Manitoba Conservation
Murray Gillespie	Provincial Game Bird Manager	Manitoba Conservation
Mike Goodyear	Director	Churchill Northern Studies Centre, Churchill
Dave Green	Water Quality Specialist	Manitoba Water Stewardship
Daryll Hedman	Regional Biologist	Manitoba Conservation, Thompson
Duane Kelln	Hydrologist	Water Stewardship
Peter Konopelny	Supervisor of Science and Technology	Manitoba Conservation
Jeanette Kosie	Administrator, Master Angler Awards	Travel Manitoba
Ryan Kustra	Power, Planning and Development	Manitoba Hydro
Jim Leafloor	Waterfowl Biologist	Canadian Wildlife Service
Rod MacCharles	Regional Parks Manager	Manitoba Conservation, The Pas
Don Macdonald	Regional Fisheries Manager	Manitoba Conservation, Thompson
Dave Pancoe	Owner	Northern Soul
Mike Reimer	Owner	Seal River Heritage Lodge
Pierre Richard	Beluga Whale Scientist	Department of Fisheries and Oceans Canada
Robert (Rocky) Rockwell	Department of Ornithology	American Museum of Natural History, New York
Richard Romaniuk	District Supervisor, NE Region	Manitoba Conservation

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NAME	POSITION	ORGANIZATION
Brian Smith	Archaeological Assessment Services	Manitoba Culture, Heritage and Tourism
Ric Syme	Director, Manitoba Geological Survey	Industry, Economic Development and Mines Manitoba
Randy Todd	Water Survey of Canada	Environment Canada, Thompson
Rick Wilson	Park Planner	Manitoba Conservation
Randy Woodell	Water Survey of Canada	Environment Canada
Sarah Wren	Conservation Biologist and IBA	Nature Canada, Ottawa

