



CANADIAN HERITAGE RIVERS SYSTEM  
LE RÉSEAU DES RIVIÈRES DU PATRIMOINE CANADIEN

*A Background Study for Nomination  
of the Ottawa River Under the  
Canadian Heritage Rivers System*

*Une étude de base pour la mise en  
candidature de la rivière des Outaouais au  
Réseau des rivières du patrimoine canadien*

2005



Ottawa River Heritage Designation Committee  
Comité de désignation patrimoniale de la rivière des Outaouais

**Kishpin wì-ganòjiyàng - [www.ottawariver.org](http://www.ottawariver.org)**



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# The Ottawa River By Night

*Poem donated by Margaret Atwood in support of Ottawa River heritage designation*

In the full moon you dream more.  
I know where I am: the Ottawa River  
far up, where the dam goes across.  
Once, midstorm, in the wide cold water  
upstream, two long canoes full  
of children tipped, and they all held hands  
and sang till the chill reached their hearts.  
I suppose in our waking lives that's the best  
we can hope for, if you think of that moment  
stretched out for years.

Once, my father  
and I paddled seven miles  
along a lake near here  
at night, with the trees like a pelt of dark  
hackles, and the waves hardly moving.  
In the moonlight the way ahead was clear  
and obscure both. I was twenty  
and impatient to get there, thinking  
such a thing existed.

None of this  
is in the dream, of course. Just the thick square-  
edged shape of the dam, and eastward  
the hills of sawdust from the mill, gleaming as white  
as dunes. To the left, stillness; to the right,  
the swirling foam of rapids  
over sharp rocks and snags; and below that, my father,  
moving away downstream  
in his boat, so skilfully  
although dead, I remember now; but no longer as old.  
He wears his grey hat, and evidently  
he can see again. There now,  
he's around the corner. He's heading eventually  
to the sea. Not the real one, with its sick whales  
and oil slicks, but the other sea,  
where there can still be  
safe arrivals.

Only a dream, I think, waking  
to the sound of nothing.  
Not nothing. I heard: it was a beach, or shore,  
and someone far off, walking.  
Nowhere familiar. Somewhere I've been before.  
It always takes a long time  
to decipher where you are.

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# Chapter 1

## Introduction

The Ottawa River cradles the natural and cultural heart of eastern Ontario and western Quebec. Canada's Aboriginal Peoples established their presence here some 6,000 years ago, followed by Europeans in pursuit of furs, timber, and land. From the area's first inhabitants to the explorers, guides, traders, loggers, settlers, and entrepreneurs that followed, the Ottawa River was truly the original trans-Canada highway.

The Ottawa River played an integral role in many of the key stories that make up Canada's history. It was the route for much of the early European exploration of North America, including Samuel de Champlain. Explorers in search of the Northwest Passage began their journeys along the Ottawa River. Other celebrated figures in Canadian history including Nicollet, Radisson, La Vérendrye, Dulhut and De Troyes, traveled west along the Ottawa River to establish trade relationships with First Nations communities, laying the groundwork for the fur trade.

The fur trade relied on the famous waterway routes that began and ended with the Ottawa River. France's North American colonial economy depended on the fur trade, which led to the development of the *coureurs de bois* and *voyageurs* era, and later to the creation of the North West and Hudson's Bay Companies. Amid the profound social, political, and economic changes of the 17<sup>th</sup> century, the Ottawa River remained one of North America's most important trading routes. It played a central role in the story of the fur trade in North America, and thus in the development of Canada.

The rich forests along the Ottawa Waterway attracted thousands of European immigrants in search of work. Waterpower for mills and transporting logs first drew settlers, and these sites eventually became permanent settlements. Descendants of Irish, French Canadian, Scottish and other nationalities produced a unique Ottawa Valley culture that is expressed in language, music and dance.

The great white pines of the Ottawa River Valley built British warships, and went on to construct Boston, New York, and Chicago. The timber and later lumber trades of the Ottawa Valley were made possible by the river itself and its tributaries, which were at the heart of the distribution process. The canal and steamboating era permitted extensive travel, trade and settlement. Subsequent hydroelectric development over the past century has dramatically transformed the Ottawa River. Economic development and settlement along both shores of the Ottawa River continue to be intimately intertwined with river resources.

The natural heritage that made the Ottawa River so attractive to its early inhabitants continues to be significant on a national level. Flowing 1271 kilometres from its source deep in the wilderness of Abitibi-Témiscamingue, the Ottawa River is one of the few rivers in the world to completely turn back on itself to flow southeast before reaching the St. Lawrence River. As the largest tributary to the St. Lawrence, the health of the Ottawa River watershed plays a significant role in the St. Lawrence basin ecosystem.



The Ottawa River traverses segments of the lithosphere that represent the past 3 billion years of the Earth's history. As the river continues to carry out its own, more recent process of erosion, it has exposed diverse features that can be viewed from the river or from shore. The accessibility of the geological features along the Ottawa River makes it an excellent and unique place to learn about our rich geoheritage.

The Ottawa River is home to many different ecosystems, each playing an important role in sustaining Canada's biodiversity. More than 300 species of bird have been inventoried along the river (Haxton and Chubbuck 4). About half of these are migratory species that use the Ottawa as one of the continent's most important migratory halts. In addition, 33 species of reptiles and amphibians, 53 species of mammals (DDEPQ), and 85 species of fish can also be observed along the river (Haxton and Chubbuck 3). Among these, several are rare and over 50 are considered to be species at risk.

Residents and visitors rely on the Ottawa River to reconnect with a natural environment. River-based recreation is a significant source of revenue for communities along the river, and represents one of the intrinsic values of the Ottawa River. Every year, hundreds of thousands of people practice paddling, boating, fishing, hiking and other forms of recreation along the Ottawa River. World-class whitewater paddling, and Ontario and Quebec's most popular canoe-camping parks are two major highlights that are associated with Ottawa River recreation.

Citizen interest and support has been building along the Ottawa River for several years to have it honoured as a Canadian Heritage River. The Canadian Heritage Rivers System (CHRS) will serve as a catalyst for governments, communities and local people to proactively promote, protect, and enhance the rich river heritage of the Ottawa. A citizen's group called the Ottawa River Heritage Designation Committee (ORHDC) is leading the initiative to have the Ottawa River formally proclaimed a Canadian Heritage River. Local sub-committees along the entire length of the Ottawa River and in both Quebec and Ontario and within First Nations communities are participating in this exciting process.

The following Background Study outlines the significant human, natural and recreational heritage values of the Ottawa River. For each of these values, major themes, background information and visible features along the river underline its importance. The Study concludes with an assessment of the river's values and recommends formal nomination of the Ottawa River as a Canadian Heritage River.

## 1.1 Description of the Ottawa River

The Ottawa River flows 1271 kilometres from its source deep in the wilderness of Abitibi-Témiscamingue until it joins the St. Lawrence River west of Montreal, making it the second-longest Canadian river flowing to the Atlantic Ocean. Rising 250 kilometres north of Ottawa in Lake Capimitchigama, a long and narrow lake in the southern Canadian Shield, the river flows west and then south through Lake Temiskaming<sup>1</sup> to its junction with the Mattawa River. The headwaters of the Ottawa are within 20 kilometres of those of the Gatineau River.

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<sup>1</sup> For the purposes of this document, the spelling "Temiskaming" will be used when referring to Lake Temiskaming, Temiskaming Shores and the community of Temiskaming in Quebec. National historic site Fort Témiscamingue will take the French spelling, as will the region of Abitibi-Témiscamingue. The only other variations will be in the spelling of Timiskaming Nation and Reserve, and of the Timiskaming Mission.

After a sharp turn east, the river follows the best-known part of its course over 500 kilometres to Montreal. Few major rivers completely turn back on themselves; the Ottawa River finishes its course in the opposite direction to its first third. The Ottawa Waterway, as the section from Montreal to Mattawa is known, gave early explorers access to the Northern Sea, the Pacific Ocean and the Mississippi. The Ottawa River still provides the shortest water route to the Great Lakes.

The Lower Ottawa River forms the border between the provinces of Quebec and Ontario. The watershed, draining an area of 146,300 square kilometres, is divided between the two provinces. The river upstream of Lake Temiskaming flows entirely within the province of Quebec. The Ottawa is the greatest tributary of

**Figure 1.2 Aerial View of the Outaouais**



Source: Mia & Klaus

the St. Lawrence, with an average flow greater than that of all of the rivers of England and Wales combined (Legget 3).

The Upper Ottawa River is fed by many tributaries, including the Winneway River, which enters Lac Simard and then Lac des Quinze. Several tributaries including the Épinette, Kinojévis, Chochocouane, Capitachouane, Camachigama Rivers join the dense lake system of the Ottawa's upper stretches. Major lakes of the Upper Ottawa River include des Quinze, Granet, Simard, Témiscamingue and Grand Lac Victoria. The upper reaches of the Ottawa are located in the southern tip of the Canadian Shield. The region surrounding the Upper Ottawa is typically one of forests, lakes, rivers and rocks, an impenetrable wilderness area that is relatively flat.

Lake Temiskaming receives the waters of the Blanche River, the Montreal, the Matabitchouan, the Kipawa, and the Gordon. The Mattawa River joins the Ottawa from the west at the town of Mattawa. After the Ottawa River abruptly turns east, drops, and is joined by the

Dumoine, the Noire and the Coulonge from the rocky northern shore. From the south come the Petawawa, the Bonnechere, the Madawaska and the Mississippi.

At Ottawa, the Rideau River flows in from the flat plains to the south. Downstream of Ottawa, the South Nation reaches the river from its source near the St. Lawrence. The

**Figure 1.1 Ottawa River at its Source**



Source: Robert Bell Library and Archives Canada

**Figure 1.3 Mouth of the Rideau Canal From Parliament Hill**



Source: Picturesque Canada

Gatineau River, the largest tributary to the Ottawa, flows in from the north. The Lièvre, the Petite Nation, the Rouge and the Nord also reach the Ottawa from its north shore. The Ontario shore of the river's lower stretches is particularly flat. The Quebec shore of the Lower Ottawa River is located in the Laurentians and in the Outaouais region.

The Ottawa River joins the St. Lawrence River through four separate channels. Two channels are outlets draining Lake of Two Mountains into Lake St. Louis (one at Ste Anne de Bellevue and the other at Vaudreuil). The Rivière des Prairies is the third outlet, and the fourth forms the île Jésus at Laval. A small drop in water level between Lake of Two Mountains and Lake St. Louis forms a natural barrier. For purpose of this background study, the river is considered for nomination from its source at Lake Capimitchigama to the Lake of Two Mountains, after which it changes name and enters the St. Lawrence. Please refer to Appendix A, maps 1-5 of the Ottawa River.

Originally, the Ottawa River consisted of mighty rapids alternating with lakes. The main rapids of the historic Ottawa River have been tamed by hydroelectric dams, making use of the Ottawa's total vertical drop of 370 metres, of which 130 metres are downstream of Mattawa (Legget 10). Today, the major rapids remaining along the Ottawa River are located in the Rocher Fendu channel and at the Chaudiere Falls. Large storage reservoirs along its tributaries and along the main course, and particularly the upper section, enable hydroelectric power generation and some flood control. There are many small regulating dams on the tributaries of the Ottawa.

The maximum depth of the river is 90 metres, at the Carillon reservoir upstream of Montreal. The river is only 15 metres wide between Lac des Outaouais and Dozois Reservoir. By the time it reaches its lower section, the river is up to several kilometres wide.

## 1.2 Project Structure

The project to nominate the Ottawa River as a Canadian Heritage River is led by the Ottawa River Heritage Designation Committee (ORHDC), a citizens' group representing the general public, organizations, agencies and municipalities along the Quebec and Ontario shores of the Ottawa River. The ORHDC meets regularly to oversee the project, review draft documents and coordinate a public involvement strategy.

### The Canadian Heritage Rivers System

The Canadian Heritage Rivers System (CHRS) was created by the Federal, Provincial and Territorial governments to recognize outstanding and exemplary rivers of Canada and to ensure the sustainable management of their heritage values for generations to come. To qualify for inclusion in the Canadian Heritage Rivers System, a river or section of a river must demonstrate outstanding human heritage and/or natural heritage values, and offer quality recreational opportunities.

In order to gain Canadian Heritage River status, a citizen-led group must come forward to propose its local river to the CHRS Board. This typically involves compiling a background study of the heritage values and recreational potential of the river, from which a succinct nomination report is written and then presented formally before the CHRS board. Once a river's nomination is accepted, the citizens'

group works extensively with stakeholders and members of the public along the river to generate a management plan, suggesting general guidelines of sound practices which promote the sustainable use and conservation of the river's heritage resources. The management plan is a strategic document rather than a prescriptive one, and does not involve any legislation or restrictions. Once the management plan is completed, the CHR Board considers the river for designation.

Gaining status as a Canadian Heritage River brings with it numerous advantages, including increased coordination between organizations along the river, better conservation of natural and cultural heritage, and a strengthened regional tourism sector. Please refer to Chapter 6.2.1: Benefits and Opportunities Associated With Canadian Heritage River Status for a more complete list of advantages.

Several regional sub-committees have been formed to coordinate public involvement and the gathering of research describing key heritage values in each region. Local experts in the fields of archaeology, geology, Aboriginal history, regional river history and river-based artwork contributed written chapters to the study. The Quebec-Labrador Foundation (QLF) is a non-profit organization that was contracted to write the background study and coordinate aspects of the sub-committee contributions.

**Table 1.1 Organizational Chart: The Ottawa River Heritage Designation Committee**

<b>Ontario Executive Committee</b>	<b>Quebec Executive Committee</b>
<p><b>Len Hopkins</b> Co-Chair Ontario Petawawa ON</p>	<p><b>Honourable Benoît Pelletier</b> Co-Chair Quebec Member for Chapleau Quebec Liberal Party Minister responsible for Canadian Intergovernmental Affairs</p>
<p><b>Norm Hawirko</b> Kenabeek ON</p>	<p><b>Nicole Desroches</b> Minister's Representative Director General, CREDDO, Hull QC</p>
<p><b>Gary Thibert</b> Councillor, Town of Mattawa ON</p>	<p><b>Hélène Landry</b> Conseillère Tourisme Plein Air Ville-Marie QC</p>
<p><b>Lyll Smith</b> Deep River ON</p>	<p><b>Chief Harry St Denis</b> Wolf Lake First Nation, Temiskaming QC</p>
<p><b>Doug Champ</b> Deep River ON</p>	<p><b>Richard M. Bégin</b> Gatineau (Secteur Aylmer) QC</p>
<p><b>Chief Kirby Whiteduck</b> Golden Lake Algonquins of Pikwakanagan, Golden Lake ON</p>	
<p><b>Cam McNeil</b> Ottawa ON</p>	
<p><b>Dr Paule Doucet</b> L'Orignal ON</p>	

## 1.3 Project Scope

The Ottawa River Background Study includes a detailed review of the human heritage, natural heritage and recreation values of the Ottawa River, using guidelines identified by the Canadian Heritage Rivers

System. In particular, the Background Study focuses on the human heritage, river-length themes of Aboriginal heritage, early explorers, the fur trade, riparian settlement, forestry, steamboats and hydroelectricity. In addition, a section on community heritage focuses on the relationship between the Ottawa River and various localities along the river.

The Background Study covers the entire length of the Ottawa River, from its source at Lake Capimitchigama to the Lake of Two Mountains, where it joins the St. Lawrence River. It focuses on the main river course, as opposed to the entire watershed.

## 1.4 Community Support and Involvement

Support for nominating the Ottawa River as a Canadian Heritage River is widespread. Many individuals representing organizations have been involved in this initiative. Committee meetings have been the main vehicle for continuing discussion and organization of the heritage nomination process. The following onsite meetings have been of key importance:

<i>September 30, 2003</i>	ORHDC Executive Committee Meeting. Petawawa, Ontario
<i>July 15, 2004</i>	Ottawa Region Committee Meeting. Kanata, Ontario
<i>August 17, 2004</i>	Gatineau Region Committee Meeting. Gatineau, Quebec
<i>September 2, 2004</i>	Meeting Regarding the Potential Role of Algonquin Communities in the Ottawa River Heritage Designation Process. Temiskaming, Quebec
<i>September 30, 2004</i>	Prescott-Russell Committee Meeting. Plantagenet, Ontario
<i>November 24, 2004</i>	ORHDC Executive Committee Meeting. Petawawa, Ontario
<i>February 16, 2005</i>	ORHDC Executive Committee Meeting. Gatineau, Quebec
<i>September 21-22, 2005</i>	ORHDC Executive Committee Meeting, Mattawa, Ontario

Community support has already been expressed by the following organizations and representatives:

### Members of Parliament

Hon. Ed Broadbent: Ottawa Centre  
 Cheryl Gallant: Renfrew - Nipissing - Pembroke  
 Marc Godbout: Ottawa - Orleans  
 Gordon O'Connor: Carleton - Mississippi Mills  
 Anthony Rota: Nipissing - Temiskaming

### Members of Provincial Parliament

John Baird: Nepean - Carleton

John Yakabuski: Renfrew - Nipissing - Pembroke

Hon. Madeleine Meilleur: Ottawa - Vanier

### **Municipalities**

City of Ottawa

United Townships of Head, Clara and Maria

Town of Petawawa

The City of Temiskaming Shores

United Counties of Prescott and Russell

County of Renfrew

Town of Hawkesbury

Town of Mattawa

Township of McNab/Braeside

Town of Deep River

Township of Horton

### **Agencies and Organizations**

Canadian Heritage Rivers System

The Friends of Bonnechere Parks

Ottawa River Waterway

Heritage Renfrew

Bromley Historical Society

Ottawa Valley Tourist Association

Ontario Parks

TD Friends of the Environment

Quebec-Labrador Foundation

FedNor

Ontario Ministry of Natural Resources

Environment Quebec

Parks Canada

CREDDO

Canadian Heritage

Renfrew County Community Futures Development Corporation

Ontario Ministry of Culture

Ontario Trillium Foundation

Ottawa Riverkeeper - Sentinelles Outaouais

Ottawa River Legacy Landmark Network: New Liskeard, Haileybury, Mattawa, Deep River, Petawawa,

Pembroke, Arnprior, Fitzroy Provincial Park, Westboro Beach - Ottawa, Atocas Bay - Lefavre,

Hawkesbury and Voyageur Provincial Park

# Chapter 2

## Cultural Heritage

The Ottawa River is truly unique and significant on a national level. It is worthy of Canadian Heritage River status because of its extraordinary cultural heritage values, which derive from a particular geographical and natural context. The events most central to the history and formation of Canada occurred along and because of the Ottawa River, including Champlain's explorations, the fur trade, the square timber and lumber trade, and the related, shifting relationships between First Nations Peoples, French and English cultures. The Ottawa River was both the scene for these events and enabled them: the extensive watershed and sheer length of the river permitted routes for travel, exploration, and access to furs, trading partners and forests.

Human habitation along the river dates back over 8000 years. The history of the Algonquin Nation is intrinsically linked to the Ottawa River watershed, and the Algonquin heartland has always included the entire length of the Ottawa River. Evidence of wide networks of trading and communications existed thousands of years before Europeans followed suit.

Much of the early European exploration of North America began with a trip up the Ottawa River, whether in search of the Northwest Passage, mapping the Mississippi, or exploring the river itself. Many of the key explorers in Canadian history will be remembered for their exploits and discoveries along the Ottawa River, beginning with Champlain and his emissaries, and followed by Nicollet, Radisson, La Vérendrye, De Troyes, Jolliet, Mackenzie and Franklin.

Some of these explorers traveled up the tributaries of the Ottawa River to establish trade relationships with First Nations communities, laying the groundwork for the rapid expansion of the fur trade. This trading network quickly became the foundation of France's North American colonial economy, and led to the cultural development of the now famous *coureurs de bois* and *voyageurs* era. Later, British competition led to the creation of the North West and Hudson's Bay Companies, key players in Canada's economic and political development.

The Ottawa Waterway attracted thousands of European immigrants who joined the logging and farming communities developing along its shores. The Ottawa River's limitless waterpower for mills and capacity for transporting logs first drew settlers, and these sites eventually became permanent settlements. Descendants of Irish, French Canadian, Scottish and other nationalities produced a unique Ottawa Valley culture that is expressed in language, music and dance.

The great white pines of the Ottawa River Valley were used to build the ships Britain needed for its war against France. As European demands for timber decreased, new markets in the northern United States used lumber from the Ottawa River Valley to build the growing communities of Boston, New York and Chicago. The timber trade of the Ottawa Valley benefited from the transportation corridors the river and its tributaries provided. These waterways were at the heart of the distribution process, and enabled large volumes of wood to be transported along even the narrowest tributaries. The Ottawa River's central role

in the transportation of lumber can therefore be said not only to have largely shaped the early social and economic development of the Ottawa River Valley, but to have affected the economies and policies of Great Britain, France, and New England, and, of course, to have contributed to the development of Canada as an emerging nation.

The canal and steamboating era involved localized transformations of the river environment of the Ottawa. With these modifications, the Ottawa River permitted even more extensive travel along the Ottawa, transporting immigrants and goods. An important part of the industrial heritage of the Ottawa River, canals and steamboats helped shape the settlements along the river.

Hydroelectric development over the past century has even more dramatically transformed the Ottawa River, impacting on its environment, economy and settlement. Hydroelectric development on the Ottawa was intertwined with the rise of the pulp and paper industry. Settlement followed this industrial and energy development that was crucial to the growth of the economies of both Quebec and Ontario.

## **2.1 Ancient History of the Upper Ottawa River and Lake Temiskaming**

Dr. John W. Pollock  
Woodland Heritage Services Limited  
City of Temiskaming Shores, Ontario

The following archaeological overview provides a non-comprehensive pre-contact historical account of the Upper Ottawa River and Lake Temiskaming.

### **2.1.1 Cultural Pre-Contact History**

Archaeologists generally divide northeastern Ontario's pre-contact history into the following generalized temporal/cultural sequences that are described below:

- Late Palaeo (circa 8,000 - 6,000 BC)
- Shield Archaic (circa 6,000 - 500 BC)
- Middle Woodland (circa 500 BC - AD 1200)
- Late Woodland (circa AD 1200 - AD 1600)
- Historic (circa AD 1600 - present)

Archaeologists classify the pre-contact groups of Aboriginal Peoples (as listed above) according to the artefacts they left behind. Because of the wet climate of northern Ontario, virtually the only materials that have survived to the present day are those made of stone, bone or clay. The way in which the stone tools or clay pots were made was strongly governed by the cultural traditions of the people. Also, the types and patterns of the finished products, as well as the way in which they were made, changed only slowly with time. This allows for some separation of past groups based on technology.

The picture is complicated by the fact that the earliest inhabitants of northern Ontario were not large in numbers, and because they followed a lifestyle of hunting and gathering food, they tended to be very



mobile. In addition, they tended to follow certain species of animal. Thus, if a band was used to hunting Caribou in an area, and the Caribou moved further north, the band would move after the herds it was hunting, thus giving the impression that they had disappeared. This is in contrast to the traditional way of life of later First Nations Peoples who had traditional territories and family hunting grounds.

## **2.1.2 Descriptions of the Various Archaeological Cultures along the Upper Ottawa River**

### **Late Palaeo (circa 8,000 - 6000 BC)**

There are no known Paleo or Plano “early man” sites along the Upper Ottawa, although the Jordan site on Lake Abitibi may date to that era and the bottom component at the Fort Témiscamingue (Obadjiwan) narrows site on Lake Temiskaming may also date to over 6,000 years ago.

Ten thousand years ago the Upper Ottawa / Temiskaming area was covered by a more than one-kilometre thick layer of glacial ice during the last Ice Age. Numerous area rock outcrops are marked by the scour marks of the glacier as it moved south. Between eight and nine thousand years ago, the climate warmed and the ice, which was stalled just south of North Bay, started to melt.

It took about 640 years before the major part of the ice sheet disappeared from the Lake Temiskaming area. The scenery it left behind, however, was much different from what we see today. The deep waters of Lake Barlow-Ojibway covered what is known today as the Little Clay Belt and Lake Temiskaming, and even flooded over the Height of Land. This lake was created by the remains of the glaciers to the north, preventing the northward drainage of the rivers to James Bay, as well as by a great mass of glacial debris blocking the southward flow of what is now the Ottawa River.

As time passed, the northern ice melted while the outflow from the lake cut through the debris blocking its flow south. In all, it probably took some two thousand years for the landscape of the area to become something like the one with which we are familiar today. Eventually this lake shrank so that it became two lakes with Lake Barlow covering what is now the Little Clay Belt. The surface of the land, however, would have been quite different from today. The residue left by the glacier would have been a thick mixture of ice and soil, much like the present day tundra of the Canadian Arctic.

The Plano peoples may have lived here some eight thousand years ago in what is now the Upper Ottawa River. This subarctic landscape would have supported small trees and animals, notably Caribou. Certainly, there would also have been First Nations Peoples hunting and living on the tundra. However, to date, no trace has been found of these first Aboriginal Peoples.

Slowly, the climate warmed and the ice melted from the tundra and the area as we know it today appeared. This process was completed some five thousand years ago and coincided with a climate that was warmer than today. In fact, the climate eventually became warm enough that, in the dry bed of Lake Barlow, the Little Clay Belt, the vegetation growing there was similar to that now found in southern Ontario. Shield Archaic Aboriginal Peoples lived in this area some five to six thousand years ago.

### **Shield Archaic Peoples (6000 B.C.-500 B.C.)**

One of the pre-contact cultural developments is the Archaic. Developmental aspects of prehistoric cultures are based on technological and stylistic differences and variations in raw materials as well as the geographic distribution of technology, style, etc. The Shield Archaic Peoples, which may involve one or more separate cultural phases or groups, were widespread across northern Ontario and may have evolved their culture and technology from the preceding Plano peoples who lived in the Thunder Bay and Manitoulin Island areas. These Plano people originated to the south and west of the Ottawa River and may have come to this area in pursuit of their favourite animal, the Caribou. It is suspected that they lived in wood framed tents, presumably covered with skins or bark. However, as mentioned above, about five to six thousand years ago, the vegetation in the Upper Ottawa changed to resemble that now found to the south and a new group of Aboriginal Peoples moved into the area. This culture is called the "Laurentian Archaic" tradition. They appear to have come from the south and east up the Ottawa River and their remains are found in many areas of Ontario. These new Archaic Peoples found ample food supplies in the Clay Belt area.

Although it is possible to identify local differences in the way they made their stone tools, it is clear that members of the Shield Archaic cultural group lived in all parts of the Canadian Shield, from the Northwest Territories through to Nova Scotia. The Shield Archaic people lived in wood framed tents that, perhaps, looked like wigwams, and they were also the first people living in the Upper Ottawa to use metal: in this case, tools made from natural or native copper. People of the Shield Archaic tradition also started a trend away from a livelihood focused upon the hunting of large game animals like Caribou, and instead concentrated on fishing and hunting small mammals. The Shield Archaic people lived in Northern Ontario until around 800 B.C. and their artefacts and sites have been found throughout the district.

### **Laurel Peoples (500 B.C. - 500/900 A.D.)**

The Laurel Peoples cultural tradition marks the first appearance of pottery in the region. Laurel sites tend to be found along major lakes and rivers. Moose and beaver were important food sources, as were fish. Clay pot making in North America was probably an invention of the Indians living in the southwest United States. Slowly, over trade routes, the technique spread across the continent and, quite possibly, was invented separately at other times and places. In any event, the Aboriginal Peoples who used both clay pots and metal (copper) tools appeared in the Lake Temiskaming area at about the time of the birth of Christ and are called the "Laurel" or "Middle Woodland" people. Aboriginal Peoples of the Laurel tradition also may have originally come from the south. They lived in fair numbers in southern Ontario and Quebec as well as the northern United States. Like their predecessors, they hunted the smaller mammals and fished extensively. The Laurel people also liked to set up camps besides the shores of the larger rivers and lakes and it is clear from the amount of use these people made of area rivers such as the Montreal River and the Blanche River that these were favourite camping areas. At the same time, the Aboriginal population of North America was expanding and the Laurel people had many links with other groups of Aboriginal Peoples in North America.

### **Late Pre-Contact and Historic First Nations Peoples (A.D. 500/900 - 1600 A.D.)**

These Peoples were the groups who lived in northeastern Ontario just prior to the arrival of Europeans and European trade goods in what is now Canada. Many of these groups are known on the basis of their pottery vessels and distinctive decorations found on them. Pottery traditions found in the area include

Blackduck, Selkirk, and Ontario Iroquois. They are the direct ancestors of the present day Ojibwa, Cree and Northern Algonquin Peoples, all of whom call themselves "Anishnabeg" and speak various Algonquian languages. "Anishnabeg" means "real people" or "human beings." The self-designation Anishnabeg is common to a number of tribal groupings, all of whom speak dialects of the Ojibwa language. Other members of this dialect group include the Algonquin, the Mississauga, the Ottawa, the Potawatomi and the Saulteaux.

Late pre-contact Aboriginal Peoples used stone tools and were skilled at making ceramic pots and other artefacts. The tradition of hunting small mammals and relying heavily on fishing continued. People lived in hide and bark tents and used birch bark canoes for transportation. Their camp remains are found throughout the Upper Ottawa River and on Lake Temiskaming. As well, trade routes were developed and the people congregated in large numbers during the summer to trade, meet relatives and, in some places, mined flint/chert for stone tools and ochre for red paint. At the same time, the various groups of related Late Woodland people culturally evolved into the modern Anishnabek tribes and bands of Ojibway, Cree, and Algonquin with which we are familiar today.

It is probable that the late pre-contact and historic inhabitants of the Upper Ottawa and Lake Temiskaming in the 1400s and 1500s were most closely related to the Ottawa Valley 'Algonquin'. However, the ability to connect prehistoric populations in Ontario to historic groups such as the Cree, Ojibway and Algonquin, is extremely diminished by the New York Iroquois raids during the mid and late 1600s which caused a considerable movement and relocation of people. This, and the growing use of European trade goods and a 'fur trade' economy, created potential confusion as to group identities during the later historic periods.

### Summary

**After the last ice age, the melting of the ice and the warming of the climate, there may have been Plano people present in the Lake Temiskaming area as early as 8000 years ago. The earliest evidence of peoples living in the Upper Ottawa Valley was about 6000 years ago with the Shield Archaic Peoples, who may have come in search of caribou. Around 500 BC the Laurel peoples appeared and are known for their pottery and their choice of riverside campsites. From 500 AD until about 1600 the late Pre-Contact Peoples lived in the river valley, leaving numerous archaeological sites throughout the area. The Pre-Contact Peoples were the direct ancestors of today's Ojibwa, Cree and Northern Algonquin Peoples, and were known for using birch bark canoes for transportation. They were probably related to today's Ottawa Valley Algonquin Peoples.**

## 2.2 Ancient History of the Lower Ottawa River Valley

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Canadian Museum of Civilization

### 2.2.1 Archaeology in the Ottawa Valley

The following discussion surrounding the ancient history of the Ottawa Valley does not attempt to present a full picture of its lengthy past. The Ottawa Valley contains literally thousands of archaeological

sites, and to date only a handful have been studied by archaeologists. Still fewer of these have been properly published. Consequently, any reconstruction of the region's ancient history is based on preliminary interpretations and a few more certain findings. The purpose of this summary is to provide a first blush of the richness of the Ottawa Valley's pre-contact past without labouring the discussion with details.

The history of archaeological investigation of the ancient history of the Ottawa River Valley, and in particular, the stretch of river downstream of the Mattawa River, has been influenced by several historical factors. For nearly 150 years, there has been a national historical institution located within the city of Ottawa. Paradoxically, since it is a national, and not regional institution, its scholars have generally worked outside of the region. Another factor which has affected the level of interest in the pre-contact ancient history of the region is the nature of the lifestyles of the peoples in the region who were relatively mobile hunter/gatherer groups, leaving few visible remains attesting to their life and times. However, as will be seen below, this situation is far from a hard fast rule.

### **2.2.2 The Champlain Sea and Early Ottawa River**

It has been said that First Nations have been on this land ever since the beginning of time, when the world was created. At first glance, this might seem to contradict the archaeological theory that the First Nations that eventually came to populate the entire American continent originally crossed from an ancestral homeland(s) in northeastern Asia, crossing over the proverbial Bering Land Bridge anywhere from 15,000 to 30,000 or more years ago. This argument can certainly be supported with scientific data. However, new discoveries could re-open these discussions at any moment; such is the nature of archaeology.

Another way of looking at this question is to consider the retreat of the vast Laurentide Ice sheet from the valley, a process that began around 15,000 years ago. Immediately following the retreat of this ice sheet, salt waters from the Atlantic Ocean flooded the valley, forming the inland Champlain Sea. This sea supported a rich diversity of marine life, including some of the largest mammals on earth, such as the Bowhead Whale. A skeleton of a Bowhead Whale was found near Pembroke during the 1970s.

With time, the earth's crust adjusted from the removal of the immense weight of the glacier and the sea drained. This process ended about 10,000 years ago. For a while, the sea was replaced by an enlarged, but gradually diminishing version of the Ottawa River fed by fresh water from the Great Lakes. During this time, the land as we know it was being created. This process took several thousand years with waves of change as the climate improved and soils built up through successive vegetation types.

### **2.2.3 The Earliest Ottawa Valley Peoples**

It is during this initial, dynamic appearance of the Ottawa Valley that tangible evidence of people first appeared. Archaeological evidence of this period is difficult to find, recognize and document, in part because of the nature of the items which were left behind as well as the more recent uses of the land, including farming and urban development. Another factor which makes the discovery of such early sites difficult is the fact that the shores of the Champlain Sea and of the early version of the Ottawa River were changing quite rapidly and did not leave clearly delineated beaches to guide the search for early sites. It is only in the last few years that archaeologists have been systematically searching out such locations and successfully identifying sites possibly contemporaneous with late Champlain Sea shorelines. Were people using the marine resources of the sea? Did they follow the herds of caribou and other game species which

were also discovering the new land as conditions improved and allowed? Until good undisturbed sites of this period are found and carefully studied, we can only speculate. However, judging from what was occurring in regions further south and west, it is highly likely that as the first groups of hunter/gatherers entered the region, they would have had very flexible economies able to quickly adapt to the new and ever-changing conditions and exploit the available resources.

The best unequivocal information relating to the early peopling of the Valley is found in peripheral regions. Beautiful lanceolate points very similar to specimens dated to 8000-8500 years ago were found in islands in the St. Lawrence River near Cornwall, Ontario. A similar point with small notches near its base was found by a collector in the Perth region. It likely dates to that same time period or slightly later. These artefacts are reminiscent of projectile points (probably the tips of lances or spears in these instances, not arrowheads) that have been found along the south shore of the St. Lawrence Valley and westward in central and southern Ontario. In those regions evidence strongly suggests that caribou hunting was a major focus of hunting activities, but as with the earlier groups, they must have hunted a broad range of species in order to successfully adapt to the region. To date, we lack excavated sites capable of informing us on the exact nature of their subsistence activities.

## 2.2.4 The Pembroke Sites and Evidence of Early Trade Networks

Our understanding of ancient lifeways improves dramatically for the period beginning about 6000 years ago (Fig. 2.1 and 2.2). Two very important sites were found in the early 1960s on islands in the Ottawa River near Pembroke. The sites were strategically located at good fishing spots on the river, but also at important locations within the regional transportation / communication corridors. In fact, one of the most spectacular aspects of the artefacts left behind at these sites was the use of native copper, an ore found in nearly pure form that has been shown to have originated at the western end of Lake Superior. We can now better understand the scale of communication and trade networks in the Great Lakes region,

**Figure 2.1 Harpoon Head**



Source: Canadian Museum of Civilization, artefact number BKGG-1-1046. Photo: Jean-Luc Pilon.

*A harpoon head from the Allumette Island site near Pembroke, Ontario, manufactured approximately 6000 years ago from native copper originating in the area west of Lake Superior.*

**Figure 2.2 Copper Knife or Lance Head**



Source: Canadian Museum of Civilization, artefact number BKGG-12-5665

*A native copper knife or lance head from the 5500 year old Morrsson Island – 6 site near Pembroke, Ontario.*

networks in which the Ottawa Valley played a large part in the distant past. Archaeological research on other, later sites shows that these networks became increasingly complex right up until contact with Europeans in the 17<sup>th</sup> century.

These two sites demonstrate strong links with archaeological sites documented much further south, and throughout northeastern North America. Projectile points were readily subjected to stylistic adaptation and modification, and the people in the Pembroke region between 5000 and 6000 years ago were full participants in the styles shared over a very wide area. These traits strongly demonstrate that groups were rarely isolated, and participated in extensive networks where goods, materials, ideas, and likely also people, moved freely and widely.

## 2.2.5 Adapting to Ecological Niches

Another set of sites has been documented more recently in the Pendleton area of the South Nation River drainage basin. There, a number of localities, apparently restricted in their distribution to the edge of a palaeo-delta left behind when the Ottawa River was much higher than it currently is, have been identified, and at least one has received more than just a cursory inspection. The sites appear restricted to the period between about 3500 and 3800 years ago (Fig. 2.3). There is remarkable homogeneity between these localities which are separated by several hundred meters. Additionally, the sampled site revealed a high number of pit features, some of which might have been hearths. Soils which made up these man-

**Figure 2.3 Projectile Points**



*Projectile points or arrowheads found at the Lamoureux site (BiFs-2), located near Pendleton, Ontario, estimated at between 3500 and 3800 years old.*

Source : Canadian Museum of Civilization, artefact numbers : top row (l to r) BiFs-2:1, 16, 7, 9, 5; bottom row (l to r) BiFs-2:11, 4, 13. Photo: Jean-Luc Pilon.

made features have been found to contain a rich diversity of macrofossils, including berry seeds, nutshell fragments, calcined and highly fragmented fish and possibly mammal bone and charred wood. The artefact collection was dominated by heavy working tools and projectile points. Preliminary analysis has only begun, but this data suggests that at this particular time period, people were seeking out very particular ecological niches which produced a wide range of animal and plant foods. If nothing else, these sites and many others within the Ottawa Valley show how intricate life in the past was. Clearly, people needed to possess an intimate knowledge of their environment and the changing seasonal availability of the land's resources in order to successfully live in the area.

## 2.2.6 Ottawa Valley Ceramics

Beginning around 2500 years ago, ceramics were introduced into the region from more southern areas where the history of modifying tempered clay in order to produce durable cooking and storage vessels was longer. The Ottawa Valley is particularly rich in ceramic bearing sites, where some spectacular finds having been made over the past four decades. For example, at Indian Point, on the north side of the Ottawa River, once again in the Pembroke area, one of the earliest styles of pots, known to archaeologists

**Figure 2.4 Ceramic Container**

Source : Canadian Museum of Civilization, artefact number B1Ca-2-36. Photo: Jean-Luc Pilon.

*Point Peninsula type ceramic container dated to more than 2500 years ago, found at Constance Bay, Ontario.*

as Vinette I, was recovered nearly complete. At Constance Bay, a very large Point Peninsula style pot (Fig. 2.4) was reconstructed following excavations in a cottage yard. It has an associated radiocarbon date on the order of 2500 years ago. At Luskville, three intact ceramic pots dating to the contact period were found in rock overhangs or eroding from streams.

These pots, along with thousands of fragments found at dozens of sites in the region, document a long-established Ottawa Valley ceramic tradition. Like other traditions, the Ottawa Valley ceramic style was influenced by neighbouring practices over a large area, and eventually evolved into a local expression of contemporary stylistic tendencies.

**Figure 2.5 Ceremonial Knife**

Source : Canadian Museum of Civilization, artefact number B1C5g-10-110. Photo: Jean-Luc Pilon.

*Ceremonial knife found at the Morrison – 2 site and manufactured from a type of stone only found in Ohio, USA.*

## 2.2.7 Wide Trade Networks Following the River Networks

At the mouth of the Gatineau River, an archaeological complex of nearly twenty sites documents the last 3000-3500 years of pre-contact history and has been extensively studied during the past decade. These sites show a continuous occupation by a local population as well as continued contacts with far-flung regions as attested by the presence of exotic raw materials coming from as far away as the tip of Labrador, southwestern Ontario and Lake Superior. Indeed, the area around the city of Ottawa is particularly well situated for water access to a vast region, being at the confluence of the Gatineau River, gateway to the interior of Québec, the Ottawa, leading to the upper Great Lakes or to the St. Lawrence, and the Rideau River, offering access to the upper St. Lawrence Valley and the lower Great Lakes (Figure 2.5).

## 2.2.8 Contact Period Algonquin Peoples

Samuel de Champlain was the first European to make a record of his observations in the Ottawa Valley, known at that time as the Grand River (*Kichi Sibi* in Algonquin) or the River of the Algonmequin. Many of the people that he met during that trip identified themselves with various locations or tributaries along the way. Today we group these apparently distinct bands into the entity known as the Algonquins. To date, little work has taken place to study the archaeological remains of contact period Algonquins, although their sites have been found (or at least contact period artefacts are often found at sites with remains from

much older periods). In the lower part of the river, this search has been severely handicapped by the construction of the dam at Carillon. As a result, the later sites have either been submerged under the waters of the Ottawa or the artificial maintenance of high water levels throughout the summer has exposed low lying sites to erosion which they normally would not have experienced given the lower summertime flow of the river.

### Summary

**The Ottawa Valley contains thousands of archaeological sites, few of which have been studied in detail. The ancient history of the Ottawa Valley below Mattawa reaches back to when the Ottawa River was quite literally forming, and spans across millennia. During this time, the peoples of the Ottawa Valley developed an intimate relationship with the land and distinct cultural characteristics, including a rich ceramic tradition. At the same time, artefacts from the Ottawa Valley demonstrate wide trade and communication networks that existed up to 6000 years ago, enabled by the Ottawa River and its tributaries. Despite the relative lack of archaeological research in the Ottawa Valley, the data which we do possess provides brief but exciting glimpses into ways of life which have been constantly changing and adapting.**

## 2.3 Algonquin History in the Ottawa River Watershed

James Morrison, Sicani Research and Advisory Services

The history of the Ottawa River watershed is inseparable from the history of the Algonquin Nation. Though their territory was once considerably more extensive, the Algonquin heartland has always included the entire length of the Ottawa River, from its headwaters in north-central Quebec to its outlet near Montreal. At present, there are ten federally recognized Algonquin communities, with a total population of approximately 8-10,000<sup>1</sup> (for more detailed information on these communities, see Appendix F). Nine of the Algonquin communities are in Quebec. Proceeding from northwest to southeast, these are the Abitibiwinni, Timiskaming, Eagle Village (Kebaouek), Wolf Lake, Long Point (Winneway), Kitcisakik (Grand Lac), Lac Simon, Mitcikinabik Inik (Algonquins of Barriere Lake) and Kitigan Zibi (River Desert) First Nations. In Ontario, members of the Algonquins of Pikwakanagan (at Golden Lake) First Nation make up the only recognized Algonquin community, though three other Ontario First Nation communities, Wahgoshig, Matachewan and Temagami, are of at least partial Algonquin descent.

Compared to First Nations in most other parts of Canada, the ten Algonquin communities have very little reserve land. By far the largest parcel is the River Desert Reserve belonging to the Kitigan Zibi Algonquins. Consisting of approximately 43,000 acres, it is located near Maniwaki, Quebec. The Timiskaming First Nation has a Reserve of approximately 5,000 acres at the head of Lake Temiskaming, Quebec, very close to the Ontario border. This Reserve, originally some 69,000 acres in size, was set apart by the Province of Canada in the period 1851-53, as was the River Desert Reserve. The Algonquins of Pikwakanagan Reserve at Golden Lake consists of approximately 1,750 acres near Renfrew, Ontario. The

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<sup>1</sup> There are also some communities on the Ontario side which assert Algonquin identity but are not recognized by the federal government. These include Beaverhouse, as well as a number of groups associated with the Algonquins of Pikwakanagan land claims negotiations.



Algonquins of Lac Simon have about 800 acres near Val D'Or, Quebec, and the Abitibiwinni have about 225 acres near Amos, Quebec, as well as a joint share (with Wahgoshig First Nation) of Abitibi Indian Reserve #70 near Matheson, Ontario. The Kebaouek (Eagle Village) First Nation reside on a 53-acre parcel on Lake Kipawa, which was purchased from a third party and set apart as a Reserve in 1975, and the Mitcikinabik Inik (Algonquins of Barriere Lake) occupy a 59-acre reserve on Rapid Lake in the Réserve Faunique La Vérendrye, which was created in 1961. The Wolf Lake, Long Point<sup>2</sup> and Kitcisakik First Nations have no reserve lands at all.

The historical outline that follows does not purport to be exhaustive. It is only intended to provide a broad picture of Algonquin history in the Kichisipi valley. In their own language, Algonquin people call themselves *anishinabeg*, which carries both the general meaning of “human being”, and the specific meaning of “real (i.e. Indian) people”. Though use of their language, the *anishinabemowin*, has declined considerably in communities such as Timiskaming, Kitigan Zibi and Pikwakanagan, it is still very much alive in interior communities like Kitcisakik and Rapid Lake. Most Algonquin communities have inaugurated programs to promote language retention or use.

Historically, the *anishinabemowin* was spoken very widely. Various dialects are still spoken today not only by Algonquins, but by Ojibway (also known as Chippewa and Sauteaux), Odawa (Ottawa) and Potawatomi people, among others. The fact that the language was so widespread, however, has caused considerable confusion when interpreting historical records. As will be seen below, although the First Nations of the Ottawa River watershed are today called Algonquins, this is not necessarily how they were known in the three centuries following contact with Europeans. Early French observers generally confined the term *Algommequin* (Algonquin) to the various bands living along the Lower Ottawa River drainage, whose descendants now belong mainly to the Algonquins of Pikwakanagan (at Golden Lake) and Kitigan Zibi (River Desert) First Nations. Those *anishnabeg* living in the Upper Ottawa Valley and northeastward towards the headwaters of the river, by contrast, were known by several different tribal and group names, including *Nipissings*, *Timiskamings*, *Abitibis*, *Têtes de Boules* and *gens des terres*. By the end of the 17<sup>th</sup> century, however, as the French moved further inland, they used the generic term *Algonquin* for all groups they encountered who spoke the same language (ie. Ojibway, Potawatomi, etc.).

### 2.3.1 Algonquin Origins

Algonquin people believe they have always lived in the Ottawa Valley, an understanding which is reflected in their traditional stories. The anthropologist Frank Speck collected a number of these Algonquin legends, including the following narrative about the pursuit of a giant beaver, when carrying out fieldwork at Timiskaming Reserve in the summer of 1913.

#### *Wiskedjak Pursues the Beaver*

*Wiskedjak was traveling about looking for adventures. He never succeeded in anything he tried to do. He never did well and was always hungry. In his travels he came to Kiwegoma “Turn-back-lake” (Dumoine Lake). Now he even had no canoe, but he was a great swimmer. When he came to Kiwegoma, he found it even too big to swim, so he started to walk around it. He wanted to hunt beaver. On one side of the lake, he came to a round, high mountain that looked like a beaver-lodge.*

<sup>2</sup> The Long Point First Nation occupies 91 acres of settlement lands at Winneway under a lease agreement involving the government of Quebec, the Oblates, and Canada.

*In front of it he found deep water, just as there is in front of a beaver lodge. And a little way off shore was a little island with many grasses; just as the beaver provides a winter supply of greens for himself near his lodge, so this island he supposed to be the beaver's winter supply and the mountain his lodge. Wiskedjak wanted to get this great beaver, but did not know how to get at him. Then he thought of draining the lake, so he went way around to the lower end and broke away the dam so that the water would run off. Soon the water began to go, and Wiskedjak lingered about, waiting for it to get low enough to get at the beaver. Pretty soon he took a nap. When he woke up, it was rather late and he hurried back to the mountain only to find that the beaver had gone. Now he thought the beaver might have escaped over the dam with the water, so he started back, and sure enough he saw the beaver going over the dam. "Now", said he, "I lost my beaver". He followed hard after him and had lots of trouble to keep up. He followed him past Coulonge River and Pembroke Lakes. But when the beaver reached Calumet chutes, he was afraid to go through and took to the portage. Then Wiskedjak saw him and chased him harder over the portage. When he got to the lower end, he lost sight of the beaver and started back up river (Ottawa River). When he got to the upper end of the portage, he saw fresh tracks. "Well", said he, "there has been somebody here. I wonder if I could trace him. We might have something to eat". Then he followed the track to the lower end of the portage where he had already been, but nobody was there. So he went back to the upper end of the portage and there saw more fresh tracks leading to the lower end. These he followed to where he had been twice before, but saw no beaver. He then discovered that they were his own tracks he had been following and gave it up. The tracks back and forth can be seen plainly today imprinted on the stone of Calumet portage, which the Indians call Wiskedjak tracks (Speck 1-3).*

Dr Speck's informant, Ben McKenzie, who had been raised as a member of the *Kiwegoma Anishnabeg* or Dumoine Band (now the Wolf Lake First Nation), told Speck that he had learned the stories from elders of that band when he was a young man. Since Ben McKenzie was born in 1847, his traditional education would have taken place in the 1860s.

Wiskedjak (Wisakedjak), also called Nenabojo (Nanabush), was the great culture hero of the Anishnabeg (Cuoq 1886: 442). Often personified as the Canada Jay (still known popularly as the Whisky Jack), this trickster-transformer also features prominently in the legends of the neighbouring Cree and Ojibway. Elders would tell these stories in cycles, generally in the wintertime, as a way of providing the youth of the band with spiritual and moral direction. In the story above, Wiskedjak drains Grand Lac Dumoine in order to hunt a giant beaver, whose lodge had taken the form of a very large mountain. The French trader and explorer Nicolas Perrot (1644-1717) recorded an analogous story in his memoirs, which he obtained from the Nipissing and the Amikwa (literally, "beaver people"), both of them *anishnabe*-speaking groups living to the west of the Algonquins. They told Perrot that a giant beaver (from whom the Amikwa claimed descent) had entered the French River from Lake Huron, creating a series of dams as it traveled eastward through Lake Nipissing and along the Ottawa River. These eventually turned into rapids and portages. The last dam the beaver built became the Calumet rapids, at which point the beaver died, and was buried to the north of Calumet Lake, in a mountain in the shape of a beaver (Perrot 36-37 and Blair 62-63). This would have been the mountain featured in Ben McKenzie's story.

The Jesuit historian P. F.X. de Charlevoix, who traveled through the great lakes region in 1721, tells a similar story about Amikwa origins, though he gives the great beaver's final burial place as a mountain on the north shore of Lake Nipissing (De Charlevoix 417-418). Charlevoix and Nicolas Perrot, as it turned out, had heard only the second half of the story. The first part, which the surveyor Robert Bell collected in

1891 from Joseph Misabi, an Ojibway from the French River, directly links the story Ben McKenzie told Frank Speck to the legend recounted by Nicolas Perrot two centuries earlier. In ancient times, Joseph Misabi recounted to Bell, Kitchigami (Lake Superior) was the pond of the great beaver, the *Manitou Amik*. His dam was at the outlet where the Sault Ste Marie rapids (*Bawating*) now exist. Here he lived for many years until one day Nenabozho (*Wiskedjak*) decided to hunt him. The cunning trickster sent his wife to the outlet to break the dam, which would lower the water and, he hoped, frighten the great beaver into leaving his lodge. But the beaver was too clever, and escaped before Nenabozho could find him. Angry at his wife for failing to stop the beaver, Nenabozho kicked her through the air, which turned her into stone. She landed on the north side of Lake Superior, forming the hill called Gros Cap. In the meantime, the great beaver *Manitou Amik* hurried along the north channel of Lake Huron and turned up the French River, tearing up the rocks through the back action of its feet and forming a long series of dams, now rapids. He passed through Lake Nipissing and on down the Ottawa River, ending up at the big island, where the Ottawa joins the great Noddaway River (the St Lawrence). Here he stopped and was turned to stone like his wife, forming a large hill (Montreal Mountain) (“Nenabozhoo Hunts the Manitou Amik”).

This story can be interpreted in a number of ways. On one level, it can be taken as a myth of national origins. Though the beaver’s final resting place varies, the sites all fall within the historic range of the eastern *anishnabeg*, basically between the north shore of Lake Huron and Montreal. But there is a core of even deeper historical truth to the legend. Giant beavers, along with many other now-extinct megafauna, inhabited North America between 10 and 12,000 years ago. Their remains have been found in various locations, including Ontario. Moreover, the story of the trickster-transformer draining Lake Superior or Dumoine Lake in pursuit of the beaver, who then creates rapids and portages as it flees to the east, evokes the natural history of the great lakes basin and the Ottawa River watershed in the aftermath of the last great ice age.

With the retreat of the Wisconsin glacier, an enormous glacial lake (which geologists have dubbed Agassiz) covered virtually all of Manitoba, and parts of Saskatchewan, North Dakota, Minnesota and Ontario for much of the period between 15,000 and 8,000 years ago. This lake first drained southward into the Mississippi, then southeastward into what became the Lake Superior basin, and finally due eastward into another glacial lake called Barlow-Ojibway, which covered present northeastern Ontario and northwestern Quebec. The remains of the northern glacier, however, prevented Lake Barlow-Ojibway from draining into James Bay, and a great mass of glacial debris blocked the southward flow of water into what is now the Ottawa River. Over a period of about two thousand years, the northern ice gradually melted. The waters of Lake Barlow-Ojibway eventually cut through the debris blocking the flow to the south and about 8,000 years ago, the whole lake abruptly (in geological terms) emptied into James Bay. Further to the east, when the vast Laurentide ice sheet began retreating from the Ottawa Valley, also about 15,000 years ago, the valley was immediately flooded by salt waters from the Atlantic Ocean, forming an inland sea. There was a rich diversity of marine life within this Champlain Sea (as geologists named it), including some of the largest mammals on earth, such as the Bowhead Whale (the skeleton of one was found at Pembroke in the 1970s). The earth’s crust eventually adjusted to the immense weight of the glacier and the sea drained, a process which ended about 10,000 years ago, being replaced for a few more thousand years by an enlarged, but gradually reducing, version of the Ottawa River, fed by fresh water from glacial lakes Agassiz and Barlow-Ojibway.

It was during this period between 10,000 and 8,000 years ago that the first tangible signs of human occupation appear in what is now the Ottawa River watershed. Though the archaeological evidence is often very difficult to find (because of the problem in identifying the original shoreline of the Champlain

Sea and Lake Barlow-Ojibway), it appears that mobile groups of hunter/gatherers entered the region and began exploiting the available resources, which would have included animal species like caribou and beaver. It may in fact be this ancient history of the draining of lakes and the emergence of rivers that is recorded in myths like Ben McKenzie's story of Wiskedjak and the giant beaver.

For the period beginning about six thousand years ago, the evidence of human occupation is much more abundant. For example, archaeological excavations carried out for many years on Allumette Island and nearby Morrison Island by the late amateur archaeologist Clyde Kennedy (and others) have turned up an enormous variety of artefacts, which include stone and bone tools as well as native copper implements originating on Lake Superior. The people who inhabited these sites appear to have followed a seasonal round of hunting, fishing and gathering, and they were clearly integrated into long-distance trading networks. In addition to Lake Superior copper, the materials they were using to manufacture tools included quartzite from Manitoulin Island and Vermont, and chert from various locations between the north shore of Lake Ontario and the southern shores of Lake Huron. Though archaeologists are reluctant to speculate about ethnic continuity, the lifestyle of these Shield Archaic people was remarkably similar to that of the Algonquins encountered by the first Europeans. When coupled with the oral history, there is little reason to suppose they are not the same people (Clermont, Chapdeleine and Cinq-Mars).

### 2.3.2 The Algonquin Sense of Place

As the anthropologist Frank Speck discovered when collecting Algonquin legends, Wiskedjak's adventures are always located within the territory of the band whose member is telling the story. In Ben McKenzie's story of the giant beaver, he refers specifically to the Dumoine and Coulonge Rivers, "Pembroke lakes" (i.e. lower and upper Allumette lakes), and the Calumet chutes or rapids. The larger river, down which Wiskedjak finally proceeds, says Dr Speck, was the *Kichi sipi*, literally "big river". This has always been the Algonquin name for the Ottawa River, an obvious reference to its length and breadth. Samuel de Champlain and other early French explorers identified the band who occupied the immediate vicinity of the Allumette lakes and Calumet portage, and whose summer village on Morrison Island Champlain visited in 1613, as the *Kichesipirini* (*Kichi sipi irini*), literally "big river people". Exactly three centuries later, Frank Speck was told that the bands living along the Ottawa were still known as the *Kichi sipi anishnabeg*, "big river people".<sup>3</sup> The Algonquin name of the river has survived (in translation) as "Grand River" or "Grande Rivière", a term first recorded by the Sulpicians Dollier de Casson and Bréhan de Galinée on the map legend illustrating their 1669-70 voyage of discovery through part of the great lakes. That particular name for the river was still in common use among European traders and settlers in the 18th and 19th centuries.

The Ottawa River takes its rise about 250 kilometers north of the present cities of Ottawa and Gatineau in Lac *Capimichigama*, also known as Lac Travers or Cross Lake (its full *anishnabe* meaning is "crossing from one watershed to another"). From *Capimichigama*, which is within the traditional territory of the Algonquins of Barriere Lake, the Ottawa flows westward, then southward, then southeastward for about 1200 kilometers, before joining the St Lawrence River near Montreal. Unlike modern geographers, however, Algonquin people never used the same name for an entire watershed. They confined the term *Kichi sipi* to the lower part of the river, from *Matawang*, now Mattawa (which means "where the river

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<sup>3</sup> The Algonquin terms *irini* (now "inini") and *anishnabeg* are synonyms. Both are still in use today. The Timiskaming Algonquins call themselves *Saugeen Anishnabeg* while the Algonquins of Barriere Lake call themselves *Mitcikinabik inik*.

divides”), down to Lake of Two Mountains<sup>4</sup>. The uppermost sections of what is now called the Ottawa, which are really a continuous series of linked river expansions, had many different names. The best known of these upper sections is *Temiskaming Sagahigan*, literally “deep water lake”, which forms part of the current boundary between Ontario and Quebec. But even that name applied only to the northernmost, and widest, portion of present Lake Temiskaming. The section below the narrows was known, appropriately enough, as *obawjewanong Sagahigan*, or “narrowed-current lake”. That part of the same river flowing from modern Lac des Quinzes into the head of Lake Temiskaming (called the Quinze River in Quebec) was known as *wanaweia sipi* or “dirty water river”. Algonquin names for other prominent sections of the watershed include *Kichi Saki* or “big-outlet” (for Grand Lac Victoria), and *Mitcikinabikong*, or “place of the stone fence or weir”, which was translated directly into French as Lac Barrière.

Apart from Mattawa, almost none of the Algonquin place names on the Lower Ottawa have survived in common usage. Instead, for over three hundred years, names such as the Long Sault, Chaudiere, Lac des Chats, Calumet, Allumettes, Des Joachims and Dumoine have reflected the long history of French exploration and trade in the valley. Some of these place names, like Des Joachims and Dumoine, are obviously of European origin. The original Algonquin name of the Dumoine River (still used by elders of the Wolf Lake and Eagle Village First Nations) is *aginagwasi sipi*. As with Lake Barrière, however, many other French toponyms turn out to be literal translations of their original Algonquin names. This process dates back to the very beginning of upriver exploration, as evidenced by the writings of Samuel de Champlain, the first European to record the features of what he called the “Rivière des Algommequins” or Algonquin River. On 31 May 1613, after paddling through what is now the Lake of Two Mountains, Champlain and his companions “passed a rapid which is called by the inhabitants *Quenechouan*. It is full of stones and rocks, and the water flows through them with great swiftness”. The word *Quenechouan* (*Kinodjiwan*) means “long rapid” in Algonquin, and this 20 kilometre stretch of the river (eventually submerged by the Carillon and Grenville canals) was known ever after as the Long Sault.

On 4 June 1613, Champlain came across a wide deep basin where “the water whirls around to such an extent, and in the middle sends up such big swirls, that the Indians call it *Asticou*, which means ‘boiler’ (Biggar 268).<sup>5</sup> He dubbed this feature the “Sault de la Chaudière”, a name which still applies to the famous rapids between the cities of Ottawa and Gatineau. Champlain also described the traditional ceremony which he witnessed at the falls on his return journey a week later, as performed by the Algonquin canoe party which was accompanying him back to Quebec:

*Having carried their canoes to the foot of the fall, they assemble in one place, where one of them takes up a collection with a wooden plate into which each puts a piece of tobacco. After the collection, the plate is set down in the middle of the group and all dance about it, singing after their fashion. Then one of the chiefs makes a speech, pointing out for years they have been accustomed to make such an offering, and that thereby they receive protection from their enemies; that otherwise misfortune would happen to them, as the devil persuades them [...] When he has finished, the*

<sup>4</sup> There are multiple theories about the origins and meaning of the word “Mattawa”; please refer to Chapter 5.2: A History of Mattawa for another example.

<sup>5</sup> The word *Asticou* must be a misprint in the original text, because the Algonquin word for small cauldrons or boilers (plural) is *Akikok*. The missionary J.A. Cuoq says that the full name for the Chaudiere Falls is *Akikodjiwan*, which means “place where the water falls into stone basins whose rounded form resembles a boiler” (Cuoq 31).

*orator takes the plate and throws the tobacco into the middle of the boiling water, and all together utter a loud whoop.*

Shortly before arriving at the village of the *Kichi Sipi* Algonquins, Champlain passed a set of dangerous rapids, which are identified on the map of his travels as the “sault des Calumets”, also described as “the Calumet stone rapids, which are like alabaster”. This too is a translation of an Algonquin term, *Opwagani pawatik* or “pipe rapids”. The stone at that place, so Ben McKenzie told Dr Frank Speck in 1913, was “suitable for making pipes and was there sought by the Indians for that purpose”. The trader and explorer Pierre Esprit Radisson had made the same observation in the summer of 1660. The Calumet rapids, he said, were “so called because of the stones that are there very convenient to make tobacco pipes”. In the *anishnabe* language, both tobacco (*n’asema*) and the calumet or pipe (*opwagan*) are animate objects, which reflects their centrality in the culture of the Algonquins (and other North American tribes). Tobacco was always an important part of Algonquin ceremonies, as Champlain had observed at the Chaudiere Falls, and all feasts, funerals, games and councils of peace or war involved the ritual smoking of the calumet. Champlain took part in one such ceremony when meeting with Chief Tessouat and the *Kichisipirini* at Morrison Island. Algonquin people also used the pipe as a measure of time and distance, a custom they passed on to French-Canadian settlers and voyageurs. Thus, the word *Nijopwagan* (“deux pipes”) meant the time it took to smoke two pipes, which was approximately an hour (Cuoq 1893: 142 and Grant 77).

It might seem strange that the *Kichi sipi*, or “great river of the Algonquins”, is now known as the Ottawa River. But use of the latter name can be traced to the later 17th century. When Pierre Radisson passed the Calumet rapids in 1660, he was traveling with a large flotilla of canoes from the upper great lakes that were going down to Montreal to trade. Most were “Ottawak” (as Radisson called them) and other closely related groups. In the 17th century, the *Odawa* (Ottawa) occupied the arc of land between eastern Lake Huron, the Bruce Peninsula, the Manitoulin Island chain and the Straits of Mackinac. There are still large numbers of Odawa people living on Manitoulin Island and in northern Michigan to this day. It has generally been argued (following the Recollet missionary Gabriel Sagard) that the word *Odawa* (Ottawa) is a contraction of the Huron word *Ondatawwat*, meaning “Cheveux Relevés” or “raised hairs”. Samuel de Champlain met three hundred members of a nation he called the “Cheveux Relevés” on his second trip inland in the summer of 1615. They were gathering blueberries near the mouth of the French River. However, it is also possible that *Odawa* is derived from *atawe*, the *anishnabe* word for trader. According to Champlain and later observers, trading was an important part of the “Cheveux Relevez” way of life.

Whatever the origin of their name, the *Odawa* lived on Lake Huron, not in the Ottawa Valley. It was their predominant role as middlemen in the fur trade in the second half of the 17th century, not their place of residence that led Montreal traders and government officials to start calling the Algonquin River the River of the *Odawa*. The trader Nicolas Perrot, who came to Canada in 1660, and spent much of his career in the upper great lakes, uses the latter term consistently in his memoirs, and he was joined by other French historians and mapmakers. It should be pointed out, however, that the English spelling “Ottawa” is much closer to the original Indian usage than its current French equivalent. As the 19th-century missionary linguist J.A. Cuoq explains, the word *Odawa* was never pronounced “Outaouais”.<sup>6</sup>

<sup>6</sup> “Qu’on continue donc à écrire *Ottawa*, comme on prononce, et non pas *Outaouais*, comme on ne prononce pas, et comme on n’a jamais prononcé” (Cuoq 1886 : 311). The source of the error was the substitution of “ou” for the vowel sound written as “8” (as in “huit”) in early French orthography of the word *8ta8ois*. The English “w” is much closer to the actual sound.

### 2.3.3 Algonquin, French and Iroquois

Samuel de Champlain first encountered *Algommequins* (Algonquins) in 1603 at Tadoussac, where they and their *Montagnais* and *Etchemin* (*Maliseet*) allies were celebrating a victory over their traditional enemies, the Five Nations Iroquois. For the Algonquins, this was certainly not their first meeting with the people they called *Wemitigojiwak* ("wooden ships"). They had already been trading with the French at Tadoussac for several years, and may well have had earlier encounters with Basque and Breton fishermen who had been active in the St Lawrence estuary for some two hundred years. The exact origin of the word Algonquin is unclear, but it seems to have been a name applied by outsiders. One suggestion is that it derives from the Maliseet term *elakomwik*, meaning "they are our relatives (or allies)". Champlain and early missionaries like the Recollets and Jesuits applied the name most commonly to a number of *anishnabe*-speaking bands then living in the Lower Ottawa Valley, who appear to have functioned as a trade and military alliance. The largest of these groups were the *Kichesipirini* or "Big River people", who had their main village on Morrison Island, and who probably consisted of more than one traditional band. Other related bands included the *Waweskarini* (literally *wawashkesh irini* or "deer people"), also known as the "Petite Nation des Algonquins", whose traditional lands were along the Rouge, Petite Nation and Lièvre Rivers immediately west of Montreal; the *Matouweskarini* ("Madawaska people"), whose territory lay along the river of that name, which flows into the Ottawa near modern Arnprior; the *Kinouchebiriiniouek* (*Kinozhe sipi iriniwag* or "Pike river people"), who probably inhabited the Bonnechere River drainage near Renfrew; and the *Onontchataronon*, also known as the people of Iroquet, after one of their chiefs, who lived along the South Nation River in what is now eastern Ontario.

The territory of these lower Algonquin bands extended no further up the Ottawa than Deep River. Their nearest neighbours to the west were the *Nipisiriniens* (*Nipising irini*), another group of related bands who had their main summer village on the north side of Lake Nipissing (which Champlain visited in 1615) and whose territories extended over a considerable area in all directions from that lake, including parts of northeastern Georgian Bay, the Mattawa River drainage, and adjacent portions of the Ottawa River watershed. The southernmost winter encampments of the *Nipisiriniens* or Nipissings were close to the villages of the Iroquois-speaking Huron Confederacy in modern Simcoe County. Famed for their religious prowess (the Huron called them "sorciers"), the Nipissings operated an extensive trading network in conjunction with their Huron allies. The Jesuits often classed them as Algonquin because they spoke that language, but until the mid-17th century, they were not always on the best of terms with *anishnabe* neighbours such as the *Kichesipirini*.

There were other bands living to the north, whose existence the early Europeans were only dimly aware of, and who may or may not have been part of the Algonquin alliance. Champlain was told of a group called the *Otaguotouemins* (*Kotakoutouemi*) whose territory extended inland from the rugged country between Deep River and Mattawa, and who seldom came out to the main river. The derivation of that name is obscure, but the same territory was occupied in the 19th century by what is now the Wolf Lake (formerly Dumoine) First Nation.<sup>7</sup> And the Jesuit Relation for 1640, drawing on the lost memoirs of the interpreter and trader Jean Nicolet de Belleborne (who spent the 1620s among the Nipissings), mentions several additional groups, among them the *Timiscimi* (Timiskamings) and *Outimagami* (Temagami). But early eyewitness accounts of these and other groups are lacking because, other than Nicolet and perhaps one or two others, no French people travelled on the Upper Ottawa north of Mattawa prior to 1670.

<sup>7</sup> It has recently been suggested that these people were ancestral to the modern Algonquins of *Kitcisakik* (Grand Lac), though that doesn't seem to fit with Champlain's territorial description (Chamberland et al.).

Apart from Champlain's voyages, details of the Algonquin way of life in the first half of the 17th century are surprisingly rare. Even though Jesuit and Recollet missionaries travelled through the southern parts of Algonquin territory over the following years on their way to and from Huronia, they left little information about the inhabitants. The names of some of the bands ("Big River people", "Madawaska River people") suggest that Algonquin territorial organization was based on watersheds, which was certainly the case two hundred years later. The bands also maintained their boundaries zealously. As Champlain and others noted, the *Kichisipirini* levied tolls on the Hurons, Nipissings, and any other groups passing up and down the river by Allumette Island. So too did the Nipissings within their own territories. Each band had one or more "Captains", a word the French translated literally from the *anishnabe* word *Okima*, meaning Chief. While these chiefs were chosen for their leadership abilities (and usually for their spiritual powers), the bands were not organized hierarchically (unlike European societies). Chiefs could not coerce members to do their bidding, and what powers they had were only exercised during the summer gathering period, when the various families came together to take part in communal activities.

Though the Algonquins were sometimes described as nomadic, this was only by comparison with the more sedentary Iroquois and Huron. Generally speaking, families remained within their band's territory, following a seasonal round of resource harvesting activities. During the winter, they lived in the bush in extended families, hunting large game like moose and deer, and trapping fur-bearing animals, particularly beaver, which was valued both for its pelt and flesh. Though fishing took place year-round, it was most productive between spring and fall. Champlain mentioned that Muskrat Lake (near Cobden) was an important fishery for all the people in the surrounding area, and that the Nipissings took great quantities of sturgeon, pike and carp, some of them of enormous size, from both their lake and the (aptly-named) Sturgeon River. The Nipissings and the Algonquin bands along the Lower Ottawa also practised a form of slash and burn agriculture. Champlain saw cornfields at Muskrat Lake and peas, beans and squash, as well as corn, growing on Allumette Island. However, he noted that the soil was relatively poor, and that the Algonquins, unlike the Hurons, relied more on hunting than on tilling the soil.

Living as they did on a major water route between the Atlantic coast and the interior of North America, the Nipissings and Algonquins were intimately involved in inter-tribal trade. Their closest economic relations were with the Hurons, who traded corn and cornmeal, wampum and fish nets with both the Nipissings and Algonquins in exchange for furs and dried fish. The Nipissings and Algonquins in turn secured pelts (in addition to their own fur harvest) from Ojibway, Cree and other people living as far away as Lake Superior and James Bay. It was along these existing trade routes, using the same transportation systems, that European goods first made their way inland. In the later part of the century, French traders came inland themselves. But they discovered (as Champlain had earlier found out) that in order to do business, they had to follow Indian customs. This meant treaties of peace and military alliance, because only friends could trade.

Over the course of the 17th century, many of these Algonquin bands were considerably affected both by European diseases (particularly smallpox), and by ongoing warfare with the Five Nations Iroquois, who were gaining a military advantage by obtaining firearms from Dutch and English colonists on the Atlantic coast. Every summer, marauding canoe parties of *Matchi Nottaway* ("bad Snakes", as the Algonquins called the Iroquois) would harass people, both native and European, living on or near the Ottawa and St Lawrence Rivers. As a result, some of the lower Algonquins, particularly the Matouweskariini, the Onontcharonons and the Kichisipirini, whose hunting grounds lay directly along the Iroquois warpath, began spending their summers at Trois Rivières, or at the new French settlement of Ville Marie on



Montréal Island (founded in 1642), though they still returned upriver in the wintertime. The Upper Ottawa Valley between Deep River and Lake Temiskaming also became increasingly unsafe. By 1650, the Iroquois had destroyed the Huron Confederacy and were launching attacks on the Nipissings, who sought temporary safety in the interior, some of them fleeing along their habitual trade routes as far as northern Lake Superior. Other Nipissings and Algonquins, however, remained in their traditional territories. They simply avoided the Lower Ottawa in the summer, instead using a parallel route to Trois Rivières and Montreal that took them along the Upper Ottawa from the north end of Lake Temiskaming and across to the headwaters of the Lièvre and St Maurice Rivers.

The modern Algonquins of *Kitcisakik* and other interior communities have retained oral history about the Iroquois attacks, but such raids must have been relatively rare. In contrast to the Hurons, whose year-round villages were easy targets for the Iroquois, Algonquin people only came together in sizeable numbers in the summertime. Except for vulnerable sites like Allumette Island and the mouth of the Sturgeon River on Lake Nipissing, most Algonquin villages would have been difficult to reach. The Iroquois used heavy elm canoes which were really only suitable for major waterways like the Lower Ottawa, unlike the lightweight bark canoes of the *anishnabeg*, which were adapted to the difficult rivers of the Shield (Coyne 10-11). Moreover, the Iroquois hardly ever raided north of the Ottawa or St Lawrence in the winter, because subsistence was so difficult. As the 17th-century Sulpician historian Dollier de Casson pointed out, game was scarcer in these regions than in their own country, and the Iroquois were poor fishermen (De Casson 76).

Throughout the latter half of the century, there were several truces or interludes of peace (accompanied by a profitable trade in furs), interrupted by frequent outbreaks of war. Though the Five Nations had better access to firearms, the conflict was not all one-sided. By the mid-1660s, French, Algonquin, Nipissing, Huron and Abenaki warriors were carrying the war to the main Iroquois villages in the Finger Lakes region of present upstate New York. In 1666, they captured and burned all the villages of the Mohawks, the easternmost of the Five Nations. The ensuing peace treaty in 1667 would limit Iroquois attacks for more than a decade. In the years that followed, the Iroquois took advantage of the peace to establish a series of villages along the north shore of Lake Ontario between modern Toronto and Gananoque, which made it easier for them to trade with the French settlements on the St Lawrence. This general northward movement, however, had unintended consequences. One of the conditions of the Treaty had required the Iroquois Confederacy to allow Jesuit missionaries into their villages. The result was a net population loss, particularly for the Mohawks, because the Jesuits eventually persuaded most of their converts to relocate to the Montreal region. Many of the new arrivals, who the Algonquins and Nipissings called *niina Nottaway* or "our Snakes" (which was also their name for the Hurons) settled at the Jesuit mission of *Kentake* or La Prairie on the south shore of the St Lawrence, which was moved somewhat later to what is now *Kahnawake*. By the mid-1670s, other Iroquois had joined a Sulpician mission to the Christian Hurons and Algonquins, located at what is now the intersection of Atwater and Sherbrooke Streets at the foot of "La Montagne" or Mount Royal (*Kanasetake* in Iroquois). Though these new arrivals were now French allies, they maintained close connections to their original villages (so much so that the French would later accuse them of carrying on contraband trade with the Dutch and English).

During the peaceful decade, French influence expanded enormously in the North American interior. French traders and missionaries flooded into the *pays d'en haut* or "upper country" (basically the area between the Ohio valley and the upper Great Lakes) and large trading parties from the interior Nations made annual summer visits to Montreal by way of the great lakes and the Ottawa or St Lawrence Rivers. By 1673, there were Jesuit missions at Sault Ste Marie and Michilimackinac and French trading posts as far

north as *Piscotagemy* (Nighthawk) Lake, near modern Timmins, Ontario. Angry at French expansion, however, and urged on by the English authorities in New York, the Iroquois Confederacy broke the peace in 1680, ushering in another two decades of intermittent war. The westernmost Iroquois Nations, the Seneca, Cayuga and Onondaga, launched annual attacks on the French allies living to the north and west, with the ultimate aim of destroying the St Lawrence River colony once it had been isolated (Jennings 172-185). As in the 1640s, the *anishnabeg* of the Ottawa Valley and adjacent areas adopted various strategies to stay out of the line of fire. In 1682, 300 *Nipisiriniens* arrived at Montreal, and asked Governor le Febvre de la Barre for land as a temporary place of refuge "from the fury of the Iroquois". It is possible that these Nipissing arrivals included Timiskamings, because in August of 1684, forty warriors of the Nipissings and Timiskamings and 72 warriors of the Algonquins accompanied the Governor on an expedition against the Iroquois villages in upstate New York.

Despite Iroquois harassment, the fur trade in the Upper Ottawa Valley continued to flourish. By 1683, Montreal merchants had opened direct trade with the Nipissings and Timiskamings, establishing a post at Matabitchuan on the southwest side of Lake Temiskaming. The Chevalier de Troyes visited this post in the June of 1686, on his way with a company of French soldiers to attack the Hudson's Bay Company posts on James Bay. On the expedition's return in September, the Chief of the Timiskamings guided them back to Montreal. In 1689, the eastern Iroquois launched a major attack on Lachine, killing or capturing both French settlers and the residents of Indian missions on Montreal Island. That same year, western Iroquois warriors also destroyed the French trading post on Lake Temiskaming. But the tide slowly began to turn against the Confederacy. In 1691, "domesticated Indians" helped ward off an attack on Montreal by English and Iroquois forces. According to the Jesuit historian Charlevoix, one of the leaders was the Timiskaming Chief "La Routine...at the head of a large party of his nation of Algonquins". In 1696, Odawa, Algonquin and Nipissing warriors - almost certainly including Timiskamings - accompanied Governor Frontenac on an expedition south of Lake Ontario, where they helped to destroy the Oneida and Onondaga villages. The Confederacy was also attacked from the west by the *anishinabe*-speaking Nations of the upper great lakes, including the Odawa, Ojibway and Potawatomi. According to Ojibway oral history, their war parties eventually drove the Iroquois out of what is now southern Ontario. By March of 1701, Onondaga ambassadors at a conference with the French Governor in Quebec were complaining that Algonquins and Nipissings were hunting near Fort Frontenac (Kingston), on lands that the Iroquois had always considered their own. Although historians still disagree over the extent to which the Iroquois Confederacy was weakened, these reverses certainly encouraged the Five Nations to seek an accommodation with France and her Indian allies. At the great Peace Treaty brokered by the French at Montreal in 1701, the Five Nations and their enemies agreed to end hostilities. The Indian Nations in the French alliance promised to return Iroquois prisoners, and the Five Nations agreed to remain neutral in case of further war between England and France. Algonquins, Nipissings and Timiskamings were among the Nations present at the Treaty council (Havard 210-214).

### 2.3.4 Algonquin People in the 18th Century

With the passing of the Iroquois threat in 1701, the various bands of the Algonquin Nation would have undisturbed possession of the Ottawa River watershed for more than a century. Several decades of close contact with French officials and missionaries, however, together with the population decline caused by the Iroquois wars and epidemical diseases, had brought about changes in their social organization. This was particularly true for the Algonquins living along the Lower Ottawa. Many descendants of the *Weskarini*, *Onontchataronon* and other groups, who had been attending French missions since the 1630s, now spent their summers at the mission of La Montagne (*Kanasetake*), though they still returned to their

hunting areas in the *Kichisipi* valley at other times of the year. These were the people that the French usually referred to as Algonquins. In their own language, they called themselves *Omamiwininiwak* or “downriver people” (Cuoq 1886: 298). In 1696, the Christian Huron and Iroquois and some of the Algonquins moved to Sault-au-Récollet on the north side of Montreal Island. The remaining *Omamiwininiwak* Algonquins moved their summer village to Sainte Anne du Bout de l’Isle (now Sainte Anne de Bellevue) at the western tip of the Island.

These mission villages were genuinely multi-ethnic, partially as a result of a century of warfare and disease. All Indian tribes adopted prisoners that they did not kill, which was an effective way of replenishing their populations. The most prominent example of this practice were the member Nations of the Iroquois Confederacy. According to the Jesuit historian Pierre Charlevoix, two-thirds of the Iroquois population by the mid-1660s consisted of captive Hurons, Neutrals and others. In the case of the *Omamiwininiwak*, while the core of the population were people of Algonquin origin, their numbers also included former captives (or their descendants) from the Iroquois Confederacy, *Mahicans* (Loups) and other New England tribes, and even Europeans from the English and Dutch settlements.

There were other groups of *anishnabeg* who had been visiting Montreal from up the Ottawa River at regular intervals since the early 1680s. The majority of them were known to the Algonquins (and to the Odawa and Ojibway) as *Otickwagamik* or “last water people”. These were the groups that the French called Nipissings (Cuoq 1886: 314). They were closely connected to the Timiskamings, who were also making frequent visits to Montreal in this period, and who were sometimes known to the Algonquins as *Nopiming daje inini* (literally, inland people/gens des terres) and *Machakandiby* (round heads/Têtes de Boule). Those terms were also applied to the various Algonquin-speaking bands living along the Upper Ottawa. At some point in the 1690s, the Nipissings and Timiskamings had established a summer village on l’Île aux Tourtes (Pigeon Island), directly opposite Ste Anne de Bellevue, where several French merchants were located. These merchants, who belonged to the extended d’Ailleboust and Guillet families, had formerly operated several posts on the Upper Ottawa, including Fort Coulonge and the *fort des français* on Lake Temiskaming. French officials had refused to reopen the Temiskaming trade after the Iroquois sacked the post in 1689, mainly because other Montreal merchants had complained (rightly) that it diverted canoe parties that would otherwise have come down to the St Lawrence colony to trade. In 1704, the Sulpicians opened a new mission at Ste Anne, and one or two years later the local Seigneur, Philippe de Rigaud (then the Governor of Montreal) built a fort and trading post on Isle aux Tourtes, which became known in the *anishnabe* language as *Aouanagassing*. Unlike the *Omamiwininiwak* Algonquins, however, the Nipissings and Timiskamings were not really Christians. The parish registers for the Sulpician mission show numerous infant baptisms, but even as late as 1720, most adult Nipissings and Timiskamings (including the Timiskaming Chief *Routin*) remained unbaptized. Thus, it was not religion that attracted them to the Montreal region, but rather the pragmatic benefits of the French alliance, which included gifts from the Crown, the services of blacksmiths and other tradesmen, and continued access to trade goods.

In 1717, the King of France granted the Seminary of Saint-Sulpice a new seigneurie on the north shore of the Lake of Two Mountains because the Sulpicians were anxious to move their Indian missions away from the perceived bad influence of European settlers. By 1721 they had persuaded the 150 Iroquois, Huron and Algonquin warriors and their families then living at Sault-au-Récollet, as well as the Algonquins from Ste Anne du bout de l’Isle, to relocate. The Algonquins formed one village, the Iroquois and Hurons another. The Iroquois dubbed the new Mission *Kanesatake*, the Mountain, in memory of the original mission on Montreal Island. The Algonquins called it *Oka*, or pickerel (walleye), presumably because of

the fishery there. The Nipissings and Timiskamings at Ile aux Tourtes, however, did not join the new mission, because their practical requirements were now being met elsewhere. In 1720, Governor de Vaudreuil reopened the Temiskaming trade. He did so in order to retain the loyalty of the Timiskamings and Nipissings who, as it turned out, had also been trading with the English merchants of the Hudson's Bay Company on James Bay for over twenty-five years. The concession holder, the Ste Anne merchant Paul Guillet, was not allowed to trade along the Lower Ottawa River, but he did have the right to go to Lake Nipissing or Manitoulin Island to get corn or other provisions.

The original licence Guillet received from the Governor authorized him to trade with "the Indians of the said post of Temiskaming" as well as "those of the same nation" on Lakes Wanapitei, Temagami, Kipawa, Barriere and Abitibi. All of these places are within the area mapped in 1725 as the Temiskaming fur trade district, which extended on the west from the entrance to the French River at Lake Nipissing, to the Lièvre River in the east. Wanapitei Lake is just west of the Sturgeon River, which flows into Lake Nipissing, as does Lake Temagami, which has another outlet which drains eastward into the Ottawa River system. Lakes Kipawa and Barriere are also part of the Ottawa watershed. There are modern First Nations associated with all of these lakes (as well as other lakes in the same region). And the members of these First Nations are all *anishnabeg*, though those living in Ontario are now called Ojibways, and those in Quebec are called Algonquins. A testament to the importance of the fur trade in the Upper Ottawa Valley is the fact that the trading location Paul Guillet established in 1720 (now the Fort Témiscamingue National Historic Site) was occupied continuously until the early 1900s, when its business was transferred to the nearby town of Ville Marie.

Even after the reopening of the Temiskaming trade, many Nipissings continued to come down to Montreal at regular intervals. So did at least a few of the Timiskamings. By 1736, the *Otickwakamik* or Nipissings had established a small summer village at Oka, adjacent to those of the Algonquins and the Huron-Iroquois, though they also maintained their longstanding village at the mouth of the Sturgeon River on Lake Nipissing. All of these groups sided with France during the Seven Years War (1756-1763). They were part of an alliance known as the Seven Nations (or Seven Council Fires) of Canada, which also included the Christian Iroquois, Huron and Abenaki. The Nipissings, who considered themselves the senior members of the alliance, were renowned for their ferocity as warriors. As the westernmost members, they also acted as intermediaries between the neighbouring great lakes confederacy (which included the Odawa and Ojibway Nations, among others), the rest of the Seven Nations, and the French. The Nipissings and Algonquins were the last to abandon the French colony as British forces descended on Montreal in the summer of 1760. In August, at a treaty council held at Swegatchy or Oswegatchie (now Ogdensburg, New York), the Seven Nations<sup>8</sup> agreed to remain neutral. In September of that year, shortly after the surrender of New France, the Seven Nations met in council with the British and their Iroquois allies. Under the terms of the resulting Treaty of Kahnawake, the Seven Nations (including the Algonquins and Nipissings) agreed to join the Six (formerly Five) Nations Iroquois in one large alliance in the British interest. The parties promised one another mutual support in time of war, and, among other measures, the British agreed to protect Indian rights to their villages and hunting grounds, and promised a free and open trade with English-speaking merchants.

Not all of France's former allies were in favour of peace. The Indian nations of the Ohio valley and Great Lakes regions, who were angry that Anglo-American settlers had spilled across the Alleghany Mountains

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<sup>8</sup> For a detailed discussion of the fluctuating membership of the Nine (later Seven) Nations of Canada, see Jean-Pierre Sawaya, *La Fédération des Sept Feux de la Vallée du Saint-Laurent*. Québec: Septentrion, 1998.

into territories protected by Treaty, attacked British outposts in the spring and fall of 1763. Under the leadership of the Odawa chief Pontiac, the hostile tribes captured the important British fort of Michilimackinac at the straits between Lakes Huron and Michigan, as well as a number of smaller posts. They also laid siege to the British garrison at Detroit for several months in 1763-64, though they were ultimately unsuccessful. The British relied on the Seven Nations of Canada, particularly the Nipissings, to act as peace emissaries, advising the hostiles of the definitive Peace Treaty with France, signed in February of 1763, and the terms of the 1760 Treaty at Kahnawake. British officials had already been developing legislation to deal with the territory recently acquired from France, but it was the crisis provoked by the Pontiac War that spurred the Crown to issue a Royal Proclamation on 7 October 1763. This famous Proclamation (still part of the Constitution of Canada) banned non-native settlement not only in the continental interior but on all unceded Indian land within the colonies, and ordered unauthorized settlers removed. Colonial governments were forbidden to pass patents or warrants of survey for unceded lands. If an Indian Nation was prepared to dispose of land within an area open for settlement, such land could only be ceded to the Crown at a public meeting called for that purpose. Private purchases by third parties were strictly forbidden. At the Treaty of Niagara held in July and August of 1764, which formally ended the Pontiac War, British officials formally, read out the terms of the Royal Proclamation, and it thereby, became part of the Treaty relationship between the Crown and the Indian Nations. Algonquins and Nipissings attended the Niagara Treaty Council as members of both the Seven Nations and the Great Lakes Confederacies.

The Royal Proclamation of 1763 also created three new colonies within former French territory in North America. One was the Province of Quebec (the others were East and West Florida). Quebec's boundaries were not very extensive. They included the St Lawrence valley, parts of present eastern Ontario and the Lower Ottawa Valley between Lake Nipissing and Montreal. Unlike the Anglo-American colonies to the south, however, Quebec was not a settlement colony, nor was it intended to be one. Few Anglo-Americans, apart from a handful of merchants, came north after the War, and the French-speaking population was largely confined to the seigneuries along the St Lawrence. The Ottawa Valley was off limits to most residents of the province. Even fur traders required a pass to travel above Carillon. The Algonquins and Nipissings, as well as the other *anishnabeg* living both within and outside the boundaries of the Province, considered that the land was theirs. The trader Alexander Henry found this out in September of 1761, when he was on his way from Montreal to Michilimackinac. Traveling on Lac des Chats near present Arnprior, he met a party of Algonquins who were traveling to Lake of Two Mountains with their hunt. Henry learned that these people, "claim all the lands on the Outaouais, as far as Lake Nipissing; and that these lands are subdivided, between their several families, upon whom they have devolved by inheritance. I was also informed that, they are exceedingly strict, as to the rights of property, in this regard, accounting an invasion of them as an offence, sufficiently great to warrant the death of the invader" (Henry 22-23). The Algonquins and Nipissings enforced their tenure in a number of ways. In the early 1770s, for example, angry that traders were bringing liquor into their hunting grounds, young men from the two villages began stopping canoes arriving at Lake of Two Mountains and emptying out the offending casks.

Quebec did not become a settlement colony until after the American Revolutionary War, but even then, there was little pressure on the Ottawa Valley. In 1774, the province's boundaries had been extended all the way to the Ohio and Mississippi Rivers, ostensibly to provide civil government for several interior French enclaves (like Detroit), but also as a way for Imperial officials to keep Anglo-American settlers away from the Indian Nations. That policy, however, turned out to be a primary cause of the Revolution, as Anglo-American "liberty boys" refused to recognize either Imperial or Quebec authority. By the end

of the War, thousands of Loyalist refugees had fled north to Quebec and were searching for land to replace the properties they had lost south of the new border. Beginning in 1780, the Imperial Crown entered into a series of treaties for lands in what was then Quebec. This treaty-making process would continue for another one and a half centuries, eventually covering almost all of what is now Ontario, as well as much of western and northern Canada. To the extent that records have survived, these early land cession treaties were negotiated in accordance with the principles of the Treaty alliance, and the rules codified in the Royal Proclamation of 1763 and subsequent statutes and regulations. Early agreements in 1783 and 1784 covered parts of present eastern Ontario between Gananoque and Carillon. One of the participants was an Algonquin Chief from Lake of Two Mountains. But there was little interest in any other portions of the Ottawa Valley, which were considered far too remote for settlement. Most Loyalists took up land in the Eastern Townships, or along the upper St Lawrence River and the north shores of Lakes Erie and Ontario. It was agitation from English-speaking settlers in the latter regions that led the British government to divide Quebec in 1791 into the Provinces of Upper and Lower Canada.

By the later 18th century (and quite probably earlier), the people of the Ottawa River watershed known variously as Algonquins, Nipissings, Timiskamings and Têtes de Boule had developed dual identities. Many of them, particularly along the Lower Ottawa, were Christians, with strong ties to the Algonquin and Nipissing mission villages at Lake of Two Mountains (Oka). But these very same people also belonged to traditional bands which had numerous members who were not Christian and who rarely (if ever) visited Lake of Two Mountains. These traditional bands occupied the watersheds of the various rivers flowing into the Ottawa on both sides, such as the Quinze, the Montreal, the Mattawa, the Petawawa, the Madawaska, the Dumoine, the Coulonge and the Gatineau. As an example, the present members of the Wolf Lake (formerly Dumoine) First Nation, can trace their ancestry in almost equal parts to non-Christian *anishnabeg* living on the upper Dumoine and Kipawa Rivers in the 18th century, and to *Otickwagamik* (including several prominent Chiefs) from the Nipissing village at Lake of Two Mountains.

For most of the year, the members of these traditional bands lived in their hunting grounds. Even the Christians only resided at Lake of Two Mountains between June and (at the latest) September. Over the course of the other nine or ten months, they shared the same seasonal round as their fellow band members. The Nipissings in particular, who lived the furthest up the valley, were frequently absent, only coming to the mission village at two or three year intervals to have their children baptized. The seasonal round of resource harvesting activities is largely reflected in their names for the months of the year, as can be seen in the following lunar calendar provided by J.A. Cuoq (1821-1898), a Sulpician missionary from Lake of Two Mountains (Cuoq 1893: 140).

**Table 2.1 Algonquin Calendar**

Algonquin name	Meaning	Month
<i>Kenozitc kizis</i>	Long moon month	January
<i>Akakwidjic kizis</i>	Groundhog month	February
<i>Nika kizis</i>	Goose month	March
<i>Kawasikototc kizis</i>	Breaking up of the ice month	April
<i>Wabikon kizis</i>	Flower month	May

<i>Otehimin kizis</i>	Strawberry month	June
<i>Miskwimin kizis</i>	Raspberry month	July
<i>Otakakomin kizis</i>	Blueberry month	August
<i>Kakakone kizis</i>	Hulling corn (harvest) month	September
<i>Namekos kizis</i>	Trout month	October
<i>Atikameg kizis</i>	Whitefish month	November
<i>Piticipipon kizis</i>	Beginning of winter month	December

The anthropologist Frank Speck obtained the identical calendar from residents of the Timiskaming Reserve in 1913. According to Dr Speck, there were very slight differences in the calendar used by the neighbouring *Tima'gami anicena'bi* (Temagami First Nation) in Ontario. There, February was *Mako'ns gizis* or "little cub month" and May was *Name'bin gizis* or "Sucker spawning month". The period from late November to February, shown as "winter" on the calendar, was the primary hunting and trapping season. October and November were prime fishing months, when first trout, then whitefish, spawned. Geese (and other migratory waterfowl) were usually hunted in March, on their return northward. Berries of various kinds were gathered in June, July and August. The reference to "corn hulling" (September) shows that the Algonquins still practised agriculture.

According to the ethnological literature, Algonquin and other *anishnabeg* (such as the Ojibway) were organized in bands, and the band, not the tribe or nation was the land-holding group. At the time of his 1913 fieldwork, Frank Speck found that the traditional Algonquin way of life had declined considerably over the previous half-century, as the pressure of settlement and resource development had led many Band members to take up farming and logging. Nevertheless, he was able to obtain considerable detail about life in previous generations. He also discovered that the bands living both to the east and west of Timiskaming were much more traditional. In his report, published in 1915, Dr Speck states that extended families were the building blocks of Algonquin bands. And land use was the key to Algonquin social and political organization. Watersheds were the basic unit of traditional land management, serving as boundaries for family, band and tribal territories. Rivers and lakes were the "highways" Algonquin people used to travel around their territory.

### 2.3.5 Algonquin People in the 19th Century

The development pressure that Frank Speck mentioned in a report was a product of the 19th century. Until about 1803, the government of Lower Canada had respected Indian title (as the government of Upper Canada would continue to do). The government would not issue patents or warrants of survey for lands that were still in the possession of their Indian proprietors. But around the time of Philemon Wright's settlement of Hull Township, which was the first serious development in the Ottawa Valley, local authorities changed their attitude. The Algonquins and Nipissings had objected to the presence of settlers, but Wright later claimed that government officials had helped him assert his title. In fact, there was a division of authority within the colonial administration. The settler government was responsible for lands and resources. But Indian Affairs was an Imperial responsibility, and Indian Department officials were not answerable to the government of Lower Canada. Particularly after 1820, as settlement

and lumbering slowly proceeded up the Ottawa Valley, the Algonquins and Nipissings of Lake of Two Mountains lodged continuous protests with the Indian Department, who would convey their complaints to the local executive, who would generally ignore the protests. The Algonquins and Nipissings did, however, make their own arrangements with local settlers, requesting and receiving rental payments, particularly for islands in the Ottawa River. For almost thirty years, the Indian Department acknowledged the validity of those rents, and even collected them on occasion. But the government of Lower Canada refused to recognize them, and proceeded to survey and patent lands without consideration for Indian claims. This process accelerated when Lower and Upper Canada were combined in 1840 to form the Province of Canada.

Beginning in the late 1840s, a number of Algonquins and a few of the Nipissings moved their summer residence from the mission village at Oka to *Kitigan Zibi* (River Desert), a tributary of the Gatineau River which had always been part of their winter hunting grounds, and began petitioning the government of the province of Canada for title. Oblate missionaries also urged the government to set aside these lands as an Indian Reserve, and this was done by statute and executive order in the period 1851-53. That reserve came to be known as *Maniwaki*, or "Mary Land" in the *anishinabe* language. The Oblates also pressed simultaneously for the creation of a reserve at the head of Lake Temiskaming, where they hoped to form a mission for the many traditional bands who lived on the Upper Ottawa and in the neighbouring Hudson's Bay Company territory. What is now the Timiskaming Indian Reserve would also be created by statute and executive order in 1851-53.

But although the government styled the reserves at River Desert and Timiskaming as places of residence for all the Nipissings and Algonquins, as well as other bands in the Upper Ottawa Valley, this solution was overwhelmingly rejected by the majority of Algonquin-speaking people. For the most part, the only people who had settled at River Desert and Timiskaming by 1900 were members of traditional bands whose hunting grounds already included those reserves, or who lived in the immediate neighbourhood. Even after 1851, the Algonquins and Nipissings of Lake of Two Mountains continued to press for protection of their traditional territories and to have reserve lands set aside at Oka. And if that was not possible, then they wanted Calumet and neighbouring islands on the Ottawa River set apart as a reserve for them.

Beginning in the 1860s, in response to the overwhelming wave of settlement and resource development which was then sweeping over the Ottawa Valley, individual Algonquin and Nipissing bands began to press for reserve lands within their own traditional territories. In the 1840s, for example, the Algonquin Chief Pierre Shawanepinesi was petitioning for a reserve for his band in Bedford Township north of Kingston. Land was set aside to become an Indian Reserve, but was then withdrawn due to lumbering interests. Other Nipissings and Algonquins wanted a reserve around their summer village at Golden Lake on the Bonnechere River, within winter grounds that they had been occupying since at least the late eighteenth century. These lands would later become the Golden Lake Indian reserve. Most bands, however, were not as successful. After 1867, the *anishnabeg* of Grand Lac and Barriere Lake petitioned the government of Canada for reserve land at their respective localities and began clearing land. So did the Algonquin people who lived along the Kipawa River drainage, including ancestors of the Eagle Village and Wolf Lake First Nations, who began clearing land both on Kipawa Lake and at nearby Grassy Lake in the early 1870s. But none of these groups succeeded in having their land and resource rights protected. Apart from the Algonquins living on the Reserves at Timiskaming, River Desert and Golden Lake, the governments of Canada, Ontario and Quebec, like the colonial governments that preceded them, consistently treated Algonquin people as squatters on their own land. Up to the present time, the Algonquins have never signed a land treaty, pursuant to the Constitution of Canada, for the Kichisipi watershed or the remainder of their traditional territories.



## A Sacred Site: OISEAU ROCK

Joann McCann

Founder, Friends of Oiseau Rock

Oiseau Rock is a sheer rock face about 150 metres in height which rises straight out of the Ottawa River in Pontiac County, Quebec. It was a sacred site for Aboriginal Peoples who have left behind a remarkable legacy of ancient pictographs or rock art which may still be seen today. It continues to be part of the sacred landscape for the Algonquins of Pikwakanagan (at Golden Lake, Ontario) and of the Kitigan Zibi First Nation (Maniwaki, Quebec) who call the rock "Kinew Kishkaabikaan", meaning bird rock.

This large outcrop is situated across from the Atomic Energy of Canada Research Laboratory (AECL) at Chalk River, Ontario. This part of the river, originally called "La Rivière Creuse" or deep river reach, is very beautiful as the river narrows, the water deepens and the channel is flanked by the Laurentian Mountains. Towering green pines border the blue waters. The immediate area's only development on the River, besides the Laboratories, consists of a few cottages.

When one approaches the Rock from downstream, it cannot be seen since Oiseau Point bars the view. This makes the Rock's appearance even more spectacular as one revels in the unexpected: a massive mountain that rises straight out of the river and reaches a dizzying height, with dwarfish pines clinging to its rocks and crannies.

Oiseau Rock possesses many of the typical attributes of a sacred site: a vertical rock wall immediately beside the water. Here, the sky, land and water meet so the Manitous (spirits) can travel from this world to the next. Algonkian-speaking people believed that spirits dwell in creatures, people and animals, and even in the components of the land, such as rocks. Consequently, they painted images called pictographs on the rock face. It is believed that an image is a testimony to one's spiritual experience whereby a powerful healer documented his entrance into the rock seeking medicine.

The paintings were done with red ochre, a mineral that is found in many places across the Canadian Shield. Not far from Oiseau Rock, at Morrison's Island near Pembroke, Ontario, archaeologists found a site which is 5000 years old where ochre was sprinkled around the buried. For picture writing on rocks, ochre was possibly mixed with an agent such as water. The picture writer usually used his/her finger to apply the ochre to the rock. After this paint is applied to the rock surface, it lasts for a long time.

The historical record indicates that First Nations Peoples considered Oiseau Rock as a sacred site. In 1636, the Jesuit priest Paul Le Jeune noted that the Huron called the rock, "Tsanhoki Arasta", which refers to birds of prey. In the spring of 1686, Chevalier de Troyes with his fleet of thirty canoes traveled

**Figure 2.6 Oiseau Rock, ca. 1900**



Source: Library and Archives Canada

up the Ottawa and observed First Nations Peoples making offerings at Oiseau Rock by throwing arrows with tobacco attached to them. In 1913, an Aboriginal person from Temagami told Frank G. Speck, an American anthropologist, that there was a picture of Nanabojou, an Ojibwa Manitou, on a rock on the Ottawa River.

Yet many Algonkian legends are associated with the rock. One is that a baby was saved by an eagle from falling over the top of the cliff. Another story describes how an eagle plucked a baby from its mother's papoose and flew to the top of the Rock. The mother bravely climbed the summit and snatched the babe from the eagle's eyrie. A more tragic tale is that of an Aboriginal woman, grief-stricken over the death of her love, leapt from the Rock to her death.

According to Dr. Daniel Arsenault, an archaeologist with the University of Quebec at Montreal, "... this site is the biggest rock art site known in the Quebec part of the Canadian Shield... and among a few with paintings reproduced on such a huge outcrop within the Canadian Boreal Forest." With respect to Oiseau Rock, there is much more to learn about the pictographs.

In the late 1970s, another archaeologist, Gilles Tasse and the late Selwyn Dewdney, Canada's foremost authority on pictographs, visited Oiseau Rock. They published a report which depicts some of the 15 to 20 recorded images on the rock. Since then, some of those images have been covered with graffiti. The images on the rock include fish, canoes, arrowheads, a bear and several anthropomorphic or human-like figures.

**Figure 2.7 Pictographs at Oiseau Rock**



Since the late 1990s, Dr. Daniel Arsenault, University of Quebec at Montreal, has been studying the Oiseau Rock pictographs. Possibly more paintings at the site await his discovery. Each time he visits the site, he finds more pictographs. He and the stewardship group, "Friends of Oiseau Rock" are currently consulting with conservation specialists to determine the best method to conserve the pictographs. Dr. Arsenault and several of his students have started to document the pictographs.

The Rock has witnessed much. In ancient times, Aboriginal Peoples made offerings to the rock and left their picture writing on the face of the rock; explorers and fur traders traveled this stretch of the river, and were later followed by the first settlers, loggers, and then the steamboats.

In the mid-1900s, steamboats were the primary mode of travel, taking people and cargo up the River. The steamboat would leave Pembroke and make several stops, including one at Oiseau Rock, en route to Des Joachims. Often when the boat reached the face of the Rock, the captain would blow the whistle and the sound would echo off the face of the Rock.

Since then, the Rock has been frequented by visitors in canoes, cruisers, sailboats, houseboats and now Sea-Doos. All come to look at this ancient rock and hike to the top. Many of the visitors, no matter how young or old, make the hike to the top an annual event.

No roads lead to the rock so all access is by boat. Boats can be launched at Pembroke, Petawawa and Deep River, Ontario, and at Fort William, Quebec. Boaters park their boats at the beach and in the woods is the path that leads you to the top of the Rock. The hike to the top takes about 20 minutes but the rewards are a spectacular view of the river and the Petawawa Plains, and a cool swim in the pretty, spring-fed lake.

Across the river is Point au Baptême, a sandy point of beach where voyageurs were immersed in the deep water as an initiation to their vocation. Ancient artefacts had been found there, too, indicating Aboriginal occupation of that site. Visitors cannot stop at Point au Baptême when passing by boat since it is part of the Canadian Forces Base Petawawa, but it is worth passing by closely to glimpse this fine point of white sand.

## 2.4 Exploration Along the Ottawa River

The Ottawa River has made a remarkable contribution to Canadian heritage as a route of European exploration. Beginning in the early 17<sup>th</sup> century, the French followed its waters on their way deep into North America's interior. Famous French explorers such as Champlain, Brûlé, Vignau, Nicollet, Radisson, Jolliet, Dulhut, De Troyes, and La Vérendrye, as well as British explorers such as Mackenzie and Franklin, canoed the river's waters on many of the most important European voyages of exploration into North America's interior.

European monarchs and merchants ventured west in search of a new and faster trade route to the Far East. During the 16<sup>th</sup> century, Europe began to investigate the possibility of a passage in the Northwest that would offer a safer sea route to the Orient than those that lay exposed to possible Spanish or Portuguese attack, such as the areas of Cape Horn and the Cape of Good Hope. For two more centuries, Europeans would continue to seek this route across the North American continent, including the fabled Northwest Passage through the Arctic. The Ottawa River is central to their stories of exploration (Champlain 1993: 155).

These explorers never found the route that they were seeking, but they did discover a continent rich in natural resources. The exploitation of these resources, beginning with furs, prompted further voyages and eventual settlement. In fact, many of the first Europeans to explore the Ottawa Waterway were missionaries and fur traders. From early days, geographic exploration and discovery were therefore intertwined with other motives.

### 2.4.1 European Context

Between 1450 and 1750, European nations beginning with Spain and Portugal, and then including Britain, France, and Holland, underwent major transformations that enabled them to gain command of the world's key international trade routes, and led to the European colonization of many parts of the world.

European traders of the 15<sup>th</sup> century became focused on the goal of establishing a trade route to the Orient that circumvented the Ottoman-Turkish Empire, a powerful (and costly) middleman. Europeans began to seek a more direct route to access the valuable silks, gems, and spices of the Orient (Taylor 26).

The 15<sup>th</sup> century also marked the beginning of a period of European scientific enquiry and technological development. These innovations, coupled with trade, led Europe to develop new ships, navigation techniques, geographic knowledge, and cannons that would enable European mariners to travel further and dominate those whom they encountered. The period of European imperialism was underway, and would soon lead to the colonization of Africa, parts of Asia, and the Americas (Taylor 29).

The story of the colonization of the Americas is said to begin with the Italian-born and Spanish sponsored navigator Columbus and his “discovery” of North America. Contrary to popular belief, Europeans of Columbus’ time did not believe that the earth was flat. In fact, educated Europeans since the ancient Greeks had agreed that the world was spherical, and that, in theory, Asia could be reached by venturing west across the Atlantic. What prevented them from attempting such a voyage was their remarkably accurate understanding, based on ancient Greek calculations, that the distance was too great. It was only a grave error in the re-calculation of this distance on Columbus’ part that justified his venture at all. Had the Americas not luckily been “in the way” none would have survived this voyage.

Columbus refused to admit that the continent he had reached was not Asia, and called the First Nations Peoples whom he encountered “Indians,” a misnomer still employed by many today. Subsequent European explorers soon admitted that the continent was not Asia, and referred to it as the “New World.” Of course, this too was a misnomer, as the Americas were not at all new to the continent’s Aboriginal Peoples.

European “discovery” of the “New World” had several major ramifications on trade. The natural resources of the continent were almost immediately harvested and sold in European markets. In North America, the French, Dutch, and British all engaged in the extraction of important resources, fuelling a vigorous trans-Atlantic trade.

In addition to this resource extraction, the quest for a westward route to the Orient did not end. This search would continue for about three hundred years, during which explorers would brave the harsh climate and treacherous ice conditions of the North. Some men would lose their lives by starvation, scurvy, or attacks by Inuit or fellow crewmembers as they attempted to find a passage through the maze of ice and islands.

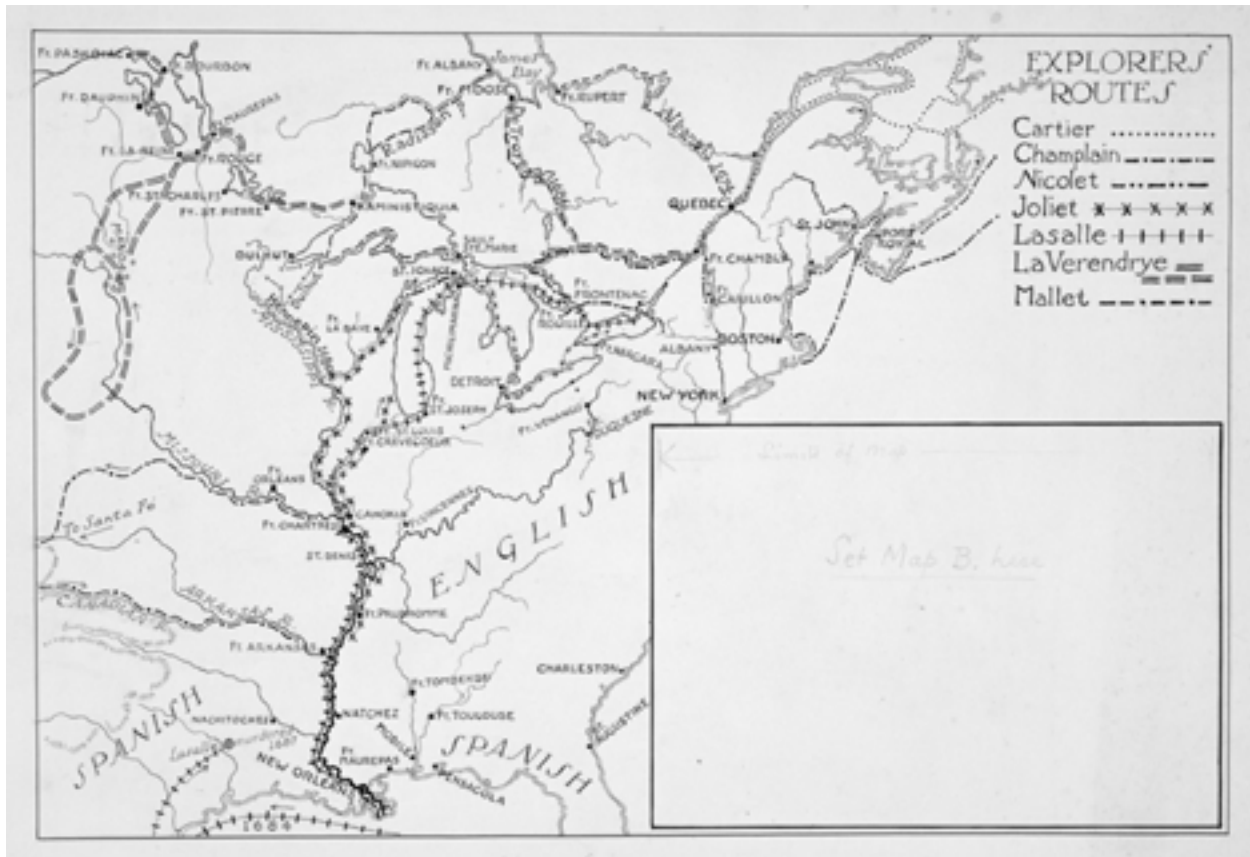
Despite the hardships and challenges faced by the European explorers, the land accessible via the Ottawa River provided all the materials necessary for extensive travel by canoe. Birch bark is found in all parts of Canada served by the Ottawa Waterway. The long Canot de Maître, developed for the fur trade between Montreal and Grand Portage (at the west end of Lake Superior), relied on readily available materials such as white cedar, spruce and juniper roots, and pine or spruce gum.

## 2.4.2 The Explorers

The French were the first Europeans to travel up the Ottawa River. François I commissioned the earliest French voyages of exploration in the 16<sup>th</sup> century to obtain a share of the New World's riches - goods that, up to that point, had been taken by Portugal and Spain.

In 1534, Jacques Cartier was charged with finding a route to China by which France could trade with distant Asian lands. In 1535, Cartier stood atop Mount Royal (in modern-day Montreal) and recorded what he saw. Among the lands new to his eyes, he noted a great river extending toward the western horizon: the Ottawa River, weaving its way into the distant wilderness of a vast, unexplored region.

**Figure 2.8 The Explorers' Routes**



Source : Charles William Jefferys/Library and Archives Canada/C-068751

### Samuel de Champlain

The story of European exploration along the Ottawa River can be said to have begun with the vision and efforts of Samuel de Champlain. Geographer, explorer, as well as colonizer and founder of Quebec City, where he carried out most of his works, Champlain was the first to publish maps of the Ottawa River and names of topographic features in the Ottawa region as well as in Hull, Pontiac, and Renfrew counties (Kennedy 71). By the time he began exploring the Ottawa River in 1611, he had already sailed the St. Lawrence, explored the mouths of the Saguenay and the Richelieu, and founded colonies in Acadia and Quebec.

**Figure 2.9 Champlain's Map of Canada, 1653**



Source : Pierre d'Abbeville du Vail/Library and Archives Canada/NMC 6333

Commissioned by the King of France to establish a colony in North America and to continue the search for the China Sea, Champlain encountered a group of Algonquins, Malécites, and Montagnais at

**Figure 2.10 Samuel de Champlain**



Source : Hamel Théophile Moncombel/Library and Archives Canada/C-014305

Tadoussac in 1603 (Hancock: "Champlain Anniversary"). These allies were celebrating their recent victory over the Iroquois in a battle on the St. Lawrence. Champlain's presence offered these First Nations Peoples a timely opportunity to ally themselves with the French - an opportunity that, strategically, they seized (Legget 1975: 32).

In 1609, the allied Montagnais, Algonquin, and Malécite tribes guided Champlain into the Iroquois country. In honour of the French-First Nations alliance, Champlain and several of his men fought and won a battle against the Iroquois alliance on the shores of Lake Champlain, at Cape Ticonderoga. Samuel de Champlain and a group of Frenchmen participated in a second battle on the Richelieu River the following year.

Champlain earned much of his historical reputation because of the courage, strength, and skill of the rugged and versatile scouts that carried out his strategy of cultural penetration. While Champlain fortified his

alliances with these First Nations groups, he also sent emissaries to explore the Ottawa River to lead French exploration deep into the interior of the land.

### The First of Champlain's Emissaries: Etienne Brûlé

Although the Ottawa is often called "Champlain's River", Champlain was not in fact the first European to canoe on its waters or to witness its beauties; rather it was Champlain's emissary, Etienne Brûlé, who deserves the credit. Around 1608, Brûlé was the first European to paddle up the Ottawa at the young age of 19. He is known to have made his way to the Georgian Bay via the Mattawa River by 1611, and was the first European to see Lake Huron (Legget 1975: 31). Unfortunately, Brûlé did not leave any written records of this voyage.

Brûlé's mission for Champlain was to explore the country of the Hurons, to learn their language, and to familiarize himself with their culture in order to establish a trading alliance with them and to better organize the fur trade (Germain 32).

After his first winter among the Huron, Brûlé returned to the colony accompanied by Aboriginal warriors. He was dressed like them, wore his hair like theirs, and his face was painted after their fashion. After greeting Champlain, Brûlé left once again with his companions (Germain 32).

Having traveled around Lakes Ontario, Erie, and Huron, Brûlé already had an excellent knowledge of the surrounding lands. In addition, he spoke the Huron and Algonquin languages, enabling Champlain, an excellent cartographer, to make remarkably accurate maps of the region in 1615 based on Brûlé's descriptions of his travels (Germain 32). Brûlé went on to be the first European to explore what is now the State of Pennsylvania.

### Brûlé's Assimilation and Death

Brûlé lived among the Huron for eighteen years. After the Kirke brothers captured Quebec for the British in 1629, Brûlé had no qualms about selling his furs to the British. Champlain thought that Brûlé had betrayed his king by agreeing to trade with the competition, but Brûlé had supposedly lost his emotional ties to France, and had taken on a Huron identity. He had no more interest in European politics or trade.

The tale of Brûlé's death underlines the extent to which he had assimilated and been accepted into Huron life. Brûlé had been captured by a group of Seneca, members of the Iroquois Confederacy and enemies of the Hurons. When the Seneca spared his life, the Hurons believed that it was because Brûlé had served as an intermediary between the Seneca and the French, thus compromising the Huron position in the fur trade (Germain 33).

**Figure 2.11 Passing the Line: Hauling a Canoe Up a Rapid on the Ottawa River, ca. 1845**



Source: Henry James Warre/Library and Archives Canada/C-031230

It is unknown whether this allegation was true. However, Brûlé, familiar with Huron customs, almost surely knew that he was in an untenable position. In fact, he confided his fears to the Recollet priest Gabriel Sagard soon after the Seneca freed him. He could easily have returned to Quebec, but instead chose to take his chances and face the Huron system of justice. He told the Huron that he had been freed by a miracle, and relayed a tale of a storm so violent that it could only be a sign. The Huron, with whom he had lived for so many years, did not believe Brûlé's story. They executed and ate him, as they would their own traitors, in 1633.

Brûlé is often considered a classic example of an explorer and coureur de bois who became assimilated into First Nations society, and is a central figure in the history of the Ottawa Valley and Great Lakes area (Germain 33).

### Champlain's First Voyage Along the Ottawa – Vignau and the Northern Sea

Forced to return to France himself, Champlain next sent Nicolas de Vignau to live with the Algonquins in 1611. Vignau returned to Paris in 1612 with the startling news that he had seen the "Northern Sea": presumably today's Hudson's Bay (Legget 1975: 31-33). He reported encountering the remains of an English ship, possibly Henry Hudson's ship. This tantalizing news seemed to mean to Champlain that Vignau had found a potential passage to the Orient via a northern ocean.

Accompanied by Vignau, Champlain himself first ventured along the Ottawa in 1613. He had been planning a trip up the Ottawa River after encountering Brûlé and a group of Hurons and Algonquins near Lachine in 1611. In addition to following up on Vignau's reports of a "Northern Sea", Champlain sought to further extend the French trade in furs already established at Tadoussac, and to learn more about the

**Figure 2.12 Champlain in a Canoe**



Source : John Henry de Ritzzy/Library and Archives Canada/C-013320

Ottawa River. Through his thorough written records, we are able to reconstruct his voyages with some accuracy.

The journey was long and arduous. On the way, Champlain nearly lost his life lining his canoe up the Long Sault rapids. With the assistance of additional Algonquin guides, the group traveled along a chain of lakes (via Muskrat Lake) to avoid the most dangerous waters. Champlain, Vignau and the Algonquin guides then went to meet with powerful Algonquin chief Tessoüat at his settlement, probably at Morrison Island (across from today's Pembroke).

Champlain tried to convince Tessoüat to supply him with guides and canoes to take him on to the land of the Nipissing and beyond to the "Northern Sea". Tessoüat refused, viewing the voyage through Nipissing territory as impossible since he considered the Nipissing to be dangerous enemies. Champlain was not concerned since Vignau had successfully made the same voyage the year before:

*I said I was sorry that they showed themselves so little my friends, and that I would never have thought it; that I had a young fellow with me (showing them my impostor) who had been in their*



*country, and had not observed all the difficulties that they described, or found the people so bad as they said (Champlain 2000: 138).*

Tessouïat and the Algonquins accused Vignau of lying about his journey, insisting that Vignau had been with them the whole time:

*You are a bold liar; you know well that every night you slept at my side with my children, and every morning you got up there. If you have been among these people, it was when you were asleep. How have you been so barefaced as to tell your chief such lies, and so wicked as to be willing to risk his life among such dangers? You are a scoundrel, and he ought to put you to death more cruelly than we do our enemies. I am not surprised that he should be so insistent, on the assurance of your words (Tessouïat qtd. in Champlain 2000: 138).*

Fearing the outrage of the Algonquins, Vignau retracted his story and confessed that he lied to earn his passage back to New France. Humiliated, the party was forced to turn back and travel down the river.

Some historians believe that Vignau could indeed have been telling the truth. Certainly, the Algonquins would have good reason for wishing to keep their control of the river and strategic trade interests, leading them to protect knowledge of this passage to the Hudson's Bay. Outnumbered, Vignau may simply have retracted his previous statements to protect himself.

### The Mystery of Champlain's Astrolabe

During this arduous first journey up the Ottawa River, Champlain reported losing his astrolabe, an ancient scientific instrument used to determine and fix his latitude. In 1867, a farm boy near Cobden uncovered a bronze artefact bearing the date 1603 that may have been Champlain's lost astrolabe. The rare artefact was sold to a steamboat captain and made its way to the New York Historical Society. It wasn't until 1989 that it was acquired for the Museum of Civilization. Today, historians still debate the origins of the astrolabe; it may also have belonged to an early Jesuit missionary.

### Champlain's Second Voyage up the Ottawa: 1615

In 1615, Champlain undertook a more extensive and significant voyage up the Ottawa River and beyond, bolstered by greater experience, a host of First Nations guides, and seasoned wilderness explorer Étienne Brûlé. The trip was part of a military campaign with Champlain's Algonquin and Huron allies against the Iroquois, which Champlain saw as an opportunity for him to chart new lands and create new trading partnerships.

Champlain and his party traveled up the Ottawa and along the Mattawa, crossing Lake Nipissing, and going down the French River to Lake Huron. After suffering an injury as the result of a minor conflict

**Figure 2.13 Champlain With an Astrolabe on the West Bank of the Ottawa, 1613**



Source: Charles William Jeffers/Library and Archives Canada/C-073632

with an Iroquois, Champlain spent the winter in Huron territory with his “son” Brûlé (Germain 32). He finally returned to Montreal in the spring of 1616, almost a year later, having taken a route that the French fur traders would follow for centuries to come.

### Jean Nicollet de Belleborne

Nicollet’s familiarity with the fur trade route as well as his knowledge of First Nations customs and languages were among the best possessed by any European in New France. Like Champlain, Nicollet sought to find a route to the Western Sea and to the famous lands described by Marco Polo.

Nicollet’s explorations of North America began in earnest with a voyage up the Ottawa River. In 1618, Champlain sent Nicollet to winter on Allumette Island on the Ottawa River. His mission was to consolidate the alliances that Champlain had established a few years earlier. Nicollet spent two years with the Algonquin Peoples. He learned their language and customs, and, it is reported, gained their confidence and friendship (Germain 14).

**Figure 2.14 Lake Allumette on the Ottawa River, ca. 1870**



Source : Alfred Worsley Holdstock/Library and Archives Canada/C-040097

Two years later, Champlain gave Nicollet a new task: to establish ties with the Nipissing, a tribe further inland. Nicollet stayed with the Nipissing for nine years, during which time he maintained his own household, took part in tribal councils, and contributed significantly to the organization of the continent’s burgeoning fur trade.

In the early 1630s, Nicollet ventured further west, seeking to establish a peace between the Algonquin and the Winnebago, a nation that was largely unknown to the French. It was hoped that Nicollet, thought to be an excellent interpreter and diplomat, would be able to settle any potential disputes that might

compromise the fur trade. For this voyage, Nicollet had an ulterior motive: he believed that from the Winnebago's territory, he would be able to reach the China Sea (Germain 14).

After crossing Georgian Bay, he followed the North shore of Lake Huron up the spectacular rapids that would later be named Sault Ste Marie and into Lake Superior. He continued his journey, following the northern shore of Lake Superior, and entering the land of the Winnebago by way of the river leading to Lake Nipigon (Germain 14).

In order to be appropriately dressed for his arrival in the Orient, Nicollet brought a long, brightly coloured robe of Chinese damask patterned with flowers and birds. He was often sighted with this robe billowing dazzlingly over the sides of his canoe. He wore this robe when he met the Winnebagoes, "striking them with terror by his gaudy array" (Legget 1975: 37). However, he soon had to admit that he was not in the China Sea.

There, he assembled several thousand First Nations Peoples. These people, it is reported, thought that Nicollet was godlike, and called him Manitouriniou or "Man of Wonders." They listened to him with great respect. By using this position of power, Nicollet was able to convince the Algonquin and the Winnebago Chiefs to create peace between their traditionally rival nations. This was strategically significant for the French fur trade, as it extended the French alliance of traders further into the continent's West (Germain 15).

In 1634, still acting under orders from Champlain, Nicollet undertook yet another mission. This time, the main purpose was to discover a sea-going passage to the Orient. Following the Ottawa River route, by that time familiar, he explored the frontiers of Lake Michigan and traveled as far west as the Wisconsin River.

Nicollet's search for the China Sea continued. He realised that it could not be in the land of the Winnebago, as he had originally thought, since this land lay to the North. His communications with the Elders led him to believe that there were waters south of Lake Superior that could only be the China Sea (Germain 14).

He spent several years exploring this country, and may have made it as far as the Wisconsin River, which flows into the Mississippi. Although Nicollet never did discover the passage to the Orient that he sought, he, more than any other explorer, extended the territory over which France would exercise its influence for more than a century as it monopolized the fur trade.

After his period of exploration, Nicollet settled in Belleborne, near Quebec City, and married in 1637. He served the French colony as a representative in the fur country until, in October of 1642, at the age of 44, he drowned on a voyage intended to rescue a prisoner whom the Huron were about to torture and put to death (Germain 14).

### **Radisson: Explorer of the West**

Pierre Esprit Radisson was a French fur trader and explorer known for switching allegiance to the British and helping to create the Hudson's Bay Company. Born in France in the late 1630s, Radisson immigrated to New France, soon after which he endured an experience that would influence his personality for the

rest of his life: he was taken prisoner by the Iroquois, and it is said that he emerged from this rite of passage quite like his captors.

Through his captivity, Radisson learned to remain indifferent to hunger, thirst, fear, and pain. He acquired a sense of the theatrical and began to value the spoken word in order to survive among the Iroquois, and to gain their respect. He lived happily with the Iroquois for a summer, but then, wishing to return to his family in Trois Rivières, he killed three of his adoptive brothers with a tomahawk and escaped. Although recaptured, he eventually made his way to Fort Orange, onwards to France, and, from there, back to Trois Rivières (Germain 54).

**Figure 2.15 Radisson Meets First Nations Peoples at a Winter Camp**



Source: Charles William Jefferys/Library and Archives Canada/C-073423

Radisson lived between societies and cultures. He lived with the Algonquin of the north shore of the St. Lawrence, with the Huron, the Ottawa, the Ojibwa, and other tribes around the Great Lakes, and with the Mohawk. He associated with British aristocrats, New England adventurers, and upper-class French traders. He studied with Jesuit missionaries, serving them as a guide and interpreter (Germain 54).

Radisson made several voyages to the Pays d'en Haut with his brother-in-law, Médard Chouart des Groseilliers. The brothers-in-law traveled past Lake Superior, or possibly further on to Lake Winnipeg, accompanied by Ojibwa and Cree.

They would then have encountered the Sioux (Germain 54). Their voyages began by traveling up the Ottawa River. When the fall of Huronia cut the French off from their existing trade alliances with First Nations, it was Radisson who built up a new network (Germain 55).

In the spring of 1660, des Groseilliers and Radisson were returning from a long journey with sixty canoes laden with furs. When they reached Long Sault, just up the Ottawa from the Lake of Two Mountains, they came across the site at which the Iroquois had massacred Dollard des Ormeaux and his companions only a few days before. They saw the small fort burnt to the ground and the inhabitants scalped or decapitated (Germain 55).

Upon Radisson and des Groseilliers' arrival in Montreal, Governor d'Argenson confiscated the furs that they had brought to the small colony at the risk of their lives on the grounds that they had traded without a license and infringed on the monopoly held by the Company of New France.

In response, Radisson wrote the governor a scathing letter, reminding him that he and his brother-in-law had saved the country through their generosity and daring. Upon returning from their next expedition, the two men decided to sell their furs to the British. They disclosed to the British the fur routes to Hudson's Bay, and collaborated with them to found the powerful Hudson's Bay Company (Germain 55).

When Radisson finally retired from the fur trade, he married an upper class British woman and spent his remaining years in London. During this final period of his life, he wrote: "What greater pleasure than

good conversation, especially when you can see the smoke rising from your own chimney, and kiss your wife or your neighbour's wife with ease and enjoyment" (Germain 55).

### Pierre Gaultier de La Vérendrye

With his three sons, Pierre Gaultier de Varennes, Sieur de la Vérendrye opened up the prairies as a source of trade for merchants in Montreal. The posts he founded for New France were extended west until one was established in 1751 almost at the Rocky Mountains.

Born in New France, La Vérendrye was a soldier and a farmer. In 1726 he joined a fur-trading venture in the Lake Superior region and while there, became convinced that exploring Lake Winnipeg and the "great Western river" would lead him to discover the Pacific Ocean. Arguing the merits of increased French presence in the west (while damaging British trade in Hudson's Bay), he applied to travel further west on an official mission. He traveled west several times, initially to establish fur-trading posts, and then to discover a passage to the Pacific Ocean.

**Figure 2.16 Encampment on the Ottawa River, ca. 1850**



Source: Augustus Terrick, Hamilton Library and Archives Canada/C-040059

La Vérendrye's first journey West in 1731 took him up the Ottawa River. His numerous journeys between Montreal and the western plains hold a special place in the history of the Ottawa Waterway. As a result of these voyages, by 1763, there was a well-recognized route to the western plains, with small posts established for fur trading, in direct competition with the Hudson's Bay Company (Legget 1975: 45). Although at first France didn't recognize the importance of his and his sons' discoveries, he was eventually recognized by the king and awarded the Croix de Saint-Louis (CMCC: The Explorers – La Vérendrye).

### Sir Alexander Mackenzie

Sir Alexander Mackenzie's explorations of the West all started on the Ottawa Waterway. A Canadian fur trader and explorer born in Scotland, Mackenzie was the first European to cross the northern part of North America to the Pacific. Mackenzie entered a Montreal fur-trading firm in 1779 and soon became a partner of one of the firms that merged to form the North West Company (1787) (Columbia Electronic Encyclopedia: Alexander Mackenzie). In 1789 he made an expedition down the river that was later named after him to reach the shores of the Arctic, and in 1793 crossed the Rockies to the Pacific coast.

Since Mackenzie traveled along the Ottawa Waterway to reach the West, it is not surprising that his famous Voyages... to the Frozen and Pacific Oceans (1801) is prefaced by a history of the fur trade including an excellent description of the famous Ottawa route. Voyages won Mackenzie recognition and in 1802 he was knighted. Here Mackenzie describes in detail the start of the voyageurs' journey at Lachine:

*Leaving Lachine, they proceed to St Ann's, within two miles of the Western extremity of the island of Montreal, the lake of two mountains being in sight, which may be termed the commencement of the Utawas River. At the rapid of St Ann they are obliged to take out part, if not the whole of their lading. It is from this spot that the Canadians consider they take their departure, as it possesses the last church on the island, which is dedicated to the titular saint of the voyageurs (Mackenzie qtd in Legget 1975: 60-61).*

### **Louis Jolliet**

A coureur de bois born near Quebec City, Louis Jolliet became an important explorer in the opening of North America. In 1673, Jolliet and Father Jacques Marquette became the first Europeans to explore and travel down the Mississippi River (CMCC: Jolliet). The purpose of the France-sponsored canoe expedition was to determine whether the Mississippi flowed into the Gulf of Mexico, and whether one of its tributaries might allow a passage to the Pacific and thus to China. On his way to this historic exploration of the other "Great River", Jolliet journeyed along the Ottawa River.

### **Daniel Greysolon Dulhut (1636-1710)**

Dulhut is best remembered for his expedition to Lake Superior via the Ottawa River to improve commercial relations with First Nations communities around Sault Sainte-Marie.

Born in Lyon, France, Dulhut was a career soldier and settled in New France around 1674. He became interested in the French and Iroquois conflicts that he perceived as hindering the north-south fur trade, and became convinced that New France should immediately establish commercial relations with tribes living to the west of the Great Lakes.

In 1678, Dulhut left on a secret voyage along with seven other Frenchmen and three slaves. Heading for Lake Superior, the party traveled along the Ottawa River to Lake Huron. Dulhut aimed to convince tribes living at Sault Sainte-Marie to make peace with the other nations around Lake Superior who were at the time trading with France. Ultimately, he hoped the Saulteurs would decide to reserve all their furs for the French.

Following this secret voyage, Dulhut traveled south along Mississippi in search of the Pacific. During this time, he learned that in Quebec and Montreal he was being accused of trafficking with the English. As a result of these accusations, he was not able to obtain a seigneurie on Lake Superior as he had hoped. Instead, he agreed to return to his previous role as "peacemaker" for the Lake Superior area, as mandated by Governor LaBarre in 1683 (CMCC: Dulhut).

### **Pierre de Troyes (Chevalier de Troyes)**

Pierre de Troyes is known for his successful campaign to regain French control over English-held forts on James Bay. His well-documented, dangerous early spring voyage up the Ottawa on his way to the Hudson's Bay provides a vivid description of canoe travel on the Ottawa River in the 17<sup>th</sup> century.

Born in France, Pierre de Troyes moved to Quebec in 1685 when he was appointed captain of a company of marines on duty in New France. Soon after his arrival, governor Denonville ordered him to lead an

expedition to occupy English posts on the shores of the Hudson's Bay. The Compagnie du Nord financed this military expedition, revealing that it was prompted by competition by fur.

The fleet of 35 canoes, led by De Troyes and his three senior officers, Jacques, Pierre and Paul Le Moyne, left today's Ste Anne de Bellevue in 1686 with strong ice still on lake. Reaching the foot of the notorious Long Sault on April 9<sup>th</sup>, De Troyes writes:

*...it was necessary to load and unload the canoes continuously because of ice jams which covered a quarter of a league of the river. Crevasses in the ice were so wide that we had to build bridges to get our canoes, supplies, and munitions across... During the portage over the ice, however, we had two canoes smashed and one of the canoeists swam ashore despite the extreme cold (qtd. in Legget 1975: 20).*

On May 1<sup>st</sup> they set up camp at the future site of Fort Coulonge, where the men erected a maypole as per the tradition. Reaching Mattawa on May 10<sup>th</sup>, the group deviated from the traditional route west and instead turned north up the Ottawa into Lake Temiskaming and on to the portage into the Abitibi River. They reached the James Bay on June 20. That summer they engaged in a number of successful campaigns and battles, seizing English-held Forts Monsipi, Rupert and Albany (CMCC: Chevalier de Troyes).

### **Sir John Franklin**

British admiral and explorer Sir John Franklin (1786-1847) journeyed on the Ottawa River on his way to and from his great survey of the Arctic Coast of Canada in 1825-1827. From the Great Lakes, he traveled overland to the MacKenzie River which he descended until the Arctic Coast. He charted the territory from the Hudson's Bay north to the Arctic in an attempt to delineate the most direct route for a Northwest Passage, a navigable sea route between the Atlantic and Pacific oceans through the Arctic between Baffin Bay and the Bering Strait. Franklin is also known to have laid first stone of the Rideau Canal locks in 1827 (Bytown Museum 2004: "Timeline").

### **2.4.3 The Interpreters**

Europeans were sent to live with the First Nations groups in order to learn their languages and customs and to establish ties that would promote trade. It was common for these European adventurers to acquire a deep respect for their host community and the culture of its people. Often, they would become totally and whole-heartedly assimilated into this culture, never to return.

First Nations Peoples generally considered hospitality to be a sacred duty. When a young Frenchman would arrive among them, they would treat him as a brother or a son. They also sought to teach him their language and skills (Germain 30).

Fluency could not be acquired without lengthy immersion, especially since many of the languages use barely any lip movement. Instead, sounds are produced with the tongue inside the mouth, with the speaker's lips barely moving. Europeans learning an Aboriginal language would have to learn to distinguish similar sounds without visual cues (Germain 30).

The interpreters, by virtue of their cultural immersion, would often resemble those with whom they lived, and would adopt their host's cultural values and ideas about happiness, love, war, work, and trade (Germain 31).

The missionaries of the time were shocked by the behaviour of the interpreters, and their adoption of First Nations values and lifestyle. These men of the Church felt that, far from helping to convert the First Nations Peoples, these young men were undermining the missionaries' efforts by acting like "savages" themselves, and therefore setting a bad example. In 1635, a few months before Samuel de Champlain's death, all interpreters were recalled, supposedly to "save them from the influence" of the First Nations Peoples. The presence of the interpreters in the young French colony was unsettling: some viewed them as renegades and others as inspiring role models, whom other brave young Frenchmen would soon follow (Germain 31).

#### **2.4.4 Missionaries on the Ottawa River**

Joann McCann

Founder, Friends of Oiseau Rock

The story of European exploration and settlement of the Ottawa River is intertwined with the evangelical activities of early Christian missionaries. In the early 1600s, the first missionaries attempted to convert First Nations Peoples to Christianity. Deep-seated faith led these men, and later women, to travel up the Ottawa route, enduring severe conditions and hardship. They journeyed great distances in birch bark canoes shooting rapids, suffering hunger, starvation and mosquitoes, and for some, torture and death. These missionaries possessed a Eurocentric attitude toward First Nations Peoples, who called the Catholic missionaries "Black Robes" because of their dark cassocks. Their accounts about encounters with First Nations Peoples along their journeys provide us with information, albeit from their perspective, about these first occupants of the Ottawa Valley, their culture and the land.

##### **The Earliest Missionaries – Accompanying the Explorers**

Jesuit missionaries may have accompanied Etienne Brûlé when he became the first European to ascend the Ottawa River in 1609 or 1610. After Champlain's pioneer journey up the Ottawa in 1613 and his subsequent return home to France, Champlain came back to New France with three Recollet friars and a lay brother who hoped to convert the First Nations Peoples. In 1615, Père Joseph LeCaron made the 1000 kilometre journey up the Ottawa River to Georgian Bay to carry the message of Christianity to the Hurons. The Hurons did not accept him so he tried once again in 1623, taking Father Nicolas Viel and lay brother, Gabriel Sagard, the best known of the Recollets. Sagard went barefoot like Saint Francis but found the mosquitoes the "worst martyrdom, (he) suffered in this country."

Chevalier de Troyes' 1686 military expedition was accompanied by the Jesuit priest Antoine Silvy who held mass on the sandy beach of Lamure Bay which is presently part of CFB Petawawa.

##### **En Route to Huron Country**

When the Recollet friars sought the assistance of the Jesuits with their missions in Quebec, the Jesuits planned to convert the Hurons, who were already settled farmers and traders. As the Ottawa River was a



route to the Huron country, many of the Jesuits made contact with First Nations Peoples including the Algonquins along the river and at the different trading stations in Quebec.

Paul Le Jeune, the second Jesuit superior at Quebec, journeyed up the Ottawa in 1633. His letters provide information about the First Nations Peoples and landmarks on the Ottawa River. He recorded that the Hurons called a large rock formation across from present-day Chalk River "Tsanhoki Arasta". This Huron term meaning birds of prey was later translated to the present-day name of Oiseau Rock.

### **The Permanent Missions**

In 1638, Père Le Moyne left Quebec for the Huron mission, but his guides left him at a remote spot on the Ottawa. He stayed on the riverbank and fortunately, two weeks later, Père du Peron came up the river with two Aboriginal guides and took Le Moyne to the Huron mission. This mission continued for another decade until the Iroquois, on the warpath against the Hurons and Algonquins, murdered many of the Hurons and Jesuit priests Brébeuf and Lalemant. The mission was closed the following year and the Hurons fled to Quebec.

In 1676, the Sulpicians arrived on the scene, establishing a mission on Mont-Royal, which they later moved to Oka on the Lake of Two Mountains. At this time, some of the Algonquins of the Ottawa River returned to their territories since the threat of the Iroquois had subsided, while others continued to live at the Oka mission.

### **Settlement and the Missionaries**

Despite the establishment of permanent missions, the river would continue to be a means for missionaries to travel to their flock. The Sulpician Fathers continued to visit the Algonquins at the various trading posts on the Ottawa River and its tributaries. They also traveled up the river to minister to the spiritual needs of the trappers and settlers. In 1819, Sulpician missionary Jean Baptiste Roupe went up the Ottawa as far as Fort Coulonge.

At the time, Irish and Scottish settlers began to outnumber French Canadian settlers in the area. Consequently, both Catholic and Protestant missionaries traveled extensively during the 1820s and 1830s making many trips up the river to Allumette Island, Fort Coulonge, Temiskaming and Abitibi.

In the 1790s, there were Anglican missionaries in the Bytown area. The first Anglican to hold services at Bytown was Ansley Amos who served Hull and traveled widely to cover a large area. During the 19<sup>th</sup> century, although the first preachers to conduct services in the Ottawa Valley were Methodists, the three major denominations were the Church of England, the Roman Catholic faith and the Church of Scotland.

The poverty of the early settlers spurred the churches to turn to the government for aid. The dispersed settlement along the river resulted in the creation of missionary stations and preaching tours where the clergy would travel a circuit administering to the members. The heyday of the timber industry drew Roman Catholic missionaries to visit lumber shanties up the Ottawa and its tributaries, including the Gatineau, Madawaska and the Bonnechere.

Previous to the 1840s, it was difficult to attract clergy to newly settled areas. As the congregations became more prosperous and numerous, the quality of the clergy improved. In 1845, the Sulpicians' missionary

work was taken over by the Oblate Fathers of Bytown. In Bytown in 1849, there were four priests: two French-Canadian and two Irish. A year later, their numbers increased to ten. Increased immigration and the growth of these towns necessitated the need for more clergy. New churches were built and the clergy itself turned its attention to the other needs of the laity, such as hospitals, orphanages and schools. The Sisters of Charity in Bytown established a small hospital and a school.

### Establishing Missions Further Upriver

In 1836, the Sulpicians held summer missions on Lake Temiskaming and along the Upper Ottawa en route to James Bay. They stopped at Fort William, Quebec (across from Petawawa) and held a mass in the presence of fifty Aboriginal Peoples. The Sulpician father Louis Charles de Bellefeuille and his companion Father Dupuis built a small chapel near the company post at Temiskaming. Two years later, in the

**Figure 2.17 St. Theresa of the Little Flower, Fort William, Pontiac County,**



company of one hundred Algonquins, they erected a cross at the cemetery at Fort William, Quebec. A cross and the cemetery remain there today.

The Hudson's Bay Company built an interdenominational mission chapel at Fort William in 1857 and the Oblate Fathers held services every year, baptising, marrying and confirming the Algonquins and Nipissings who would gather there every summer. These Algonquins were from the many tributaries of the Ottawa. When the various fur trade posts along the Ottawa River gradually closed, the Oblate Fathers left the area for the posts of the North. They did however return every summer to hold services at the former posts, as was the case of Fort William, Quebec. Once, after leaving that mission and heading down-river, Father Lavelochere's canoe was

overturned in a set of rapids called "The Awakening" and he barely escaped with his life.

By turning their attention to their missions on the upper reaches of the river, the Oblates encouraged the colonization of the northern regions of the Ottawa. Father Paradis of the Oblates was sent by his Order in 1881 to the missionary district of Temiskaming. On his journey up there, he suggested the construction of a dam on the Ottawa River at Mattawa to raise the water level in order to drown out the rapids on the way to Lake Temiskaming. He saw the Ottawa as a "grand chain of communication to divert a vast trade down the Ottawa River..."

By the mid-19th century, the Oblates shifted their attention to the new frontiers of the North and the West. Consequently, when the Aboriginal Peoples along the Ottawa had settled on reserves and in permanent settlements, the Oblates transferred their missions and chapels along the river to the local dioceses. With respect to the Protestant missionaries, farming, lumbering and other industries had created towns and villages along the river. The more prosperous parishioners then chose to build their own churches, schools and other institutions.

### 2.4.5 Sites Related to European Exploration

- The Rideau Falls: Samuel de Champlain remarked on their beauty in 1613. Later, these falls were harnessed to produce energy for a sawmill and a textile factory.
- Jacques Cartier Park: A camp site for First Nations travelers on the river.
- Victoria Island (right below Chaudiere Falls in Ottawa). For centuries First Nations Peoples, voyageurs, and explorers rested on this island before making the portage around Chaudiere Falls.
- Green Lake near Cobden: a cairn tells the story of the astrolabe that may have belonged to Champlain.
- “The Champlain Trail”: the route that Champlain followed through Renfrew and Pontiac counties.
- “Champlain Rock” near McKenzie’s Hill, Horton Township: probably inauthentic, this rock bears the inscription “Champlain, Juin 1, 1613” with an arrow pointing away from the Ottawa River (Kennedy 77).
- Brébeuf Park: A park in Gatineau commemorating the second Chaudiere portage over which passed Champlain and nearly all the Canadian explorers and fur traders on their canoe route from Montreal west. The portage is a National Historic Site.
- Other portage sites used by explorers and fur traders including Long-Sault Rapids, Blondeau Falls, Carillon Rapids, Chats Falls, Grand Calumet Island, Allumette Island and Rapides-des-Joachims.
- Champlain statue, designated historic site and plaque located at Nepean Point in Ottawa.
- Tessouat and le Borne designated National Historic Site, Allumette Island.

#### Summary

The Ottawa River was the pathway for much of the early European exploration of North America, truly a gateway to the continent. In search of a passage to the Orient, French and later English and Scottish explorers began their travels by paddling up the Ottawa River, including the illustrious Jolliet, Mackenzie and Franklin. The most famous of French explorers in Canada will be remembered for their exploits and discoveries along the Ottawa River, beginning with Champlain and his emissaries who mapped and named many features of the river after founding Quebec in 1608. Other well-known figures in Canadian history including Nicollet, Radisson, La Vérendrye, Dulhut and De Troyes, traveled west along the Ottawa River to establish trade relationships with First Nations communities, laying the groundwork for the fur trade, a period that is central to the history of Canada.

## 2.5 The Fur Trade along the Ottawa River

Through the 17<sup>th</sup> century, an almost endless stream of men plied the Ottawa River on long and dangerous fur-gathering expeditions. Their contribution to the fur trade was critical to the survival of New France. The Ottawa River was a route of choice for travel to fur-harvesting areas, and was considered simply to be an extension of the St. Lawrence.

The story of the fur trade along the Ottawa River can and should be told from at least two perspectives: that of the Europeans who crossed the ocean to a foreign land, taking great personal risks in pursuit of adventure and profit, and that of the First Nations Peoples who had been living in the land and using its waterways as trade conduits for several thousand years. The very term “fur trade” only refers to half of

this complex relationship. From a European perspective, there was a “fur trade,” since animal (primarily beaver) pelts were the commodity in demand. First Nations groups, on the other hand, were engaged in a trade for needles, thread, clothing, fishing hooks, axes, kettles, steel strike-a-lights, glass beads, alcohol, and other goods, mainly utilitarian items of metal (Kennedy 88). A more balanced account of the fur trade<sup>9</sup> along the Ottawa River begins with the context in which both trading parties chose to engage in an exchange of goods.

### 2.5.1 European Demand

Change in the Ottawa River region in the 17<sup>th</sup> and 18<sup>th</sup> centuries was shaped in large part by European demand for beaver pelts. Fur was a luxury article in Europe. At the end of the 16<sup>th</sup> century, a fashion craze for broad-brimmed beaver hats swept the continent. As trapping reduced the Russian and Baltic beaver to extinction, European merchants turned increasingly to North America for a source of fur (McGill University Archives: In Pursuit).

Given this high demand, King Henry IV of France focused on the trade in furs in order to acquire the revenue required to establish a North American empire. Returns on the sale of beaver pelts were so high that it was profitable for French merchants of the time, even given the enormous investment involved, to send boats across the Atlantic for the sole purpose of collecting this fur (Gaffield 79). In fact, both English and French traders were soon selling beaver pelts on the European market for twenty times the price at which they had purchased them (McGill University Archives: “In Pursuit”).

For about two centuries, these economic incentives drove thousands of European men to make the trans-Atlantic voyage to take part in the lucrative North American fur trade.

### 2.5.2 First Nations Demand

While the Europeans were eager to acquire furs for profit, the First Nations Peoples of North America were able to benefit from this trade for the acquisition of utilitarian items for cooking, hunting, building, and sewing. Geographer David Thompson commented in 1787: “See the wife of an Indian sewing their leather clothing with a pointed, brittle bone, or a sharp thorn and the time and trouble it takes; show them an awl, or a strong needle, and they will gladly give the finest Beaver skin... they have to purchase it.” (qtd. in Kennedy 89). In the manner of his time, Thompson was describing a phenomenon that was occurring in many parts of the world as industrializing and non-industrialized cultures entered into contact with one another through trade.

#### The Pre-Contact Algonquin and the Mahamoucébé

The Algonquins had long referred to the Great River as *Mahamoucébé*, meaning “the river of trade.” The Great River was one of North America’s most important trade routes. Its waters connected several important trade areas of the time, allowing copper, obsidian, flint, and whalebone to circulate throughout the continent. The Great River provided a route from the Saint Lawrence to the Great lakes via Lake Nipissing and the Georgian Bay. It provided access to James Bay from the Saint Lawrence via the Dumoine River. Finally, by following the Gatineau River through the Saint Maurice River System, one could access the Lac St. Jean area (Gaffield 78).

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<sup>9</sup> Although the term “fur trade” is not wholly satisfactory, it is used in this report to make the story accessible to a wide audience of readers.

As a result of early trade, European-made goods could be found by the late 16<sup>th</sup> century some 2,400 kilometres from the Atlantic coast well before penetration of the North American interior by European explorers (Gaffield 79). Algonquins, important traders, had long had contact with European traders on the St. Lawrence River. An excavation at an Aboriginal campsite in Renfrew County unearthed glass trade beads thought by archaeologists to have been made in Venice during the 14<sup>th</sup> century (Kennedy 86).

The Algonquins' location on the Great River had enabled them to develop an economic niche as middlemen in this immense trading network (Gaffield 79). This powerful position shaped their early relations with French traders.

### 2.5.3 The Early Fur Trade on the Ottawa

For at least 160 years, France controlled most of the fur trade in what is now Canada. Throughout this period, the Ottawa River was within the domain of the French traders, with the exception of some periods during which threat of conflict with the Iroquois forced them to close the route to traders (Kennedy 90).

The fur trade was monopolized at different times by various French nobility, merchants and companies, many of whom disregarded the trade charters. Early on, the monopoly was held by de Monts and groups of French merchants; from 1621-1627, it was the de Chaëns; from 1627-1645, the Compagnie des Cent-Associés, established by Richelieu; from 1645-1663, the Communautés des Habitants, the people actually living in New France; from 1663-1674, the Compagnie des Indes Occidentales (Kennedy 89).

Because of the Algonquin people's traditional function as middlemen, they quickly assumed this role in trade between other First Nations groups and the French. The Nipissing and Huron would hunt beaver and transport it down the Great River to the Algonquin people, who would in turn bring it to the French at one of their early trading posts at the sites of Montreal, Trois-Rivières, and Quebec (Legget 1975: 37). The Algonquin maintained their economically advantageous position in this trade for several years (Gaffield 80).

#### The Role of the Island Algonquins in the Fur Trade

The Kichessipirini, or people of the Great River, are of particular historical importance in the story of the fur trade. This Algonquin group was established on Morrison Island, and is for this reason often referred to as the Island Algonquins. The Kichessipirini had traditionally benefited from their establishment upon this island by playing a role in all trade passing by the island. With the coming of the Europeans to the Ottawa River region, the Kichessipirini used their already advantageous position to obtain a central role in the fur trade with the French.

The Kichessipirini desired and benefited from early trade with Europeans, and had a strong interest in ensuring that they maintained their position as middlemen in the trade. They preferred, as the Jesuits put it, that "the Hurons should not come to the French nor the French go to the Hurons, so that they themselves may carry away all the trade" (Thwaites: Vol. 9, 1636: 275).

The Jesuit Relations record that in 1636 the Chief Tessoüat Le Borgne sought to convince the Hurons to join a war of vengeance against the Iroquois. It is recorded that the Algonquin Chief, when facing their

refusal, gave them a warning:

*Le Borgne of the Isle said to the Hurons, in our presence, that his body was hatchets; he meant that the preservation of his person and of his Nation was the preservation of the hatchets, the kettles, and all the trade of the French, for the Hurons. They even say, whether true or false, that he is master of the French, and that he would lead us back to Québec and make us all recross the sea (qtd. in Thwaites: Vol. 10, 1639: 77).*

The French would have preferred to trade more directly with the Hurons, and to avoid their reliance on middlemen in their trade on the Ottawa River. Out of fear of jeopardizing their alliance with the French, in 1615 the Kichesippirini allowed Champlain to pass Morrison Island on his way to the land of the Hurons, with whom he intended to develop direct trading relations.

Despite the developing relationship between the French and the Hurons, the Island Algonquins maintained their control of the fur trade, and exacted a heavy toll (paid in furs or in corn) upon all First Nations Peoples passing downriver on their way to the French settlements. The Island Algonquins closed the route to the Hurons in 1637, and required them to pay in gifts in order to regain access rights. In 1640, the Algonquin categorically refused passage to the Nipissings (Gaffield 82).

## 2.5.4 Impacts of Trade with the Europeans

### Economic Dependence

Given their economically significant role in the fur trade, the Algonquin culture was under considerable stress. First Nations handicrafts were being abandoned for European manufactured goods, causing the Algonquin, like many other groups, to become economically dependent on trade with the French. Furthermore, their connection with the French was specialized in fur-bearing animals, and their hunting skills for other animals diminished as a result (Gaffield 83).

### Missionaries

To strengthen their alliance with the Algonquins and the Hurons, the French soon sent missionaries upriver. The French government's goal, of course, was to strengthen their economic alliance with the First Nations Peoples by spreading Christianity (Gaffield 81). The missionaries led to the distortion of traditional First Nations values, a diminished power for the Medicine Man, and conflict within families. Despite repeated efforts, the Jesuits had a difficult time convincing the Algonquin people to convert to Christianity. The Hurons further upriver were more receptive to the preaching of the missionaries.

### Epidemics

Missionaries imposed close contacts with First Nations Peoples, spreading contagion. Influenza was a killer of whole populations within a few months. In the 1630s and 1640s, epidemics such as smallpox, cholera, typhoid, typhus, and the flu swept almost constantly through Algonquin country. The Kichesippirini blamed the missionaries for infecting the Hurons who had in turn infected them (Gaffield 83).

### 2.5.5 A Brutal War

The Iroquois, a confederacy of five nations living in what is now Northern New York state and controlling important parts of trade along the Saint Lawrence, chose to attack the Algonquin during this weak period. The Iroquois had hunted beaver in their own region to the point of extinction, and were interested in moving into Algonquin territory to continue their profitable trading operation (Gaffield 83).

In the 1630s, the Algonquin communities in the Ottawa River Valley were raided repeatedly. The Iroquois were becoming well armed as a result of their trade with their Dutch allies, giving them a major advantage in war. By 1640, the Iroquois were also attacking French and Algonquin settlements in the St. Lawrence Valley (First Unitarian Congregation of Ottawa).

The Algonquins were frequently forced to hide, and would winter with their Huron allies or near French settlements along the St. Lawrence. From 1643-44, guerrilla war brought trade in the region to a complete standstill. Tessoïat the Chief was forced to seek refuge with the French in exchange for his own baptism, a ceremony he had previously denounced.

The French were alarmed by the Iroquois' actions. They wished to sign a peace treaty with the Iroquois, and did so in 1645. However, it was broken in 1646 at Allumette Island as more raids took place in that year and in 1647 at Trois-Rivières against the Algonquins (Gaffield 79, 84). The Iroquois Wars were only brought to a halt in 1701 when the Iroquois ratified a treaty that committed them to neutrality in the wars between the British and the French (First Unitarian Congregation of Ottawa).

By 1648, the Algonquin people were so weakened that they had lost their traditional economic control of the Great River. The Hurons soon passed down the Ottawa River to take over their role. The Hurons were often forced to detour around the Ottawa River, as it was for some time under Iroquois control. Instead, the Hurons would bring furs down to Trois Rivières and Quebec by way of the Gatineau River, or portage into the St. Maurice River system. Tragically, the Iroquois attacks upon the Huron nation led to its rapid decimation by 1649 (Gaffield 84). It was shortly after this, in 1653, that the French began trading more extensively with the Odawa people, whose traditional territory was further west, in the Lake Huron and Manitoulin Island area (Gaffield 91).

In 1650, a Jesuit Priest gathered together one hundred Huron survivors and accompanied them on a journey down the Ottawa to Quebec. On his way, he passed through Algonquin land, and wrote the following reflections:

*When I ascended the Great River, only thirteen years ago, I had seen it bordered with large numbers of people of the Algonquin tongue, who knew no God. These, in the midst of their unbelief, looked upon themselves as the Gods of the earth for the reason that nothing was lacking to them in the richness of their fisheries, their hunting grounds, and the traffic which they carried on with allied nations; add to which, they were the terror of their enemies. Since they have embraced the faith, and adored the Cross of Jesus Christ, he has given them, as their lot, a portion of that Cross, -verily a heavy one, having made them a prey to miseries, torments, and cruel deaths; in a word, they are a people wiped off the face of the earth (Thwaites Vol. 35, 1649-1650: 204).*

In the manner of his time and vocation, this priest was describing the end of an era for the Algonquins on the Great River. Weakened, dispersed, and culturally eroded, the Anishnabek were a shattered nation. The Great River would no longer be known as the river of the Algonquins (Gaffield 84).

These dramatic and violent events along the Ottawa River Valley had important implications for the fur trade. The period in which First Nations groups traveled long distances to bring pelts to stationary Frenchmen was coming to an end, and a new era in which Europeans participated more directly in the pursuit of these furs was set in motion.

### The Role of the Odawa

The Odawa were an important trading group along the Ottawa River for about thirty years, after the dispersal of the Algonquins and the decimation of the Hurons. A shift in the French government's policy caused the Odawa to lose their advantageous position as middlemen on the Ottawa River. As furs in the region became scarcer, and as Iroquois attacks continued, the group moved south and west. (Starnes E8). Historian Cellard describes their legacy to the Ottawa River:

*In the history of the Outaouais region, this tribe played a part that was certainly outstanding but, in the end, highly transient. As for their impact on the history of the Outaouais region, it was quite marginal. Nevertheless, the Odawa bestowed their name on the river, the region and even the capital of Canada. The place names of the Outaouais, chosen by Europeans, are thus at total variance with the fact that the region was long inhabited by another people. The Europeans were accustomed to deciding for themselves the names of nations and tribes, of the territories they exploited and the rivers they navigated. Accordingly, with their mercantile viewpoint, they named the Great River after the native nation that most recently had traveled along it in significant numbers. The Great River of the Algonquins henceforth was known as the Ottawa River. From that time, the thousand-year connection of the Algonquins with the land of the Outaouais began to fade from collective memory (in Gaffield 92).*

## 2.5.6 The Voyageur Era on the Ottawa

### Emergence of a New Type of Fur Trade

In the early 1650s, New France was still "hardly more than a simple fur trading post" (Gaffield 90). Even by 1665, the total population of the little settlements along the St. Lawrence was a mere 3,215 *habitants* (Legget 1975: 42). The wars between the Iroquois and France's allies therefore threatened the very survival of the young colony by paralyzing the most important component of its economy: the fur trade.

For a time, the Iroquois succeeded in closing the Great River to their enemies, strategically blocking French access to the fur markets of the Great Lakes and further west. In 1653, for example, no furs at all came down the Ottawa River to Montreal, and the situation appeared dismal for the young colony (Gaffield 90). Although trade with the Odawas did help to improve this situation in the following years, this trade remained irregular and therefore unreliable.

Given the difficulties that its new colony was facing, the French government opted to change its trading strategy in New France altogether: if the First Nations Peoples could not regularly journey down the Ottawa, then the settlers would follow the same route in the opposite direction, and would stock up on



the desired furs at the source. And so, in 1654, France began issuing trading permits, called *congés*, to young Frenchmen who wished to travel into the North American interior in search of furs (Gaffield 91). This act heralded the beginning of the now famous *voyageurs* era.

**Figure 2.18 Shooting the Rapids**



Source : Frances Anne Hopkins/Library and Archives Canada/C-002774

### **The Voyages of des Groseilliers and Radisson**

To further this effort to regain control of the fur trade, the governor of New France, Jean de Lauson, authorized Médard Chouart des Groseilliers and one of his companions to accompany western tribes returning home along the Great River. In their return to the French settlement in 1656, the men arrived with fifty canoes laden with furs. According to the Jesuits, their arrival “caused the Country universal joy” (Gaffield 91).

In 1659, des Groseilliers and Pierre-Esprit Radisson, described earlier, set out on yet another long voyage up the Ottawa, this time escorting First Nations Peoples to their home on the western shore of Lake Superior. The brothers-in-law aimed to return once more with a large convoy of furs. In 1660, the men were leading three hundred Odawas and sixty canoes laden with furs back along the Ottawa. This return set the stage for one of Canada’s most famous tales: the Massacre of Dollard des Ormeaux (Gaffield 91).

### **Massacre of Dollard des Ormeaux**

In April of 1660, Dollard des Ormeaux, commander of the garrison at Ville-Marie, and sixteen companions canoed out to Long Sault to help protect the returning des Groseilliers, Radisson, and their accompanying flotilla (Gaffield 92).

On the first of May, Dollard des Ormeaux's men were eating in the open on the shore of the Ottawa River when they were ambushed by 250 armed Iroquois coming down the rapids. The Frenchmen were able to retreat to their small stockaded fort. The siege lasted eight or nine days before they were all either killed or captured. It is not known how many Iroquois died in this battle (Legget 1975: 38).

The location of the fort defended by Dollard des Ormeaux and his men is thought to be at the foot of the old Carillon portage on the north shore just downstream of Île Persévérance. The water impounded by the Carillon Dam now submerges this site (Legget 1975: 38). Although recent historians have offered different interpretations of this event, Dollard des Ormeaux's massacre at Long Sault remains etched in Canada's cultural memory as one of the country's most heroic tales (Gaffield 92).

### The Fur Trade during the Voyageur Era

Given the perils involved, the voyageur system was understandably slow to motivate French youths to engage in the fur trade. By the 1670s though, potential profits made the voyageur method the common manner of acquiring furs. Two parallel arrangements developed. In one, *voyageurs* obtained legal trading permits. In the other, *coureurs de bois* traded illegally, without permits.

**Figure 2.19 Encampment of Voyageurs, Ontario, 1870**



Source : Anne Frances Hopkins Library and Archives  
Canada/Acc. No. R9266-277 Peter Winthrop Collection  
of Canadians

In both cases, traders brought furs from the continent's interior back to Montreal. An important component of French fur-gathering expeditions would both begin and end with a voyage along the Ottawa River.

A regular pattern in fur trade along the Ottawa Waterway emerged. Canoes would leave Montreal in the spring; supplies would be obtained at Michilimackinac, and the men would continue on to Lake Superior or Lake Michigan, winter with First Nations communities, engage in trade, and return

down the Ottawa Waterway with their loads of furs to Montreal. The round trip would take at least one year. With the passing years of active fur-trading, greater and greater distances had to be traveled in order to find good furs, making the time required for a successful venture up to two or three years (Legget 1975: 43).

### 2.5.7 British Competition with the French

As the 17<sup>th</sup> century advanced, competition with the British for access to North American furs became an increasingly significant concern to the French colony. This competition was catalyzed by the formation of the British-run Hudson's Bay Company in 1670.

## **The Founding of the Hudson's Bay Company**

Through their journeys, the famous explorers Radisson and des Groseilliers discovered a wealth of fur in the interior of the continent north and west of the Great Lakes, and also accessible via Hudson's Bay, part of the great Northern Sea. Despite their success, the French governor seized the furs that the men had brought to the French colony in 1660, prompting the adventurers to defect to the British (Legget 1975: 38).

Prince Rupert, cousin of King Charles II, used his influence and wealth to support their defection, and the two went on to help found the Hudson's Bay Company. On May 2<sup>nd</sup> 1660, King Charles II granted the initial group of investors – the “Governor and Company of Adventurers of England Trading into Hudson's Bay” - a Royal Charter allowing them a monopoly to trade in the Hudson's Bay drainage basin. In 1672, the Company made its first public sale of furs - 27 lots, at Garraway's Coffee House in London (Hbc: “Our History”).

## **Chevalier de Troyes and the Attack at Hudson's Bay**

In 1685, news reached New France that the British had established permanent posts on Hudson's Bay, and had carried off a large shipment of beaver pelts intended for Quebec City. In response, French Governor Brisay de Denonville charged Chevalier de Troyes, a captain in the Piémont Regiment, to lead an expedition to rout the British from the bay. De Troyes was given the task of capturing any British that he could, especially associates of Pierre Radisson, who was by then regarded as a traitor (Legget 1975: 40). The expedition was funded in large part by the Compagnie du Nord, which then held the monopoly on the fur trade in the region for the French. In 1686, de Troyes and his three senior officers, the brothers Pierre, Paul, and Jacques Le Moyne, led 96 other men in over thirty canoes up the Ottawa River and on towards the English posts of Hudson's Bay.

The voyage went well. Leaving Montreal on March 20<sup>th</sup>, when ice was still on the Ottawa, they reached the junction at Mattawa on May 10<sup>th</sup>, but here, instead of following the accustomed route west, they continued north up the Ottawa and into Lake Temiskaming. The company followed the portage route into the Abitibi River, and finally reached James Bay on June 20<sup>th</sup>, exactly three months after their departure (Legget 1975: 40).

They captured three British forts without great difficulty - Monsipi (Moose Factory), Rupert (Charles), and Albany, and all without any losing of any of their men. Pierre Le Moyne remained in charge of the forts, but de Troyes led the main body of the troop safely back to Quebec by that October. In total, the expedition resulted in the loss of only three men: two from drowning, and a third from exposure (Legget 1975: 40). The operation was therefore a military success with positive results for the Compagnie du Nord.

## **The Fur Trade Expands West**

The signing of the Treaty of Utrecht in 1713 had major implications for the French colony. Through this treaty, France ceded Rupert's Land to Great Britain, still a rather undefined area but containing the valuable hunting grounds of the West. The French became even more economically dependent on the lifeline provided by the Ottawa Waterway.

Competition from the British came not only from the Bay in the north, but also from New York and Albany in the south. French dependence on the Ottawa was further enhanced when the British

established a fort at Oswego on Lake Ontario in 1720. The Ottawa then became the only link with Louisiana, under French control until 1763, when France deeded this territory to Spain (Legget 1975: 44).

In response to British competition from the north and the south, the French opted to expand their fur trading activities in the West. The explorations of Pierre Gaultier de Varennes, Sieur de la Vérendrye, and of his three sons are a good example of this strategy to expand west.

La Vérendrye made his first journey into the West in 1731, following the Ottawa River, as described in a previous section. Through his many journeys west from Montreal via the Ottawa Waterway, he succeeded in opening the prairies for trade with Montreal. By 1763, he had established a route to the western plains, where French traders were in direct competition with the Hudson's Bay Company, descending from the north. The posts that La Vérendrye founded were extended west after his death (Legget 1975: 44). The many voyages of La Vérendrye are part of a grander story, but hold a special place in the history of the Ottawa River. The explorer and trader is commemorated in the name of Parc de La Vérendrye near the Ottawa River's source in Quebec.

### **The British on the Ottawa River**

During the entire 18<sup>th</sup> century, the British and the French were at war on and off, with important consequences for their North American colonies. By 1760, British forces had taken both Quebec and Montreal. British and American merchants soon moved into Montreal to control an increasing share of the fur trade (Kennedy 91). During the 1760s, the exclusively French trade in furs up and down the Ottawa River gave way to an active trade by English-speaking merchants. This new phenomenon eventually led to the establishment of the North West Company (Legget 1975: 46).

As British forces attacked, British merchants followed quickly in their wake. As early as 1761, the British began issuing passes for travel to the 'upper country.' Alexander Henry was among the earliest of these traders, and supplied goods to the English army at Oswego (Legget 1975: 46). Another important figure on the Ottawa was John Long, an independent British trader.

The trade in furs and associated travel along the Ottawa Waterway increased rapidly as a result of British expansionism. This was despite antipathy from First Nations Peoples who were affiliated with the French, as evidenced by the Pontiac uprising. British voyageurs traveled increasingly into the west, with James Finlay likely to have been the first English-speaking trader to do so in the 1760s. Others, including Benjamin and Joseph Frobisher, Lawrence Ermatinger, Maurice Blondeau, James McGill, John Askin and Forrest Oakes were just some of those who became leaders in this trade (Legget 1975: 47).

The *Quebec Act* and the aftermath of the American Revolution, confirmed in 1783 by the *Treaty of Versailles*, had minor implications for the fur trade along the Ottawa River. However, a policy focus on trade in the West was reinforced by these political events (Legget 1975: 48).

The importance of the Ottawa Waterway as the start of the long route west is indicated in a report on the fur trade made by Benjamin and Joseph Frobisher in 1784:

*The Inland Navigation from Montreal, by which the North-West business is carried on, is perhaps the most extensive of any in the known world, but it is only practicable for Canoes on account of the great number of Carrying places... Two sets of men are employed in this business, making*

*together upwards of 500; one half of which are occupied in the transport of Goods from Montreal to the Grand Portage, in canoes of about Four Tons Burthen, Navigated by 8 to 10 men, and the other half are employed to take such goods forward to every Post in the interior Country to the extent of 1,000 to 2,000 miles and upwards, from Lake Superior, in canoes of about one a half Ton Burthen, made expressly for the inland service, and navigated by 4 to 5 men only, according to the places of their destination (qtd. in Legget 1975: 49).*

### **The North West Company is Founded**

As this trade into the West increased, the associated costs became so great that some of the traders, mainly French-Canadian voyageurs but also Scots, French and English, decided to cooperate with one another in the 1770s, forming the North West Company (Gaffield 102). It would exist under various forms for the next forty years, with principal forts at Chats Falls, Fort Coulonge, and Lake Temiskaming. The North West Company would finally amalgamate with its competitor, the Hudson's Bay Company, in 1821. All trading forts then became the property of the latter (Kennedy 91).

Through the first half of the 19<sup>th</sup> century, the Hudson's Bay Company enhanced its efforts to control the fur trade by excluding private "petty" fur traders through the establishment of new trading posts along the Ottawa River and its tributaries. Posts at Lac des Sables on the Lièvre, and on the Desert River at Maniwaki continued until mid-century. The Hudson's Bay Company maintained a post at Fort Coulonge until 1844 and at Allumette Lake until the 1860s (Gaffield 155).

By maintaining this level of activity in the Ottawa Valley, the Hudson's Bay Company hoped to distract smaller traders from the expanding trade in the continent's interior. George Simpson, Governor of the company, explained in 1829 the Company's clear motivations for bolstering its presence in that area despite declining beaver populations in the area:

*It is necessary, however, to maintain [the fur trade] as a protection to the interior country, as were the numerous petty traders by whom we are opposed here not kept in constant employment at home, they would penetrate to our most valuable frontier establishments, and occasion heavy losses where we are now making handsome profits (qtd. in Gaffield 156).*

### **2.5.8 The Fur Trade and Settlement**

The spread of settlement and the expansion of the forest economy, not to mention the building of the Rideau Canal, encouraged an increasing number of people to become involved in the fur trade. Many small fur-trading operations developed along the Ottawa during this era. For example, Governor Simpson was convinced that "every lumberer and contractor is a trader." Furthermore, he argued, some lumbering operations were in fact established primarily in order to facilitate the fur trade. Although it is difficult to determine what number of fur traders were actually working outside of the Hudson's Bay Company's official monopoly, the involvement in the fur trade of leading figures such as the Wrights, as well as farmers and shantymen is recorded (Gaffield 157).

As a result of this continued activity at official posts (as well as at unofficial ones), canoes laden with furs remained a familiar sight on the Ottawa well into the 19<sup>th</sup> century. In 1860s, the Hudson's Bay Company still ran general stores along the Ottawa River and carried on an extensive fur trade with First Nations Peoples.

## 2.5.9 Decline of the Fur Trade

As a result of the fur trade, the North American beaver was close to extinction by the mid-19th century. There were an estimated six million beavers in Canada before the start of the fur trade. As early as 1626, individual traders were taking up to 22,000 skins annually back to France (Legget 1975: 42). During the peak of exports, 100,000 pelts were being shipped to Europe each year. Forest fires and epidemics of distemper further contributed to the threat upon the species (McGill University Archives: "In Pursuit").

As the population of North American beavers was reduced, the investment required to trap them increased, requiring longer and more involved voyages into the West. As a result, the profitability of the fur trade decreased for Europeans. But in the end, the salvation of the beaver was the same as its greatest threat: the whims of the European fashion industry. After Europeans took a liking to silk hats, the demand for beaver pelts all but disappeared.

The decline in the fur trade in the first half of the 19<sup>th</sup> century and the closing of the trading posts in the middle of the century ended the grand period of trade in the Outaouais after more than two centuries of activity.

**Figure 2.20 Burial Place of the Voyageurs, Ontario, 1841**



Source : William Henry Bartlett/Library and Archives Canada/C-040707

## 2.5.10 Lifestyle of the Voyageurs

### The Routes

The Ottawa River led to two strategically important sites for the fur trade: The first was Lake Temiskaming post, the largest trading post on the Ottawa under the French. The second, Michilimackinac (now called Mackinaw City, Michigan), was the fur-trading hub for the Great Lakes region. It was an 18-20 day voyage from Lachine to Lake Temiskaming, or a 35-40 day voyage from Lachine to Michilimackinac. This second route was extremely important to the fur trade: following the Ottawa River to the Mattawa Forks, voyageurs would then turn west along the Mattawa River, across Lake Nipissing, along the French River, and finally, through the Great Lakes to Michilimackinac (Gaffield 93).

**Figure 2.21 Voyageurs and Raftsmen on the Ottawa, ca. 1818**



Source : Charles William Jefferys/Library and Archives Canada/C-005946

## The Task

The voyageurs' tasks varied with the seasons. In summer, they would make long journeys into the continent's interior, usually following the Ottawa River for much of their way. Their days of paddling were long: they would leave early in the morning and often continue until far into the night.

In autumn, they would establish a winter camp near a First Nations village and a body of water. Here, they would build a fort and a few dwellings, and from this base, would trade throughout the winter with First Nations Peoples. In this way, the voyageurs would collect furs from the tribes, even those that lived at great distances. In the springtime, the voyageurs would return along the same route to Montreal. Life was so hard for the voyageurs that desertions were common.

## The Team

Typically, a wealthy merchant would finance an expedition. The team, however, would be made up of a guide, paddlers for the canoe, an interpreter, a clerk, and several inexperienced men. Groups of three or four canoes would often travel together, forming what was called a *brigade*, each one with its own guide (Gaffield 93).

## The Food

The voyageurs had a monotonous diet. Their monthly ration was a bushel of corn and nearly a kilogram of lard each. At times, they would replace the lard with bear fat. Before setting out, four or five litres of rum were also distributed to each voyageur in an attempt to manage morale (Gaffield 95).

## The Canoes

The canoes used by the voyageurs were built following Aboriginal methods, but were designed to fit the colonists' needs. A voyageur canoe could measure as much as ten metres in length and 1.4 metres in width. The boat bore an extremely heavy load. Eight men, each carrying a bag weighing around 18 kg, as well as a total of 450 kg of provisions, were piled in alongside 60 to 80 bundles, each weighing from 41 to 45 kg. In total, these slight vessels would carry a load of about 3,600 kg. Later, canoes carrying 15 people were constructed.

**Figure 2.22 At the Junction of the Mattawa and Ottawa Rivers**



Made of birch bark, it was only 6.5 mm thick. Given this, navigation along the rivers was both difficult and dangerous: even a small collision with a rock or piece of floating wood could pierce the canoe's bark and spoil its precious cargo. After every night of paddling, the canoe had to be unloaded, pulled out of the water, inspected, and repaired (Gaffield 93).

## Portages

The Ottawa River's rapids and waterfalls interrupted the days of regular paddling of the voyageurs. Whenever the waters became impassable, the men were forced to stop, disembark, and carry their cargo and canoes through the forest until the waters were again calm enough to continue paddling. The voyageur setting out from Lachine would have twenty portages on his way to Lake Temiskaming, and thirty-five on his way to Michilimackinac (Gaffield 94). The majority of these portages were located on the north shore of the river, and followed already-existing First Nations portage routes that they fortified to withstand the increased traffic.

**Figure 2.24 Portage Along the Ottawa River, 1836-1842**



Source : Philip John Bainbridge Library and Archives Canada C-011854

*She is first turned over. Four men then go into the water, two at each End, raise the Canoe and then two more place themselves midships of the Gunwale on the opposite side. The weight of our Canoe was about 6 cwt. The Goods are carried on the Shoulders of the men and in this manner; each Canoe Man is provided with a leather Sling broad in the middle; the Ends he fastens to a Package, this is placed on his shoulders, the broad part of the Sling placed across his Forehead. On this Package a second is placed and in this manner they generally carry two Packages of 90 lbs. each and sometimes a third (qtd. in Kennedy 92.)*

**Figure 2.23 On the Portage – Lake Comandau**



Source : Picturessque Canada

These portages were long and exhausting. Each man carried two or three bundles of merchandise weighing approximately forty-one kilograms each. The men would often have to take several trips back and forth in order to transport all of the gear to the end of the portage route. Portages were so exhausting that the voyageurs measured the exact number of paces required to walk from the beginning to the end of each route. (For example, it was recorded that the particularly challenging Grand Calumet portage measured some 2,035 paces long! (Gaffield 94)).

**Figure 2.25 Chats Rapids, ca. 1838-1841**



Source : Philip John Bainbridge Library and Archives Canada C-011854



## The Voyageur's Portages

Portage sites downstream of the capital

- Long-Sault Rapids
- Blondeau Falls
- Carillon Rapids

Portages between the mouth of the Ottawa River and Lake Deschênes:

- Chaudiere Falls (nowadays by-passed by a bridge)
- Little Chaudiere Rapids
- Brébeuf Park in Hull

Traces of the trails used by First Nations paddlers, voyageurs and European explorers are still visible. In 1956, to commemorate this important part of the history of Hull, a plaque was installed at the level of Squaw Bay in Brébeuf Park.

Portages upstream of the capital:

- Chats Falls
- Grand Calumet Island
- Allumette Island (2)
- Rapides-des-Joachims (2) (Gaffield 96-102).

### 2.5.11 The Rise of the Trapper

Through their rigorous work outdoors and frequent contact with First Nations Peoples, the coureurs de bois were exposed to a way of life drastically different from their European heritage. Many coureurs de bois chose to adopt a semi-western, semi-Aboriginal lifestyle. Taking from what they saw as the best of both worlds, these men became trappers. Living in wooden cabins, trappers would build their own bark canoes, snowshoes, and clothes, and would live a relatively free life in the forest. These men would rely upon their trapping lines to supply them with furs to trade for those things that they could not directly obtain.

Nowadays, there are strict rules about trapping, but the tradition lives on. Many descendants of trappers still take care of trapping lines as a hobby.

#### Just How Did They Catch the Beaver?

Beavers were hunted in a special way. Here is a description provided by North West Trading Company partner Alexander Henry in his 1809 journal:

*To kill beaver, we used to go several miles up the rivers, before the approach of night, and after the dusk came on, suffer the canoe to drift gently down the current, without noise. The beaver, in this part of the evening, come abroad to procure food, or materials for repairing their habitations; and as they are not alarmed by the canoe, they often pass it within gun-shot [...] The most common way of taking the beaver is that of breaking up its house, which is done with trenching-tools, during the winter, when the ice is strong enough to allow of approaching them; and when, also, the fur is in its most valuable state. Breaking up the house, however, is only a preparatory step. During the operation, the family makes their escape to one or more of their washes. These*

*are to be discovered, by striking the ice along the bank, and where the holes are, a hollow sound is returned. [...] I was taught occasionally to distinguish a full wash from an empty one, by the motion of the water above its entrance, occasioned by the breathing of the animals concealed in it. From the washes, they must be taken out with the hands; and in doing this, the hunter sometimes receives severe wounds from their teeth (McGill University Archives: "In Pursuit").*

## 2.2.12 The Ottawa River Forts

The fur trade required a certain level of infrastructure. As trade developed, forts began to dot the landscape of the Ottawa River's shores. Although called forts, these buildings were in reality modest trading posts that were intended to ensure control over the fur trade. As symbols of European (French and then later British) sovereignty, they were meant to protect traders from Iroquois attacks. In reality though, the forts were unmanned and had more the flavour of inns than of forts (Gaffield 98).

These trading posts were usually located near the tributaries of the Ottawa River. This made them accessible by canoe, promoting contact with First Nations Peoples. The forts were of various constructions; some consisted merely of a log cabin, while others included several buildings, and were flanked by a cemetery or a garden. Generally, posts were surrounded by stakes to guard against Iroquois attacks (Gaffield 99).

A head official and one or two assistant clerks usually inhabited a fort. Priests also often lived on site, or stopped in frequently. Although built to support trade, there were various other reasons for stopping there: to seek protection from hostile First Nations bands or shelter from rough weather, to have a drink, enjoy a good meal, and so on. Soldiers, clerks, merchants, *voyageurs* and *coureurs de bois* all frequented the forts. The forts also contained women (Gaffield 99). One shocked missionary described the use of forts thus:

*Officers and soldiers reduce the King's service to four main occupations: the first one is to keep a public drinking house; the second one is to carry merchandise and spirits from one post to another; the third one is to make the fort a place that people are ashamed to call by its name, where women have learnt that their own bodies could serve as merchandise; the fourth one is gambling (Gaffield 100).*

### Île Perrot

Jean Talon, first intendant for New France (from 1665-68 and again from 1670-72), was deeply involved in the fur trade (Legget 1975: 40). Talon gave to his young relative François-Marie Perrot the governorship of Montreal. Perrot used this power to gain possession of the large island at the mouth of the Ottawa River

**Figure 2.26 Freight Canoe, Hudson Bay Company Post, Lake Temagami, 1896**



Source : G.M. Kelley/Library and Archives Canada/PA-123355

that now bears his name. Here, Perrot established a trading post, and benefited from this strategic location to operate in the fur trade as a sort of robber baron.

Perrot's conduct was so questionable that Louis de Buade de Frontenac, the governor of New France from 1672-82 (and again from 1689-98), had him arrested and imprisoned. However, Perrot was able to resume his brigandage and to continue using these methods until 1683. His success in this strategic location is evidence that furs were still at this time being transported down the Ottawa River in significant quantities (Legget 1975: 40).

### **Château de Senneville**

A second fort and outpost was located at the mouth of the Ottawa River in today's municipality of Senneville. Jean Talon granted land to Captain Michel Sidac du Gué, one of the officers of the Carignan Regiment. This officer constructed a small log building at the extreme western tip of the island of Montreal. In 1679, du Gué sold this land and building to Jacques le Ber and Charles Le Moyne, father of the famous brothers. The trading post thrived under their direction. The store sold tinware, food, clothing, spirits and guns to the fur traders, local settlers and fishermen. Le Moyne died shortly after, but le Ber began to improve the property, erecting a fortified windmill on site (Borough of Pierrefonds/Senneville: "History").

The small outpost was attacked by Iroquois in 1687 and again in 1691, but the assaults were successfully resisted, though the windmill was razed. A stone fort was constructed on the site in 1692, one of Canada's earliest masonry structures outside of Quebec. Called the Château de Senneville, this fort served as a fortress and was used even in 1776, when Benedict Arnold established headquarters there during the American invasion of Canada. Its remains could still be seen in the 1970s (Legget 1975: 41).

### **Carillon**

The merchants of New France were slowly pushing their way upriver to access a greater control of the fur trade. Philippe Carrion du Fresnay obtained Carillon Island, and established a trading post at the western end of the Lake of Two Mountains (Legget 1975: 42). Carillon is thought to be a corruption of this man's name.

## **List of Forts Along the Ottawa River**

### **French Forts**

- The fort at Lake of Two Mountains: built of stone before the British Conquest in 1760, this fort located in Oka was the only one used for military purposes.
- Carillon Fort: built by the French as well.
- Long Sault Forts: two forts at the Long Sault were located on opposite banks of the river, right before falls. From this position, the French were able to control some of the traffic along the Ottawa River. Algonquins, Nipissings, and Iroquois traded with the French at these forts.
- Petite-Nation River Fort (1670-1760)
- Fort du Lièvre
- Joseph Mondion's old house: this ex-settler traded out of his house, which became a fort from 1798 to 1837.

- Fort Coulonge: located upstream of the confluence of the Coulonge and the Ottawa, this fort was established in the 17<sup>th</sup> century by the grandnephew of Louis d'Ailleboust de Coulonge, one of New France's first governors. The first trading post built on the Ottawa, it contained: a boathouse for storing canoes, a store, two houses for employees, an inn, a smithy, a servants' house, and an icehouse. In 1784 it passed into the hands of the North West Company in 1784. Its buildings were abandoned in 1855. The small wooden building survived the longest of the forts, only disappearing in the early 20<sup>th</sup> century.
- Allumette Lake
- Dumoine River
- Rapides-des-Joachims
- Mattawa Forks
- Fort Temiskaming: built between 1679 and 1685, this was the largest trading post on the Ottawa built under the French. The fort was destroyed by the Iroquois and abandoned in 1688, and then reopened after 1720. All other trading posts along the Ottawa were subordinate to the Temiskaming Fort. The fort was very important. For example, in 1755, 2% of colonial fur production passed through the fort, compared to 0.4% for Fort Frontenac. This fort also offset the British Hudson's Bay posts.

### British Forts

When the British took control of New France, Fort Témiscamingue was put in charge of the four other posts then open on the Ottawa River (Gaffield 101-102). Through the first half of the 19<sup>th</sup> century, the Hudson's Bay Company enhanced its efforts to control the fur trade by excluding private "petty" fur traders through the establishment of new trading posts along the Ottawa River and its tributaries.

- Posts at Lac des Sables on the Lièvre
- On the Desert River at Maniwaki, continued until mid-century.
- The Hudson's Bay Company maintained a post at Fort Coulonge until 1844
- HBC maintained a second post at Allumette Lake until the 1860s (Gaffield 155).

### Summary

**When Europeans arrived in the Ottawa River region in the early 1600s, the Great River was already an important trading route. Europe's high demand for beaver furs set in motion the development of an extensive fur-trading network involving both French and First Nations Peoples and later, the British. This trading network quickly became the foundation of France's North American colonial economy, and led to the cultural development of the now famous coureurs de bois and voyageurs era. Later British competition led to the creation of the North West and Hudson's Bay Companies, key companies to Canada's economic and political development. The frenzied trade in furs set in motion much adventurous travel up and down the Ottawa Waterway, and shaped early European settlement patterns in the region. Fascinating relics of this by-gone era can still be seen along the Ottawa's shores, including the remains of some of the Ottawa River forts.**

**For First Nations Peoples, the trade in furs caused traditional trade routes to shift and brought them into increasing contact with Europeans. As various First Nations groups wished to gain greater control of trade, tension soon led to open conflict among groups. The Ottawa River region experienced a brutal**

war in the 1600s. This war, coupled with epidemics spread by European diseases, severely damaged First Nations social groupings and led to the dispersal of its survivors (Gaffield 78).

Amid the profound social, political, and economic changes of the 17<sup>th</sup> century, the Ottawa River remained one of North America's most important trading routes. It played a central role in the story of the fur trade in North America, and thus in the development of Canada. Even after the opening of the St. Lawrence route, the Ottawa remained the main route to the west and to the north, providing a shorter and more protected route to the interior.

## 2.6 Settlement Along the Ottawa River

In spite of the 360-metre drop of the Ottawa between its headwaters and its mouth, the river has been a highway for human habitation for thousands of years. First Nations Peoples have lived and traded along the Ottawa for over 8000 years. In the 1600s, the fur trade sowed the seeds for European settlement along the river with its trading posts stationed between Montreal and Lake Temiskaming.

Initially, French and British government policies discouraged settlement in the river valley and focused instead on the lucrative fur trade. As a result, settlement did not occur in earnest until the late 18<sup>th</sup> and 19<sup>th</sup> centuries. The arrival of Philemon Wright to the Chaudiere Falls and the new British trend of importing settlers from the British Isles marked the beginning of the settlement era. Farming, forestry and canal building complemented each other and drew thousands of immigrants with the promise of a living wage. During this period, Irish, French Canadians and Scots arrived in the greatest numbers and had the most significant impact on the identity of the Ottawa Valley, reflected in local dialects and folk music and dancing. Settlement of the river valley has always been more intensive in its lower stretches, with little or no settlement upstream of Lake Temiskaming.

As the fur trade gave way to farming, settlers cleared land and encroached on First Nations territory. To supplement meagre agricultural earnings, farmers turned to the lumber industry that fuelled the regional economy and attracted new waves of settlers. With forestry came a whole new breed of Ottawa River folk, rough, violent, and fodder for legend. Forestry eventually ceded to a more diversified economy, and recent immigration has followed patterns similar to the rest of Canada.

### 2.6.1 Earliest Settlement and the Fur Trade

Archaeological sites shed light on the Ottawa River Valley's earliest inhabitants. Chapters 2.1-2.3 outline this prehistoric settlement and use of the land and river that began around 8000 years ago.

**Figure 2.27 "The Great Kettle", Chaudiere Falls**



Source: Archives of Ontario

Through exploration of the river and the fur trade, the French established the first European settlements in the river valley. Early fur trading posts generally consisted of a few buildings surrounded by stakes, and were staffed by an official, a clerk and perhaps a priest. A few fur trading posts eventually evolved into villages, such as Fort Coulonge (Gaffield 186).

As outlined earlier, the fur trade, the forts, alliances with rival First Nations communities and European settlement of the Ottawa Valley greatly impacted the First Nations Peoples of the area. The First Nations communities of the Ottawa River valley mainly lived a nomadic lifestyle. Fur-trade related conflict in the 17<sup>th</sup> century caused the Algonquin people to scatter, and only a small number remained. Those who found shelter near the French settlements were strongly encouraged to convert to the Christian faith, and these settlements took on the character of missions (Gaffield 87).

Despite their departure and dispersal, the Algonquin people still firmly believed that they held the rights to their traditional territory: the Ottawa River watershed (Gaffield 87). In 1763, the British Conquest led to a Royal Proclamation defining the official status of these lands. A full discussion of the history of First Nations communities in the river valley can be found in Chapter 2.3: Algonquin History in the Ottawa River Watershed, including their presence and relationship with this land, and the impact of missions, reserves and land claims.

At the end of the 18<sup>th</sup> century, the Ottawa River valley was still virtually uninhabited by Europeans. This was both in spite of and because of the fur trade. Both the French and the British governments opposed settlement in the river valley, fearing that it would reduce their control over the colonial economy, thus interfering with the lucrative fur trade. Despite these policies, Joseph Mondion settled near Chats Falls in the late 18<sup>th</sup> century, ostensibly to begin farming. He soon turned his homestead into a trading post, confirming the fears of the two governments. Mondion left in 1800, perhaps because of the isolation (Legget 1975: 186).

However, the fur trade did contribute to a gradual settlement upriver, with trading posts eventually attracting pioneers and becoming villages; examples include Fort Temiskaming, L'Orignal and Oka. The oldest remaining buildings in the Ottawa Valley date from this era: seven shrines at Oka attest to the presence of the Catholic Church at the earliest fur trading posts and date from about 1739 to 1749 (Legget 1975: 177).

## 2.6.2 From Furs to Farming

In the late 17<sup>th</sup> and early 18<sup>th</sup> centuries, the King of France granted large land tracts to noblemen in New France in the form of seigneuries, giving them the right to hunt, fish, and trade with First Nations Peoples. The seigneurs conceded part of the land to colonists, which they subdivided into lots. Farming was the main activity and the colonists were responsible for clearing the land, building houses, farming, and paying taxes to the seigneurs.

Because of French laws governing inheritance, seigneuries had to be shared equally among heirs. Waterfront property gave access to the main means of transportation and ensured a ready source of water for farming. As a result, the seigneuries were divided into characteristic long narrow lots, each with access to the river (Grant 69).

The seigneuries were not intended to increase settlement, but rather to control the land and its natural resources. They only began to attract settlers toward the end of the 18<sup>th</sup> century. France discouraged immigration, which limited the French Canadian population (Gaffield 122). The seigneuries in the Ottawa River valley changed hands often, further delaying settlement.

There was a total of five river seigneuries along the Ottawa River, all within its lower section: Petite Nation, Argenteuil, Vaudreuil, Oka and Pointe à l'Original. In 1682, Count Frontenac granted the Argenteuil seignury, located at the mouth of the North River, to Charles Joseph d'Ailleboust. Settlement started after adjoining lands were surveyed in 1783, and was so slow that a subsequent owner tried to persuade immigrants in Montreal to settle in his area (Legget 1975: 176-180). The Seminary of Montreal first owned the seignury of Oka. A pioneer settlement followed earlier First Nations encampments, and was home to both Iroquois and Algonquins in the mid-19<sup>th</sup> century (Legget 1975: 178). The Vaudreuil seignury was granted in 1702 and was surveyed for settlement as early as 1732. Voyageurs were among its first settlers.

L'Original is one of the three oldest villages on the Ottawa River and began as the only seignury granted in what later became Upper Canada (Legget 1975: 182). The seignury was originally given to the West Indies Company, which sold it to François Provost in 1674. It passed to the Soulange family and to Joseph de Longueuil in 1791. It was then sold to Nathaniel Treadwell from the United States in 1796, who divided it among his family and friends. Between 1835 and 1915, Caledonia Springs, located within the jurisdiction of the seignury, boasted Canada's most important thermal springs. Until the arrival of the railroad in 1896, visitors reached the springs via steamboat or ferry on the Ottawa River (see Chapter 5.7: *La rivière des Outaouais: une rivière d'histoire et de patrimoine pour les Comtés unis de Prescott et Russell*).

### The Petite-Nation Seignury

The Petite-Nation seignury extended eight kilometres along the north shore of the Lower Ottawa River. Granted in 1674 by the West Indies Company to the Bishop of Laval, Joseph Papineau purchased the

**Figure 2.28 Montebello – Home of Papineau**



Source : Picturessque Canada

vast land tract in 1801. His son, Denis-Benjamin Papineau, encouraged French Canadians to settle in the seignury beginning in 1810 (Friends of the Macdonell-Williamson House 29). Eventually, these settlers established farms and businesses along the riverbank of the seignury, resulting in the contemporary Quebec towns of Papineauville, Plaisance and Montebello (Rivers Inc.: Ottawa River Culture).

In 1817, Joseph Papineau sold the seignury to his son Louis-Joseph, Lower Canadian politician and rebel (Gaffield 127). Louis-Joseph's involvement in politics kept him from attending to the land, and so he only settled there after his manor was built in 1850 in the style of the Loire Valley castles in France. The seignury was leased to New England

families involved in the timber trade, and was divided among the heirs of Louis-Joseph after his death. The village of Montebello owes its first school and initial street layout to Louis-Joseph, as well as its name: Papineau named his domain “Montebello” after a town in Italy or his friend, the Duke of Montebello.

In 1929, the Papineau family sold the domain to a group of private investors who built the luxurious Château Montebello (the world’s largest log structure) on the former Papineau domain not far from the manor house. With the establishment of the seigneurie Club (1929-1970) centred around the Château, the town of Montebello’s economy revolved around tourism, attracting prominent figures such as William Lyon Mackenzie King, Bing Crosby, and Prince Ranier of Monaco (Friends of the Macdonell-Williamson House 31). In 1970, Canadian Pacific took over the Château Montebello and transformed it into a hotel. The palatial Manoir Papineau, with its chapel, granary and outbuildings, is now a National Historic Site commemorating Louis-Joseph Papineau (Parks Canada: “Manoir Papineau”).

**Figure 2.29 Papineau’s Castle, 1886**



Source : Lily Stratton/Library and Archives Canada/C-036465

**Figure 2.30 Papineau’s Residence, Ottawa River, 1854**



Source : Austin William Augustus/Library and Archives Canada/C-000485

### Philemon Wright – Farming Father

The British Crown also awarded land grants for farming, leading to a British pattern of layout farms in grids. This began with Philemon Wright’s arrival from Massachusetts. Wright was an upper-class farmer from Woburn, Massachusetts. He came to Montreal in search of a better market for his farm produce, exploring the lower reaches of the Ottawa River in 1796. He was pleased to note that the land 130 kilometres upstream of Montreal was virtually unoccupied. During a subsequent visit in 1798, Wright went as far as the Chaudiere Falls, where the wealth of available arable land convinced him of the potential to establish a thriving community. Wright purchased a

**Figure 2.31 Chaudiere Falls**



Source : Picturesque Canada



Warrant of Survey from the British Crown, entitling him to a large land grant in exchange for surveying the land, clearing it, and bringing in settlers (Cross 12).

Early on, Wright faced many challenges. First, his contract fell through: Wright's business partner, John Fasset of Burlington, Vermont, was deemed by the Crown to be a Yankee rebel, and the warrant was revoked. Furthermore, the fur trading companies were lobbying forcefully to keep settlement out of their fur trading areas. Wright did not back down. He was able to convince the Crown of his own integrity, and eventually received a warrant in his own name. In dealing with the fur traders, Wright was insistent that agricultural settlement was both possible and advisable along the Ottawa River valley (Cross 12). In an address to prominent members of Montreal fur trading companies, who had reported a mere 500 acres of arable land along the entire Ottawa River, Philemon Wright insisted that "It may [be] to your interests to keep the Grand River from becoming settled, but you may bet your best beaver skin on this, that there is at least five hundred thousand acres of uncleared land fit for cultivation along the banks" (qtd. in Cross 11).

Based on positive reports from two "respectable men" from his community, whom Wright accompanied on a tour of the Chaudiere Falls region, he finally succeeded in convincing a small group of his neighbours and family to resettle. In the winter of 1800, Philemon Wright led 37 men, 5 women, and 21

**Figure 2.32 Philemon Wright**



Source: John James Library and Archives Canada/C-011056

**Figure 2.33 Chaudiere Falls Seen From Hull, 1851**



Source: James D. Duncan Library and Archives Canada/C-040257

children on an 800 kilometres journey to the Chaudiere Falls region from Woburn (Cross 14). With family, sleighs, oxen and horses in tow, Wright's team bottlenecked at the foot of the Long Sault and proceeded single file across the ice.

Thus Wright began an agricultural settlement on the north shore at Chaudiere Falls, laying out the farms in grids and organizing the villages such as Wrightsville (today's Hull) around a central gathering area, like what he would have seen in Massachusetts (Gaffield 147). To meet the needs of a fast-growing community, he oversaw the construction of a gristmill and a sawmill, both harnessing the waterpower of the Chaudiere falls. Local Algonquin chiefs acted as generous hosts to these settlers until they began clearing the land, at which point the chiefs grew concerned that it would drive back their game and threaten their way of life (Gaffield 125).

### 2.6.3 The British Encourage Settlement

After the American Revolution and the War of 1812, the British sought control and ownership by occupying the land with settlers along the Ottawa River, hoping to curb a northern expansion by the United States (Gaffield 122). They proposed a settlement technique of *leaders and associates* whereby a *leader* such as Philemon would receive large tracts of land to parcel out to his *associates*. The British government hoped that this would relieve them of much of the administration of these lands, but ultimately the concept failed. Leaders accumulated much of the land initially given to associates as compensation for financing their migration and settlement (Gaffield 127). Archibald McMillan and Philemon Wright were two such leaders, with Wright eventually acquiring over 21 145 acres of land. And yet, the growth of the Ottawa Valley remained slow. An 1825 census recorded a mere 1736 people living in the Outaouais region.

Among their many efforts to draw settlers, the British posted a proclamation in Scotland in 1815 offering free land and six months of supplies, attracting shiploads of emigrants that summer (Legget 1975: 188). Sites for permanent settlements were surveyed and considered in the Ottawa-St. Lawrence plain. In 1818, 400 men from the 99<sup>th</sup> Regiment of Foot disbanded at Quebec and took up land at the Jock River (today's Richmond), traveling up the Ottawa in Durham boats and batteaux<sup>10</sup> (Legget 1975: 188).

But the fervour of the British and later the Canadian governments to attract settlers did not prepare these immigrants for the severe challenges they would face farming the land in the Ottawa Valley. After a gruelling transatlantic voyage followed by several weeks travel upriver by batteaux or steamship, settlers often faced broken promises of months of free supplies, thick forest to clear, swarms of insects, extreme isolation and poor land for farming. Only the thinnest of soil covered the Canadian Shield on most land upstream of Chat's Falls (Legget 1975: 204). Some of the land within the Petite-Nation seigneurie was so poor that additional land was purchased on what is now the Ontario side of the river. Indeed, Ottawa River historian Robert Legget suggests that "some of this Shield country should never have been cleared at all" and ponders how so many stayed and established permanent settlement (1975: 204).

The reality of poor soil for farming meant that riverfront land, which tended to be better quality, was settled first (Gaffield 141). In general, the lower part of the Ottawa River valley was more suitable for farming with its fertile plains resulting from deep deposits of marine clay (Legget 1975: 204).

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<sup>10</sup> Batteaux were flat-bottomed, V-shaped pointer boats used for transporting goods.

**Figure 2.34 Ladysmith, Pontiac County, Quebec**



Source : Peleg Franklin Brownell/Library and Archives Canada/C-010592

### **2.6.4 Forestry – A New and Attractive Prospect**

The evolution of the timber trade directly influenced the development of the Ottawa Valley. The early farmers supplemented the meagre income from their unproductive farms by cutting timber in the winter. For the few crop surpluses of oats, hay, wheat, and pork that did occur from time to time, the growing timber trade provided a steady and profitable market. Because local suppliers could not meet all of the requirements of the timber camps, supply routes to Montreal and the United States were expanded and developed (Brennan).

In addition to square timber operations, lumbering was important to the Ottawa economy and provided valuable seasonal employment from autumn to early spring. Some farmers built lumber mills; settlements grew around these mills leading to the construction of inns, taverns and blacksmiths' forges. The growth of forestry encouraged landowners and seigneurs to take a renewed interest in their holdings, leading to the relatively late wave of settlement in the seigneuries (Gaffield 131). New villages developed from "stopping places" along forestry access routes out from the river, including Chelsea, Wakefield, Low, Kazabazua, Gracefield, Farrellton and Rivers Desert. Villages such as Quyon and Waltham grew where

tributaries met the Ottawa River. The forest economy required more than just food and stopping places, and led to other types of service centres. For instance, a flour and sawmill established in 1840 in Aylmer flourished while serving the forest industry (Gaffield 186).

Timber shipping firms benefited from the arrival of settlers. Rather than return to Canada with empty holds, some shipping firms provided cheap passage for emigrants, especially during the 1830s and the 1840s. The converted timber ships were very dangerous and immigrants were crammed aboard with little or no regard for comfort or sanitary arrangements. This enterprise ended with the age of steam in the 1860s.

Cramped sleeping quarters led to the spread of disease. In the summer of 1847, the arrival of over 3,000 Irish immigrants brought a typhus epidemic to Bytown. Canal traffic was curtailed in August, and a separate Emigrants Hospital was built in Ottawa. Of the 619 victims treated, 167 died (Brennan).

Changes in the timber trade influenced the population distribution of the valley. The labour force had consisted of French-Canadian farmers and woodsmen from neighbouring districts until the heavy Irish immigration of the 1820s brought new workers to the Ottawa Valley who were willing to work for low wages. When the Rideau Canal was finished in 1832, many more drifted to Bytown looking for work. Some were employed cutting oak in western Quebec and were dubbed "cheneurs" (oak-cutters) which became "Shiners" in English slang. Because the Shiners accepted lower wages than the French Canadians, conflicts arose between the two groups (Brennan).

The dangerous physical work of the farmers and lumbermen along with the predominance of male settlers in the river valley fostered a "culture of masculinity" (Gaffield 204). Fights could be seen as entertainment on a day off, with even prominent men indulging in duels. The most notorious symbol of this culture was French Canadian folk hero Joseph Montferrand, a rafting foreman for the Bowman and Gilmore Company on the Ottawa River. Known as "Joe Mufferaw" to the region's English speakers, Montferrand inspired legends and songs about his legendary strength, size and exploits were legendary. Montferrand was involved in the "Shiner's Wars" that took place in Bytown from 1837-45 between Irish and French Canadian lumbermen.

The Shiners were a disorganized bunch of Irish ruffians until Peter Aylen appeared in 1835. Aylen, an Irish Protestant who came to Canada at age sixteen in 1815, was a millionaire by the age of thirty. Aylen became interested in the Shiners in order to control the Bytown timber trade and the forwarding of pine cribs for export to Quebec. He promised the Shiners he would use his influence to get them jobs and drive the French Canadians out of the shanties and off the rivers in return for their loyalty. He was prepared to accomplish this by kidnapping, intimidation, and organized violence. Amidst high unemployment and a financial crisis, the Irish had nothing to lose by joining forces with Aylen (Brennan).

The resulting violence, known as the Shiners' War, began in 1828 and lasted until 1843. Between 1835 and 1837 at least fifty people were killed. For fifteen years, Bytown braced itself for the annual visit of the Irish shantymen and raftsmen in the spring.

Finally, Bytown and the French Canadian community took action to curb this intimidation and violence. Once the rafts left Ottawa, they were in French Canadian territory. The French Canadian and First Nations river pilots boarded rafts downstream at Carillon, and removed every Shiner. In addition, the

Bytown aristocracy joined together and formed organizations such as the *Bytown Association for the Preservation of the Peace* (Brennan).

As time passed, the square timber trade, with the rowdiness that accompanied its annual drive down river, gave way to the sawn-lumber trade. Men who had worked as woodsmen and rafters became mill hands. In addition, the centre of activity shifted from Hull to Bytown, or Ottawa. Related industries sprang up in towns all along the Rideau and Ottawa Rivers: axe and tool, furniture, sash and door, shingle, and match factories in the towns of Aylmer, Pembroke, Arnprior, Renfrew, Braeside and Hawkesbury provided employment for the inhabitants of the valley and encouraged new settlement. These related industries both stimulated the forest economy and helped to diversify the timber trade. But the shanty man, replaced though he was by millworkers and railwaymen, survived in song and legend as the true spirit of the Ottawa Valley (Brennan).

### 2.6.5 Transportation and Communication

The improvement of transportation by river facilitated the waves of settlers of the 19<sup>th</sup> century. This included the appearance of canals, timber slides, steamships and portage railways. Settlements arose at ferry landings and steamboat wharves, such as the 'stopping places' and hotels serving steamboat travelers between Pembroke and Mattawa (Kennedy 204), and the famous wharves of Prescott-Russell. The Ottawa Valley's first railroad, the horse-drawn Union Rail Road circumventing Chats Falls, led to the small community of Union Village at its up-river end (Kennedy 144).

In the short term, improvements in transportation also contributed to new settlements by fuelling local industry. For instance, building the Rideau Canal and later the Ottawa River canals created jobs for many skilled labourers, drawing new settlers to the region. Building the Rideau Canal required a constant supply of cement, provided by Hull (Gaffield 187). Expanding traffic on the Ottawa River led to barge and steamboat building in the region in the mid-19<sup>th</sup> century (Gaffield 187).

People traveled by river or by foot as building roads progressed slowly compared to canal construction, and the lack of roads isolated many of the settlers. Ottawa Valley lore tells us that Scottish settlers and friends James McArthur and John Anderson settled within a few miles of each other in 1818 in the Beckwith Township, living there for two years before they realized they were neighbours (Legget 1975: 198).

Local landowners Papineau and Wright worked together to build some of the early roads (Gaffield 144). In the 1850s, the newly formed Canadian government tried to encourage settlement of Upper Canada by building a system of roads and offering each settler 100 acres of land adjacent to the road. In 1853, work began on the Ottawa and Opeongo road, a colonization road beginning on Lac des Chats (Kennedy 16). Although the road never actually extended more than a few kilometres from the village of Madawaska, it did lead to some new settlement. By 1858, two hundred mostly Irish families had come up the Ottawa River and settled along the road. The next year, 14 families arrived from Poland (Kennedy 150). Today's town of Renfrew stands on the site of a 'stopping place' along the Opeongo road (Kennedy 186). The historic road has been indicated, and you can still see logs used to build the corduroy<sup>11</sup> road and ruins of log cabins (Legget 1975: 205 and Kennedy 149).

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<sup>11</sup> A road made of tree-trunks laid across a swamp.

The construction of bridges on the tributaries of the Ottawa River and between Hull and Bytown improved land transportation and helped overcome the limits of river transport. The first bridge across the Ottawa River opened in 1828 at the Chaudiere Falls. By 1843, an iron suspension bridge over part of the Chaudiere Falls connected Ottawa and Hull (Gaffield 111-112). In 1931, the Perley Bridge connected Hawkesbury with Grenville and facilitated economic development in the region (Friends of the Macdonell-Williamson House 12).

The arrival of the railway in the 1880s greatly facilitated settlement, although by taking away from steamboat traffic it diminished the importance of wharf-based communities.

### 2.6.6 Ottawa – The Capital City

Gordon Cullingham  
Historical Society of Ottawa

The City of Ottawa is the largest community on the Ottawa River, located at what famous historian Lucien Brault called “the most strategic and historical point on the Ottawa River” (Ottawa – Old and New 33). What began as a company town established to build the Rideau Canal was to become in 1858 the Capital of Canada. In 1828 it was named Bytown by and after its founder, Lieutenant Colonel John By of the Royal Engineers. By had been sent to Canada by the British military

**Figure 2.36 Under Dufferin Bridge**



**Figure 2.35 Parliament Buildings, Ottawa, From the Opposite Side of the Ottawa River**

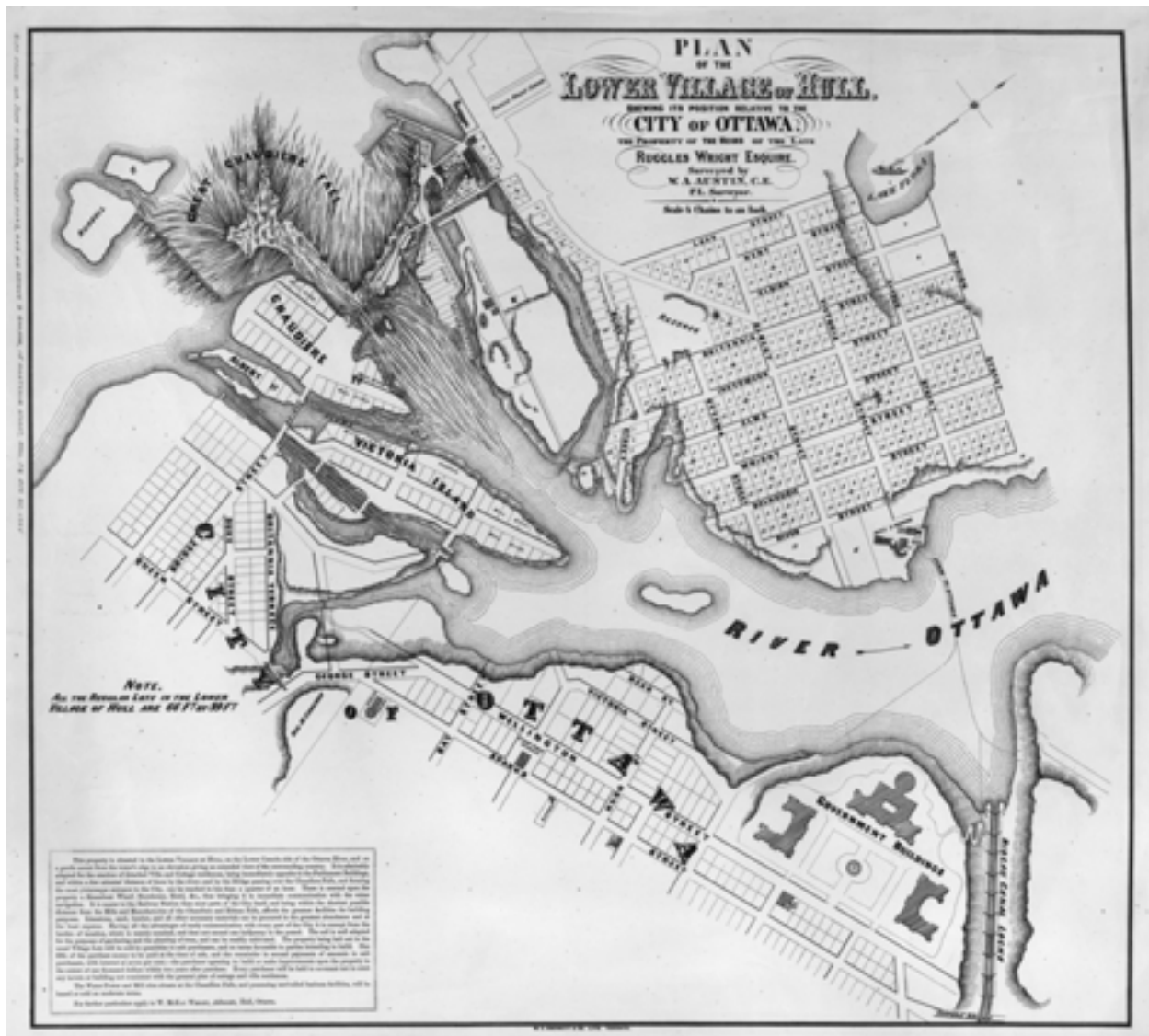


Source: Archives of Ontario. F 1077-9-1-25-3.  
John Langdon family fonds

to construct the Rideau Canal in 1826, seven years after the canalization of the Ottawa River between Montreal and Bytown had already begun. The Rideau Canal would link Bytown to Lake Ontario at Kingston. Together with the Ottawa River canals it would provide a safe route for shipping of all kinds between Montreal and Lake Ontario to avoid the International Rapids section of the Upper St. Lawrence, open to the Americans on the opposite shore.

Source : Pictresque Canada

Figure 2.37 Plan of the Lower Village of Hull, 1882



Source : W.A. Austin, W.C. Chewett and Co., Ruggles Wright Library and Archives Canada/NMC 20966

The capital region, comprised of the municipalities of Ottawa and Gatineau, is home to three rivers and a canal. The site brings together the mighty Ottawa and the romantic Gatineau with the now designated Canadian Heritage River, the Rideau, as well as with the Rideau Canal, poised to be declared a World Heritage Site by UNESCO.

Until Colonel By arrived to put this strategic junction on the map, it had been developing as a vigorous agricultural community begun by Philemon Wright around 1800. Wright had settled on the north shore of the Ottawa River near the Chaudiere Falls. He soon found that he was surrounded by saleable trees - white and red pine - for which Napoleon's blockade of Scandinavian timber bound for Britain had created a huge demand. By 1808 Wright was floating rafts of squared logs down the Ottawa, into the St. Lawrence at Montreal, and then on to Quebec City. The timber trade had begun, and for the next century log rafts were a constant presence on the Ottawa. But around 1850 the traffic began to change. The

development of steel had made the circular saw capable of ripping those giant logs into lumber. As the demand for logs diminished and the demand for lumber increased, the market began to shift from Britain to the United States. Unlike logs, lumber couldn't be cribbed and floated, but had to be shipped dry, in those days either in boats or railway cars.

Across the river from the eponymous Wrightsville (later Hull, and still later Gatineau) there wasn't much. Braddish Billings arrived in 1812 and a few other scattered settlers struggled. That isolation changed with canal construction and the influx of Scottish masons, English engineers, Irish and Quebecois laborers and American navvies. The Ottawa and Rideau Canals opened in the early 1830s. Canalization of the St. Lawrence was complete in 1850. For the previous eighteen years Bytown had been the fulcrum in a thriving traffic rotation that saw ocean vessels offloaded (both freight and immigrant passengers) in Montreal, onto the smaller canal boats, then up the Ottawa River, into the Rideau system at Bytown, then down to the entrance to the Great Lakes at Kingston. There their cargo was transferred to larger lakers, and the boats were then reloaded with goods from the Great Lakes and sent downstream to shoot the (Long Sault) Rapids on the St. Lawrence back to Montreal to complete the triangle...and then to do it all over again. The Lachine and Welland Canals were already there to welcome them at both ends.

**Figure 2.38 Ottawa City, Canada West (UpperTown), 1855**



Source : Edwin Whitefield/Library and Archives Canada/C-000601

This shipping activity in Ottawa came to an abrupt end in 1850 when the St. Lawrence Canals were completed and ocean ships could go straight through to the Great Lakes. Ottawa was no longer on the route. At the same time, other developments resulted in an explosion of activity, as the islands of the Chaudiere were about to become the biggest sawn lumber location in the world. American entrepreneurs



like Bronson and Eddy were moving in and setting up their sawmills. By 1855 the Bytown and Prescott Railway was in place, moving their lumber to the St. Lawrence. Lumber was then taken by boat across that river to connect with U.S. lines, or by boat downstream to Sorel, where it entered the Richelieu River via the Chambly Canal and continued on to Lake Champlain and so into the Erie Canal system. The very

first railroad in Canada had been built in 1836 in order to vastly shorten this distance. It ran from Laprairie, on the south shore of the St. Lawrence at Montreal, to Saint-Jean-sur-Richelieu.

**Figure 2.39 Opening of the Parliament Buildings, June 8, 1866**



Source: Library and Archives Canada/PA-120586

These developments meant increased activity and population for Bytown — no longer a village but a town — but chafing now under its undignified and belittling appellation. So humble Bytown became ambitious Ottawa in 1855. This era saw the arrival of railroads, a navigable Ottawa River, a seemingly inexhaustible hinterland of wealth-producing forest, a free-trade treaty with the United States, the adoption of the dollar as the official currency, and the arrival of standardized time. Soon, on December 31, 1857, Ottawa was declared the

**Figure 2.40 Bird’s Eye View of the City of Ottawa, 1876**



Source: Herman Shober-Brosius, Library and Archives Canada/NMC 21082

capital of the United Province of Canada– the greatest political garland of all.

That promotion over Toronto, Kingston, Montreal and Quebec was the start of a new influx of people who were highly educated with standards of architecture, dress, consumption and behavior unknown to the raftsmen, Shiners and unassuming tradesmen and merchants of rowdy Bytown. Barrack Hill, that had once housed Colonel By's military units and a hospital, became the site of the new Parliament Buildings. Government penury stalled the construction of the Parliament Buildings for a few years, but they opened in all their glory for the last session of the parliament of the Province of Canada in 1866.

Depression came and went during the rest of the century, but the forest products trade flourished. J.R. Booth arrived from the Eastern Townships to become the world's leading sawyer. He built a railway to move his logs from Georgian Bay to Ottawa, to be ripped and moved on as lumber to Coteau Landing on the St. Lawrence, where there were many entries to the United States market.

This sawing took place at the Chaudiere, central to the economy of the whole region. The logs passed through a series of chutes. The might of the falls was converted into electricity on both sides of the river by the Provinces of Quebec and Ontario. Mills were built, the lumber piles grew, and matches were made. One of those matches probably started the fire - the "Great" one - that destroyed most of Hull in 1900, where it began, and much of Ottawa, by jumping from lumber pile to lumber pile across the islands of the Chaudiere. That was the first demolition of Lebreton Flats. Over ten years, J.R. Booth was the victim of three vicious fires, but he still ended up leaving millions when he died in 1925 at age ninety-eight.

The excitement of Ottawa's first century of intense self-discovery cannot be matched by the one that followed. Still, a lot happened. There were two world wars, the formation by the federal government of a series of commissions (Ottawa Improvement Commission, Federal District Commission and National Capital Commission) designed to make Canadians feel proud of their capital, and the arrival of the electronic revolution, giving Ottawa another surge of energy and activity. Finally, in 2001, the amalgamation of the surrounding area created a new City of Ottawa, about ten times the size of the 60,000 it contained a century earlier.

The Grand River had delivered its richest prize.

### **2.6.7 Settlement of the Upper Ottawa River Valley**

The majority of settlers remained on the lower sections of the river. This tendency is reflected in present demographics, with smaller populations along the Upper Ottawa Valley. The source of the Ottawa is located in a wilderness area that remains sparsely settled even today, with only a few small villages, fishing cabins and former logging camps.

The earliest settler on the Upper Ottawa was Joseph Mondion who established a farm in 1786 on Pontiac Bay. In 1818, Charles Shirreff and his sons settled on a land grant at "The Chats", later Fitzroy Harbour (Kennedy 14). In the decades that followed, Shirreff and his sons undertook some early surveying and exploration to promote the idea of a ship canal to Lake Huron. In 1837, renowned land geographer David Thompson took up the cause and surveyed the Muskrat Lake region (Kennedy 24, 130).

Other than widely separated individual frontier farms supplying lumber camps, in the 1820s the settlers furthest up the river included a few settlers in Horton Township, and a very isolated group of settlers on

the north side of Lac des Chats in Clarendon Township. Pembroke began in 1828 when Peter White set up his lumbering headquarters at the mouth of the Muskrat River (Kennedy 25). During his trip along the Ottawa River in 1837, provincial surveyor William Hawkins observed some “scattered settlements along the Ottawa as far north as the Deep River” (Finnegan 219). In 1847, surveyors arrived in the Fort William area, noting “extensive Canadian, Irish and Scotch Settlements” (qtd. in Kennedy 96). In 1857, Robert Hamilton’s surveys of the Rolph and Buchanan townships showed that the population was still sparse, with only fourteen households along the shore of the Ottawa River in Buchanan Township (Kennedy 220).

Chief Trader Robert Hamilton found settlers already on Lake Temiskaming in 1865 (Mitchell 220). Most had initially come for the lumber trade and had turned their attentions to farming and trading furs when their lumber efforts failed (Mitchell 221). Transport of supplies up from Mattawa was challenging. Organized settlement of the lake came about through the Oblates’ ‘Old Mission’ (1863) and small farms. Later, they expanded their farming operations on the Quebec side of the lake at Baie des Pères. The extension of the Canadian Pacific Railway to Mattawa after 1880 attracted more settlers. Oblate Father Paradis in 1882 made an assessment of the lake for its farming potential and dreamt of flooding the rapids below the lake to improve access (Mitchell 225). The Bishops of Ottawa and Pontiac formed the *Colonization Society of Timiskaming* to settle the lake’s northern stretches, promoting a series of roads with horse-drawn tramways linked with steam service to facilitate access to the area (Mitchell 226).

Mining led to the development of some towns near Lake Temiskaming. Cobalt’s silver mining sites drew 12,000 people to serve 100 mines in the early 1900s; an opera house and stock exchange were built to serve the population. The communities of New Liskeard and Haileybury at the northern tip of Lake Temiskaming serve a pocket of rich agricultural land known as the “Little Claybelt”. The beef and dairy farms of northern Temiskaming are exceptional in this region dominated by mining and forestry (Great Canadian Rivers website). Indeed, during the Depression, some settlers from the Outaouais moved to the Témiscamingue and Abitibi regions of Quebec to farm or mine (Gaffield 337).

### 2.6.8 The Culture and Diversity of the Settlers

Three main cultural groups were drawn to the Ottawa Valley in the early 1800s – the Scots, French Canadians and the Irish. Other groups settled later in the Ottawa Valley, including French Presbyterians, Belgians, Swiss, Italians, Germans, Poles, and United Empire Loyalists. Most of these smaller groups remained relatively distinct, settling together, retaining their own language, and often establishing their own churches.

The Irish were the single largest European group in Upper Canada for most of the 19th century (Akeson 9). Waves of immigration to Upper Canada in the early 1800s brought Irish Protestant farmers and landless tenants from the counties of Cork, Tipperary, Wicklow, Tyrone, Cavan and Fermanagh. The first Irish families in the Ottawa Valley were attracted by opportunities of canal building, agriculture and lumbering, and included names such as Ryan, Murphy, Muldoon, O’Brien, O’Grady, O’Hara, Boyle, Fitzgerald and Callaghan. After participating in the backbreaking work of building the Rideau Canal, many stayed on as farmers.

By the mid-19th century, more than half of the settlers on the Ontario side were of Irish origin. Waves of immigration continued to bring mostly Catholic Irish. In Carleton County, Ontario and Pontiac County on the Quebec side, seventy-five per cent of residents were of Irish origin. The Ottawa Valley’s patterns of

Irish immigration shaped the history of communities such as Carp, Renfrew and Fitzroy Harbour (Ontario), and Shawville, Bristol and Quyon (Quebec).

A British government plan to alleviate Irish poverty led to the immigration of almost 500 Irish to the Bathurst District of the Ottawa Valley. Known as the Peter Robinson settlers after the member of the Upper Canada Assembly who organized their immigration, the immigrants came across in 1823 in the *Hebe* and the *Stakesby*, settling on farms in Lanark and Carleton County. Most hailed from Cork County in Ireland. A government grant including the transatlantic fare, land, shelter, tools and food for the first several months helped them establish themselves. Names such as Phelan, Quinn, Sweeny, Barry, Hennessy, Keefe and Noonan date from this wave of immigration (Great Canadian Rivers). With the help of Chief Archibald McNab in 1823, a group of Scottish Highlanders arrived to the Upper Ottawa Valley, and were granted land near Arnprior, McNab Township, and around the Madawaska River (Kennedy 109-110).

**Figure 2.41 Lumbermen Enjoying Making Music With a Fiddle and Sticks in a Logging Camp, ca. 1943, Gatineau, Quebec**



Sources: e000762887/National Film Board of Canada. Phototheque Collection/Library and Archives Canada.

When Irish immigration ceased around the 1880s, Ottawa Valley Irish culture started to become distinctive. With no more contact with Ireland, it merged somewhat with French Canadian and other settler cultures. This led to a distinctive Ottawa Valley style of step-dancing, fiddling and song (Rivers Inc.: Ottawa River Culture). Various distinct dialects have been identified in the Ottawa Valley.

In the Outaouais, Irish immigration predominated for the first half of the 19<sup>th</sup> century. The second half of the 19<sup>th</sup> century saw fewer Irish and the growth of the existing French Canadian population. A majority of Irish populated the west part of the Outaouais, whereas the east Outaouais was mostly French Canadian (Gaffield 113). Difficulty acquiring land in the Outaouais meant that a significant number of French-Canadian labourers crossed the river to pursue their ambition in developing townships of eastern Ontario. By 1871, French Canadians were in the majority in places

like Prescott (Gaffield 199). Today's town of Hawkesbury is considered the most bilingual in North America with 90% of its population speaking both French and English (Friends of the Macdonell-Williamson House 12).

Through the leader and associates system, hundreds of Scottish immigrants arrived and took up land in eastern Upper Canada. Some resettled to a rural settlement east of Hull in Templeton, Lochaber and Grenville townships, where Gaelic and bagpipes were soon heard (Gaffield 127). Scottish immigrants named and settled Arnprior (Kennedy 164), and settled the Lower Bonnechere, a tributary of the Ottawa (Kennedy 190). Skilled Scottish weavers formed the community of Lachute in 1803-1805 (Legget 1975: 180).

In the mid-19<sup>th</sup> century, two distinct German settlements were established near Shawville and in the lower Lièvre River valley. German Lutheran pioneers first settled near Petawawa around the same time (Kennedy 201). By the 1880s, at Namur and Angers, a francophone Protestant group of European origin was established (Gaffield 114). Polish and German immigrants came up the Ottawa and settled around Wilno along the Opeongo Road in the mid to late 19<sup>th</sup> century (Legget 1975: 207).

A small group of American settlers hailed from New England, the best known of whom was Philemon Wright. Leaving behind congested land, they were hopeful about the potential of the frontier (Gaffield 124). Tiny pockets of Ottawa Valley residents can trace their origins to United Empire Loyalists arriving to the Petite-Nation seigneurie and Prescott-Russell, including Hawkesbury.

Settlers shared some common attributes. Family was the strongest unit, and parents often worked with their grown children on farms and in lumber shanties. The Ottawa Valley culture was primarily made up of labouring men, since many came as single settlers hoping to make enough money to marry and raise a family, leading to the “culture of masculinity” mentioned previously. The settlers imported the *shivaree* from Europe, a rough justice to punish socially unacceptable behaviour. For instance, an older man marrying one of the few eligible young women merited the public humiliation of the *shivaree*. Offenders could be covered with oil and feathers and taken for a rough ride on a pole.

Despite the predominant “culture of masculinity”, women played an active role in the settlement of the Ottawa River valley. During the fur trade era, a few women were reported at some of the forts (Gaffield 100-101). Philemon Wright’s wife Abigail kept her husband informed about his enterprises while he was in Quebec City on business trips. Letters written from Abigail to Philemon Wright survived and became a source of information about life in the area. Other women sometimes took over businesses when their husbands died, occasionally running or working in a tavern (Gaffield 134). Women helped on the family farms and they and their older children often worked in sawmills. By 1865, the majority of teachers in the Outaouais region were women (Gaffield 236).

The Church played a role in the settlement of the Ottawa Valley with many priests and ministers reaching their communities by snowshoe or canoe. It was hoped that schools would also help to civilize the population, and the first teachers arrived in the 1820s. For many years, attendance was sparse since children were often needed on the family farm and sometimes had to travel long distances to school.

### 2.6.9 Recent Settlement Along the Ottawa River

Later economic diversification led to a more contemporary phase of settlement. By the 1870s, places such as Buckingham and Hull were mining phosphates and mica (Gaffield 189). As settlers in the Upper Ottawa Valley observed the lumber activities moving further away from their homesteads, eliminating the possibility of selling their crops to the camps, they turned to mining as a source of additional income from the 1880s to around 1920 (Kennedy 174).

In 1944, construction began east of Chalk River on a secret atomic energy research project (Kennedy 209). The project led to the creation of Deep River in the late 1940s and 1950s, the Ottawa River valley’s most recently established town. Deep River mostly consists of scientists serving the nuclear reactor and is said to have ‘more PhD’s per acre than anywhere else in Canada’ (Finnegan 218).

By the 1930s, active settlement of rural areas along the Ottawa River came to an end, and urbanization had begun (Gaffield 245-7). In the Outaouais region, most of the urban population concentrated near the Ottawa River between Aylmer and Thurso, to municipalities where major industries such as the chemical and forest industries had been established (Gaffield 249).

The initial cultural make-up of the settlers shifted somewhat during the first part of the 20<sup>th</sup> century. In the Outaouais region, the French Canadian population continued to grow, and areas like Papineau County became progressively more French speaking. Other regions retained their initial origins; for example, Pontiac County with its ties to Pembroke in Ontario continued to be mostly English speaking. German settlers continued to predominate in certain towns such as Derry-Mulgrave (Gaffield 342-344). Overall, Catholics were in the majority, although a significant Protestant population and a small but active Baptist Church also existed (Gaffield 344).

### Petawawa Canadian Forces Base Turns 100 in 2005

Initially settled to serve lumbermen and a German farming settlement, Petawawa saw its population increase with the establishment of the military camp beginning in 1905 (Kennedy 205). The base took its name from the Petawawa River, a tributary of the Ottawa River, and an early French explorers' trail passed through this area. In 1904 the Department of Militia and Defence purchase properties from these settlers totalling 22,430 acres.

**Figure 2.42 Petawawa Point – Early Settlement**



Source : Ottawa River Legacy Landmark Network

The first military aircraft flight in Canada took place at Camp Petawawa in 1909 with the aircraft named the "Silver Dart". Petawawa was used as an internment camp for European prisoners during World War I and II, and World War II saw tens of thousands of troops training on the Base. The Base became a permanent camp in 1951, bringing more regular units, married quarters and schools. In the 1970s, the Special Service Force was established, serving operations in Canada and overseas. Currently, around 5000 people live and work at CFB Petawawa (National Defence: History of CFB Petawawa).

In the second half of the 20<sup>th</sup> century, old centres such as Hull grew dramatically as the Outaouais region became more urbanized (Gaffield 441-442). As elsewhere in Canada, new patterns of immigration emerged during the late 1980s. Portuguese immigrants arrived first and settled in Hull. They were followed by Lebanese and Vietnamese immigrants who settled in the Outaouais, reinforcing its francophone character (Gaffield 443).

Highways and bridge improvements are still being tabled in the Ottawa-Hull region (Gaffield 445). In 1969, Hull became part of the nation's capital (Gaffield 459). Today's Outaouais region is highly urbanized, with government and service as major industries. Pulp and paper and other wood processing remain important. The high tech sector expanded in Aylmer in the 1970s and 1980s (Gaffield 503).

## 2.6.10 Sites Related to Settlement

Please refer to Chapter 4: Recreational Values for a list of historic sites, museums and heritage houses relating to settlement along the river.

### Summary

**The Ottawa Waterway attracted thousands of European immigrants. Developments in river-based transportation determined the pace of settlement and brought settlers further upriver. Descendents of Irish, French Canadian, Scottish and other nationalities produced a unique Ottawa Valley culture that is expressed in the region's language, music and dance.**

**The settlement of the Ottawa River valley brought great changes and upheavals to its cultural and natural landscape. Trade, industry, conflict and external politics have shaped this settlement, leaving indelible marks on the river and valley environment. Clearing land for farms and cutting forest for lumber radically transformed the landscape of the valley, sustaining European settlers, displacing Algonquin communities, and fuelling regional development.**

## 2.7 Logging in the Ottawa Valley - The Ottawa River and the Lumber Industry

The decline of the fur trade along the Ottawa River was countered by a boom in the river valley's forest industry. Initially, settlers engaged in lumbering during the winter season to provide an economic boost. However, events in Europe made the Ottawa Valley's squared timber extremely valuable, and set in motion its formidable timber trade, lasting almost 100 years. This booming industry led to the valley's first real waves of immigration, and to a fascinating cultural period in the history of Ottawa River Valley. It is during this era that some of the most important characters in the region's history take stage.

By the time that European demand for North American timber began to decline, the valley's forestry industry was able to refocus on meeting the American market's growing demand for lumber. A new wave of lumber entrepreneurs migrated to the Ottawa Valley, and the period can be characterized by their influence. With time, the forestry industry of the valley was able to further diversify, and remains to this day an important component of the Ottawa River Valley's economy.

The industry profoundly altered the Ottawa River Valley landscape. Towns, log chutes, and many other improvements bear testament to the early days of logging along Ottawa River. As a result of the extensive logging of this period, virtually all of the old growth forest is now gone. In addition, development along the river and the valley to facilitate forestry operations have led to the taming of rapids, altering their appearance and the local river-based ecosystems. Today, the forestry industry is managed with strict regard for its effect on the overall health of the ecosystem.

### 2.7.1 Origins of the Timber Industry

#### The European Context: War

From 1793, Great Britain's economy was largely focused on its 22-year war against France, a confrontation that ended with Napoleon's defeat in 1815. During this period, Great Britain required battle fleets, blockade squadrons, ships for convoy duty, scouting, and service in distant colonial waters. Great Britain wished to control the sea, and to maintain her naval supremacy, required high inputs of pine for masts and oak for decking.

Britain had traditionally relied on trade relations with the Baltic region of Europe for such wood. However, as war with France progressed, trade with the Baltic region became increasingly difficult. Through a series of decrees in 1806 and 1807, Napoleon imposed his Continental System on Europe. This economic blockade limited the Anglo-Baltic timber trade severely, and left Britain searching for an alternative source of timber to meet its wartime needs.

North America was well positioned to provide Britain with the pine that the country needed. Michigan, the region northwest of the Ohio River (known as the old Northwest) and the Trent watershed in eastern Canada were rich in pine forests. However, the great white pine forests of the Ottawa River Valley surpassed all of these regions. The Valley, of course, boasted the added advantage of being accessible by way of the St. Lawrence River. In 1783, Britain's supply of timber from New England was cut off as a result of the American Revolution, making Canada the natural supplier (Legget 1975: 101).



Even under these circumstances, incentives had to be provided before English timber merchants, familiar with trading in the Baltic region, would turn to British North America for timber. The British government guaranteed contracts and offered preferential Canadian tariffs. As a result of these measures, a number of British merchants established themselves in Quebec City where they could easily purchase the logs brought down river and ship them on to British ports. British merchants began purchasing lumber in Quebec City in 1803 (Legget 1975: 101).

### **Philemon Wright: Father of the Ottawa Valley Logging Industry**

The Ottawa River timber trade was possible because of political and economic conditions in Europe, but could not have taken place without the hard work of the early settlers to the valley itself. The story is often said to begin with the vision and work of Hull's founder: New Englander Philemon Wright (1760-1839), who has been described in Chapter 2.6: Settlement Along the Ottawa River.

Under Wright's leadership, much wood was chopped down to clear land for agricultural purposes in the course of early Ottawa River Valley settlement. Most of this wood was put to use regionally, either for heating purposes, or to build houses, barns, or other infrastructure (Cross 20).

**Figure 2.43 A View of the Mill and Tavern of Philemon Wright at the Chaudiere Falls**



By 1806, Wright needed further revenues to continue to support his extensive settlement. He learned that there was an open export market for timber in Montreal and Quebec, and obtained a contract to deliver staves to Quebec City by the end of that July. He and four other men assembled a large raft at the mouth of the Gatineau River and, on June 11<sup>th</sup>, began the 300 kilometre journey for Quebec. This maiden voyage proved to be extremely arduous for the men. Halfway down the river, the raft, christened “Colombo,” broke up several times. Wright and his team spent a month getting through several kilometres of rapids at the Long Sault on the Lower Ottawa. All told, delays cost the men an additional two months (Cross 16).

Wright arrived too late to honour his contract, and was unable to sell his wood until the end of November. That same month, Napoleon would shut off the British-Baltic timber trade. In selling his wood at that time, Wright had unknowingly established the basis for the export of squared timber from the Ottawa Valley. For the next one hundred years, he and others would navigate timber rafts along the course that he had found down the Ottawa River and along the St. Lawrence to Quebec City.

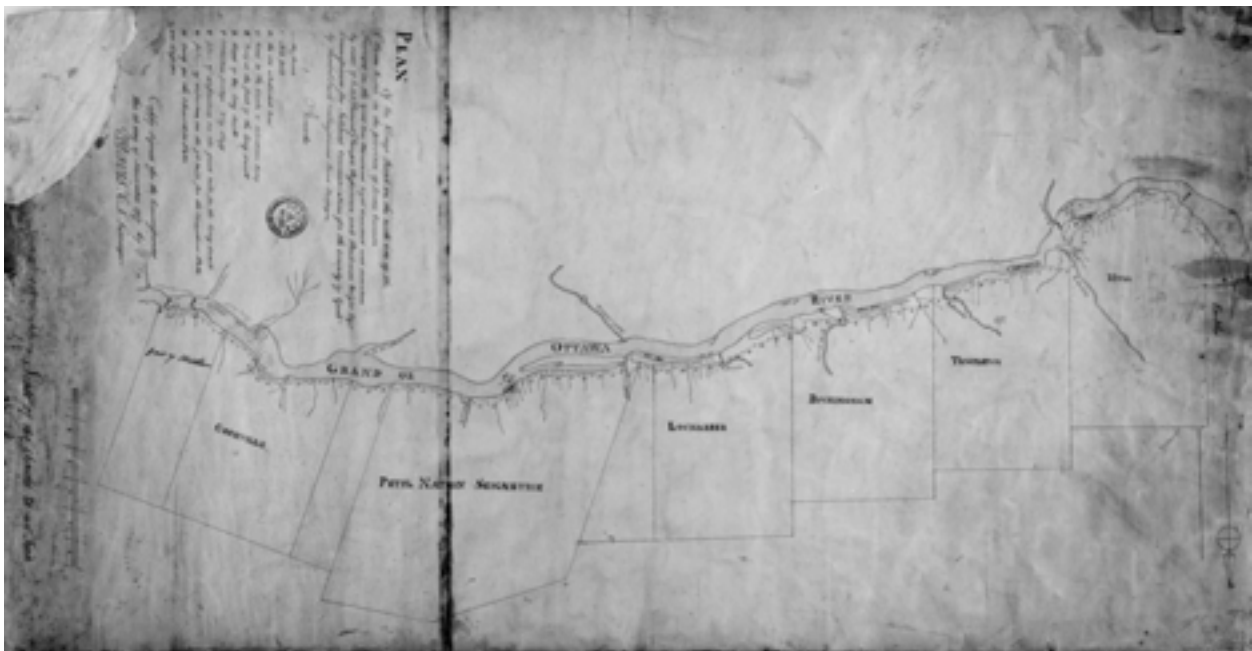
**Figure 2.44 Loggers in Fitzroy Harbour**



Source : Ottawa River Heritage Designation Committee

With Wright’s first sale and Napoleon’s decree, the 19th century era of booming timber trade along the Ottawa was ushered in. During this era, white pine was in ample supply, and even modest family logging operations could be profitable. “Timbering” became part of the seasonal economic cycle of Ottawa Valley settlers, and a welcome financial supplement to subsistence-based farming.

**Figure 2.45 Survey of the North Shore of the Ottawa River Ordered by Wright and Papineau, 1817**



Source : Theodore Dumont Davis, E.N.L. Papineau, Philémon Joseph Wright/Library and Archives Canada/NMC 14307

## 2.7.2 Description of the Timber Industry

### The Hard Work Involved

The predominant ingredient in the success of the lumber industry was the hard work and refined skill of the Ottawa River-men. The rafts that they produced were crafted to a point of structural excellence, and maneuvered with skill from the forests of the interior down to Montreal and Quebec City.

### Squared Timber

Although masts and spars were also exported, squared timber destined for Britain was the main export product from the Ottawa River Valley during the first half of the 19th century. Squared timber held together well in pegged cribs, facilitating its transport downriver by rafting. In addition, this wood could be economically shipped across the Atlantic in ships designed to transport it (Bytown Museum 1999).

Squaring timber was an extremely wasteful process. About thirty percent of the wood of each squared tree was lost, and the entire tree was left to rot if it was discovered that the last side to be squared had too many knots (Rivers Inc.: "Ottawa River"). The technique used only the best trees, and left much debris in the forest, causing a risk of fire (Bytown Museum 1999). Despite these disadvantages, the squared-timber industry rushed to satisfy consumer demand, with a timber-squarer receiving twice the wages of the regular lumberjack who simply felled and trimmed the trees (Rivers Inc.: "Ottawa River").

**Figure 2.46 A Square Timber Raft on the Ottawa River**



Source : Archives of Ontario, RG 1-448-1, 367. Ministry of Natural Resources Photo Library collection.

### The Log Drive

In wintertime, men skidded or hauled the squared timbers to the Ottawa River's nearest tributary. Come springtime, skilled river-men floated the logs along successively larger tributaries until they reached the Ottawa River. Where these rivers became narrower, logs often jammed, causing log drivers to leap instantly into action: jumping from "stick to stick" with the use of a pole, they would search for the cause of the jam and quickly break it. At times, the river's current was simply too strong, and restraining booms would collapse and both timber and profits be swept away (Rivers Inc.: "Ottawa River"). Sadly, such jams also often proved fatal for log drivers.

**Figure 2.47 The Drive**



Source : Picturessque Canada

## The Timber Rafts

If the river-men and their “sticks” arrived intact at the Ottawa River, then the logs were grouped by length and then were built into the now-famous timber-rafts. The timber rafts were unusual, ungainly craft, containing living and sleeping quarters for their passengers, and consisting of up to one hundred separate cribs (Legget 1975: 103). Many rafts were hundreds of metres across.

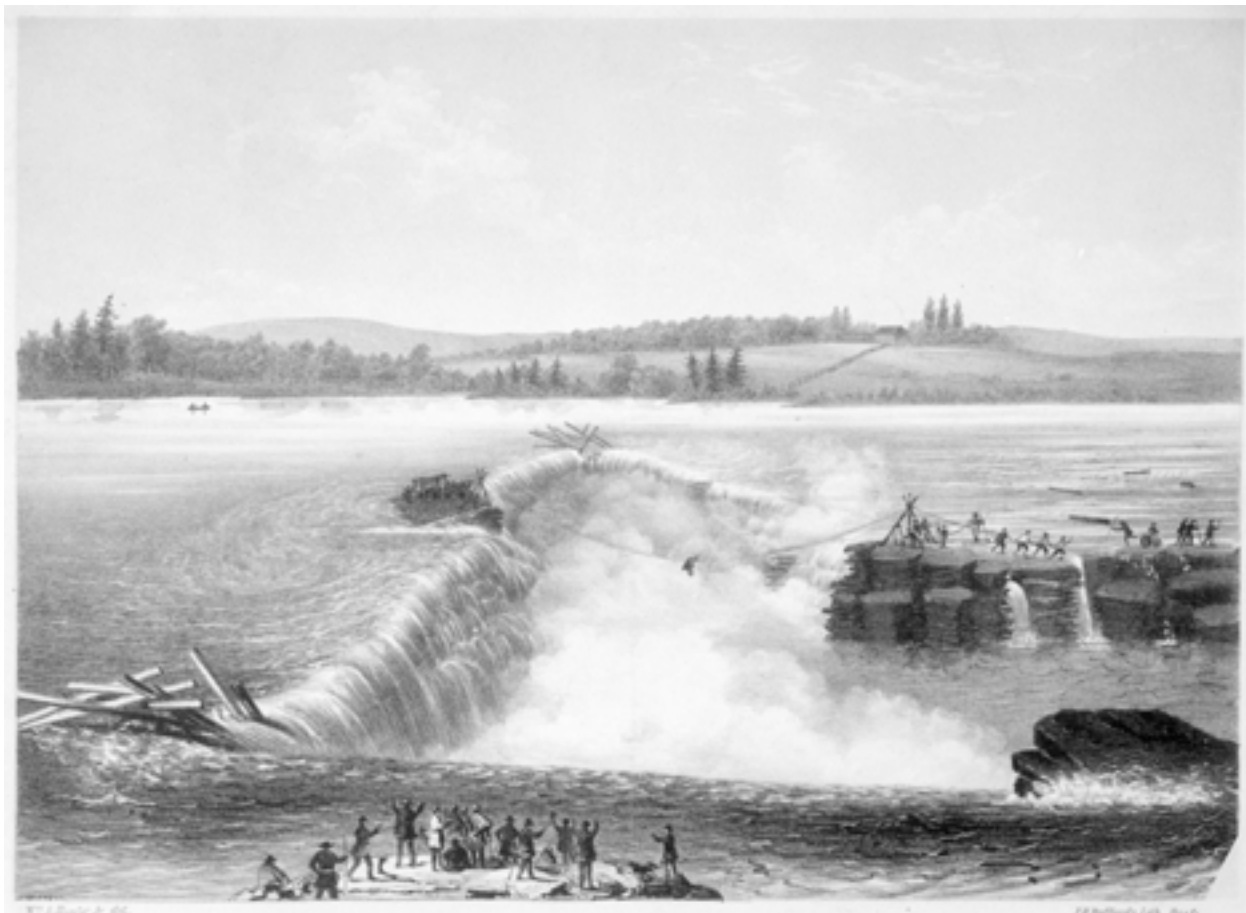
The process of transporting the rafts along the river was arduous and painstaking. Early raftsmen had to contend with frequent interruptions from un-navigable rapids and dangerous waterfalls. At each of these obstacles, raftsmen had to painstakingly take apart and reassemble their raft (Rivers Inc.: “Ottawa River”). The journey from the Upper Ottawa River to Quebec would sometimes take as long as two years (Legget 1975: 104).

**Figure 2.48 Timber Raft on the Ottawa River, ca. 1899**



Source : William James Topley/Library and Archives Canada/PA-144140

**Figure 2.49 Perilous Situation of a Raft, Chaudiere Falls, 1855**



Source : William Stewart Hunter, Jr./Library and Archives Canada/C-040783

### Infrastructure Related to Logging

Constructions to facilitate the passage of logs along the Ottawa and its tributaries were among the first public works in Canada. Remains of these constructions still exist today. In 1829, at the present site of Hull, Ruggles Wright (one of Philemon's sons) built the first timber slide. This wooden chute was sized to accommodate large sections of rafts as they passed safely around the Chaudiere Falls, previously a major obstacle for the log drive, causing enormous losses of time and money. Other timber barons soon followed, and slides were built wherever rushing water was an obstacle. Colonel By, one of Ottawa's most famous founders, built a slide on the Bytown side of the river. Some slide-owners, such as George Bryson at La Grade Chute near Fort Coulonge, began charging competing timber operators tolls for passage (Rivers Inc.: "Ottawa River").

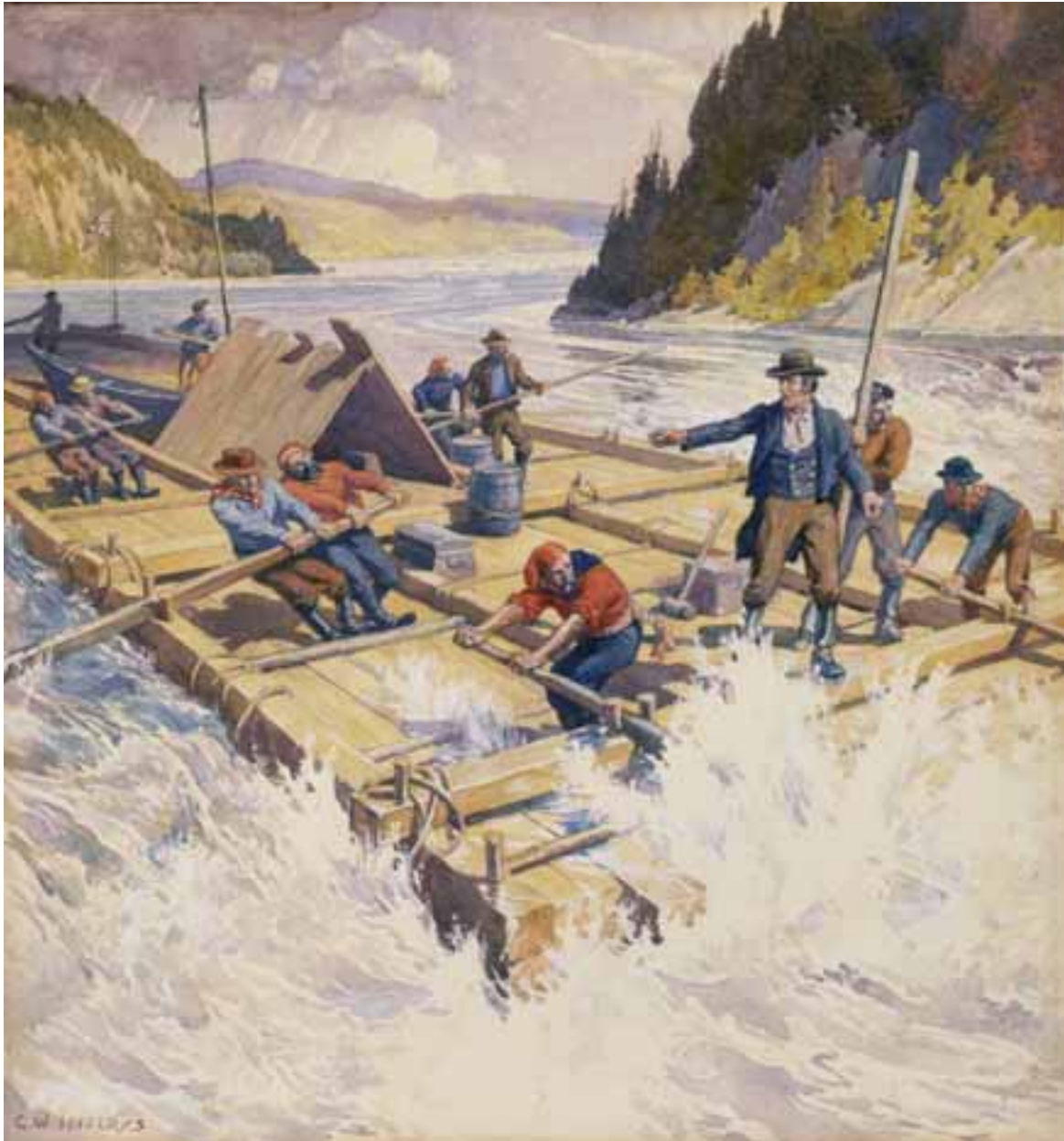
From 1826 to 1832, Colonel John By oversaw the construction of the Rideau Canal. This channel, situated on the south end of the Ottawa River, increased the importance of the river system by allowing timber to be transported inland and to distant markets. Furthermore, the creation of the canal attracted further settlement of the south shore of the Ottawa (ORIDP 15).

**Figure 2.50 Timber Slide With Raft at Bytown, ca. 1851**



Source : Alice Mary Fulford/Library and Archives Canada/C-040277

Figure 2.51 The First Lumber Raft Down the Ottawa River



Source : Charles William Jeffreys Library and Archives Canada/C-073702

### Timber Slides as Entertainment

Visitors to Canada would watch the large timbers plunge along the descent with fascination, and were occasionally allowed to experience the thrilling ride down a log slide themselves. During a carefully orchestrated reception of Edward Prince of Wales in 1860, the prince was escorted down the slide by expert river-men in a specially prepared timber crib and greeted at the bottom by costumed lumbermen. The spectacle was witnessed by thousands of entertained onlookers (Legget 1975: 107).

**Figure 2.52 The Duke and Duchess of Cornwall and York Running the Chutes at Ottawa, 1901**



Source : Mrs. John H. Acheson/Library and Archives Canada/PA-057311

**Figure 2.53 Regatta on the Ottawa River During the Visit of the Duke and Duchess of Cornwall and York, 1901**



Source : William Gamble / Library and Archives Canada

### Just how good were they?

In 1884, the British house of commons granted 300,000 pounds toward a relief expedition for General Charles Gordon who was isolated on the Nile at Khartoum, the present-day capital of Sudan. Recalling his experience with the Canadian river-men and voyageurs, the General looked to Canada for the expertise required to manoeuvre the rapids of the river. Three hundred voyageurs were commissioned (Legget 1975: 125).

**Figure 2.54 Loggers Poling the Raft**



Source : Archives of Ontario, RG 1-448-1, 372. Ministry of Natural Resources Photo Library collection

## Lifestyle at the Lumbercamps

The economic conditions favouring the timber trade also contributed to a fascinating chapter in Canada's cultural history. The Ottawa River Valley cradled the emergence of a unique logging culture, characterized by the way of life of its lumbermen.

These men would spend the most part of each year living in isolated lumber camps. The men would sleep in a large cabin built out of round logs that was furnished with bunk beds and a large table with chairs for the meals. In the middle of the room, a fire burned continually in a sandpit. Lumber camps were abandoned and relocated once the surrounding forest was totally harvested. Pioneers supplied the camps, selling items such as beans, lard, flour, and pork meat, all typical fare for an Ottawa River Valley logger (CLD du Pontiac: "The Log Drive").

The men worked hard, usually six days a week. They spent their Saturday nights fiddle-playing, dancing, singing and telling stories, as they were able to sleep in on Sundays. They referred to their dancing as "buck-dancing" because there were no women with whom to dance. Some of the men would wear kerchiefs around their waists or over their heads to play the part of the women in the dances (Bytown Museum 1999).

A lively mix of musical and storytelling styles was created due to the wide variety in the men's backgrounds. Their shanty songs are known collectively as "Come all ye's", because so many of them began with just those words. There were many such songs, sung in both French and English, mentioning the names of real people, places and events (Bytown Museum 1999).

In his 1895 book, Up To Date or The Life Of A Lumberman, George S. Thompson wrote of the lumberman's somewhat crude lifestyle:

"Sunday is cleaning up day, the men doing their washing and mending on that day, that is the few who would go to that trouble. Quite a number would never change their underclothes or shirts until the clothes wore out, and as to washing their feet, such a thing never entered their minds" (Bytown Museum 1999).

The lumbermen developed a reputation for being rough and at times troublesome. Upon their return to Ottawa, these men often became quite rowdy, and brawls and damage to public property were common. Loggers often easily handed over much of their winter earnings to merchants, barkeepers, and others shortly after their return to town. The Ottawa citizens may have viewed the loggers' behaviour as disgraceful, but because all knew well that lumbering was then the lifeblood of the economy, they often turned a blind eye (Bytown Museum 1999).

Figure 2.55 Inside a Shanty



Source: Archives of Ontario, C 120-3-0-0-125, Charles Macnamara's glass negatives.



## A Lucrative Industry

The logging industry from the early to the mid-19th century experienced rocket-like growth. A raft containing from 2,000 to 2,400 timbers would be worth roughly \$12,000 in the middle of the century. Although some red pine was usually included, most of the wood harvested was the more valuable white pine. As supplies of timber diminished, its price rose. By the turn of the century, that same raft would be worth over \$100,000 (Legget 1975: 103).

By the time the last timber-raft departed in 1908 under the direction of J.R. Booth, the industry had prospered to such an extent that rafts typically transported 80,000 to 120,000 cubic feet of material.

### 2.7.3 The Rise of the Sawn Lumber Industry (1850-1900)

As the forests of New England were increasingly depleted, the wood demands of the American market began to compete with British requirements. For the most part, the Americans wanted sawn lumber. As a result, the squared timber market along the Ottawa River valley began to decline after 1870 (Brennan).

Meeting the needs of this emerging American market necessitated changes in the Ottawa River valley. While squared timber had been a relatively small-scale operation, the production of sawn lumber required the development of sawmills, and the capital to invest in this development.

**Figure 2.56 Eddy's Mills, 1912**



Source: William Thomson Freeland/Library and Archives Canada/PA-029823

To meet this challenge, the Ottawa Valley lumber barons began to appear in the 1850s. Americans Levi Young, H.F. Bronson, E.B. Eddy, C.B. Pattee and W.G. Perley, now renowned players in the river's history, all moved into the valley and founded timber dynasties during this period. Some of the barons were Canadians, such as John R. Booth, J. Gillies, D. McLachlin, and A. Gilmour. These lumber barons oversaw the cutting of timber for the New York and Boston markets. The wood was exported by way of the new railways and along the Richelieu River through Lake Champlain and into the Hudson River system (Brennan).

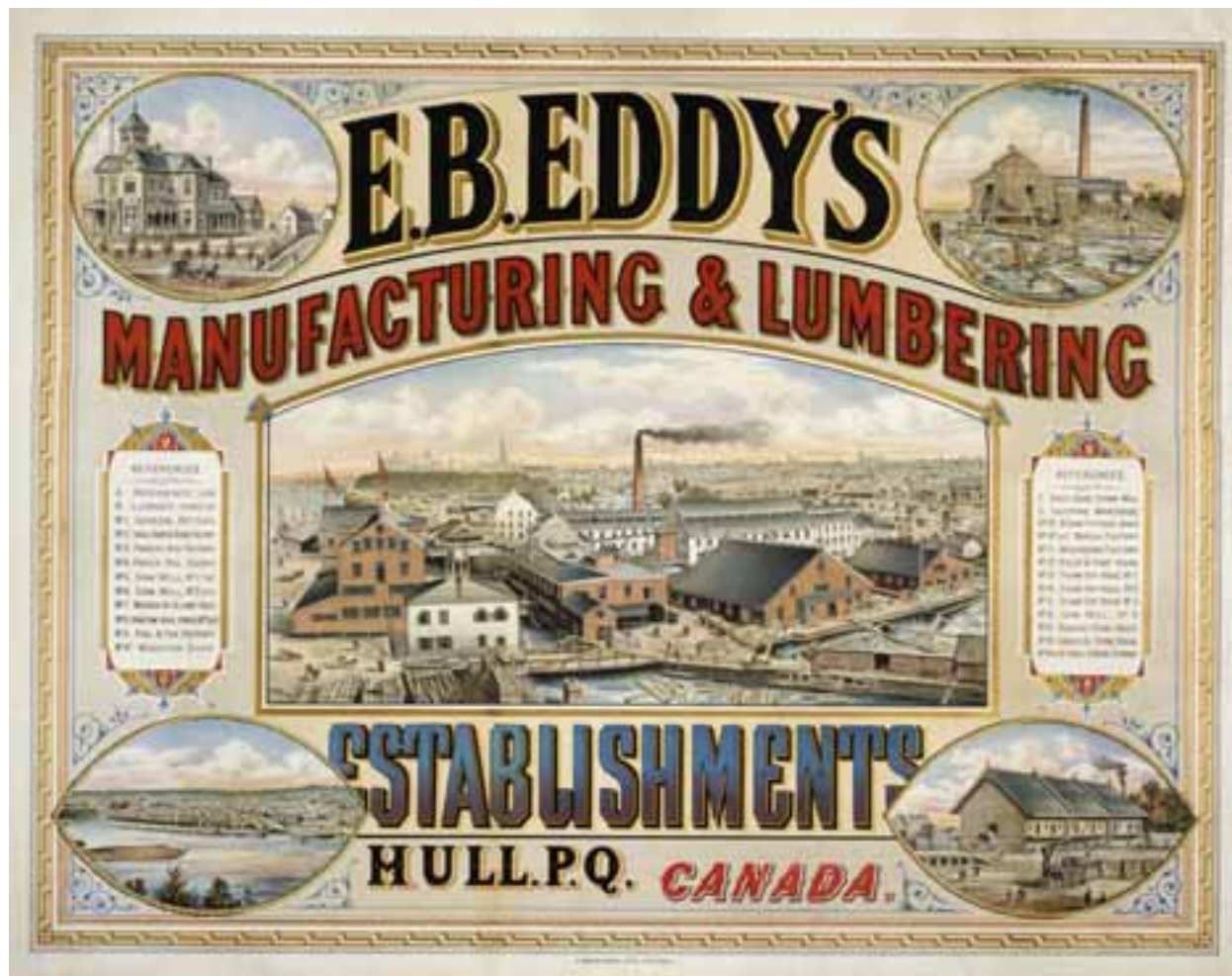
**Figure 2.57 John R. Booth**



Source: John Wycliffe Lowes/Library and Archives Canada/IC-006227

Ezra Butler Eddy and John Rudolphus Booth, more than any other lumber barons of the period, can be said to have dominated the Ottawa River Valley's forest industry. Around 1851, Ezra Butler Eddy started a little match factory in Hull. In 1857, he began producing wooden buckets, and in 1866, built a sawmill. His factory was located above the falls near Montcalm Street. Eventually, it extended as far as the Alexandra Bridge. John Rudolphus Booth arrived in the Outaouais in 1852. In 1858, he launched his own business in Hull with a sawmill on the shores of Leamy Lake. In 1871, everything was running at full capacity, and the six large sawmills of the Chaudiere district produced around 30 million board feet of wood (ORIDP 16).

**Figure 2.58** E.B. Eddy's Manufacturing and Lumbering Establishment, ca. 1884



Source : J.H. B., Library and Archives Canada/C-121146

### Sawmills

As the lumber market grew, it became increasingly advantageous to establish sawmills. Small companies harnessed the power of the more easily controllable waterfalls of the river and its tributaries. Large sawmills were set up close to the falls and rapids that could be harnessed to produce the hydraulic energy (and later hydroelectric energy) required to operate the mills. Among the most prominent were the sawmills of Bytown, Hull, and Buckingham. These mills attracted a great many settlers, and thriving communities emerged around them.

**Figure 2.59 Side View of Mill**

Source : Archives of Ontario, C 120-3-0-0-3, Charles Macnamara's glass negatives.

**Figure 2.60 Logging Mill in Arnprior**

Source : Ottawa River Heritage Designation Committee

To best meet the economic needs of the time, technology emerged in the sawmills along the Ottawa. Economical production depended on the speed at which logs could be sawn into boards, leading to the invention of a wide variety of saw types. Saw operators had difficulty keeping pace with these new faster saws, causing the mill to become “back-logged.” To address this problem, further technology was invented to “clear the saw” (Brennan). The mills also employed other innovations in steam power and water wheels. The resulting increase in production volume was astounding: in 1858, the Ottawa region produced between 20 and 25 million board feet. By 1871, this number had risen to between 236 and 260 million board feet (Brennan).

During this period, mill waste led to an increased risk of fire. Records show that mill fires were a relatively frequent occurrence. Of course, fires were not constrained to the mills and the presence of lumberyards rendered surrounding regions vulnerable. Hull was partially burnt down in the fires of 1875, 1880 and 1888 (Legget 1975: 124).

### Changes in Transportation

The steadily increasing freight traffic on the Ottawa River called for the development of more efficient transportation means. The development of steamboat transportation marked the end of the log driving on the Ottawa River. The process continued on a couple of its tributaries, but slowly disappeared as the railroad and then the road appeared.

The advent of steam power revolutionized the sawing industry to such an extent that

**Figure 2.61 A Steam Tug**

Source : Picturessque Canada

product storage became a problem. Barges were developed to address this problem, and so began the barge-building industry on the Hull side of the river. This industry became particularly important as the building of steam-tugs began. Transportation and shipping was yet another flourishing complementary industry. Under the direction of Dennis Murphy, almost all the organizations concerned with lumber shipments amalgamated in 1892. The resulting consortium was the Ottawa Transportation Company (Legget 1975: 121).

### The End of the Sawmill Era

At the beginning of the 20<sup>th</sup> century, the sawmills moved to the north of the region as the southern areas became deforested. The large sawmills of the region collapsed after the turn of the century, with the Hull fire of 1900 marking the start of this inevitable demise. Today's pulp and paper industry eventually replaced these small forest industries.

## 2.7.4 Today's Diversified Forestry Industry

Although the legendary timber rafts of the 19<sup>th</sup> century have long ago disappeared from the Ottawa River, logging trucks can be seen regularly on the highways of the Ottawa River corridor. The region's forests now support pulp and paper as well as newsprint production plants in Ottawa River communities, including Masson, Buckingham, Thurso, Hull, and Temiskaming (Rivers, Inc.: "Ottawa River"). Primary wood industries and sustainable forest licences on the Ontario shore are located around Lanark, Eganville, Pembroke and Petawawa (OMNR: "Healthy Forests").

Capitalizing on the presence of both the forests and the rivers, this new industry grew rapidly in the early 20<sup>th</sup> century. The Outaouais region, however, continued to depend to a large extent on the big sawmills located around the Chaudiere Falls on the Ontario and Quebec shores right up to the 1920s. The E.B. Eddy Manufacturing Company, a pulp and paper mill, was founded in 1886. J.R. Booth also branched into the pulp and paper business. Between 1904 and 1912, Booth further diversified his production to include pulp (1904), paper (1906) and cardboard (1912) (ORIDP 18).

**Figure 2.62 The Last Raft to Pass – Ottawa River, Hurdman's, Ottawa, 1899**



Source: Pitaway/Janis/Library and Archives Canada/C-005068

### The Petawawa Forest Experiment Station

The Petawawa Forest Experiment Station was established in 1918 adjacent to the military base on close to 100 square kilometres of dense forest. Scientific studies of forest management have continued there ever since. It became the Petawawa National Forestry Institute in 1979 after three decades of rapid growth, then regressed to its current staffing level (approximately 20) in 1996 when re-named the Petawawa Research Forest Inc.

## The Hydroelectric Plants

The growth of the E.B. Eddy Manufacturing Company and the Booth Mills called for the further development of the energy resources needed to run them. The development of hydroelectric plants on the Ottawa met the growing forestry needs.

## An Important Part of Canada's Modern Economy

Today, the Ottawa River Valley continues to contribute in an important way to a major component of Canada's export economy. Canada is the world's fourth largest producer of pulp, paper, and paperboard products. In central and eastern Ontario, the local forest industry generates \$573 million every year. Algonquin Provincial Park produces the most wood, with fibre from the Park processed by mills elsewhere in the region. The Mazinaw-Lanark Forest industry supports 1,767 jobs, and the annual harvest is up to 102,000 cubic metres. The Ottawa Valley Forest industry generates nearly 4,500 jobs, with an annual harvest of up to 277,000 cubic metres (OMNR: "Healthy Forests").

Quebec supplies nearly a third of the thirty million metric ton national total. Canada leads the world in newsprint production, with Quebec contributing just under half of this. The Outaouais region, including plants in Hull, Masson and Thurso, contributes 12.5% of the total Quebec pulp, paper and paperboard production. The Abitibi-Témiscamingue and Nord-du-Québec region contributes 8.9% of this total (Rivers, Inc.: "Ottawa River").

### The Town that Saved its Pulp Mill

In 1973, employees in the town of Temiskaming, Quebec, learned that their only industry was to be shut down. They quickly took matters into their own hands, refusing to give up on an industry and a company town that had been established by the Riordan Company in 1919, and operated since 1925 by Canadian International Paper. People with various connections to the industry, including its millworkers, townspeople and ex-company managers, united to form a new company, Tembec, to own and operate the pulp mill. After two years of negotiation and significant financial investments by employees, the mill was re-opened in 1975. Today, Tembec is one of Canada's largest integrated forest products companies, with over \$4 billion in annual sales and nearly 10,000 employees worldwide. By struggling for their economic survival, the people of Temiskaming were able to establish a financially profitable enterprise along with a precedent-setting worker participation and profit sharing plan (Rivers Inc.: "Ottawa River").

## 2.7.5 Ecological Perspective

More than any other economic sector, forestry can be said to have profoundly changed the Ottawa River valley landscape. A sense of what the valley looked like during the early days of the timber trade can be gleaned from this account by James Gourley, one of the few people to publish a book in the 19th century about the Ottawa River valley:

*These lands were so thickly covered with forest, trees standing near each other and of so large a growth as almost wholly to exclude the sunshine from the soil in the leafy season... Hardwood*

*trees of fifty and sixty feet high were plentiful, some white pines there were whose height was found to be a hundred feet from tops to the ground... The density of these forests, the interlacing of the bows and their thick green foliage or frondage account for the abundance of water then flowing in rills and for the disappearance of these waters when the country was denuded of this thick, close covering. Then little river beds have disappeared before the plow and the present generation could hardly point out their place. Yet some of them with water not over three inches deep and twelve inches wide ran the whole summer (qtd. in Legget 1975: 119).*

The Ottawa Valley was so thoroughly logged in the 19th century that today it would be nearly impossible to collect from the region the volume of lumber required to make a typical timber-raft (Legget 1975: 105). Today, the valley contains very few of the immense white pine trees that enabled its early economic development (Legget 1975: 104).

The early forestry industry taxed the ecosystem of the Ottawa River in other ways. The bark of thousands of chopped down trees and the logs that were abandoned in the course of transportation would rot in the water. En route, the logs would dig up the riverbanks. The resulting erosion would destroy the reeds and spawning-grounds of the fish in full reproduction season (CLD du Pontiac: "The Log Drive").

The river also suffered from the disposal of waste material from the sawmills. This material would remain visible long after its disposal, and complaints from residents were abundant. Sanford Fleming, a civil engineer, investigated solutions to address the problem on behalf of a committee of Ottawa lumber manufacturers (Legget 1975: 123).

### Waste as a Means of Redistribution?

Sandford Fleming, a civil engineer working to control the problem of floating debris, reported:

*There are a large number of families settled along the river banks between Ottawa and Grenville who appear to have selected the site of their habitations on account of the supply of fuel which is annually floated to their doors. During the summer months, numbers of women and children may be seen regularly at work on boats and canoes gathering in from the stream their winter's supply of fuel. There is in reality a considerable population dependent upon the mills for their winter firewood which thus costs them only the trouble of gathering it (qtd. in Legget 1975: 123).*

The full environmental impacts of the logging industry on the Ottawa River Valley's health as a system are unknown. Today, the proper management of these natural resources is a priority, both for those involved in the forestry industry and for other stakeholders. Please refer to Chapter 6: Managing the Heritage Values of the Ottawa River for a description of existing forestry and its sustainable management along the river.

## 2.7.6 Sites Along the Ottawa River Related to the Forestry Industry

- Site of settlement of the Wright family at the mouth of the Gatineau River, near Lake Leamy.
- Victoria Island, at the heart of forest industry for many years (below Chaudiere Falls).
- The site of the log chute at Chaudiere Falls, near the Thompson-Perkins factory.

- The E.B. Eddy Industrial Complex. Four buildings have recently been protected against demolition. The sawmill was built on the banks of the Ottawa in 1866. Scott Paper Ltd, which bought the White Swan Division from E.B. Eddy (now called Domtar) in 1989, is one of the last vestiges of Hull's industrial past.
- John Rudolphus Booth's sawmill, located on the south bank of Chaudiere Falls.
- The Hughson and Gilmour Limited Building (renovated by the NCC renovated the building, now called the Bicycle House.) Located in the northern corner of Jacques Cartier Park. Built in 1892, this building served as office for the company's first steam-powered sawmill near the Ottawa River in 1874. The grounds were used for lumber storage and covered half of the park.
- The Deschênes Ruins site. Includes the farm built by the sons of Robert Conroy, Robert and William; Narcisse Cormier's flour mill; and the dam and power plant of the Deschênes Electric Company
- The Thompson-Perkins Factory, built in 1842 (ORIDP 17).
- Jacques Cartier Park. Campsite for First Nations Peoples and voyageurs traveling outside of Ottawa. Became a crowded industrial site for most of the 19<sup>th</sup> and 20<sup>th</sup> centuries.
- The Ottawa Carbide Factory. On Victoria Island. Built in 1890s by Thomas Leopold Wilson. Made calcium carbide used to produce fuel lights prior to electricity.
- The Lady Aberdeen Bridge. Links Gatineau Point to Hull. Officially opened March 10, 1895.
- The McLaurin Sawmill. Built before 1910, on McLaurin Bay.
- Pembroke Heritage Murals, downtown Pembroke. Depict the log rafts, among other themes.
- Algonquin Visitor Centre and Logging Museum, Algonquin Provincial Park, Whitney.
- Bonnechere Museum, Eganville. Includes a model log chute.
- Grande Chute, Fort Coulonge. Waterfalls and canyon including interpretation about George Bryson's still-existing impressive log slide built in 1840 to bypass the falls.
- The Petawawa National Forestry Station, near Chalk River. This research station is open to the public and provides field demonstrations of forest management principles and methods.

## Summary

**The great white pines of the Ottawa River Valley were used for the construction of ships by Britain during its war against France. The remaining forests were turned into sawn lumber used for construction in Boston, New York, and Chicago. Smaller trees today are still harvested as part of a lucrative and thriving forestry industry. By virtue of the timber trade, the Ottawa River Valley region gained affluence, attracted immigrants, and developed some of the region's most colourful characters. It permitted the early settlers to earn an enduring livelihood.**

**The river and its tributaries made the timber trade of the Ottawa Valley possible. These waterways were at the heart of the distribution process, and enabled large volumes of wood to be transported along even the narrowest tributaries. The Ottawa River's central role in the transportation of lumber can therefore be said not only to have largely shaped the early social and economic development of the Ottawa River Valley, but to have affected the economies and policies of Great Britain, France, and New England, and, of course, to have contributed to the development of Canada as an emerging nation.**

## 2.8 Steamboats and Canals on the Ottawa River

The Ottawa River was once the only way to access the Upper Ottawa Valley, to travel between Montreal and Ottawa and beyond. It was a viable option for military and commercial access to the Great Lakes. Before roads and even railways were built, the Ottawa River was literally the one and only highway, carrying merchandise, people, and mail in both directions. From Montreal, there were two main routes inland: the St. Lawrence – Great Lakes system, and the Ottawa River – Lake Nipissing – Georgian Bay to Upper Great Lakes route (Canadian Public Works Association 113).

At first, canoes plied the waters of the Ottawa, carrying First Nations Peoples, explorers and voyageurs into the interior of the land. But the development of the lumber industry in the Ottawa Valley and the related settlement in its upper reaches soon required larger boats. These boats faced logistical challenges hoisting themselves up or around the many sections of chutes and rapids they encountered along the Ottawa. A series of canals, initially built for military purposes, facilitated the transportation of goods and people along the river.

**Figure 2.63 Canoe on the River, 1841**



Source : Philip John Bainbridge, Library and Archives Canada/C-011815

**Figure 2.64 Steamer, "Duchess of York"**



Source : Library and Archives Canada/C-003949

Steamboats appeared on the Ottawa River during the construction of these canals, enabling a more reliable and efficient transportation system. The canals only circumvented certain rapids. Others, such as the Chaudiere Falls, still represent an obstacle to navigation. Steamboats were therefore confined to particular sections of the river. Therefore, transportation by steamboat often involved changing steamboats, which required loading cargo onto portage railways or even a horse-drawn railway to by-pass the rapids. The Ottawa-Rideau canal system, built to ensure the

military security of the then-British colony, was too small to accommodate commercial steamships, and was enlarged in the late 19th century. For a limited period of time, it was possible to get from Montreal all the way to Mattawa via a series of steamboats.

Forwarding (shipping) companies developed, first along the stretch from Montreal to Ottawa and then along the Upper Ottawa. The Ottawa River witnessed a colourful, thriving and boisterous steamboating era at its heyday in the mid-19th century. The steam-driven paddleboat was a common sight on the Ottawa River for just over one hundred years, from the 1820s until the 1920s. Often luxurious, steamboats carried tourists and dignitaries up and down the river. This activity continued on the Ottawa even after the commercial decline of steamboating when faster and more efficient railway service was established by the 1880s. Although many traces of the canal and steamboating era have disappeared or been submerged by recent hydroelectric dams, some visible evidence along the river still remains, including a small lock leading to the original Carillon canal and the guard lock at Grenville.



### 2.8.1 Navigation Before Steamboats and Canals

The Ottawa River drops 338.5 metres along its length, creating powerful rapids and falls that have been a challenge to navigation for all craft (Lamirande xi). In the 17<sup>th</sup> century, French explorers and voyageurs enlarged portages around waterfalls and rapids initially cleared by First Nations Peoples. Two centuries later, eight primitive canals were built to circumvent the 20 kilometres of rapids at Carillon, Chute-à-Blondeau and the Long Sault on the Lower Ottawa. This initial canal system only included one lock and consisted of simple trenches. It is not known who built these first canals, all traces of which were submerged by the Carillon dam in 1963 (Lafrenière 17).

In the period from 1800 to 1820, before the first steamers appeared, goods could be shipped from Lachine on batteaux and later on Durham boats, flat boats up to thirty metres long. In Carillon, passengers disembarked at the bottom of the rapids, while the boats were unloaded and cargo transported by land until Grenville. The boats themselves were poled and pulled by cables over 19 kilometres up the rapids. The process took over 24 hours (Labelle: “Outaouais”).

#### The Horse Railway - A Unique Solution

Fifty-one kilometres upstream of Bytown, passengers encountered the spectacular Chats Falls. The Union Rail Road, a horse-drawn covered railway passenger car, transported passengers five kilometres through dense forest to avoid the falls and rapids. Operated by the Union Forwarding Company between 1847 and 1879, the “horse railway” delighted travelers to the region (Rivers Inc.: Ottawa River):

*Certainly this is one of the last things you dare to hope for in the heart of the wilderness far away from either a road or a cow-path - and you must almost doubt whether it is a reality, or like the palace of Aladdin, you are not under the mysterious influence of some kind genii for your present position (James Poole, editor of The Carleton Place Herald, 1853, qtd. in Kennedy 140).*

Today a cottage road runs through part of what was the first railroad in the Ottawa Valley. In a rock cut near Lake Aumond and near a cottage road to Black Bay, marks of the ties are still visible (Kennedy 145).

### 2.8.2 The Construction of Military Canals on the Ottawa

Although they would never serve as such, the first proper canals on the Ottawa River were built for military purposes. British colonial authorities designed them to transport troops and military supplies between Montreal and Kingston via the Rideau Canal system in case of an American blockade of the St. Lawrence, as threatened during the War of 1812 (Lafrenière 4). Built between 1819 and 1834, the canals bypassed rapids at Carillon, Chute-à-Blondeau and Grenville, following already-existing portage routes (Legget 1975: 139). They improved communication between the Great Lakes and the sea, providing an alternate route to the St. Lawrence and facilitating travel between the military posts in Montreal (Lower Canada) and Kingston (Upper Canada). Kingston represented a vital fortress with a naval dockyard serving Lake Ontario, previously supplied via the St. Lawrence. The system also included a canal to pass the Lachine rapids in Montreal. As soon as they began operating, the canals served mostly for commercial traffic, since the events of 1812 did not repeat themselves.

The British Army's Royal Staff Corps, under Captain Henry du Vernet, built the 9.6 kilometre-long Grenville canal. Ottawa River historian Robert Legget describes this daunting project, which involved excavating 1.5 metres through solid bedrock: "The task of building a canal around the surging waters of the Long Sault with no plans or specifications as a guide, and in country that was still thick with virgin forest down to the water's edge, would have daunted any ordinary man." (1975: 139). The canal at Chute-à-Blondeau was more straightforward, bypassing a drop of only 1.3 metres. Carillon represented a larger drop and was more challenging. The unusual solution of creating a lift in the entrance lock brought ships up to a level in land overlooking the river that was easier to excavate. The North River was partially diverted by a small ditch or feeder channel to accomplish this lift, generating violent protests from the Seigneur of Argenteuil and residents of St. Andrews (Legget 1975: 143). Three locks falling only 3.3 metres followed the lift.

Work was completed in 1834, with 12.9 kilometres of canals and eleven locks. With the completion of the Lachine Canal in 1825 and the Rideau Canal in 1832, the entire system was navigable.

The building of the Rideau Canal attracted new settlers to Bytown, but otherwise construction had little direct impact on the settlement of the Ottawa River. Building the canals required the Crown to expropriate a narrow strip of land between the river and the canal. Farmers and landowners protested, sought compensation from the Crown in court and won their case in 1832 (Labelle). This affected around twenty farmers between Carillon and Grenville (Lafrenière 37). The township of Grenville experienced an increase in population because of the labour needed to build the canals: Irish and Scottish immigrants provided this labour and many settled permanently in the area.

When the military canals were built, canoes were still in use. By the time they were completed, steamboats had made their appearance. Because the first locks were initially built using military specifications, they were too small for most commercial steamboats to pass. Three of the seven locks in the Grenville canal as well as the Lachine canal were built using the smaller military scale of 33 metres by 6.1 metres. The locks at Carillon as well as those on the Rideau system were larger, measuring 40.8 metres by 10 metres. This poor planning created a bottleneck at Grenville, limiting navigation to ships under 6 metres wide (Lafrenière 25).

In 1857, the Sykes and Deberg Company built a twenty-one kilometre long railroad between Carillon and Grenville. Cargo and steamboat passengers in both directions had to take the train for a short distance before embarking in a different vessel to continue their journey (Labelle: "Outaouais"). It wasn't until the 1870s that the locks were enlarged.

### 2.8.3 The Steamboats of the Ottawa River

In the heyday of steamboating on the Ottawa River, from May until November of each year, steamboats provided passenger service, mail service, brought farmers to market, towed lumber barges downstream and transported politicians and dignitaries. In the 1820s, with the involvement of Philemon Wright Junior, Thomas Mears of Hawkesbury built the *Union of the Ottawa*, commonly recognized as the first steamboat on the river. It made a weekly return trip between Grenville and Hull, covering the 95 kilometres in 24 hours (Lafrenière 22 and Labelle). The vessel was 38 metres long, 9 metres wide, with a 28 horsepower engine, and a draught of only 47 centimetres (Lamirande 3-4).

Around 1827, two more steamboats appeared: the William Henry and St. Andrew, linking Lachine with St. André and Carillon, where cargo was unloaded and transported around the Grenville rapids. The number of steamboats increased rapidly in the 1830s once the canal system was completed (Labelle). Above the Chaudiere Falls, steamboats arrived in the 1830s as well: in 1832, the Lady Colborne was launched on Lake Deschênes and the George Buchanan on Chats Lake in 1836 (Lamirande xii).

The steamers were flat-bottomed sidewheelers, smaller and with shallower draughts than those on the St. Lawrence and the Great Lakes. Until the 1840s they were mostly powered by low-pressure, single-cylinder beam engines. Some of these vessels retained masts and sails. The steamboats burned wood as fuel for most of the 19<sup>th</sup> century, which was cut at forests along the banks and stacked at loading points. “Wooding up” was picturesque but hard work (Legget 1975: 163).

**Figure 2.66 Steamer, “Anne Sisson”**



Source: Ottawa River Heritage Designation Committee

Museum”). Dignitaries and politicians also graced the steamboats, and Sir John A. Macdonald is said to have had a permanent stateroom on one of the Ottawa River steamers (McGoldrick: “Sailing”). A visit by steamboat by the Prince of Wales was truly an event:

*The most distinguished traveler of these years was His Royal Highness, Edward, Prince of Wales, a youth of nineteen in 1860. He was one of the first royal visitors to Canada; his large entourage was headed by the Duke of Newcastle. In the course of a crowded itinerary, he opened the great Victorian Bridge carrying the Grand Trunk Railway (now CNR) across the St. Lawrence at Montreal, and then he traveled up the Ottawa River in order to lay the foundation stone for the new parliament buildings. He left Montreal early on the morning of 31 August 1860, traveling by rail to Ste Anne de Bellevue. Here he boarded a new steamer, named Prince of Wales in his honour, and sailed on it to Carillon. He was received by a great assembly (estimated at 5,000) including two troops of cavalry. Addresses were given, and three distinguished local citizens were presented to the prince before he boarded the little portage train for the journey to Grenville. Here*

**Figure 2.65 Launching of the Opeongo, Chats Lake**



Source: Archives of Ontario, C 120-3-0-0-90, Charles Macnamara's glass negatives

Travel by steamboat was often luxurious, and steamboats such as the *Peerless* and the *Empress* have been described as palatial, boasting their own brass and string band and equipped with mahogany cabins and bars (Lamirande 50). Steamboats carried the social elite, and must have been considerably more comfortable than 19<sup>th</sup> century travel by rail. The christening of these steamers was a social event attracting the “beauty and fashion of the Town” and inspiring local pride in the craftsmanship (VMC: “Champlain Trail

*were another local display and more presentations, but eventually he boarded the Phoenix for the journey to Ottawa. The climax of his river journey was a greeting by about 1,000 lumbermen, all in similar gay costumes, paddling in 150 canoes, who met the steamer two miles below Ottawa and escorted it to its wharf (Legget 1988: 177).*

A growing number of tourists enjoyed traveling the Ottawa by steamboat. The *Prince of Wales* jumped the Lachine Rapids 1,800 times (Lamirande 32)! Steamboats traveling between Pembroke and Des Joachims would stop at Oiseau Rock where the captain would blow the whistle and the sound would echo off the face of the rock (CLD du Pontiac: “The Oiseau Rock”). Travel by steamboat could be both thrilling and harrowing. Running the 33 kilometre Lac des Chats in high water in the *George Buchanan* in 1854 inspired the following description:

*As she neared the dreaded channel, the passengers gathered in clusters on the forecastle – the fireman selected his choicest fuel – the engineer screwed up his slackening bolts and greased his rickety bearings – the captain stood by his bell. By judicious steering and hard paddling the lower current was surmounted, and the little craft glided into the eddy which led up to the very vortex of the rapid; suddenly the engine ceased its revolutions – an ominous silence reigned throughout the boat, as taking advantage of the eddy which bore her slowly up to the scene of her laurels or her shame, the boiler gathered steam for the approaching contest. The engineer rolls up his sleeves – the fireman pokes the fire – the captain eyes his enemy – and when the friendly eddy is exhausted nervously rings the bell for ‘full steam’. The engineer throws off the eccentric and seizes a lever in each hand – for full steam cannot be depended upon from the wobbling shaft or crazy eccentric. As the cylinders are charged, a cloud of steam fills the waist of the boat, looming through which a spectral figure is seen frantically working the steam port valves as if life depended on the result. If the feat is performed and the little boat has secured a safe position above the rapids - the captain comes down from his perch - the fireman pops up through his hatch, and the engineer rushes out from his misty den, when, looking back with grim satisfaction on the vanquished waters, mutual congratulations are exchanged on the forecastle (qtd. in Kennedy 17).*

Indeed, the full trip from Montreal to Mattawa was one of the most exciting and picturesque trips at the time in North America. This trip was no longer possible in 1876 when the “Grand Portage” was abandoned, as was the steamboat service on Muskrat Lake (Lamirande xix). A typical mid-19th century journey up the Ottawa began in Montreal, and involved several days of travel (Lamirande xix and author’s extrapolation):

#### **DAY 1 – Montreal to Ottawa**

- 7:00 a.m.      Board the train from Montreal to Lachine.  
                   Board the *Prince of Wales* steamer for a 4-hour cruise to Carillon.  
                   Dock below the Carillon rapids and board the portage train, a 35-minute, 19-kilometre ride to Grenville.

**Figure 2.67 Steamboat Captains From the Ottawa River Who Served With the Canadian Nile Contingent, 1884**



Source: Library and Archives Canada/C-00886

- Board the massive *Peerless*.  
 5:30 p.m. Arrival at Queen's Wharf in Ottawa, after a full day's travel from Montreal.

### DAY 2 – Ottawa to Pembroke

- 6:00 a.m. The next morning, take an omnibus leaving from local hotels and destined for Aylmer. Board the *Jessie Cassels* and eat breakfast while crossing Lake Deschênes. At Pontiac Village, take a 5 kilometre horse-drawn railcar ride around the spectacular Chats Falls.
- 11:00 a.m. Board the *Prince Arthur* at Union Village on Chats Lake to go to Portage du Fort. Dine onboard after the ship leaves Arnprior. Enjoy an exhilarating ascent of Les Chenaux rapids.
- 4:00 p.m. Reach Gould's landing. Choose between two options to reach Pembroke: the shorter route consists of the "Grand Portage", an omnibus ride for 20.8 kilometres to Cobden on Muskrat Lake. The longer involves boarding the *Jason Gould* in early evening.
- 8:30 p.m. Arrival in Pembroke.

### DAY 3 – Pembroke to Mattawa

- 7:00 a.m. The *Pontiac* departs from Pembroke.
- 12:00 p.m. Arrival at Des Joachims. Enjoy the "Deep River", the most romantic part of the Upper Ottawa Route. Join the intrepid few continuing above Des Joachims to reach Mattawa via three portages and three different steamers: the *Kippawa*, the *Deux Rivières* and the *Mattawan*. The steamers are smaller and the portages more difficult.

#### Stopover at the Symmes Hotel

Built in 1831, the Symmes Hotel lodged passengers in transit between the portage route from Hull and the steamer on Lake Deschênes. Located in Aylmer (formerly Symmes Landing) on Lake Deschênes, this hotel and busy wharf was the point of departure for travelers and merchandise traveling northwest up the lake on the *Lady Colborne* and other steamers (Legget 1975: 241).

Charles Symmes, nephew of Philemon Wright, built the hotel in stone. Its unique architecture using local stone was restored when the building was designated a historic monument in the mid 1970s. It now houses the regional history museum of Gatineau, Musée de l'Auberge Symmes (CCQ: "Hôtel Symmes").

### The Navigation Companies

Numerous navigation and forwarding companies developed during the 1800s. During the 19th century, most traffic on the Ottawa canals actually consisted of barges, such as those owned by John R. Booth, transporting lumber down the canals of the Ottawa River, up the Richelieu to Lake Champlain and New York (Lafrenière 64).

Some shippers were major lumber companies with their own transportation facilities, such as Bronson and Weston, a company set up near the Chaudière Falls in 1853 (Lafrenière 64). Others boasted luxurious passenger vessels. In 1839, the Ottawa and Rideau Forwarding Company operated four steamboats on the

Ottawa, as well as a number of barges. With warehouses at Lachine, Carillon, Grenville, and Bytown, the company employed 650 people (Labelle). In 1841, five shipping companies operated on the canals of the Ottawa River. By 1872, some 15 companies operating 241 barges and 45 steamers on the Ottawa River employed 2000 men (Lafrenière 63).

Figure 2.68 Ottawa River Navigation Company – Steamer

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# Ottawa River Navigation Comp'ny

## ROYAL MAIL LINE OF STEAMERS.

### Ottawa to Montreal. - - Day and Night Line.

<i>New Iron Steamer "Peerless,"</i>	Captain <i>J. BOWIE.</i>
<i>Steamer "Prince of Wales,"</i>	" <i>M. W. SHEPHERD.</i>
<i>"Queen Victoria,"</i>	" <i>F. Y. MACDONNELL.</i>
<i>"Princess,"</i>	" <i>P. McGOWAN.</i>



**DOWNWARDS.**

Passengers leave Ottawa at 7:30 A.M. and 5 P.M. by Steamers "Peerless" and "Queen Victoria," for Montreal and Intermediate Landings.

**UPWARDS.**

Passengers leave by the 7 A.M. and 5 P.M. trains for Lachine by railway, and connect with the Steamers "Prince of Wales" and "Princess," for Ottawa and Intermediate Landings.

BARRAGE CHECKED. MEALS AND STAYEROOM EXTRA.

Passengers leaving Ottawa by the evening steamer will observe this notice. No through passengers taken on Saturday evening's boat.  
The comfort and economy of this line are unsurpassed, whilst the route is one of the most picturesque in Canada. Tourists will find this a delightful trip.  
Freight from all points west through with dispatch daily.  
Single and Return Tickets may be had at the Company's Office, Queen's Wharf and from Agents.

**J. T. SUTTON,**  
*Agent,*  
*End of Queen Street, Ottawa.*
**R. W. SHEPHERD,**  
*President.*

O. R. Navigation, Pelee, St. John, Ottawa.

Source : William James Topley/Library and Archives Canada/C-000259

In 1892, most of the transport companies involved with forest products merged to form the Ottawa Transportation Company. Owning over 250 boats and barges, this was the most powerful navigation company in the history of the Ottawa River canal system. The Ottawa River Navigation Company provided transportation and leisure service until 1909 (Lamirande xii). Of note also is the Union Forwarding and Railway Company, which eventually gained a monopoly over the forwarding trade (Lamirande xii).

### Commercial Navigation

Increased settlement in the Ottawa Valley, along the Rideau Canal and near the Great Lakes meant transporting immigrants up the Ottawa River. Steamboat companies vied for the “immigrant” trade to Upper Canada, carrying up to 400 immigrants per trip (Lamirande 12). New settlers needed goods, supplies and equipment. Large quantities of lumber that was produced in the Valley needed to be transported downstream to markets in Ottawa, Montreal and New York. Commercial navigation benefited from these many lumber camps as the birchbark canoe, still in use through the 1830s, no longer sufficed (Lafrenière 19).

A triangular trade route developed linking Montreal, Bytown and Kingston. Barges were towed by steamers via the Ottawa and Rideau canals to Kingston carrying immigrants, merchandise and staples including hay, oats, turnips, potatoes, barrels of pork, flour, oatmeal, beef, fish, molasses and salt (Lafrenière 59). These same barges were reloaded in Kingston with products from the Great Lakes, and then shot down through the rapids of the St. Lawrence River and the Lachine Canal, carrying staples for the Atlantic trade such as wheat, flour and potash back to Montreal (Canadian Public Works Association 117).

At mid-century, freight down the Ottawa River mainly consisted of steamboats towing sawn lumber on barges or in rafts. The lumber traveled by barge to New York via the Ottawa military canals, the Richelieu River canals and the Lake Champlain-Hudson River system for the American market (Canadian Public Works Association 123). Steamboats also towed rafts of squared timber (Lamirande xix). Upstream transport continued, with agricultural products to feed the lumber camps, until around 1870 when camps became more remote and the region more agriculturally self-sufficient. In the later 19th century bituminous coal, sugar, salt and miscellaneous merchandise traveled upriver (Lafrenière 59).

Steamers also provided regular mail, passenger and ferry service. The Ottawa Steamer Company began carrying mail up the river in 1850 (Legget 1975: 147). Ottawa River Mail Steamers ran from Bytown to Montreal several times a week in the 1850s, stopping to deliver mail at almost all the small wharves along the way (Legget 1975: 163). Mail delivery extended to the upper reaches of the river, representing the only source of mail or news in these isolated areas (Legget 1975: 148).

### The Wharves of Prescott-Russell

When commercial navigation was at its peak on the Ottawa River, there were some 41 wharves serving the steamships in the United Counties of Prescott and Russell. The wharves were prosperous from the 1830s on and were at their peak in the late 1880s, with intense commercial activities associated with them. They also served as ferry landings.

The early wharves were wooden, built with timber-crib boxes. The *caissons* technique was common,

consisting of square timber filled with earth and stone as permanent piers. Later in the 1800s, concrete wharves and wharves on piles were built.

The wharves were built to serve the steamships where hamlets already existed, such as Pointe Fortune, L'Orignal and Hawkesbury. Steamships brought and picked up goods at the wharves. Local products were shipped to city markets. The steamships picked up mail and passengers, carried students to school and medical patients to Ottawa. Stagecoaches carried passengers to and from the wharves.

Industrialists, merchants, farmers and entrepreneurs owned the wharves, and set up commercial buildings near the wharves, including mills of all kinds, warehouses, granaries and general stores. The wharves brought prosperity to the local villages. The downfall of the wharves came in the early 20<sup>th</sup> century with the decline of the lumber and forwarding trades and the increasing popularity of the railroad. Some of the wharves became marinas. Remains of others are submerged as ruins, mostly hidden underwater (Beaulieu: "Forgotten Wharves").

By 1842, a regular passenger service linked Montreal and Hull using a combination of stagecoaches and steamers. In 1879, the Ottawa and Hull Ferry Line ran steamers between Ottawa and Hull every 15 minutes (Lamirande). In 1894, the Minister of Railways and Canals reported over 2600 steam and sail vessels on the various Ottawa River canals, carrying timber, clay, sand, lime and various grains. 13,828 passengers passed through the canals (Labelle: "Outaouais").

The spread of steam railways in the Valley presented stiff competition with the steamers, eventually shutting down some services, including the horse railway in the 1870s and passenger service between Ottawa and Deux Rivières (Lamirande). The paddleboat was becoming obsolete. Despite all the competition, steamboats were prevalent on Lake Temiskaming after 1882 and prospered until the mid-1920s. Most of these were screw-propelled. Passenger service from Ottawa was available until 1910. During the decline of the lumber era from the 1920s until the 1960s, new products such as sand and gravel traveled downstream to Montreal by barge (Lafrenière 60). Fuel oil came to the Ottawa region this way until the pipeline was developed. The last paddleboat on the Ottawa River was the Hamilton in 1949 (Lamirande). Now only old photographs and underwater wreck sites attest to the days of the Ottawa River steamships.

### Underwater Shipwrecks of the Ottawa River

Dozens of the Ottawa River's steamboats ended their lives on the bottom of the river, many succumbing to fire. The Underwater Society of Ottawa, founded in 1963, uncovered many of these shipwrecks using archival records, diving and dragging techniques. Most of these wrecks were sidewheelers, and many are familiar names, including the *Lady Colborne* and the *Emerald* under the waters of Lake Deschênes, and the *Dauntless*, *Pontiac* and *Prince Arthur* between Pembroke and Mattawa (Séguin 62-65).

## 2.8.4 Canal Improvements

The existence and maintenance of the canals was key to the economic development of the Ottawa River valley region. When Upper and Lower Canada united in 1841, Britain helped fund a Board of Public Works focusing on waterway improvements. The government of Canada acquired ownership of the



military canals of the Ottawa-Rideau system in 1856 when they were transferred from Britain (Canadian Public Works Association 124).

In the early 1840s, the Department of Public Works built a canal at the confluence of the Ottawa and the St. Lawrence rivers to improve the Ottawa-Rideau canal system. Previously, steam navigation was limited because private companies built and controlled their own small wooden lock at the Vaudreuil rapids, charging exorbitant fees to rival companies wishing to use the lock (Lafrenière 22). Although the Vaudreuil lock was not part of the military canal system, it had strategic commercial importance. The monopoly continued until a channel was discovered through the rapids at St. Anne's that was navigable by steam. In addition, the government built a lock at St. Anne's representing the downstream entrance of the Ottawa River canal system (Lafrenière 35). The new lock was a single cut-stone masonry lock, 58 metres by 14 metres with a 1.8 metres depth of navigation (Canadian Public Works Association 121).

In the 1830s and 1840s, the Ottawa-Rideau military canal system dominated the import trade of the Canadian interior. This continued until the completion of the St. Lawrence canals system (Canadian Public Works Association 121). Starting in 1851, after the St. Lawrence locks were enlarged, all freight destined for Lake Ontario traveled up the St. Lawrence rather than taking the less direct Rideau-Ottawa route. River traffic continued to grow regardless because of increased settlement in the Ottawa Valley (Legget 1975: 147).

But the bottleneck at the Grenville canal hindered commercial traffic on the Ottawa. In the 1850s, the canals began to show signs of wear. In 1866 unsold sawn timber piled up in vast timber yards in Hull because the canals could not carry the quantities of timber being produced. Prominent lumbermen petitioned the government to improve the system, and the Canal Commission upgraded it during the 1870s (Lafrenière 44). The Commission built a second Carillon Canal from 1873-1882 with two locks and a semicircular timber crib dam above the village of Carillon (Canadian Public Works Association 124). The dam drowned out the rapids at Chute-à-Blondeau, creating a direct navigation route from Carillon to Grenville. The Grenville canal was improved from 1871 to 1884 with five locks that had the same dimensions as the Carillon locks (Labelle: "Outaouais"). The Ste. Anne's canal was enlarged from 1879 to 1883. All the new locks were built using cut-stone masonry, 61 metres by 14 metres with 3 metres of water on the sills (Canadian Public Works Association 124).

The final, perhaps most dramatic changes to the Ottawa River military canal system occurred from 1959 to 1962 when Hydro Quebec constructed a power dam at Carillon, flooding the former Carillon and Grenville canals (Canadian Public Works Association 124). The new lock at Carillon boasted a lift of nearly 20 metres. Its official opening in 1963 marked the end of commercial navigation on the Ottawa River canal system (Lafrenière 60).

The only place you can still see evidence of both the first military canal and the second Ottawa River canal is at Grenville. The upstream lock of the second Grenville canal is visible: it is a masonry ship lock with carefully carved stone quoins (Legget 1975: 133). The walls of the old canal can be seen downstream from the lock (Lafrenière 51).

### Carillon Canal National Historic Site

Today, the Carillon Canal is a prominent heritage site and recreation area run by Parks Canada and visited annually by 20 000 pleasure boaters and 30 000 people who use its banks (Parks Canada: Carillon). One of the highest locks in North America, the Carillon lock is an impressive facility. Locking operations raise or lower boats across a 20 metres difference in water levels, equivalent to 7 stories. It takes 25 million litres of water to fill the lock. The power dam at Carillon has the most generating capacity on the Ottawa River (McGoldrick: "Sailing").

The lower lock on the original (1870s) Carillon canal is visible and was restored in the 1960s (Lafrenière 28). A section of the feeder canal from the North River is also visible. The residence of the superintendent and the canal collector's house have been preserved and now house the Museum of the Argenteuil County Historical Society. This masonry building was originally a British military structure built in 1829 as barracks for the troops stationed at the canal when it was still controlled by the British army. The Museum contains models of historical steamships (Legget 1975: 228).

### 2.8.5 Canal Construction on the Upper Ottawa

As early as the 1830s, settlers and businessmen argued for canal development on the Upper Ottawa. Many different proposals to develop a complete navigation system were developed, including the Montreal to Lake Huron Route (via the Ottawa, the Mattawa and the French). Settlement on the border of Lake Chats suffered from the dangerous navigation around Chats rapids (Kennedy 131). In 1854 the government awarded a contract to dig a four kilometre long canal around Chats Falls and rapids. After two

**Figure 2.70 Steamer "Argo" on Lake Temiskaming**



**Figure 2.69 Des Joachims Landing, 1882**



Source : G.M. Grant/Picturisque Canada/Library and Archives Canada/C-082899

years of excavating through hard igneous Canadian Shield by hand, the project was abandoned. It cost nearly \$483,000 (Canadian Public Works Association 124). The great cut can still be seen. In 1931 a block dam was built across the upriver end of the abandoned canal for the Chats Falls Generating Station, drowning the rapids (Kennedy 133).

A survey for the Ottawa River – Lake Huron route was carried out in 1856 by snowshoe. Despite the belief that this route would open up the country for iron ore, waterpower, and the

cereals of the west, the only other canal construction on the Upper Ottawa was at the Rock Portage on the northwest end of Allumette Island (Kennedy 135).

Source : W.M. Harmer/Library and Archives Canada/C-026396

Lumber interests persuaded the government to build a canal on the Culbute channel at the Calumet Rapids, known as the Rock Portage. Construction of the locks took place from 1873-1876, involving two combined locks and opening up 124 kilometres of interior river navigation (Canadian Public Works Association 124). The Culbute Locks were outmoded before they were even completed. They were abandoned soon after their construction (Legget 1975: 174).

### 2.8.6 Navigation on the Ottawa River Today

Although steamships are a thing of the past, the river is still busy with pleasure craft and their associated docks, wharves and marinas. It is still possible to do the “Golden Triangle” by navigating from the Lake of Two Mountains to Ottawa to access the Rideau Canal system (Legget 1975: 219). Each year a few people paddle the Ottawa by canoe (221).

Several cross-river ferry services remain. These include:

- Oka to Como across the Lake of Two Mountains
- Pointe Fortune to Carillon (St. André East), offering a splendid view of the Carillon dam
- Lefavre (Ontario) to Fassett (Quebec) near Montebello. This becomes an ice bridge in winter months.
- Thurso (Quebec) to Clarence, near Rockland (Ontario). This service was so popular that in 1962, a small canal was excavated through Clarence Island to make the route more direct. Two Ottawa-area businessmen plan to revive this ferry service using a cable ferry.
- Masson to Cumberland
- Quyon wharf to Fitzroy Harbour, providing a view of the powerhouse and dam at the former Chats Falls (Legget 1975: 222).
- Deux-Rivières to Quebec Road 834 east of Mattawa

### 2.8.7 Sites Related to Steamboating

- Carillon Canal National Historic Site. The lower lock on the original Carillon canal is visible and restored.
- Traces of the Horse Railway. Ties are visible in a rock cut near Lake Aumond
- The Rideau Canal
- The Bytown Museum, Ottawa
- Musée de l’Auberge Symmes. A regional history museum in Aylmer.
- The wharves of Prescott-Russell. Some of these are now marinas, and others are underwater ruins.
- Underwater shipwrecks of the Ottawa River. Some can be seen by divers.
- The original military canal. The upstream lock of the second Grenville canal and evidence of the first canal are visible.
- Museum of the Argenteuil County Historical Society. Housed in the historic residence of the superintendent and the canal collector’s house. Also former British military barracks. The museum includes models of historic steamships.
- A section of the feeder canal from the North River is still visible.
- The cribs of the Culbute canal dam are still visible.
- Various cross-river ferry services connecting Quebec and Ontario.

## Summary

Today it is hard to imagine the lively steamboating traffic and trade that was so intertwined with the economic development and settlement of the Ottawa River region. The canals that permitted this traffic only exist as traces, most having been submerged by the dam at Carillon. The canal and steamboating era brought localized transformations of the Ottawa River environment. With these modifications, the Ottawa River permitted extensive travel along the Ottawa for immigrants and goods. As an important part of the industrial heritage of the Ottawa River, canals and steamboating accelerated the settlement and economic development of communities along the waterway.

## 2.9 Hydroelectricity on the Ottawa River

The Riverman's Fancy  
By Fred Coyne

The seven chutes of Calumet  
Are flooded deep from view,  
And muffled is the rapid's roar,  
Along the Rocher Fendu.  
Since hydro power dams have stemmed  
The Ottawa, to change,  
Portage du Fort's rock-riven shore  
Is soundless now, and strange.

Old Devil's Elbow crooks unseen;  
Grand Sable lifts no sound;  
Gray Mountain Chute is deadly mute  
Like D'Argis Rapids drowned;  
Wild cataracts from Lac Coulonge  
Lie listless in a lake  
Where once the lunging River's plunge  
Made rocky ravines quake.

Des Chats, Chenaux, la Rocher Fendu,  
Des Joachims and La Cave;  
Those waters leapt the Laurentides,  
Are docile now and suave;  
But somehow from the whirling wheels  
Of hydro plants we hear  
The power song we know belonged  
To Chutes of yesteryear (from Finnegan 205).

Today it is hard to imagine that most of the Ottawa River once resembled the Rocher Fendu section, with raging rapids at sudden drops along its whole length. But the days of the voyageurs are over and the river has seen its most significant changes over the past 100 years - from the harnessing of its power for

hydroelectricity. Hydro dams have now been built at most of the great cataracts of the Ottawa River. Although the Ottawa has always been a series of elongated reservoirs separated by sudden drops in elevation, massive concrete dams now flood and silence the rapids at their narrow junctions.

Early dams on the Ottawa River were built to drown out rapids and to harness hydraulic power. From the 1880s until 1964, seven hydroelectric dams were constructed between Carillon and Lake Temiskaming (Haxton and Chubbuck i). In all there are 43 dams in the Ottawa River watershed, forming 14 billion cubic metres of water storage capacity. All of these dams and reservoirs make the Ottawa River one of the most highly regulated catchments in Canada (Haxton and Chubbuck 1). The combined capacity of the Ottawa basin's hydroelectric generating stations is about 3,500 megawatts. The value of the electricity averages about \$1 million per day (ORRPD: "Managing the Waters").

On a national scale, the Ottawa River is one of three rivers that played a crucial role in the early development of hydroelectricity in Canada, along with the St. Lawrence and Niagara Rivers (Canadian Public Works Association 174). Currently, hydroelectricity accounts for 61% of Canada's electricity (CCE). The development of hydroelectricity on the Ottawa River was intertwined with the rise of the pulp and paper industry, which needed a ready supply of electricity. Settlement followed this industrial and energy development that was crucial to the growth of the economies of both Quebec and Ontario. That the river follows the Quebec-Ontario boundary for much of its length has meant a shared responsibility for hydroelectric power development between the two provinces.

### 2.9.1 Paper and Power – Developing Hand in Hand

Economic development and industrialization along the Ottawa River were closely linked to hydroelectric resources and the forest industry. People were encouraged to settle around factories - first around sawmills and then pulp and paper mills. Urban areas such as Hull, Buckingham and Gatineau resulted from these first mill-driven settlements (Gaffield 259).

As early as the 1850s, people used water wheels and turbines to drive machinery in sawmills and flourmills (CCE: "Hydro Timeline"). As the lumber industry began to decline at the end of the 19<sup>th</sup> century, pulp and paper became the main industry in Quebec (Gaffield 261). Sawmills consumed more and more energy, as did the factories to process raw materials. Large sawmills set up close to falls and rapids, at first harnessing hydraulic waterpower directly, and then consuming hydroelectric energy to operate (ORIDP 16). In 1886, large-scale industries in the Outaouais region began depending on the energy-hungry pulp and paper sector. This situation continued until 1940 (Gaffield 259).

Canadian and provincial governments encouraged the development of forest and energy resources to take advantage of the American demand for pulp and paper (Gaffield 260). With wood, workers and hydropower, the paper business was well positioned to flourish in the Outaouais region.

#### E.B. Eddy and the Chaudiere Falls

The tumultuous Chaudiere Falls has always been seen as an ideal spot to built mills and was used for hydraulic power for regional lumber companies since the 1850s. Set up at the Falls, entrepreneur E.B. Eddy harnessed the power of the Ottawa River to drive his sawmill built in 1866 (ORIDP 16). In 1886, Eddy formed the E.B. Eddy Manufacturing Company to produce matches and other items made of

wood. Soon, along with J.R. Booth, another lumber giant turned paper producer (on the Ontario side of the Chaudiere Falls), Eddy became one of the biggest producers of paper in the Ottawa Valley (Gaffield 261, 268). These pulp and paper mills generated regular factory jobs and employment in logging and transportation in the region (Gaffield 265-266).

The E.B. Eddy industrial complex and the hydroelectric resources needed to operate these factories grew hand in hand. In 1913 the company built its own electricity generating plant. This followed a 1907 agreement between Ontario and Quebec to share the hydroelectric potential of the Chaudiere Dam, built in 1909. Indeed, at the Chaudiere Falls, the Ottawa River served as a boundary – but it also helped integrate the regional economy of both provinces (Gaffield 267).

Pulp and paper mills also led to power plants on the tributaries of the Ottawa River, such as the Lièvre, where the Maclaren brothers built a small power plant for their pulp and paper mills at the beginning of the 20th century (Gaffield 269).

The Ottawa River basin experienced a second phase of hydroelectric construction when Canadian International Paper (CIP) bought up pulp and paper companies in the region (Gaffield 270). CIP was a subsidiary of International Paper and Power Co. (IPP), which became the world's leading electricity and paper producer after investing in hydroelectricity and timber concessions in Quebec from 1924 to 1930 (Gaffield 270).

Gatineau Power, a subsidiary of CIP, swallowed up local firms on the Ottawa basin, controlling nearly all the hydroelectric developments in the Ottawa Valley except E.B. Eddy's plants on the Ottawa and the Maclarens on the Lièvre. Gatineau Power built massive brick dams and generating stations, and reservoirs upstream on the Gatineau River (Gaffield 273).

## 2.9.2 Electricity Takes to the Streets – Lighting and Tramways

In the 1860s, some mill owners began to install small generators for electric lighting. In 1862, McAllister's mills generated electricity for sale in Pembroke, considered a first for Canada. The Ottawa Electric Light Company later built a small waterwheel at the Chaudiere Falls for street lighting. This was possibly the first hydraulic generator in Canada. The major power companies that later developed in many cases started out as gas companies for streetlights (Canadian Public Works Association 175).

But the largest early use of hydraulic energy was for traction motors on street cars (Canadian Public Works Association 170). In 1896, Deschênes Electric Company built a dam and hydroelectric plant near Robert and William Conroy's sawmill near the Deschênes Rapids. This became the Hull Electric Company that supplied electricity to streets in Hull and the villages of Aylmer and Deschênes, as well as to the Hull and Aylmer tramways (ORIDP 18).

Hydroelectric resources helped encouraged growth of manufacturing activities in Hull, including a meatpacking plant, textile company, cement factory, iron and steel works etc. (Gaffield 277).

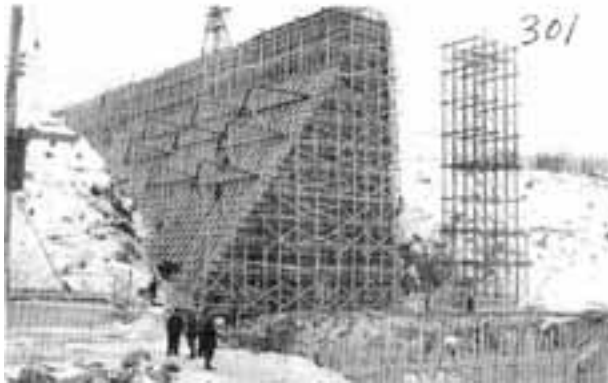
### 2.9.3 Building Dams and Generating Electricity

The first reservoirs on the Ottawa River were built to aid navigation, augment low flows and provide some flood control. Next, reservoirs were built with hydroelectric energy production as their primary purpose. Today the greatest needs are hydroelectric generation, domestic water supply, wastewater dilution, and recreational boating (ORRPB: “Flow Regulation”).

On the Ontario side of the river, hydroelectric power generation began in 1885, although not much electricity was produced before 1914 (Gaffield 267). Regulating dams upstream of Lac la Cave were built from 1911 to 1914 by the Canadian government to increase the volume of flow during low water. The dams were built above Quinze Rapids (upstream of Lake Temiskaming), at the outlet of Lake Temiskaming and on the Kipawa River (Haxton and Chubbuck 55).

All electric distribution systems used direct current (DC) at first (CCE: “Hydro Timeline”). The early generators couldn’t transit direct current (dc) over large distances, leading to high prices (Canadian Public Works Association 171). By the 1920s, the best sites near to urban centres had been developed (CCE: “Hydro Timeline”). Electric power usage increased greatly when alternating current (ac) was adopted, and transmitting the electricity over long distances became possible (Canadian Public Works Association 171).

**Figure 2.71 Dam Construction at Rapides-des-Joachims**



Source : Courtesy of Joe and Kathy Lance and CEDEC.

**Figure 2.72 Divers Building the Dam at Rapides-des-Joachims**



Source : Courtesy of Joe and Kathy Lance and CEDEC.

### Temporary Settlement in the Hydro Camps

In the 1940s and 1950s, colonies and camps were built to house workers building hydroelectric dams and generating stations on the Ottawa River. Most of these communities eventually dispersed. For instance, a mini company town at Fitzroy Harbour housed staff at the Chats Falls Generating Station. Run by Ontario Hydro, it became too costly to maintain by the 1970s (OPG: “Chats Falls”).

**Figure 2.73 Lunchroom, Des Joachims**



Source: Courtesy of Joe and Kathy Lance and CEDEC.

**Figure 2.74 Housing, Des Joachims**



Source: Courtesy of Joe and Kathy Lance and CEDEC.

A large construction camp near the Chenux Generating Station provided accommodation for 1,500 men! This camp had bunkhouses, a cafeteria, engineering and administrative offices, a camp hospital, recreation hall, and storage quarters. The Des Joachims Generating Station project housed personnel in three separate camps, one of which housed 900 men and included a thirty-bed hospital. The Otto Holden Generating Station was built by staff housed in a colony set up in Mattawa (OPG: “Otto Holden GS”).

## 2.9.4 Flood Control in the Ottawa River Basin

Despite thirty storage reservoirs with a tremendous capacity of 14 billion cubic metres in its basin, the Ottawa River still sometimes experiences damaging floods. Many studies for the construction and operation of specific dams have been carried out in the basin, but few have considered the system as a whole. Various different federal and provincial agencies as well as private companies own the many dams and generating stations in the basin.

In 1983, the governments of Canada, Quebec and Ontario established the Ottawa River Regulation Planning Board (ORRPB) to “ensure integrated management of the principal reservoirs of the Ottawa River Basin”. This serves to protect against flooding along the Ottawa River and its tributaries while maintaining the interests of various users - with an emphasis on hydroelectric energy production (ORRPB: “Organization and Purpose”).

Most of the Ottawa River reservoirs are located on its upper section. The Ottawa River experiences a first flood peak in the spring from unregulated flows from its southern tributaries. A second peak results from high flows from tributaries along the north shore and from the partially regulated headwater areas. Reservoirs store much of the spring runoff, reducing this second peak. Flooding is of particular concern in the Montreal region (ORRPB: “Flow Regulation”).



## 2.9.5 Quebec and Ontario – Sharing a Rich Resource

Sharing the rich potential of the Ottawa River has always been a source of concern, beginning with the Chaudiere Falls, which was controlled by monopolies as early as the mid-19th century. Sawmill owners held these monopolies and discouraged the development of other sectors (Gaffield 267). Early 20th century entrepreneurs in both provinces launched many court actions over the ownership of the hydroelectric potential of the Chaudiere Falls. In 1907, Ontario and Quebec reached an agreement to share the rights for the hydroelectric potential of a Chaudiere dam, splitting the power generated equally. The Chaudiere dam was completed in 1909, and was fed by storage reservoirs upstream. The federal government built these reservoirs at the headwaters, as well as the Temiskaming and the Quinze reservoirs (1912-1913) (Gaffield 267).

In 1943, Ontario and Quebec signed the *Interprovincial Agreement*, giving them equal rights at potential hydro sites along their boundary, from Point Fortune up to Lake Temiskaming. Under the agreement, one province can lease its half to the other, allowing it to control and develop the generator. Quebec controls sites at Carillon and Rocher Fendu, and Ontario controls Chenaux, Des Joachims and Otto Holden. Sites located above Lake Temiskaming are entirely in Quebec, and so fall outside the agreement, as does the Chaudiere site, leased by the Government of Canada many years ago.

The control of hydroelectricity developed differently in the two provinces, leading to a unique situation for much of the Ottawa River. Hydroelectricity was under private control for most of Quebec's history. Hydro Quebec, a provincial agency, was created in 1944 and took over plants owned by small private firms (Canadian Public Works Association 177). Today, Hydro Quebec is Canada's largest electric utility (CCE: "Hydro Timeline"), a major exporter, employer, and engine of economic growth (Canadian Public Works Association 172). Quebec relies heavily on hydroelectric power.

In Ontario, public utilities controlled hydroelectric power generation for much of the 20th century, although private companies undertook early developments. 1905 marked the incorporation of Ontario Hydro's precursor, the Hydro Electric Power Commission of Ontario (Canadian Public Works Association 179). Although Ontario Hydro had some of its own plants, it also imported electricity from Quebec. Subsidized electricity revolutionized rural farm life. Private development continued in the north, where pulp and paper companies built their own generating facilities for their own needs (Canadian Public Works Association 181).

In 1999, Ontario Power Generation (OPG), a major North American electricity generating company, acquired many generating stations on the Ottawa River basin from Ontario Hydro. OPG's Ottawa/St. Lawrence Plant Group operates ten generating stations on the St. Lawrence, Ottawa and Madawaska Rivers. Four of these are located on the Ottawa River, including Chats Falls Generating Station (shared with Hydro Quebec), Chenaux Generating Station (from which most of the others are remotely controlled), Des Joachims Generating Station and Otto Holden Generating Station (OPG: "Operations").

## 2.9.6 The Impact of Hydroelectricity on the Environment of the Ottawa River

Hydroelectric development has radically changed the face of the Ottawa River, through the creation of reservoirs that have flooded land upstream and dams that create a physical barrier to river life. The change in the natural flow regime has an impact on all life in and along the river (Haxton and Chubbuck 58). Hydro development has affected the diversity and distribution of fish and wildlife. Dams have

blocked migratory species such as American shad and eels. (Haxton and Chubbuck 3). Reservoirs have altered bird habitat, including the loss of historic mud flats and the creation of new habitat through wetlands. Resource users such as First Nations Peoples, canoeists, hunters and fishers have been adversely affected by these developments. Cottaging and other lake-based recreation has benefited from the creation of reservoirs (Haxton and Chubbuck 4).

## 2.9.7 Generating Stations, Dams and Reservoirs on the Ottawa River

### Carillon Generating Station

The first dam at Carillon was built as part of upgrading the canal system in the 1870s and 1880s. The Carillon Generating Station, operational by 1964, was constructed at the site of the old dam to supply hydroelectric power to Montreal in peak hours. Raising water levels nineteen metres at Carillon, the dam flooded out rapids at Chute-à-Blondeau and the Long Sault (Haxton and Chubbuck 8). Carillon receives the full flow of the Ottawa River basin (Haxton and Chubbuck 9).

Figure 2.75 Carillon Dam



Source : Ottawa River Legacy Landmark Network

### Chaudiere Dam

The Chaudiere Dam was built at the site of a boiling cauldron where the river tumbled over a limestone ledge (Haxton and Chubbuck 17). The saw mills of the early 1880s were driven by waterwheels. Early log slides were built in the 1820s and 1830s. In 1868 a diversion dam was constructed across the falls to ensure a continuous water supply for the mills. In the 1890s, two small power plants built at the falls supplied the Ottawa-Hull area with industrial and residential power. A “Ring Dam” was built in 1909 to raise the water level to feed the Chaudiere operations.

The Chaudiere Dam maintains a constant water level for power generation at the Hull 2 Generating Station, E.B. Eddy and four hydro plants at the southern end of the dam. It does not have storage capacity and did not dramatically change the shoreline of upstream Lake Deschênes (Haxton and Chubbuck 25).

The Hull 1 Power Plant built in 1902 by the Ottawa and Hull Power Manufacturing Co. Ltd. shows the transition from domestic to industrial architecture, contrasting with plants built during large-scale industrial periods (Gaffield 269).

### Chats Falls Generating Station

The Chats Falls Generating Station was built in 1931. Its associated dam drowned out the spectacular Chats Falls and rapids, described as the most beautiful on

Figure 2.76 Chats Falls, 1901



Source : James Ballantyne/Library and Archives Canada/PA-132330

the river (Haxton and Chubbuck 27). The hydro dam was built immediately upstream from the falls, creating a forty kilometre long impoundment at Lake des Chats (Haxton and Chubbuck 31). Cost of operation and the power produced are shared equally by OPG and Hydro Quebec.

### Chenaux Generating Station

The Chenaux Generating Station began operating in 1951 and involved building the Chenaux and Portage du Fort Dams, as well as a discharge channel excavated through Limerick Island. The Chenaux Dam flooded 809 hectares of land; flooding extends to the base of the Bryson Dam, drowning out several sets of rapids, including the end of the famous whitewater section at Rocher Fendu (Haxton and Chubbuck 37). The Chenaux Generating Station is currently owned and operated by OPG.

### Bryson Generating Station

The Bryson Generating Station was in service in 1925, located near the end of the Chenal du Grand-Calumet. Construction of the main dam began in 1923, immediately above the foot of the rapids. The Generating Station is not an integral part of the main dam – it is situated downstream and connected by a canal excavated along the western bank (Haxton and Chubbuck 39). A dam built in the Chenal du Rocher Fendu to raise water for the historic canal on the Culbute channel now ensures sufficient flow to the Bryson Generating Station (Haxton and Chubbuck 40).

### Rapides-des-Joachims Generating Station

Historically, there were two stretches of rapids above Rapides-des-Joachims. Rapides-des-Rocher Capitaine, some thirty kilometres west, were the most intriguing. The 2.4 kilometres of fierce, crooked whitewater were considered to be the best on the Ottawa River (Haxton and Chubbuck 46). The Rapides-des-Deux-Rivières were located sixteen kilometres upstream of Rocher Capitaine (Haxton and Chubbuck 47).

Construction of the Des Joachims dam started in 1946 on the site of the once-flourishing lumber village of Des Joachims, Quebec, named for the Joachims brothers whose family used to own land in the area. 4,452 hectares of land was cleared between Des Joachims and Mattawa. The McConnell Lake Control Dam, an auxiliary dam, was built at the upper end of an ancient riverbed to allow excess flow to bypass, starting in 1949 (Haxton and Chubbuck 49). The Generating Station was built at the top of the Rapides-des-Joachims. Completed in 1950, the hydro dam altered or completely drowned the rapids at Des Joachims, Rocher Capitaine and Deux-Rivières, raising water levels all the way to Mattawa and flooding about 46 square kilometres. The lake-like impoundment is 92 kilometres long and created sandy beaches that are now part of Driftwood Provincial Park, 12 kilometres upstream from Des Joachims (Haxton and Chubbuck 53). The Generating Station is run by OPG but was originally built by the Hydro-Electric Power Commission of Ontario.

**Figure 2.77 Building the Dam at Rapides-des-Joachims**



Source : Courtesy of Joe and Kathy Lance and CEDEC.

## Otto Holden Generating Station

The Otto Holden Dam, completed in 1952, flooded an area of 12 square kilometres, creating an artificial lake and drowning out the La Cave Rapids 8 kilometres north of Mattawa. Lake La Cave extends 49 kilometres upstream of the Otto Holden Dam to the Public Works Dam at the outlet of Lake Temiskaming and has surface area of 3028 hectares.

Dam construction began in 1948 and involved the clearing of 1,254 hectares of land upstream from dam, which was built at the head of the La Cave Rapids (OPG: “Otto Holden GS” and Haxton and Chubbuck 53). Built by the Hydro-Electric Power Commission of Ontario, the dam also required relocating the railway, which was flooded by the impoundment. The generating station is now owned by OPG.

**Table 2.2**      **Generating Stations on the Ottawa River**

	<b>Owner</b>	<b>Inservice Date</b>	<b>Installed Capacity (MW)</b>	<b>No. of Units</b>	<b>No. of Dams</b>
<b>Carillon</b>	HQ	<i>1962<sup>1</sup></i>	<i>752</i>	14	1
<b>Hull 2</b>	HQ	1920	27	4	2
<b>E.B. Eddy</b>	EB	n/a	9.0	n/a	n/a
<b>Chaudiere 2 &amp; 4</b>	OH/EB	n/a	12.0	n/a	n/a
<b>Chats Falls</b>	OPG/HQ	1931/32	192.0	8	6
<b>Chenaux</b>	OPG	1950/51	122.0	8	3
<b>Bryson</b>	HQ	1925	61.0	3	2
<b>Des Joachims</b>	OPG	1950/51	432.5	8	2
<b>Otto Holden</b>	OPG	1952/53	240.0	8	1
<b>Première-Chute</b>	HQ	1968	130	4	n/a
<b>Rapide-des-Îles</b>	HQ	1966	147	4	n/a
<b>Rapides-des-Quinze</b>	Federal government and Minister of Public Works	1923	95	6	n/a
<b>Rapide-2</b>	HQ	1954	48	4	n/a
<b>Rapide-7</b>	HQ	1941-49	48	4	n/a

n/a = data not available

Sources: Haxton and Chubbuck 9, HQ: “Hydro Quebec Production”.

<sup>1</sup> Numbers in italics report discrepancies between Hydro Quebec and OPG’s figures. Figures taken from Hydro Quebec have been selected here since the generating stations involved (Carillon and Hull 2) are owned by Hydro Quebec.

## 2.9.8 The New Face of Power: Nuclear

In the 1940s, the Deep River or “rivière creuse” section of the Ottawa River was selected as an ideal spot for developing a new type of energy: nuclear. The deep stretch of river supplied cold water for reactor cooling, and passed between well-isolated, largely uninhabited shorelines. To operate the supporting laboratory, hundreds of families were housed in a secret town site later named Deep River.

In 1956, the world’s first CANDU power reactor was established near Des Joachims at the head of the Deep River section. In 1962 it produced electrical power for the first time. This nuclear power demonstration plant was built on the site of a former dam construction colony and was closed in 1987. Water used for these power and research reactors made up one quarter of the river’s total usage (Whitlock: “Algonquins to Atoms”).

Today, the major research and development efforts of Atomic Energy of Canada Limited (AECL) take place at the Chalk River Laboratories (CRL). The laboratories have world-class expertise in physics, metallurgy, chemistry, biology, and engineering. The National Research Universal (NRU) reactor has been operating at CRL since 1957. Canada’s neutron beam research is centred here. NRU is also used for materials research and to produce a large portion of the world’s supply of medical isotopes for diagnosis and treatment of cancer and other illnesses (AECL).

**Figure 2.78** Pointe au Baptême Showing the Nuclear Power Plant



Source: Cliff Baskin, Atomic Energy of Canada Limited

## 2.9.9 Sites Relating to Hydroelectric and Early Power Development

- Carillon Canal National Historic Site
- Centrale de la Première-Chute on the upper stretches of the Ottawa River. Open to visitors
- The E.B. Eddy Industrial Complex. Four buildings have recently been protected against demolition: E.B. Eddy Manufacturing Company’s 1866 sawmill; pulp and paper mill 1886; hydroelectric plant, 1913. Scott Paper Ltd. bought the White Swan Division from E.B. Eddy in 1989, and is now one of last vestiges of Hull’s industrial past (ORIDP 19)
- John Rudolphus Booth’s sawmill, 1858. On the south bank of Chaudiere Falls (ORIDP 17)
- Chaudiere Dam, 1850
- Ruins of the Deschênes site, Lake Deschênes: farm (built by Robert and William Conroy), sawmill and flour mill (belonging to Narcisse Cormier); dam and power plant of the Deschênes Electric Company (ORIDP 17).
- McLaurin Sawmill. Built before 1910 on McLaurin Bay (ORIDP 19)
- Hydro Electric Museum, Pembroke

## Summary

Hydroelectric development over the past century has dramatically transformed the Ottawa River, impacting on its environment, economy and settlement. Dams have been built to drown out rapids to facilitate navigation and to harness the river's power. On a national scale, the Ottawa River is one of three rivers that played a crucial role in the early development of hydroelectricity in Canada, along with the St. Lawrence and Niagara Rivers. Hydroelectric development on the Ottawa was intertwined with the rise of the pulp and paper industry. Settlement followed this industrial and energy development that was crucial to the growth of the economies of both Quebec and Ontario.

That the river follows the Quebec-Ontario boundary for much of its length has meant a shared responsibility for hydroelectric power development between the two provinces. The 43 dams in the Ottawa River watershed make the Ottawa River one of the most highly regulated catchments in Canada. Today, power production in the Ottawa basin generates \$1,000,000 daily.

## 2.10 Aesthetic Values: Celebrating the Art of the Ottawa River Watershed

Lynn Jones  
Founder, Ottawa River Institute

The Ottawa River watershed is a place of great natural beauty. The majestic Ottawa itself flows over 1200 kilometres from its source in the wilderness of northwestern Quebec, with at least ten major tributaries, including wild and beautiful rivers such as the Madawaska, Petawawa, Dumoine, Coulonge, Black, Gatineau, and Lievre; and less wild but still beautiful rivers such as the Bonnechere, Rideau and South Nation. There are vast, wild expanses of forest as well, including large swaths of boreal spruces and many wonderful pine and hardwood forests and glades. Countless are the places in the watershed where a connection to the great mystery lies very close indeed.

It is no surprise then that the Ottawa River watershed has been a source of inspiration for artists dating from thousands of years back. One significant example of ancient art, dating from at least 3,000 years ago, is Oiseau Rock or *Migizi Kiishkaabikaan*, as it is called in Algonquin language. Situated on a cliff on the Ottawa River, Oiseau Rock is a sacred pictograph site. The Algonquin today describe it as a beautiful, powerful, place where the earth's energy is exposed and where the pictographs represent their ancient traditional understanding of the spiritual and physical landscape.

Figure 2.79 River Spirit



Source: Kathrin Winkler

Perhaps the most famous modern painter to draw inspiration from the watershed was Tom Thompson. Thompson painted many beautiful images in Algonquin Park, most of which is in the watershed. One of his most famous paintings, "The Jack Pine", was inspired by the shores of Grand Lake near Achray, in

**Figure 2.80 Ottawa River**



Source : John Almsiedt

1916. A curator at the National Gallery wrote of this painting that it is "an icon embodying the spirit of the land and the Canadian experience of nature".

In the early to mid-1900s, most, if not all members of the Group of Seven painted extensively in the Ottawa River watershed. Scenes included the countryside outside of Montreal (A.Y. Jackson and J.E.H. MacDonald), the more northerly wilderness near Mattawa (Franklin Carmichael and J.E.H. MacDonald), the southeastern edge of the watershed in Bancroft (A.J. Casson) and Algonquin Park, to which members were introduced by Tom Thompson. In

later years, many of the group frequently visited the Combermere area for some autumn painting. In the 1950s and early 1960s, A.Y. Jackson created a number of paintings around Lake Clear and the Opeongo Line while visiting a friend at his Lake Clear cottage.

Earlier examples of watershed art include a number of paintings by Frances Anne Hopkins, a British artist who painted detailed, naturalistic canoe scenes as she traveled through the watershed in a Voyageur canoe with her husband, an inspector for the Hudson's Bay Company. One of her most famous paintings was "Shooting the Rapids", now an icon in Canadian Voyageur heritage. Many other 1800s era paintings from the watershed depicting early life and scenes of nature on the Ottawa and its tributaries are housed in the National Archives of Canada.

Legions of contemporary artists draw inspiration from the Ottawa River watershed today, working in all kinds of media from wood and metal to paint and paper, often incorporating elements of nature in their designs.

Hoping in a small way to increase appreciation for the works of watershed artists and make their works available to a wider audience, the Ottawa River Institute (ORI) has launched an on-line art gallery of contemporary works from the Ottawa River watershed. The gallery can be viewed at [www.ottawariverinstitute.ca](http://www.ottawariverinstitute.ca). The ORI gallery also aims to increase appreciation for the majestic Ottawa River watershed itself. In the words of one of the gallery's on-line artists, Kathrin Winkler of Morrison Island, "The arts open a door to seeing and cherishing the beauty that surrounds us - and if that door is opened wide enough we will strive to protect that life-giving

**Figure 2.81 The Deep**



Source : Kathrin Winkler

gift of river and sky.”

The ORI gallery currently contains work from painters Kathrin Winkler, John Macgillivray, John Bateson and John Almstedt, and photographer and hand-made paper artist Edith Hanatschek.

### 2.10.1 Selected Ottawa River Poetry

#### Outaouais

By Jamie MacKinnon, 2004

All the flowing vowels  
trail  
and fade

All the firm avowals made  
on this river and on  
its granite shores  
reverberate...

Tales, tall and small  
    Champlain  
    Henry  
    Mufferaw  
made myth  
fed dreams  
    that nourish still

Yet this charged current  
that flows from heart to ocean  
    substrate of our dreams  
is sometimes misimagined  
as glinting blade  
    fatal barb rammed deep  
asseverating  
nation

So little time ago  
this highway  
    as they called her  
this certain invitation  
to probe the deeper heartland  
was serenly busy  
with *canots de maitre* and pointers  
and tugs and rafts  
and steamers and  
above the rapids  
    by the mounds



where "grave goods"  
ochre  
copper  
pipes  
lie  
companion bones  
long gone  
in acid soil  
above the rapids could still be heard  
the shouts and songs of bucherons

She's best imagined  
says Tessouat  
lord of entrepot  
enterprising toll taker  
first to greet the aliens  
not as blade, but stem  
with veins  
Matabichuan, Kipawa  
Madawaska, Petawawa  
Mississippi...

I know many  
no one knows them all  
but understand this  
you should understand this  
we Kitchisipirini  
we people of the Big River  
understand this: the price of passage

But canoes are microbes  
and smallpox  
and the Iroquois  
and  
chop chop chop chop chop chop  
messieurs  
Bronson, Bryson  
Booth and Eddy  
and  
cobble  
stitch  
invent  
amend  
in the making of a larger nation  
as Cartier and Macdonald  
were fabricating  
*"C'est clair que ce n'est pas parfait,*

*mais on doit s'efforcer... »*  
they could look down  
from the parliamentary precinct  
    below the falls  
    below the straitened stretch  
    where the water foams  
and see more lumberyards and sawmills  
than any place in the world  
and watch the green hands  
do their pike pole dance

from below  
a local *gars de hache*  
could and did look up  
and seeing gentlemen and power  
    if not their individual features  
saluted *les nobles en haut*

In twenty years  
the sons of these green hands  
and the son  
of that *gars de hache*  
    rivermen, all  
left this river  
to ascend another  
    the Nile  
to rescue "Chinese" Gordon  
    one myth flows  
    into another

Here now  
in this glaciated hillscape  
where granite bluffs  
and the hard bold end of the north  
meets south and soil  
where the scabble slopes erode  
the ache of myth  
and misremembered dream  
I stand on escarpment edge  
with pumpkin-coloured  
veiny leaf in hand  
and look down  
through October's silver smoke  
on this ribbon of memory  
    coursing  
    coursing  
in sovereign potency

this Manitou of water  
this Outaouais of light

### **The Ottawa River**

By Wilfred Campbell, ca. 1900

Out of the northern wastes, lands of winter and death,  
Regions of ruin and age, spaces of solitude lost;  
You wash and thunder and sweep,  
And dream and sparkle and creep,  
Turbulent, luminous, large,  
Scion of thunder and frost.  
Down past woodland and waste, lone as the haunting of even,  
Off shriveled and wind-moaning night when Winter hath  
    wizened the world;  
Down past hamlet and town,  
By marshes, by forests that frown,  
Brimming their desolate banks,  
Your tides to the ocean are hurled.

# Chapter 3

## Natural Heritage

The natural heritage values of the Ottawa River have provided the basis for the development of cultural heritage values as well as recreational opportunities. This section outlines the natural features of the Ottawa River using the following themes: geology, hydrology, river morphology, climate, flora, fauna, aquatic and terrestrial ecosystems, conservation, and land and water use. These chapters describe the natural values of the river as well as the conservation of these values, and current uses of the land and water.

The Ottawa River displays many interesting physical features. Its drainage basin offers an excellent, accessible display of geological heritage. The Ottawa River is the only Canadian River that crosses four major geological subdivisions. The sheer size of the Ottawa River is impressive: its 1271 kilometres and its high discharge volume make it the largest tributary to the St. Lawrence. The Ottawa River is Canada's 12<sup>th</sup>-longest river, and ranks 8<sup>th</sup> in terms of discharge volume.

The Ottawa River is home to many different ecosystems, each playing an important role in sustaining Canada's biodiversity. Unique wetlands and floodplain habitats along the river support species that are considered to be rare or at risk. The Ottawa River region hosts the most biologically diverse ecosystems in Quebec (Nature Conservancy of Canada: "Ottawa River Valley"). More than 300 species of birds have been inventoried along the river, and about half of these are migratory species that use the Ottawa as one of the continent's most important migratory halts. In addition, 33 species of reptiles and amphibians, 53 species of mammals, and 85 species of fish can be observed along the river. Within the watershed, there are at least 50 animal and plant species at risk (nationally or provincially), including the River Redhorse, American Shad and American Ginseng. The Ottawa River is also home to the threatened Least Bittern and the Eastern Spiny Softshell Turtle, one of the most rare turtles in Canada.

### 3.1 Geoheritage of the Ottawa River Drainage Basin

Dr Allan Donaldson  
Carleton University, Ottawa

The Ottawa River crosses distinctive segments of the lithosphere (the rigid, rocky, outer part of our planet) that are representative of all but one of the major time units through which 4.5 billion years (BY) of Earth's history can be traced: Archean, Proterozoic, Paleozoic, and Cenozoic (Table 3.1). An earlier unrepresented time unit, the Hadean, is nowhere preserved on Earth because it represents the interval of time between the origin of our universe, about 13 billion years ago, and the time of preservation of the oldest solid rock known on Earth: the Acasta Gneiss in Nunavut Territory, Arctic Canada, for which a minimum age of nearly 4 BY has been determined by radiometric methods.

Another unrepresented time unit within the Ottawa River drainage basin is the Mesozoic Era, best known as the time when dinosaurs “ruled our planet.” The lack of dinosaur fossils within the region now traversed by the Ottawa River does not mean that dinosaurs did not wander over this part of Canada. In fact, they likely did, and the evidence for their existence has simply been removed by erosion. This same process of erosion is slowly revealing evidence for their existence elsewhere, as in the Badlands of Alberta, one of the most significant dinosaur burial grounds in the world.

**Table 3.1 Geological Time Divisions<sup>1</sup>**

Time Subdivisions		Millions of Years Ago
Phanerozoic Eon	Cenozoic Era	65 to present
	Mesozoic Era	250 to 65
	Paleozoic Era	545 to 250
Precambrian	Proterozoic Eon	2,500 to 545
	Archean Eon	4,500 to 2,500
	Hadean Eon	> 4,500

To gain an appreciation of the enormity of geological time, it is instructive to scale it to a single year, a unit readily comprehended (Table 3.2). On this condensed time scale, the Ottawa River has followed its present path for little more than a minute, having developed as a principal drainage pathway during the recession of the last continental ice sheet, 12,000 to 8,000 years ago (or about two minutes ago on our condensed time scale.)

**Table 3.2 Geological Time Scale for Our Planet, Proportionally Compressed to One Year**

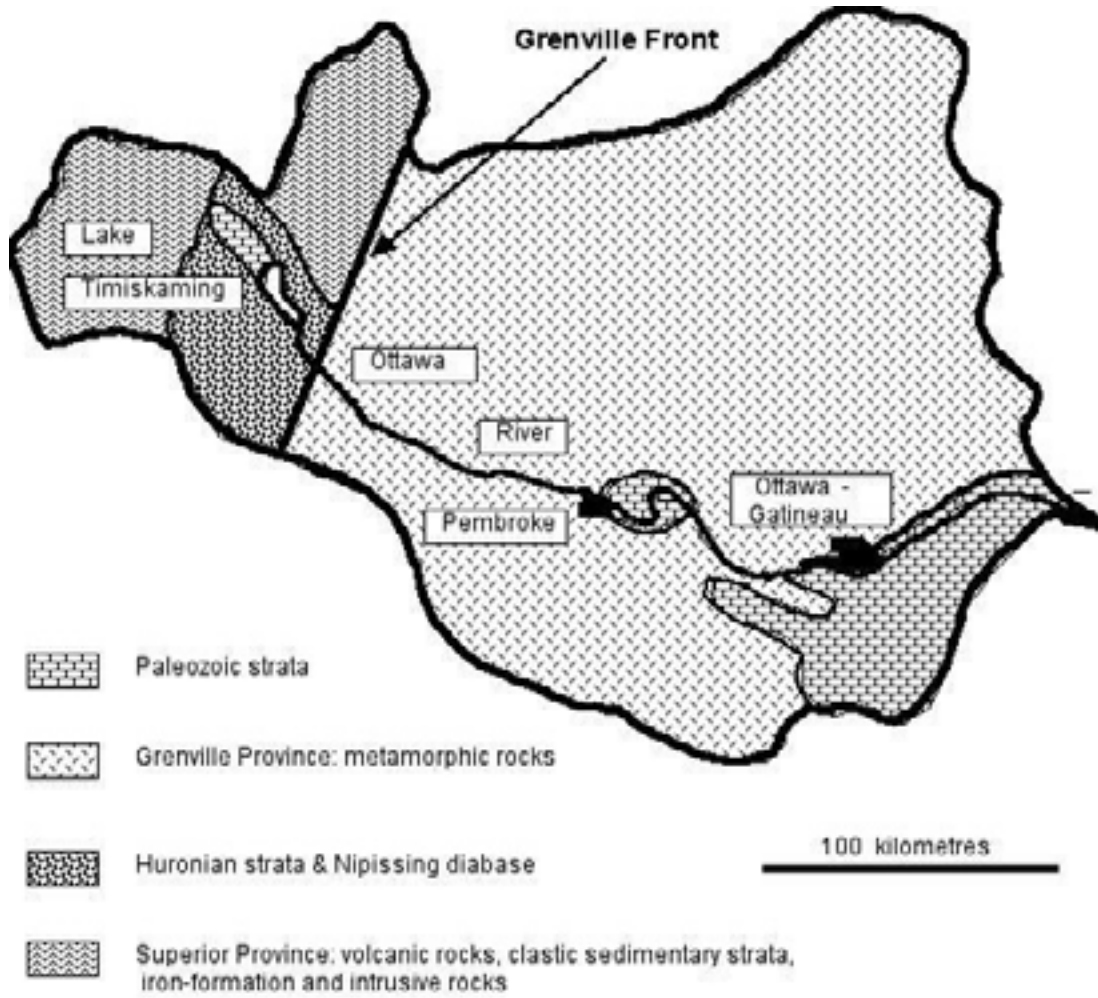
Compressed Time (1 yr.)	Geological Time Scale
1 second ago	Our lives
1 minute ago	Oldest written records
2 minutes ago	Last ice age
3 hours ago	First humans
1 week ago	End of dinosaurs
3 weeks ago	First dinosaurs
1.5 months ago	First metazoans
9.5 months ago	First stromatolites
10 months ago	Oldest rock
1 yr ago	Origin of Earth
3 years ago	Origin of Universe

The drainage basin of the Ottawa River now offers an excellent display of natural landscapes representative of a large part of our impressive geological heritage. Visits by road to selected segments of the river and environs offer appealing introductions to a variety of Ottawa River geoscapes. However, a trip down the river by raft, kayak or canoe is the ideal way to grasp the scope of events recorded in the rocks (Fig. 3.1) and in the overlying discontinuous blanket of unconsolidated sedimentary deposits: glacial till, drumlins, moraines and raised beaches; glacial outwash (sand and gravel in floodplains, deltas,

<sup>1</sup> Other designations of eras and eons are in current use. This simplified table matches common North American usage as shown at <http://geology.er.usgs.gov/paleo/geotime.shtml> and [http://geoscape.nrcan.gc.ca/ottawa/time\\_e.php](http://geoscape.nrcan.gc.ca/ottawa/time_e.php).

and eskers); and vast accumulations of silt and clay that were deposited during waning stages of the last Ice Age within both freshwater lakes and the Champlain Sea, a marine estuary of the Atlantic Ocean that extended up the Ottawa River beyond Pembroke (Fig. 3.2).

**Figure 3.1 Distribution of Bedrock Units Underlying the Drainage Basin of the Ottawa River**



Source : Dr. Allan Donaldson

**Figure 3.2 Maximum Extent of the Champlain Sea, Approximately 12,000 Years Ago**



### 3.1.1 Our Geological Legacy

Sadly, few of our citizens or visitors to the Ottawa Valley have received formal training in the geosciences, in spite of the importance of the earth sciences to our very existence, let alone to our present standard of living. Nearly all products of modern society arise from the lithosphere, the upper solid component of our planet. Earth's bounties include a ready source of durable building materials, metallic and non-metallic ores, and also the coal and petroleum resources that provide vast quantities of fuel (and are also used to make plastics and other organic derivatives.)

Earth's lithosphere also provides sustenance for life as an outcome of the continual weathering of solid rock to produce soils essential to life on land. This is complemented by the relentless transport of waterborne mineral nutrients that support life in our rivers, lakes and oceans. The Ottawa River is a fine example of this interplay between geological and biological resources, arising in the hinterlands of the Canadian Shield, and terminating more than 1200 kilometres downstream, where it joins the St. Lawrence River. The St. Lawrence in turn drains the Great Lakes, the largest assemblage of linked lakes in the world, both in terms of area and of volume. One of the few publications that shows appreciation of the natural connection between biology and geology is a booklet by Paul Keddy (1999) that provides many interesting details about a key segment of the Ottawa Valley.

As discussed in Chapter 2.3: Algonquin History in the Ottawa River Watershed, the Ottawa River was an important pathway for First Nations inhabitants for many years. These people utilized the river's geological resources for thousands of years, and were familiar with much of its geological character. Although some geological observations were recorded by early explorers and missionaries, the first systematic geological survey was carried out in 1845 by Sir William Logan, founder of the Geological Survey of Canada (Smith and Dyck, in press; Zaslow 1970).

Art can function as a portal to geoh heritage. Paintings by the artists such as Paul Kane, Tom Thomson and members of the Group of Seven have depicted the geology of the landscape in Algonquin Park and other parts of the Ottawa Valley quite well. More recently, artists such as George Cassidy and Muriel Newton-White have captured the essence of geological features along the rocky shores of Lake Temiskaming, often incorporating the famous history of the Cobalt silver mines through paintings of head frames and abandoned mining machinery.

Today, the geological legacy of the Ottawa River Valley is recognized in signage, such as that which has been erected by the National Capital Commission at the Champlain Lookout in Gatineau Park, a panel on the kiosk at Kitchissippi Lookout erected by the Ottawa Riverkeeper, the impressive RockWalk on the campus of Haileybury School of Mines in Haileybury, displays in the Museum of Nature (Ottawa), in the Écomusée (Gatineau) and in the Northern Museum of Mining (Cobalt).

**Table 3.3 Introduction to the Three Types of Rock Present Along the Ottawa River<sup>2</sup>**

Igneous Rock	Any rock that solidified from molten or partly molten material (such as magma).
Metamorphic Rock	Any rock derived from pre-existing rocks by mineralogical, chemical and/or structural changes, in response to marked changes in temperature, pressure, shearing stress, and chemical environment, generally deep within the Earth's crust.
Sedimentary Rock	A layered rock resulting from the consolidation of sediment. Examples include clastic rocks such as sandstone, chemical rocks such as rock salt, and organic rocks such as low-rank coal.

### 3.1.2 The Precambrian Shield

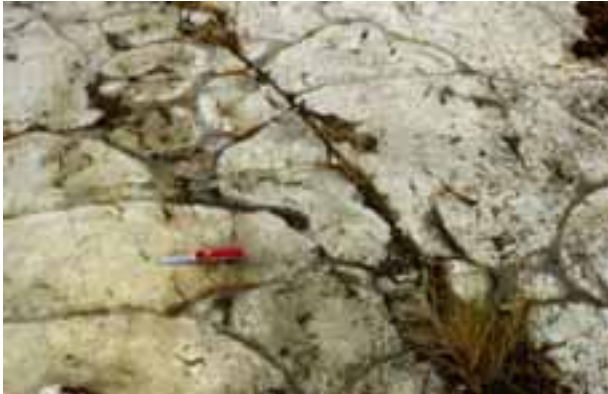
The source of the Ottawa River lies within the Quebec portion of the Superior Structural Province of the Canadian Shield, one of two large blocks of Archean igneous and metamorphic rocks (Fig. 3.1 and 3.2) that contain the oldest rocks in North America. More than 2.5 BY old, these blocks consist of:

- (1) Gneiss and large intrusions of granite and other igneous rocks;
- (2) "Greenstone belts" that preserve volcanic edifices in which sea-floor eruptions are widely recorded by pillow structures (Fig. 3.3). The greenstone belts also contain thick accumulations of wackes and similar clastic sedimentary rocks (Fig. 3.5). The wackes commonly display graded bedding indicative of downslope resedimentation of unconsolidated sediment in response to earthquake-generated underwater landslides (turbidity currents). In addition, some tracts of Archean sedimentary rocks within the Ottawa Valley display large-scale cross-bedding suggestive of terrestrial deposition, as well as both textural and chemical maturity (well-rounded grains; high concentration of quartz sand) suggestive of multicycle origin; and
- (3) Minor but economically significant deposits of banded iron-formation (chemically precipitated laminated rocks rich in silica and iron oxides, the prime source of iron ore (Fig. 3.4)).

In traversing this terrain, the Ottawa River is marked by numerous falls and rapids before it reaches Lake Temiskaming via Rapides des Quinze.

<sup>2</sup> For an explanation of other geological terms used within this section, please refer to Gary et al.

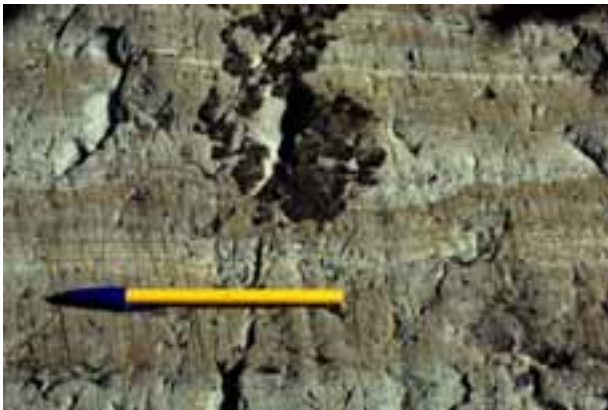


**Figure 3.3 Pillow Structures**

Source : Dr. Allan Donaldson

*Pillow structures in a flow unit of Archean basalt that is more than 2.5 billion years old. Each pillow is actually a section through a lava tube, created when liquid rock material (magma) erupted under the sea, with the molten lava becoming instantly enshrouded in a glassy outer rim when the lava contacted cold sea water. Downward-pointing projections (keels) of the pillows were formed when the initially plastic lava tubes sagged to conform to the irregular surface created by the underlying, previously consolidated, lava tubes.*

*Location: 4 kilometres south of Cobalt, Ontario.*

**Figure 3.5 Typical Stratified Archean Sedimentary Rock**

Source : Dr. Allan Donaldson

*Typical stratified Archean sedimentary rock showing graded bedding. Each layer represents deposition from a single downslope turbidity current (an underwater landslide generated by an earthquake).*

**Figure 3.4 Block of Banded Iron Formation**

Source : Dr. Allan Donaldson

*Block of banded iron-formation in the RockWalk, Haileybury School of Mines, showing tabular beds that are alternately iron-rich (black) and iron-poor (red). This multi-tonne block came from the now inactive Sherman Mine, Temagami, Ontario.*

At Lake Temiskaming, the Ottawa River encounters younger Precambrian strata of Proterozoic age. An ancient soil profile, known as a paleosol (Fig. 3.6) is locally preserved here beneath a major unconformity (a time gap in the rock record due to uplift and erosion - the lost interval in this case spans more than 300 million years). The paleosol lies between the older complexly folded and faulted Archean rocks and the generally flat-lying to gently undulating cover of overlying sedimentary strata assigned to the Huronian Supergroup.

**Figure 3.6 Paleosol**



Source : Dr. Allan Donaldson

*Paleosol (ancient soil profile) at the base of the Gowganda Formation of the Huronian Supergroup. Formed by mechanical (freeze-thaw) weathering of Archean volcanic rock, it is overlain by a pebbly conglomerate of the younger sedimentary strata.*

**Figure 3.7 Tillite Overlying a Laminated Siltsatone**



Source : Dr. Allan Donaldson

*Tillite overlying a laminated siltsatone-claystone succession in the lower part of the Gowganda Formation. Road cut on north side of Highway 588, west of Haileybury.*

These Proterozoic strata of the Huronian Supergroup have been subjected to only mild metamorphism, and only rarely do they display penetrative cleavage (deformation-induced layering). Most of the Huronian strata that border Lake Temiskaming belong to the world-renowned Gowganda Formation, universally regarded as a classic example of one of at least four episodes of continental glaciation that took place before the last Ice Age (Fig. 3.7). The ice sheet responsible for the deposition of the Gowganda sediments was at its maximum size more than 2.2 BY ago. This was established by the radiometric age of the Nipissing Diabase (Fig. 3.8), an igneous rock that intruded the Huronian strata as sills (bedding-conformable layers). Local intermixing of diabase and sedimentary units indicates that this widespread intrusive event took place before the sediments had completely lithified.

The Nipissing Diabase is a hard, weathering-resistant rock, responsible for much of the rugged topography north of the Grenville Front, which is the southern boundary of both the Superior Province

and its overlying cover of Huronian strata (the latter geological unit is designated as the Cobalt Plate). One of the more striking examples of landscape created by the resistant Nipissing Diabase is Spirit Rock, which displays a spectacular cliff rising more than 100 metres above the west shore of Lake Temiskaming (Fig. 3.9). This vertical cliff presents a cross-section through one of the thicker sills of Nipissing diabase that was intruded as molten magma parallel to the bedding of enclosing, nearly flat-lying, sedimentary rocks of the Cobalt Group. The sill is transected by sets of near vertical joints that have controlled the mechanical weathering of this sill. The dark vertical lines spaced a few metres apart along the cliff mark the intersections of near-vertical joints.

**Figure 3.8 Microscopic View of Nipissing Diabase**



Source: Dr. Allan Donatelson

*Microscopic view of Nipissing diabase, showing its characteristic intergrowth texture comprising randomly oriented elongate crystals of plagioclase feldspar (clear with dark linear stripes) and mafic minerals (more equant crystals that appear dark to opaque, reflecting their high content of iron and magnesium). Width of field of view is 4 millimetres.*

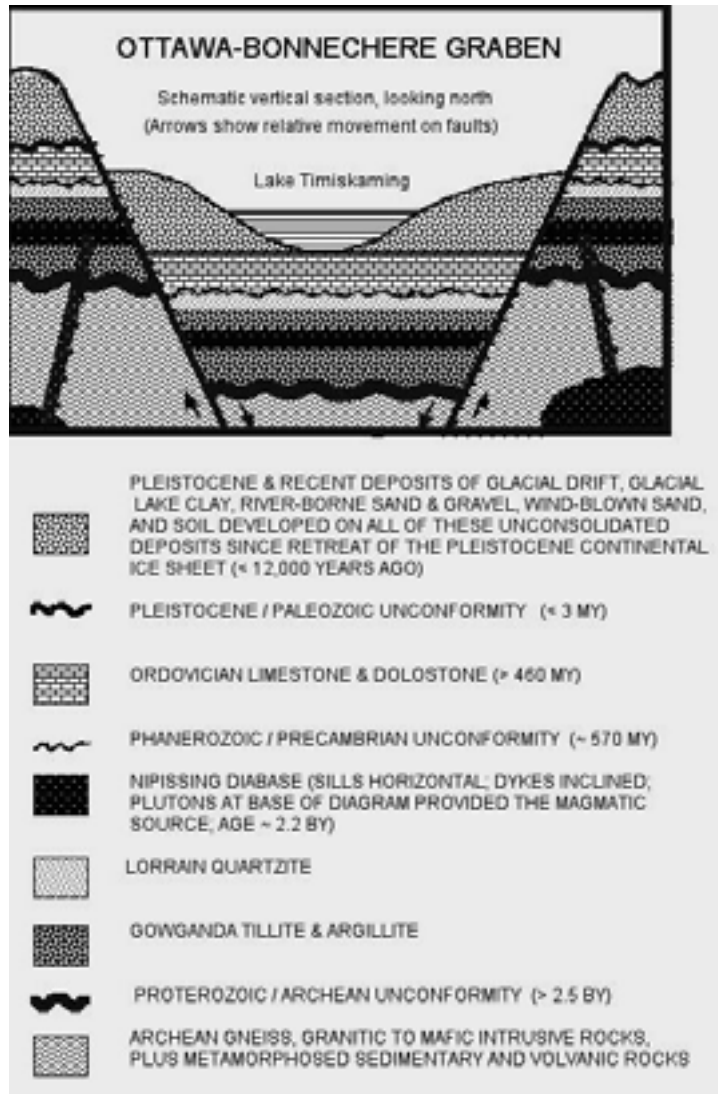
**Figure 3.9 Spirit Rock**



Source: Dr. Allan Donatelson

The Ottawa River takes an abrupt southward turn along the linear south- to south-southeastward path of Lake Temiskaming, narrowing to again take up a route marked by intermittent rapids. This southward path is controlled by faulting that has down-dropped younger sedimentary strata of Paleozoic age within a keystone-like block or graben within, and extending north of, Lake Temiskaming (Fig 3.10: A graben is an elongate, down-dropped crustal unit that is bounded by faults along its roughly parallel sides (Bates and Jackson 217)). Unusually deep segments of Lake Temiskaming follow the trends of graben-parallel boundary faults.

**Figure 3.10 Vertical Section, Looking Northward, Across the Ottawa-Bonnechere Graben**



*Vertical section, looking northward, across the Ottawa-Bonnechere Graben. This diagram illustrates how, as a result of east-west extension, the central fault-bounded block of rock (the graben) has subsided relative to the rocks on both sides.*

### 3.1.3 The Grenville Province

At a point on the Ottawa River approximately due east of Temagami, Ontario, Archean rocks of the Superior Province are truncated by a block of Precambrian rocks intensely deformed, metamorphosed and uplifted more than 1 BY ago. These rocks, which belong to the Grenville Structural Province of the Canadian Shield, extend southward into southern Ontario and New York State, where they provide the basement to unmetamorphosed Paleozoic strata of the St. Lawrence Lowlands, and also form the Adirondack Mountains.

In contrast to the predominantly east-west alignment of greenstone belts in the Superior Province, the Grenville Province is characterized by large-scale, swirly patterns due to complex folding and intrusion of granitoid plutons. Interlocking crystalline texture (Fig. 3.11), and a wide range in size of their constituent mineral grains, are characteristic of both the Grenville metamorphic and intrusive rocks. Consisting mainly of gneiss and schist, these metamorphic rocks characteristically display a faint to distinct foliation (layered appearance) due to an alignment of minerals of different composition and colour. Typically, they are laced with networks of pegmatite and aplite dykes that were injected in a molten state along fractures in their metamorphic host rocks (Fig. 3.12). Their younger age is demonstrated by crosscutting relationships (the dykes truncate the metamorphic foliation).

**Figure 3.11 Interlocking Crystalline Texture of Pegmatite**



Source : Dr. Allan Donaldson

*Interlocking crystalline texture of pegmatite, a coarse-grained igneous rock that commonly occurs in dykes injected into fractures opened in older solid rocks. Such ``jig-saw-puzzle`` textures, created by either crystallization from a magma (igneous rock) or recrystallization in the solid state while hot and under pressure (metamorphic rock), are typical of all igneous and metamorphic rocks of the Grenville Structural Province of the Canadian Shield. Roadcut on the east side of Highway 17, 15 kilometres north-west of Deep River.*

**Figure 3.12 Dykes of Pegmatite and**



Source : Dr. Allan Donaldson

*Dykes of pegmatite and aplite that were injected in a molten state along fractures in mafic metamorphic host rocks. Roadcut on the east side of Highway 17, 15 kilometres north-west of Deep River.*

An imposing example of Grenville bedrock rises from the Ottawa River as Oiseau Rock, a site revered for many years by the First Nations Peoples of the area. Downstream from this locality, on both sides of Calumet Island, many fluviially eroded outcrops of Grenville age are exposed within and bordering the numerous river channels around Rocher Fendu. Especially striking are lichen-free water-scoured and polished sections of metamorphosed limestone (marble), which display spectacular folding in three dimensions (Fig. 3.13) when the water level is low. Early cultural development in these lower regions of the Ottawa River drainage basin was spurred by the development of numerous mines (lead, zinc, iron, mica and phosphorous) near the river, in both Quebec and Ontario.

Bordering the Ottawa River southward from a location just a few kilometres downstream from Pembroke, outcrops of unmetamorphosed sedimentary rock of Paleozoic age first appear, resting unconformably on the more-than-twice-as-old Grenville basement. Easily recognized by slightly inclined layering that marks the original beds, these strata include sandstone, limestone, dolostone, shale and minor conglomerate. Limestone and dolostone, the predominant rock types, are intermittently exposed downstream from their point of first appearance to Ottawa; from Ottawa south to the St. Lawrence River, the Grenville rocks are almost completely covered by these younger Paleozoic rocks.

Preserved in these rocks is a great variety of invertebrate fossils characteristic of the early Paleozoic Era. These record the evolution of lime-precipitating organisms that lived in warm tropical

**Figure 3.14 Ordovician Brachiopods and Gastropods**



*Silicified brachiopods and gastropods in Ordovician limestone. South shore of Ottawa River near Westmeath.*

soft bodies of the ancestors of our present-day squids). Many of these have been silicified (fossilized in such a way that their original components are replaced by quartz, chalcedony, or opal (Bates and Jackson 469)) (Fig. 3.14 and 3.15). These now stand out in relief due to dissolution of their enclosing matrix of soluble carbonate minerals.

**Figure 3.13 Marble**



*Marble (metamorphosed limestone) containing interbedded layers of siliceous metasedimentary strata, displaying intense folding due to deformation at depths probably in excess of 15 kilometres. Ottawa River at the Paquette Rapids.*

seas that covered much of Canada (which then was near the equator) from about 570 million to 440 million years ago. The fossils include corals, stromatoporoids, bryozoa, brachiopods, pelecypods, gastropods and cephalopods (mostly nautiloid orthocones: tapered and chambered shells up to 30 centimetres long, which housed

**Figure 3.15 Ordovician Stromatoporoids**



*Silicified stromatoporoids in Ordovician limestone. South shore of Ottawa River near Westmeath.*

The stratigraphy (sequential ordering of the strata) in the Ottawa Valley was initially established by Alice Wilson, the first female geologist to work for the Geological Survey of Canada. Her subdivisions, as well as her fossil identifications for the most part remain valid today (e.g. Wilson, 1946). In addition to bedding, primary structures characteristic of the environments within which the Paleozoic sedimentary strata were deposited include crossbedding, ripple marks, desiccation cracks (mudcracks) and intraclasts (pebbles of composition identical to their containing beds). Cyanobacteria (primitive bacteria, until recently classified as blue-green algae) were responsible for the syndepositional growth of stromatolites, which can be seen in several places along both shores of the Ottawa River today. Their characteristics and some of their most accessible locations are described below.

### **Stromatolites: The Oldest Known Record of Life on Earth**

The section of the Ottawa River between Pembroke and Ottawa offers the most easily accessible displays of stromatolites in Canada. Stromatolites are biosedimentary structures rather than true body fossils. They record departures from normal horizontal or rippled bedding occasioned by the presence of biofilm layers built up during sedimentation into domal to branching forms by cyanobacteria (primitive life forms such as bacteria and blue-green algae, which collectively are regarded as falling somewhere between the plant and animal kingdoms).

**Figure 3.16 Oblique View of Ordovician Limestone**



*Oblique view of Ordovician limestone showing elongate, concentrically laminated domal stromatolites in a section parallel to bedding. Locality: North shore of the Ottawa River, immediately west of the Champlain Bridge, Gatineau.*

Cyanobacteria thrive in a wide variety of environments, but fare best in warm aquatic waters where they build reefs in much the same way as do the corals. Through their life-related processes such as photosynthesis, cyanobacteria were likely responsible for transforming the Earth's initially reducing atmosphere (oxygen-poor) to its present oxygen-rich state. Although they were the predominant life form on Earth for over 2 billion years, cyanobacteria live in abundance in only a few localities worldwide, largely because numerous more advanced forms of life, such as snails, evolved in Early Paleozoic times, and remain in abundance today as voracious scavengers of biofilms.

**Figure 3.17 Stromatolites**



*Bedding plane view of elongated, concentrically laminated stromatolites in Hamelin Pool, Shark Bay, Australia.*

One of the places where cyanobacteria still live in abundance is Shark Bay, Australia. Here, hypersaline conditions (more than 3 times the salt content of normal marine water) provide an effectively scavenger-free environment that has enabled stromatolites to develop in profusion in subtidal, intertidal and supratidal zones.

Stromatolites are exposed along many stretches on the Ontario side of the Ottawa River (especially at times of low water levels). Some sites in Ontario include: the shore upstream of the bridge south of Pembroke; the shore immediately downstream from Port O'Call Marina near Dunrobin; Westboro Beach, Ottawa; the islands offshore from Fitzroy Provincial Park (where some attain diameters over 1.5 m). Small outcrops of stromatolites also occur in numerous other places in eastern Ontario, including Almonte and Appleton. The most spectacular place to view stromatolites, however, is in Gatineau, Quebec, less than 300 metres upstream from Champlain Bridge. During low water stages at this site, a platform of continuous exposure exceeds an area of more than 1500 m<sup>2</sup>.

These stromatolites (most of their tops have been eroded during glaciation and then by the river) are arrayed in parallel north-south lines (Fig. 3.16) that, by analogy with Hamelin Pool, Shark Bay, (Fig. 3.17) represent control of their growth by onshore winds and tides (Donaldson et al.). Smaller stromatolites show a distinct east-west elongation, and this, together with associated ripple marks, suggests the action of longshore currents in a warm, shallow-water saline environment, about 460 million years ago.

Since the Champlain Bridge stromatolite locality was drawn to public attention in 2001, more than 5000 people have visited it. The domal stromatolites so well displayed at this site on the shore of the Ottawa River closely resemble those in Lester Park and Petrified Sea Gardens near Saratoga Springs, New York State, the site where stromatolites were first recognized in North America (Hall).

At the north end of Lake Temiskaming and northward, strata of Silurian age overlie the Ordovician strata. These are the youngest lithified sedimentary rocks in the Ottawa River drainage basin. Dawson Point is an ideal place to grasp the three-dimensional relationship between the downdropped central block of the Ottawa-Bonnechere Graben and the uplifted blocks of much older Precambrian rock to both the east and to the west (Fig. 3.18).

### 3.1.4 Pleistocene Ice Age

During the past few million years, almost all of Canada was covered by continental ice sheets that advanced and receded several times. Each advance scoured the solid bedrock, and during the melting of the last ice sheet, 10,000 to 7,000 years

**Figure 3.18 Silurian Limestone**



Source: Dr. Allan Donaldson

*Cliff exposure of Silurian limestone at Dawson Point, on the north shore of Lake Temiskaming. Lying within the Ottawa-Bonnechere Graben, these nearly flat-lying coral- and brachiopod-rich strata are the youngest lithified sediments in the Ottawa River drainage basin. Their down-dropped position relative to the blocks on both sides of the graben can be appreciated by noting that the highlands on the horizon (at head-level of students viewing the Silurian strata) is composed of much older Precambrian rocks (mostly metamorphic and igneous rocks of Archean age).*



ago, deposited vast quantities of glacial till, sand, gravel and clay. Because the ice was several kilometres thick and persisted for such a long time, the land became sufficiently depressed to allow the marine waters of the Champlain Sea to slowly encroach over the till, sand and gravel deposits, leading to the deposition of locally thick deposits of marine silt and clay (Leda clay) over the lower part of the present Ottawa River drainage basin. Much of the rich farmland of southeastern Ontario and southwestern Quebec is underlain by these unconsolidated fine-grained sediments.

### Unstable clay slopes

Deposits of Leda clay, a potentially unstable material, underlie extensive areas of the Ottawa–Gatineau region. Leda clay is composed of particles of bedrock that were finely ground by glaciers and washed into the Champlain Sea. As the particles fell to the seafloor, they formed loose clusters. The resulting sediment had a loose but strong structure, making it capable of retaining large amounts of water. Following the retreat of the Champlain Sea, the salts that originally contributed to the bonding of the particles were leached by fresh water filtering through the ground, weakening the sediment's structure. If sufficiently disturbed, Leda clay can liquefy, producing dangerous landslides on unstable slopes. Triggers include river erosion, earthquakes, human activities such as excavation and construction, and increases in pore-water pressure (especially during periods of heavy rainfall or snowmelt.)

Because the southern region of the Ottawa River Valley contains deposits of Leda clay, the area is vulnerable to often catastrophic landslides. Over 250 landslides have been identified within 60 kilometres of the city of Ottawa. In spectacular cases, the sediment underlying large areas of flat land adjacent to unstable slopes liquefies instantaneously. The resulting debris may flow several kilometres, often damaging infrastructure and damming rivers, causing flooding, siltation, and water-quality problems. The most disastrous Leda clay landslide in eastern Canada occurred in 1908 at Notre-Dame-de-la-Salette, Quebec. It resulted in the death of 33 people. Geologists and geotechnical engineers today can identify potential landslide areas, and make land-use zoning recommendations in order to reduce the risk that landslides will harm people or property (Geoscape Canada).

High levels of glacial lakes are marked by raised boulder beaches (Fig. 3.20). Marine animals including barnacles, distinctive pelecypods (Fig. 3.19), and even some whale skeletons, were locally preserved in sandy and muddy deposits. These have since been exposed as the land once again was elevated above the sea due to rebound of the Earth's crust of as much as one centimetre per year, in response to melting of the continental ice sheets. This rebound continues today, but at a much slower rate.

**Figure 3.19** Pelecypod Shells



*Pelecypod shells collected from the top of sand beds beneath Leda clay, 10 kilometres south of Almonte, Ontario.*

**Figure 3.20 Boulder Beach**



Source : Dr. Allan Donaldson

*Abandoned boulder beach marking the highest level of post-glacial Lake Barlow-Ojibway. 8 kilometres west of Haileybury, Ontario.*

### 3.1.5 Champlain Sea Sediments

Along the Lower Ottawa River Valley, clay is typically the most abundant unconsolidated sediment covering the lithified bedrock. Before and during the waning stages of the most recent episode of glaciation, commencing about 12,000 years ago, a vast freshwater lake extended across parts of this region as an extension of our present-day Lake Ontario. As the ice sheet continued to melt, the Atlantic Ocean crept up the Ottawa Valley, creating the Champlain Sea. Excavations created during construction commonly reveal horizontal stratification in these deposits, but after a few rainstorms, erosion masks this feature. Erosion may also release clam and barnacle shells that prove a marine origin. At the Ottawa Airport and at White Lake, the skeletons of marine mammals, including whales and seals, confirm that this region was covered by waters of the post-glacial Champlain Sea. The highest marine shoreline was just a few kilometres to the west of Almonte, almost bisecting Lanark County.

#### Whales of the Champlain Sea

Five species of whale have been reported to have once lived in the Champlain Sea. Belugas seem to have been most common in most parts of the sea as well as its eastern approaches. A record from Pontiac Point indicates that Harbour Porpoises, well adapted to freshwater conditions, reached the western part of the sea. Humpback and Bowhead whalebones show that these large species reached the western margins of the sea as well. The Common Finback was also found in the eastern portion of the sea (Harington 15).

### 3.1.6 The Ottawa River Today

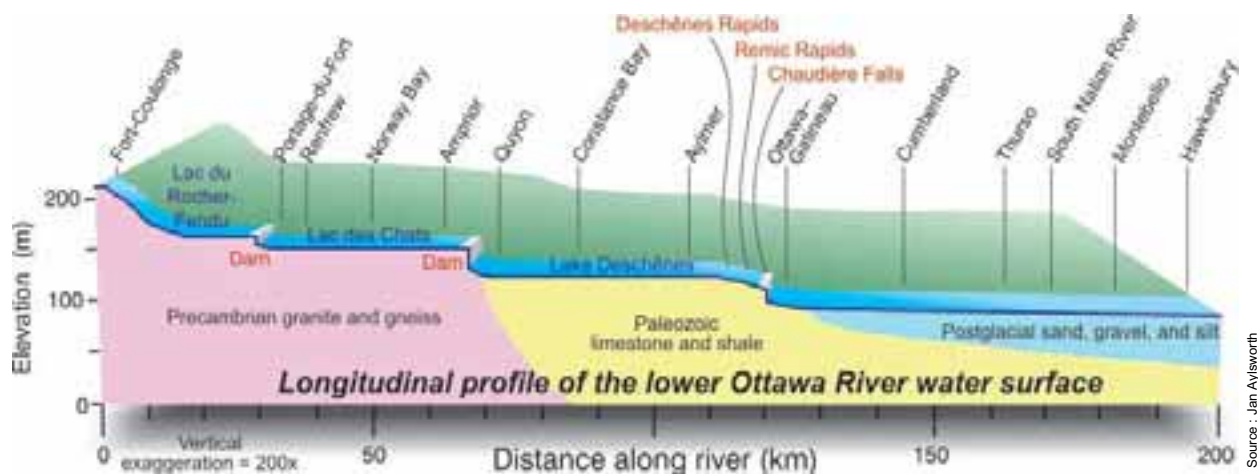
A fundamental link exists between rivers and geology, because the position of rivers, like lakes, is governed by the water table. Channelized bodies of water occur wherever the water table intersects irregular sloping landscapes; both the extent of a drainage basin and the direction in which a river travels

are determined by topography, which in turn is controlled by composition, configuration, and distribution of the underlying bedrock. During geologically recent episodes of continental glaciation, when enormous ice sheets scoured southward across the ancient Precambrian heartland of the Canadian Shield, the eventual path of the present-day Ottawa River was modified by discontinuous deposits of unconsolidated glacial till, gravel, sand and clay - material derived by erosion of the underlying bedrock as a direct result of four major glacial advances during the last (Pleistocene) Ice Age.

The interplay between the Ottawa River and its rocky underpinnings has resulted in the exposure of features never before seen, as the river carries out its own more recent process of erosion, revealing vertical sections and near horizontal bedrock platforms along its generally rocky shores. A trip down the Ottawa River provides an ideal opportunity to view an impressive variety of intrusive plutons, dykes and sills more than 2.5 billion years old, all well displayed in the upper reaches of the river's drainage basin north of Lake Temiskaming. These ancient rocks extend almost to the south end of Lake Temiskaming, where more than 1 billion years ago the southern part of the Canadian Shield was raised more than 15 kilometres vertically along a world-famous fault zone known as the Grenville Front. Recent studies have shown that, at this time, the Grenville uplift caused rivers to flow northward from the Gatineau region to the present location of the Arctic Islands! The vast, now deeply eroded Grenville block, comprising a wide array of folded and highly contorted metamorphic and igneous rocks more than a billion years old, is exposed along the banks of the Ottawa River, from the shores of Lake Temiskaming east of Temagami, all the way south to Ottawa. Soon after the uplift of the Grenville Province about a billion years ago, fold-cored mountains south of the area now occupied by Lake Temiskaming may have risen higher than the present-day Himalayas.

From Pembroke southward, discontinuous plates of sandstone, limestone, dolostone and shale begin to take over the bedrock landscape. From Ottawa south to the St. Lawrence River, the Precambrian rocks are almost everywhere covered by these younger Paleozoic rocks, in which a great variety of fossils are preserved, recording the evolution of organisms that lived in seas that covered much of Canada from about 570 million to 440 million years ago. Throughout much of the subsequent time during which more advanced life forms developed, including dinosaurs, the land now traversed by the Ottawa River remained above the sea, and so was subjected to erosion. As a result, no strata containing dinosaur fossils occur within the Ottawa drainage basin.

**Figure 3.21 Longitudinal Profile of the Lower Ottawa River**



However, as explained for the last period of continental glaciation, the ice sheets became sufficiently thick to depress the land, resulting in marine flooding of much of the present Ottawa River drainage basin. As the ice melted, the Champlain Sea crept well up the Ottawa Valley, leaving clams, barnacles, and whale skeletons in local sandy deposits.

### **Shifting river channels during the post-glacial period**

The modern river evolved when the ancestral Ottawa River and its tributaries adjusted to the retreat of the Champlain Sea. Between 10,000 and 8,000 years ago, there was a much greater flow of water through the ancestral Ottawa River than at present. Large glacial lakes in northern Ontario and the Prairie Provinces, as well as the upper Great Lakes, all drained into the Ottawa River. Several times during this period the Ottawa River shifted into new channels, but by about 8,000 years ago, the present modern drainage had become established.

## **Caves of Wonder!**

### **The Ottawa River's Underwater Caves**

In the township of Westmeath, just south of Allumette Island, lies an extensive series of caves that may well form Canada's largest cave diving system. Located under a large peninsula on the Ontario side of the river, under several large islands in the centre of the river belonging to Quebec, and under the river bed itself, this network includes over 4 kilometres of twisting passages (Sawatsky 6).

In this region, the Ottawa River is running over a bed of horizontally bedded limestone in which the caves are developing. The river generally runs in a NW/SE direction, but has, in this region, taken an "S" shaped turn to circumvent a large peninsula on the Ontario side. The peninsula is relatively flat, and about 1 to 4 metres above the normal river level. However, when the water level is high, half of the peninsula over the caves is submerged. Some of the water then flows under the peninsula along the fault lines and bedding planes in the limestones. It is this process that continues to form this complex series of caves (Sawatsky 1).

### **The Bonnechere Caves: A Recreational Opportunity**

Near Eganville, just west of Renfrew, Ontario, a series of caves has developed in limestone strata that accumulated about 460 million years ago, when the area was covered by tropical seas. This privately-owned site offers guided tours of the many strange, twisting passages. Visitors can observe fossils of coral and other sea creatures that lived long before the dinosaurs, as well as stalactites - icicle-like structures that form by solution and reprecipitation of the limestone at a rate of about one cubic inch per year (Bonnechere Caves).

### **3.1.7 Heritage Designation for the Ottawa River in relation to Geological Highlights**

The Ottawa River's unique geological features contribute significantly to its heritage value. Above all, the Ottawa River is readily accessible, unlike many extant Heritage Rivers in Canada's remote hinterlands. The Ottawa provides a tremendous outdoor laboratory for introducing our citizens and visitors to a vast

range of geological features that have been created over more than 3 BY of geological time. Many stretches of the river remain little changed since the time when it first revealed many fundamental secrets to Sir William Logan during his epic canoe journey in 1845.

The Ottawa River is the only Canadian River that crosses these four major geological subdivisions of Canada: the Superior Province, Cobalt Plate (region underlain by Huronian strata of Proterozoic age), Grenville Province and St. Lawrence Lowlands. The river traverses many historic mining regions, the most famous being the Cobalt Mining Camp. The Ottawa River additionally provides a transect through a vast range of erosional features and unconsolidated glacial deposits. It even has a 1 kilometre-diameter structure formed by meteorite impact within its drainage basin (Brent Crater, less than 25 kilometres south of Deux-Rivières, within the northern limits of Algonquin Provincial Park). Numerous points of access, augmented by many stretches of water navigable by canoe, kayak or power boat, make visits possible to a vast array of sites where the geology behind the landscape can be observed, studied and appreciated. Many small museums and historic sites on both sides of the Ottawa River could contribute to, and benefit from, its elevation to heritage status. Some, such as Cobalt's Northern Ontario Mining Museum, already devote considerable attention to geological heritage. Others intend to provide new geoscientific displays. The Ottawa River is therefore an appealing and accessible pathway for all to gain a greater appreciation of Canada's geological heritage.

### Scientists who studied the geoh heritage of the region

#### **Sir William Edmond Logan (1795-1875)**

Few people are aware of the importance of the early work on the Ottawa River by Sir William Logan, named by a Canada-wide panel as the most important Canadian scientist. Logan traversed along the Ottawa River to the head of Lake Temiskaming and westward to Lake Nipissing to study ancient Canadian Shield rock. Like all early geologists, he was a well-rounded naturalist, collecting information on geology as well as biology, meteorology and ethnology (Ottawa Riverkeeper).

#### **Willet Green Miller (1866 – 1925)**

Willet Green Miller gave the town of Cobalt its name, and was responsible for recognizing the potential for silver, cobalt and precious metal resources that were recovered from numerous mines developed after his initial geological studies in the region. He was the first provincial geologist for the province of Ontario, and refined the methodology for identifying diamonds, emeralds and corundum by X-ray diffraction. The mining and geology building at Queen's University bears his name.

#### **Alice Elizabeth Wilson (1881 – 1964)**

Alice Wilson, the first woman to be awarded Fellowship in the Royal Society of Canada, was also a pioneer in advancing the recognition of women in science. As the first female paleontologist employed by the Geological Survey of Canada in 1909, she mapped the Paleozoic terrain of the Ottawa Valley, traveling by foot and by bicycle. On the basis of detailed studies of fossils, she established stratigraphic subdivisions for Paleozoic strata in much of the Ottawa Valley. These subdivisions remain almost the same today.

#### **Robert Ferguson Legget (1904 – 1994)**

Robert Legget was a geological engineer who was the head of the Division of Building Research, National Research Council of Canada, and for many years taught at both Queen's University and University of Toronto about geological hazards in the Ottawa Valley. He wrote and presented

extensively on the engineering contributions of Colonel By, builder of the Rideau Canal, which links the Ottawa River to Lake Ontario at Kingston. Legget was instrumental in having a plaque erected in 1997 on the River Thames in London, England, near the birthplace of Colonel By (for whom Ottawa was initially named Bytown).

## Summary

The Ottawa River traverses segments of the lithosphere that represent the past 3 billion years of the Earth's history. The source of the Ottawa River lies within a portion of the Canadian Shield that contains the oldest rocks in North America: more than 2.5 billion years old. Strata bordering Lake Temiskaming contain sediments from a continental glaciation that took place more than 2.2 billion years ago.

Downstream of Pembroke, outcrops of younger, sedimentary rock border the river. Fossils dating from ancient tropical seas covering much of Canada from 570 million to 440 million years ago can be found in this sedimentary rock. Stromatolites, the oldest known record of life on earth, are easily viewed in the section of the Ottawa River between Pembroke and Ottawa.

The continental ice sheets that covered almost all of Canada during the past few million years weighed down the land. Unconsolidated glacial deposits are responsible for today's rich farmland in southeastern Ontario and southwestern Quebec. When the last ice sheet melted 10,000 to 7,000 years ago, the Atlantic Ocean crept up the depressed Ottawa Valley, creating the Champlain Sea, which was evidently once home to five species of whale.

Today's Ottawa River evolved when the ancestral Ottawa River and its tributaries adjusted to the retreat of the Champlain Sea. Between 10,000 and 8,000 years ago, much more water flowed through the Ottawa River, with large glacial lakes in northern Ontario and the Prairie Provinces as well as the upper Great Lakes, all draining through the Ottawa River. Several times during this period the Ottawa River shifted into new channels, but by about 8,000 years ago, the present modern drainage had become established. As the river continues to carry out its own, more recent process of erosion, it has exposed interesting features representing various different stages in its development, which can be viewed from the river or from shore. The accessibility of the geological features along the Ottawa River makes it an excellent and unique place to learn about our rich geoheritage.

## 3.2 Hydrological Features of the Ottawa River Drainage Basin

Hydrology is the science that deals with the distribution, circulation, and physical and chemical properties of water on the Earth's surface. This includes the amount of water flowing down a river, the velocity at which it travels, the fluctuations of these parameters over time, and the water's chemical composition. Examining each of these factors with regards to the Ottawa River fosters a better understanding of how the Ottawa functions, its impact on the surrounding floodplain ecosystems, and the ways in which humans interact with it.

### 3.2.1 Size of the Ottawa River

River size is defined by two characteristics: discharge volume and river length. Discharge volume is the amount of water passing through a cross-section of a river over a certain unit of time. The most common unit of measurement for discharge volume is cubic meters per second (m<sup>3</sup>/s).

Table 3.4 displays the discharge volume of the Ottawa River at Carillon dam, the last dam before the Ottawa's confluence with the Saint Lawrence. Measurements taken at Carillon therefore indicate the magnitude of the river at its greatest point. The yearly discharge of the Ottawa averages just under 2000 m<sup>3</sup>/s, with maximum flows as high as 5947 m<sup>3</sup>/s in the past five years.

**Table 3.4 Ottawa River Discharge Volume as Measured at Carillon Dam**

<b>Year</b>	<b>Maximum Flow</b>	<b>Minimum Flow</b>	<b>Yearly Average</b>
2004	4917 m <sup>3</sup> /s	534 m <sup>3</sup> /s	1960 m <sup>3</sup> /s
2003	4792	519	1811
2002	5947	666	2064
2001	4070	563	1700
2000	3205	971	1801

(Source: ORRPB: "Historical Streamflow Summary")

The CHRS categorizes rivers into five classes based on their discharge volumes at low flow. Low flow (also known as base flow) refers to the volume of water discharged by a river during one of two seasons, generally summer or winter, when discharge volume is at its lowest of the year. In the case of the Ottawa River, low flow generally occurs between July and October.

Based on discharge volumes measured at Carillon and other dams along its course, the Ottawa is classified as a second-order river within the CHRS low-flow volume classification system. As indicated in Table 3.5, the second order represents those rivers with low-flow discharge volumes between 2000 and 4000 m<sup>3</sup>/s, and also includes the Fraser, Peace, and Yukon rivers. The Ottawa ranks as Canada's 8<sup>th</sup> largest river in terms of mean discharge (NRC: "Rivers").

**Table 3.5 Low Flow Volume Classes of Canadian Rivers**

<b>Tier/Order</b>	<b>Discharge Range</b>	<b>Example Rivers</b>
V	<500 m <sup>3</sup> /s	Thames, Margaree, Restigouche, Grand
IV	500 to 1,000	Kazan, Thelon, Seal
III	1,000 to 2,000	Churchill, N. Saskatchewan
II	2,000 to 4,000	Peace, Fraser, Yukon, <b>Ottawa</b>
I	> 4,000	Mackenzie, Saint Lawrence

(Source: CHRS Framework for Natural Values 1997)

On average, the lowest flow volume of the Ottawa River at Carillon between 1964 and 2005 was 736 m<sup>3</sup>/s (ORRPB: "Historical Streamflow"), making it a "Large River" according to CHRS, which currently defines Large Rivers as those with a flow volume at the lowest point of nomination between 400 and 800 m<sup>3</sup>/s (CHRS 2001: 19).

The Ottawa stretches 1271 kilometres from its source east of the Dozois Reservoir to its confluence with the Saint Lawrence. It is this full length that is being put forward for nomination under the CHRS. According to Table 3.6, the Ottawa's great length and discharge volume qualify it as a 'Large', almost

'Major' river. The Ottawa River is Canada's 12<sup>th</sup> longest-river, and is the 2<sup>nd</sup>-longest Canadian river that flows to the Atlantic Ocean (NRC: "Rivers").

**Table 3.6 River Size Classes with Examples**

Flow Volume at Lowest Point of Nomination (m <sup>3</sup> /s)	Total Length of River		
	<500 km	500 km to 1,000 km	>1,000 km
Small Rivers <85	Main, Margaree, Hillsborough	Shelburne, Kicking Horse, Bonnet Plume	Thames, Boundary Water, Clearwater
Medium Rivers 85 to 400	St. Croix, Restigouche, Seal	Grand, Arctic Red	S. Nahanni, Athabasca
Large Rivers 400 to 800		Kazan	Thelon, St. Mary's, <b>Ottawa</b>
Major Rivers >800		Fraser	Yukon, Detroit, St. Mary's

(Source: CHRS 1997)

Many factors contribute to determining a river's discharge volume: climate, watershed area, drainage pattern, slope, land use, and soil type. On the Ottawa River, low flow discharge rates have been influenced over time by human activities such as:

- Dam construction for storage, flood control, and power generation;
- Withdrawals for irrigation, human use and industrial purposes;
- Agricultural, industrial and urban run-off;
- Deforestation.

Of these, the high number of dams has had a particularly significant effect of the Ottawa's hydrology. There are over 30 major reservoirs in the Ottawa River Basin. See Appendix G for a list of reservoirs along the Ottawa River's main course.

Many dams produce electricity in addition to regulating flooding. In all, the Ottawa River Basin houses 43 hydroelectric generating stations with a combined capacity of 3,500 megawatts. This represents an economic value of roughly \$1 million per day (ORRPB: "Managing the Waters"). Seven of the dams are located on the main course of the river. This high number of dams and reservoirs makes the Ottawa River basin one of the most highly regulated catchments in Canada. Please refer to Chapter 2.9.7: Generating Stations, Dams and Reservoirs on the Ottawa River, for a detailed description of these structures.

### 3.2.2 Drainage Basin of the Ottawa River

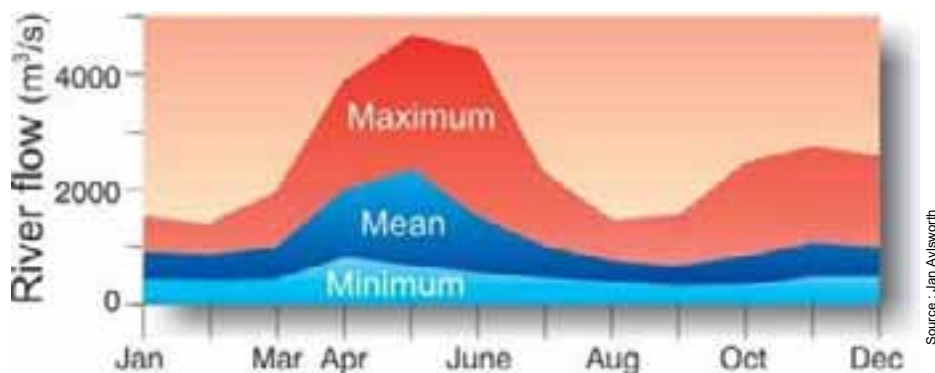
Overall, the Ottawa River's basin occupies some 146,300 km<sup>2</sup> of territory, of which 65% lies in Quebec and 35 % in Ontario (ORRPB: "Managing the Waters"). This makes it the 12<sup>th</sup> largest drainage basin located in Canada (NRC: "Rivers"). According to the CHRS Guidelines for Natural Heritage Values, rivers flowing directly into the ocean are Number 1 streams (CHRS 2001: 11). The St. Lawrence River is, therefore, a Number 1 stream, flowing into the Atlantic Ocean, and making its greatest tributary, the Ottawa River, a Number 2 stream. In fact, the Ottawa River's drainage basin accounts for approximately 11.2% of the total drainage area of the St. Lawrence (Haxton and Chubbuck 1).



### 3.2.3 Seasonal Variations

Seasonal variations include the regular periods of high and low flows and secondary peaks in the discharge volume of a river over a year. Peak flows of many Canadian rivers, including the Ottawa, occur as a result of the springtime snowmelt, and low flow occurs during dry summer periods or during winter freeze-up. Secondary peaks can occur in late summer or fall.

**Figure 3.22 Average Monthly Flow - Ottawa River at Chats Falls**



*The flow of the Ottawa varies seasonally, with a peak in the spring and a secondary peak in the fall. The extent of this flow variation also changes with each year.*

The average maximum monthly flow over the past 40 years has been 5374 m<sup>3</sup>/s, while the average minimum flow has been 736 m<sup>3</sup>/s (ORRPB: “Historical Streamflow”). The degree of seasonal variation of the Ottawa River’s flow has been greatly reduced by the reservoirs and dams along the river and in the watershed. Many of these dams serve to reduce potential damage of peak flow and ensure adequate flow for hydroelectric production throughout the year. In 1870, the ratio of maximum to minimum flow was about 10:1, while by 1930 it was reduced to 5:1 (Legget 1975: 16). Regulation for hydroelectric power generation has also created *daily* fluctuations in the reservoirs, such as in the Carillon reservoir during winter (Haxton and Chubbuck 9-10).

Despite regulation by dams and reservoirs, the Ottawa River still experiences the same general pattern of flow, with low flow in the fall, and a sudden increase in flow with the spring melt and flood around April. From year to year, seasonal variations differ due to varying rainfall and how quickly the snow melts (Legget 1975: 16). The Upper Ottawa River basin (above Lake Temiskaming) experiences two annual peaks. The spring flood is the largest, beginning in early April and ending at the end of May (Hydro Québec: Bassin supérieur 1-1).

**Figure 3.23 High Water on the Ottawa River, 1936**



Source : William James Topley/Library and Archives Canada/PA-00394

At Carillon, the spring peak extends from mid-March to mid-May. There are, within this, two distinct spring peaks. The first occurs around mid-April and results from the increased discharge volume of the non-regulated tributaries along the Ontario shore. The second, usually larger flood peak usually occurs about three weeks later and results from the swelling of the partially regulated tributaries along the Quebec shore and the floodwaters of the Upper Ottawa River (Hydro Québec: Bassin inférieur 1-1). Spring peaks in the river basin can cause flooding in the downstream areas around Laval and Montreal. The uncontrolled tributaries can contribute up to 80% of the volume of water passing through the Ottawa River's flood risk areas (Andrews 151).

The Ottawa River Regulation and Planning Board, an organization that coordinates the integrated management of the principal reservoirs of the Ottawa River basin, brings together the owners and managers of the Ottawa River basin dams and reservoirs to reduce the possibility of damaging floods and to ensure there is adequate flow for the many different uses of the Ottawa River.

### 3.2.4 Water Content

The term water content refers to both physical and chemical properties, including clarity (turbidity), acidity, and other dissolved solids. This section will also discuss water quality in terms of nutrients, bacteria, heavy metals, and pollutants contained in the water. These properties influence the biological productivity and appearance of the river, as well as its utility to humans.

#### Turbidity

Turbidity reflects how much sediment is suspended in the water, and is measured by the amount of light that can pass through a sample of water. This sediment is significant because it deposits along riverbanks and bottoms, giving the river its ever-changing physical shape. Sediment also impacts on the suitability of a river for aquatic life because turbidity may reduce the amount of oxygen that can dissolve in the water (CHRS 2001: 15). Water can be classified based on its turbidity into one of three categories: high, medium, and low turbidity.

The Ottawa River transports sand, silt, gravel and clay from the erosion of glacial deposits (Hydro Québec: Bassin inférieur 1-1). Clay effluent from tributaries such as the Petite-Nation increases the turbidity of the river's lower stretches (Hydro Québec: Bassin inférieur ii). The section from Carillon to Chaudiere Falls experiences high turbidity due to a high content of fine clay particles, often resulting in poor dissolved oxygen levels (Haxton and Chubbuck 10). Near Lake Temiskaming, the water is also high in clay, making it more turbid and therefore reducing water clarity (Hydro Québec: Bassin supérieur 1-1, 4-5).

Figure 3.24 Peak Flow of the Ottawa



*The Lower Ottawa River experiences two peak flow periods in springtime. Spring arrives earlier along the southern, unregulated tributaries (the Mississippi, Rideau, and South Nation rivers) causing the Ottawa River to rise to its first peak. The second, and normally higher, flow peak occurs about three weeks later as a result of snowmelt in the northern regions of the basin.*

## Acidity

Surface water acidity is measured by pH. A high pH, above 7.3, indicates alkaline surface water. A pH of 6.6 - 7.3 is considered neutral. Below 6.6 indicates low pH, or high acidity.

In general, the Ottawa River has a lower pH, or higher acidity, around Lake Temiskaming. This diminishes and becomes increasingly neutral and slightly alkaline further downstream (Hydro Québec: Bassin inférieur 1-1). Mine run-off in the upper stretches of the river lowers the pH of surface water in the lakes of the Upper Ottawa River. This is exacerbated by the acidic sub-soil (Hydro Québec: Bassin supérieur 4-5).

## Nutrients

Nutrients such as nitrates and phosphates are common elements in watercourses that receive runoff from agricultural and urban areas. Both are key components in many organic and commercial fertilizers. Sewage also contains high levels of these elements.

Below Chaudiere Falls, the Ottawa River has historically experienced high levels of phosphorous and nitrogen-containing compounds (Haxton and Chubbuck 10). Agricultural runoff from tributaries such as the Petite-Nation increases the nutrient content of the lower stretches by adding phosphorus and nitrogen, encouraging the growth of algae. The South Nation River flows through agricultural lands and contributes nutrients to the Ottawa River (DDEPQ: "Qualité des eaux"). The construction of wastewater treatment plants over the past 20 years has helped reduce nutrients contained in the water (Hydro Québec: Bassin inférieur ii, 4-4). Water quality has also increased since the 1980s in the vicinity of Lake Temiskaming because of lower nutrient levels (phosphorus). Pig farming in one of the tributaries to Lake Temiskaming raises the nutrient levels in the lake (Hydro Québec: Bassin supérieur 4-5).

## Bacteria

Bacteria from human and animal wastes are commonly found in natural waters and are concerning from a public health perspective. Swimmers can experience skin irritation, ear and eye infections, and, if swallowed, intestinal disorders.

Overall, the water quality of the Ottawa River is considered good, with localized cases of high bacteria levels. High bacteria levels have been reported in the Lac Dollard des Ormeaux reach (Haxton and Chubbuck 76). A wastewater treatment plant with inadequate disinfection practices in Gatineau results in higher levels of bacteria in the lower stretches of the Ottawa River (Hydro Québec: Bassin inférieur ii). Urban and industrial wastewater from Ottawa-Hull contaminates the Ottawa River with bacteria, sometimes exceeding the safe limit for swimming (DDEPQ: "Qualité des eaux"). Tributaries with high bacteria contents such as the Rouge, the Lièvre, and the Bonnechere degrade the water quality of the Ottawa River. Underground water is contaminated by bacteria around Lake Temiskaming because of the clay-like soil that prohibits the construction of proper septic tanks. This contaminates many wells and impacts on surface water as well (Hydro Québec: Bassin supérieur 4-5).

## Water Quality

Overall water quality depends on the properties described above, as well as on the presence or absence of heavy metals and other pollutants. Water quality in the Ottawa River basin is considered good overall as a result of the high velocity of the water and the numerous wastewater treatment plants that have been established (DDEPQ: “Qualité des eaux”). Most problem areas are localized, such as around densely urbanized areas. The Ottawa River’s many tributaries affect the overall water quality of the river itself. Despite localized problems, the majority of the Ottawa River is considered suitable for recreational uses such as swimming and fishing.

Water quality is generally considered good in the Ottawa River between Lake Temiskaming and the Gatineau River. Around Lac Coulange, the water is considered polluted. Water quality in this stretch has been improving since the 1980s, as is the visible appearance of the water, which is affected by solid waste in the water as well as the water’s colour (Hydro Québec: Bassin inférieur 4-4). Historically, PCBs and DDT have been found in high levels between Chaudiere and Carillon (Haxton and Chubbuck 10). Nickel and copper are heavy metals found in small concentrations along the river.

Water quality above Lake Temiskaming is considered good, although the water table has been polluted in numerous places due to the absence of adequate septic tanks because of the clay-like soil (Hydro Québec: Bassin supérieur iii). Wastewater treatment around Ville-Marie has improved water quality for swimming. In the upper stretches, wastewater from industry such as paper mills decreases water quality (Hydro Québec: Bassin supérieur 4-5). The presence of cottagers in lakes within the river basin tends to lower the quality of the water.

**Table 3.7 Water Properties Along the Lower Ottawa River**

River Reach	Turbi- dity	Nitrogen (mg/l)		Phosphorous (mg/l)	Biological Oxygen Demand (mg/l)	pH	Avg. Temp. in °C
		Average	High				
Lac Dollard des Ormeaux (Carillon to Chaudiere Falls)	High	0.30-0.50	2.65	0.025 to 0.10	0.5 to 2.5	7.5	24
Lac Deschênes (Chaudiere Falls to Chats Falls/Fitzroy)				0.01 to 0.02		7.5	24
Lac des Chats (Chats Falls/Fitzroy to Chenaux Dam)		0.35	1.12	0.01 to 0.08	0.2 to 3.0		
Lac du Rocher Fendu (Chenaux to La Passe Dam)		0.25	0.40	0.01 to 0.04	0.25 to 3.0		
Allumette Lake and Lac Coulange (LaPasse to Des Joachims)						7.0	
Holden Lake (Des Joachims to Otto Holden Dam)						6.5	
Lac la Cave (Otto Holden Dam to the Dam at Lake Temiskaming)		0.45	2.20	0.02 to 0.05	0.5 to 3.0		

Source: Haxton and Chubbuck 76

The water quality of the Ottawa River is extremely important, as it is the source of drinking water for many local communities. The City of Ottawa is the heaviest of these users, drawing 341 million litres of water from the river each day at the Britannia and Lemieux Island water purification plants (Geoscape Canada: “Ottawa River”).

## 3.3 River Morphology

The Ottawa River environment changes constantly. Rivers can be divided into three zones: the headwater stream zone, middle-order zone and lowland zone. The Ottawa River displays characteristics of each of these zones. Along its path, the river alternates between rapids, lakes, shallow bays, and quiet stretches. More than 80 tributaries contribute their water to the river's force. As a tributary itself, the Ottawa River meets the St. Lawrence River at its southern end. The numerous dams along the Ottawa River affect the duration, frequency, timing and rate of the natural water flow.

### 3.3.1 Channel Pattern

Because water will always travel in the path of least resistance, a river's channel pattern, or map view, is a response to the physiographic features of the area. The channel pattern of a river can take many forms. Kellerhals et al (1976) suggest classifying channel patterns into six categories: straight, sinuous, irregular (wandering), irregular meanders, regular meanders, and tortuous meanders.

Overall, the Ottawa River is a constrained, straight river that has been highly altered. The river is said to be constrained because it exists within a valley, although a flood plain exists on the Ontario shore of the river and on parts of the Quebec shore. For the most part there is a main river channel lacking the sinuosity generally observed in unconstrained rivers.

**Figure 3.25 Main River Channel of the Ottawa**



Source : Christian Veillemont

**Figure 3.26 Ottawa River Watershed**

Source: Jan Aylisworth

### 3.3.2 Landforms and Depositional Forms

Material that is transported down a river can be deposited temporarily and then reactivated as the channel shifts, creating transient landforms. The landscape surrounding the Ottawa River includes features such as river terraces and glacial landforms that are relict depositional landforms that have been preserved since they were deposited. The fact that these features have been preserved attests to the change in environmental conditions since they were formed. One of the conditions for the survival of depositional landforms is that they form under conditions of waning erosive power, such as the retreat of the ice sheets or the diversion in the course of the river (*Fundamentals* 355).

The sediment load in the Ottawa River is probably reduced due to impoundments, although some bank erosion is related to water level changes for hydroelectricity. There may be artificial deltas forming, such as at the mouth of the Petawawa River, due to reduced natural peak flows.

The Ottawa-Gatineau region is underlain by three different geological materials that create very different landscapes adjacent to the river. The resistant rocks of the Canadian Shield form highland areas that are characterized by rough terrain, numerous small lakes, and abundant rock outcrops. In contrast, the flat-lying Paleozoic rocks underlie lowland plains and low hills, and outcrops are confined largely to low scarps and riverbanks. Much of the region is covered by a blanket of Quaternary sediments which form

landscapes that range from gently undulating plains and low hills of glacial deposits to the flat plains of the Champlain Sea (Geoscape Canada: “Different Rocks”).

In the Outaouais region, the banks of the Ottawa River are made up of a flat terrain with associated terraces (CREDDO 6). Natural and artificial beaches are present in places along the wider, slower flowing reaches of the Ottawa, such as Norway beach and Britannia beach. Downstream from the Gatineau River, the landscape differs as the Ottawa’s course takes it over Quaternary sediments. Here, vegetated sandbars form low islands (such as Petrie Island and Kettle Island) and marshes are common along the shore.

### Petrie Islands of the Ottawa River

The Petrie Islands are a series of alluvial deposits forming a wetland complex of elongate sedimentary ridges and backwaters characteristic of the Ottawa River below the confluence with the Gatineau River. Along with Kettle Island and the Duck Islands, Petrie Islands form a unique landform in the region. They bear testament to the powerful geological forces that shaped the landscape. The sand and clay sediments that make up these islands were created by the massive icesheet that moved over the continent 10,000 years ago. Crushed by the continental glaciers from the rocks further north, the sediments were carried down the Ottawa and Gatineau Rivers (Hanrahan and Darbyshire).

### 3.3.3 Waterfalls and Rapids

Falls and rapids occur where the Ottawa River drops over resistant bedrock outcrops. At these locations, the river is relatively shallow and swift, and bedrock islands often divide the channel. Hydroelectric dams exploit many of these natural drops, including the generating centres at Portage-du-Fort, Fitzroy Harbour, Chaudiere Falls and Carillon, as well as along many of the tributary rivers such as the Gatineau. Major rapids or drops that still exist today on the Lower Ottawa River are located at Chaudiere Falls and Rocher Fendu, where there are five major drops separated by pools. The rapids themselves are created by the Lafontaine Islands that create a narrowing in the river. Along the Upper Ottawa River, the main rapids occur downstream of Lake Forks.

### 3.3.4 Lakes

Lakes and reservoirs along the Ottawa River include:

- Lake of Two Mountains
- Lac Dollard des Ormeaux
- Lac Deschênes
- Lac des Chats
- Lac du Rocher Fendu
- Allumette Lake
- Lac Coulonge
- Holden Lake
- Lac la Cave
- Lake Temiskaming
- Petit réservoir des Quinze
- Des Quinze Reservoir

- Simard Reservoir
- Descelles Reservoir
- Dozois Reservoir
- Lake Grand Victoria
- Baskatong Reservoir
- Lac des Quinze
- Lake Capimitchigama

## 3.4 Climate

### 3.4.1 Upper Stretches

Along the northern stretches of the river, the climate is slightly cooler and dryer. The city of Ville-Marie, for example, has an average annual temperature of 2.8°C with an average of 18.2°C in July and of -15.2°C in January. The most extreme temperatures on record for the region are 36.1°C and -50°C. Average annual precipitation totals 819 millimetres and is comprised of 625 millimetres of rain and 195 centimetres of snow. There are on average each year 170 frost-free days, 156 days of precipitation, and 144 days with snow cover (Hydro Québec: Bassin supérieur 4-3).

### 3.4.2 Lower Stretches

In the southern stretches of the river, the climate is generally milder and more humid (CREDDO 6). For example, Pointe au Chêne, a small town just east of Montebello along the Ottawa has an average temperature of 5.6°C with an average of 10.7°C in the day and 0.5°C at night. The most extreme temperatures on record are 36.1°C and -36.7°C. On average, each year has 202 frost-free days, 105 days of rain, and 45 days of snow. Average annual precipitation totals 965 millimetres, and is comprised of 187 centimetres of snow and 779 millimetres of rain. Dominant winds are from the west (Hydro Québec: Bassin inférieur 4-2).

## 3.5 Flora

In-stream vegetation, riparian vegetation and canopy vegetation make up the flora along and within the Ottawa River. Please also refer to Chapter 3.7: Ecosystems for a discussion of flora along the river.

### 3.5.1 In-stream Vegetation

In general, in-stream vegetation includes algae and macrophytes (larger aquatic plants.) Because the Ottawa River is alternately a fast-moving river and a series of deep lakes, in-stream vegetation is relatively rare along its course, and is mostly associated with its wetlands. In-stream vegetation in the Ottawa can be divided into three categories: submerged plants, floating plants, and emergent plants.

Figure 3.27 Orchid



Source : Ottawa River Legacy Landmark Network



**Figure 3.28 Instream Vegetation**

Source : Francis Lavigne

Submerged plants are either rooted to the soil or floating on the water's surface, and benefit from shallow water conditions to capture available light for photosynthesis. Common submerged plants along the Ottawa River include Hornwort (*Ceratophylla* sp.), and tape grasses (*Valisneria americana*).

More visible than submerged plants, floating plants can have a positive impact on river ecology by partly shading the river floor and therefore helping to reduce algal blooms. Certain floating plant species may spread rapidly, often taking over a given area. For instance, the

European Frog-bit, a free-floating aquatic plant with small white flowers, was intentionally introduced in 1932 at Ottawa's Experimental Farm. It soon found its way onto many connected tributaries and wetlands. By 1939, the species had spread to nearby sections of the Rideau Canal, and by 1952, it had been collected from the Ottawa River near Montreal Island. By 1960, it had been identified at various points along the Ottawa and Rideau Rivers, and had spread up the Ottawa to near Pembroke by 1982. This plant species produces a dense floating mat of vegetation, preventing submerged aquatic plants from accessing light, dissolved gases, or nutrients. There is little doubt that the species is therefore displacing native flora and perhaps impacting also the fauna (CWS: "Invasive Plants"). Similarly, the European Water-Milfoil is an invasive species that was introduced in the 1960s. It grows in dense mats, disrupting boat traffic and swimming (Can. Museum of Nature: "Biodiversity").

**Figure 3.29 European Frog-bit**

Source : Petawawa Civic Centre

Emergent plants are those plants that are rooted in shallow water but have most of their vegetative growth above water. These plants play an important role retaining soils, in regulating current and temperature, and in purifying water. Emergent plants present along the Ottawa River include *Carex* sp., *Rush* sp., *Sagittaria* sp., and *Horsetail*.

Submerged, floating, and emergent vegetation along the Ottawa is discussed in greater detail in Chapter 3.7.1: Riverine Systems.

### 3.5.2 Riparian vegetation

The term riparian refers to plant life that is located on the bank of a natural watercourse. Riparian vegetation is essential to the health of rivers. It stabilizes riverbanks, prevents runoff, and helps with flood control. It also provides habitat for wildlife, serves as a food source, and affords other species an area for reproduction. A river's current carries the seeds of riparian plant life, helping this vegetation to disperse.

Many riparian plant species can only be found along the floodplain of the Ottawa River. The unique habitats of the river corridor contain many plant species that are at the limit of their habitat along the floodplain forests and shores. All of these plant communities are adapted to seasonal flooding. The plant communities situated on the Petrie Islands provide an excellent example of this, and are discussed in greater detail in Chapter 3.7.4: The Riparian Zone. Riparian species along the Ottawa include the Speckled Alder, Silky Dogwood, Sweet Gale, *Viburnum* sp., *Potentilla* sp., *Solidago* sp. and numerous fern species. On inhabited islands, remnant plants that are typical of farming operations (such as grasses and legumes) can be found.

Spring flooding also creates and supports prairie-like and alvar<sup>3</sup> vegetation in narrow bands along the shorelines of the Ottawa River. These are significant because it is less well-known that these conditions can lead to this type of vegetation along rivers. Little Bluestem (a riverine prairie vegetation) grows on the south shore of Beckett Island west of Pembroke. Shirley's Bay in Ottawa contains shrubby alvars with plants such as Shrubby Cinquefoil and prairies species such as Little Bluestem, Big Bluestem, Prairie Cord-grass and Indian Grass. Prairie and alvar-like vegetation also exist at the Norman Rapids of the Rocher Fendu. Plants characteristic of Great Lakes shorelines are also present along the Ottawa River (Bakowsky 5-8).

### 3.5.3 Canopy vegetation

**Figure 3.30 Woods Along the River**



Source: Alexandre Baker

The forest along the southern stretches of the Ottawa River is composed of a mix of deciduous and coniferous trees. The dominant species of this mixed forest are Maples, White Pine, Red Pine, Eastern White Cedar, Tamarack, White Spruce, Red Oak, Basswood, Ash, Poplar, Yellow Birch, and White Birch. The deciduous Butternut tree, which exists along the shoreline of the Ottawa River, has recently been added to Canada's list of endangered species (COSEWIC: "Species Database").

Along the northern stretches of the river, coniferous trees dominate, including Jack Pine,

Black Spruce, White Spruce, Balsam Fir, Trembling Aspen, White Birch, and Balsam Poplar. The forest floor associated with the boreal forest is made up of lichens and mosses. The forest communities of both the northern and southern stretches of the Ottawa are discussed in greater detail in Chapter 3.7.5: Forest Ecosystems.

<sup>3</sup> An alvar is a rare habitat created by a limestone plain with thin or no soil and sparse vegetation. The lack of drainage means that these areas flood in the spring and become very dry in the summer. This challenging habitat supports rare plants and animals (Wikipedia: "Alvar").

## 3.6 Fauna

The Ottawa River is home to many different ecosystems, each playing an important role in sustaining Canada's biodiversity. More than 300 species of bird have been inventoried along the river (Haxton and Chubbuck 4). Of these, about half are migratory species that use the Ottawa River region as one of the continent's most important migratory halts. Along the river, 33 species of reptiles and amphibians, 53 species of mammals (DDEPQ), and 85 species of fish (Haxton and Chubbuck 3) can also be observed. Among these, several are rare or at risk.

### 3.6.1 Fish

The 85 species of fish documented to inhabit the Ottawa River live in turbid to slow moving waters, deep lakes, wetlands and shallow bays: each of these fish species are adapted to specific features of the river. As a result, not all species can be found in each section of the river (see Appendix I).

The various ecosystems of the Ottawa River offer habitat for spawning, nurseries and rearing. The distribution and abundance of fish varies based on the habitat and the location. In general, the most diverse fish communities exist in the shallow shoreline areas; both warmwater and coldwater fish communities are found here. North of Lac La Cave, most fish species are coldwater.

The diversity and the distribution of fish species have been significantly affected by development of the Ottawa River, particularly by hydroelectric generation. Hydro dams have blocked migratory species, such as the American Shad and Eels, to such an extent that they are now very low in numbers or absent from the river (Haxton and Chubbuck 3).

Muskellunge and Pike are known to spawn in the Ottawa River's numerous wetlands. These two species play an important role in the food web of wetland ecosystems: they are fierce predators. When wetlands are filled in for agriculture and urban development, their populations diminish. Industrial pollution may also impact on their populations.

Walleye may spawn in turbid areas. Walleye are known to spawn below dams in tributaries as well as along the Ottawa River. Since their passage is blocked by dams, they are numerous downstream of dams, but relatively scarce upstream. Sauger, a species similar to Walleye, can be found in the same habitats and is known to occasionally hybridize with Walleye.

#### Living Dinosaurs of the Ottawa River!

The Longnose Gar is a highly predaceous, scaly, needle-nosed, and quite large fish, often growing to 1 metre in length and to a weight of 10 kilograms. Although startling, it is in fact a common species on the Ottawa River.

Like another Ottawa River native, the Stately Sturgeon, the Longnose Gar is an ancient species, dating back to the Cretaceous period of up to 140 million years ago. It is one of only two gar

**Figure 3.31 Longnose Gar**



Source : Pelawawa  
Civic Centre

species found in Canada, its relative being the threatened spotted gar (COSEWIC: “Species Database”). The Longnose Gar populates the Saint Lawrence River and the southern Great Lakes, but is particularly prevalent in the Ottawa River and its tributaries.

Living up to 22 years, this impressive species has a number of distinctive characteristics that enable it to maintain its role as a top-level predator of other fish, crustaceans, frogs, and insects:

- A torpedo-shaped body
- Needle-sharp teeth
- Strong jaws
- Hard, diamond-shaped scales
- A slender, needle-like snout 15 to 20 times its width
- Skin so tough that it has historically been used as an abrasive material; its enamel-like scales have been used as arrowheads and jewellery.

The gar is specifically adapted to murky, stagnant, low-oxygen conditions, and has a lung-like gas bladder that allows it to breathe air. The Longnose Gar will drift close to the surface of shallow bays, pools, or backwaters and gulp air to supplement its gills.

Finally, the Longnose Gar lays poisonous eggs. The fish spawns in the weeds of shallow inlets or offshore shoals, and provides no subsequent care for its young. Instead, the eggs are coated with an adhesive substance that attaches them to underwater vegetation, and is highly toxic to its predators, including humans (Rivers, Inc.: “Ottawa River”).

The River Redhorse is a freshwater fish found in the Ottawa River that inhabits moderate to large rivers where the current is fast, and the bottom is composed of stones, rubble and bedrock with very little siltation. In Canada, River Redhorses are found only in southern Ontario and southwestern Quebec. Its population seems to be declining (CWS: “Species at Risk”). This fish species has restrictive habitat requirements and is sensitive to siltation and pollution along the Ottawa River. In Canada, it is considered

**Figure 3.32 Channel Catfish**



Source : Petawawa Civic Centre

a species of “special concern” by COSEWIC (“Species Database”). In the United States, the River Redhorse is listed as endangered, threatened, rare or extirpated in several states (CWS: “Species at Risk”).

The American Shad, a species that spawns in the Ottawa, is also at risk due to the many dams along the river. The American Shad was found in great numbers before hydroelectric

development. The village of Chute-à-Blondeau was once renowned for its exceptional fishing grounds upon which several varieties of fish, and Shad in particular, were being caught in large numbers. In the mid-19th century, as many as 1,200 fish could be caught in a single day (Haxton and Chubbuck). The Lake Sturgeon has recently been added as a Species of Concern to the list of endangered species present in Ottawa River environments (COSEWIC: “Species Database”).

Sport fishing has a long history on the Ottawa River. The numerous catches commonly include Muskellunge, Largemouth and Smallmouth Bass, Yellow Perch, Walleye and Northern Pike. Other species have been unsuccessfully introduced in the river for sport, such as Lake Trout introduced to the

Deep River area in 1993, with only a few individuals reported since. Please refer to Chapter 4.2.1: Fishing for a more detailed description of sport fishing.

A few commercial fishing operations exist on both shores of the Ottawa River. Companies are licensed to harvest the following species: Sunfish, Bullhead, Yellow Perch, White Perch, Suckers, Carp, Channel Catfish, Freshwater Drum, Black Crappie, Rock Bass, Lake Sturgeon and American Eel (Haxton and Chubbuck 3).

### 3.6.2 Mammals

Though few mammals inhabit the Ottawa River itself, numerous mammal species live near its banks or frequently travel to its shores. Mink and Beaver are often observed, and Muskrat and Otter communities have been reported in various wetlands along the river.

Many mammals inhabit the mixed wood lowlands of the river watershed. Some of the most abundant species of mammals here are rarely seen by humans. These species include Southern and Northern Flying Squirrels, Northern Water Shrews, Short-tailed Shrews, White-footed Mice and Meadow Voles. Sightings of Woodchucks, Red Squirrels, and Eastern Chipmunks are frequent. Snowshoe Hares, Eastern Cottontail Rabbits, Grey Squirrels, Raccoons, Coyotes, Muskrats, Red Foxes, Ermines, Deer Mice, Mink, Striped Skunk, Porcupines, White-tailed Deer and both Little Brown and Big Brown Bats are also numerous. Red Squirrels, Red Foxes, Ermines, Little Brown and Big Brown Bats and Striped Skunk have been observed in the past.

Wolf, Lynx, Moose, Marten, and Wolverine are more restricted to the boreal forest of the upper reaches of the Ottawa River. The Black Bear inhabits the entire watershed, often living near lakes and rivers. This omnivore mostly feeds on vegetation but also consumes fish.

#### The Beaver

The Beaver is Canada's animal mascot, chosen because it represents the country's fur trade heritage.

As in the days of Champlain, the North American Beaver remains present in great numbers in the Ottawa River watershed. It is easily distinguished by its fat, leathery, paddle-shaped tail, large, webbed hind feet, delicate, agile front paws and thick coat of brown fur. Its homes, mud-plastered lodges with mound-shaped domes, are often visible even when the animals themselves are not.

Figure 3.33 Beaver



Source - Petawawa Civic Centre

## Island Mammals

Certain islands of the Ottawa River are home to different species of mammals, depending of their size and condition during the flood season each spring. For instance, Woodchuck, Red Squirrel, Grey Squirrel, Beaver, Muskrat, Porcupine, Raccoon, Mink, and White-tailed Deer have been reported on the Petrie Islands (Hanrahan and Darbyshire).

Mammal populations have greatly changed with the replacement of forest with agricultural land and urban development. New species have appeared, either introduced for sport or better suited to the new conditions. Currently, species such as Snowshoe Hare, Eastern Cottontail Rabbit, Deer Mouse and White-Tailed Deer are common in agricultural and urban areas. White-tailed Deer populations are on the rise in many parts of southern Ontario and Quebec. They benefit from farmlands by feeding on the highly nutritious agricultural crops, and often take cover in nearby woodlots (Haxton and Chubbuck).

### 3.6.3 Birds

**Figure 3.34 Tree Swallow**



Source : Ottawa River Legacy Landmark Network

Canada Geese. Over 300,000 Canada Geese stop here to feed in spring, more than half of the entire Atlantic corridor population. Other migratory birds with stops on the Ottawa include northern species such as Brant Geese, Artic Tern, and Red-Throated Loon (Haxton and Chubbuck).

Sand flats provide habitat for the American Golden Plover, Red Knot, Western Sandpiper, Buff-Breasted Sandpiper, Black-Backed and Glaucous Gulls and the rarer Mew Gull. Marshes are home to many waterfowl during their breeding season. Colonies of Great Blue Heron are also found along the river. Common Mergansers, Harlequin Ducks, Barrow's Goldeneyes and Common Goldeneyes have been reported to spend the winter in the open waters near rapids and dams. Eleven species of raptor breed in the forests bordering the Ottawa River,

Over 300 species of birds are found along the Ottawa River. About half of these are migratory birds. Situated in the heart of the Atlantic Flyway, the Ottawa River is one of North America's most important halts for migrating waterfowl, a crucial staging area for many species (Dulude 28).

One of the richest habitats for migratory waterfowl is located between Montebello and Gatineau; species that stop here include Black Duck, Mallard, Northern Pintail, Northern Shoveler, Green-Winged Teal, Blue-Winged Teal, Wood Duck and American Wigeon. This same stretch is known for its abundant population of

**Figure 3.35 Bald Eagle**



Source : Ottawa River Legacy Landmark Network

including Cooper's Hawk, Red-Tailed Hawk, Merlin, Bald Eagle and the rare Red-Shouldered Hawk. Please see Appendix J for a full list of breeding birds along the Ottawa River.

### The Peregrine Falcon

The Peregrine Falcon, one of the bird species that breed on the cliffs beside the Ottawa River, was considered an endangered species in Canada from 1978 to 1999. Like the Bald Eagle, its population crashed in the 1950s due to the presence of agricultural pesticides, especially organochlorine compounds such as DDT, in the environment. These compounds caused the birds' egg-shells to thin and eggs to break, leading to reduced hatching success, reduced brood-size, and therefore reduced overall breeding success. Because Peregrine Falcons are at the top of the food chain, they are victims of biomagnification: their tissues accumulate high concentrations of the toxic substances present in their environment.

Due to more stringent regulations governing pesticide use, organochlorine contamination in Canada is no longer a major limiting factor for Peregrines. Unfortunately, the species is still considered threatened. Organochlorine compounds may still be in use in the birds' southern wintering range. Furthermore, there is uncertainty about the stability of small reintroduced populations in southern Canada, and the birds' overall population remains small. The birds also face diminishing quality of habitat. Locally, Peregrines may be affected by destruction of breeding sites and breeding areas, or by human intrusion near nest sites (CWS: "Species at Risk").

The Ottawa River's bird populations were first disturbed by intensive hunting, and more recently by the construction of hydroelectric dams. Today, bird hunting is still permitted in many areas of the river.

### The Least Bittern: A Threatened Bird of the Outaouais Region

The Least Bittern, *Ixobrychus exilis*, is seen at times in the Outaouais region, primarily in the wetlands bordering the Ottawa River between Gatineau and Papineauville. Perras Bay is considered an excellent site for observing this species, though it is also often seen at the Rubaniers Marsh, the Massettes Marsh, the Laïches Marsh, the Noire Ouest Bay and McLaurin Bay. The density of the population seems to be low upstream of Gatineau (Chabot and St-Hilaire).

COSEWIC has designated the Least Bittern a threatened species in Canada. This status was conferred because its population is small and continues to decline as a result of the loss or degradation of high quality marsh habitats across its range. There are presently only about 1000 pairs left in Canada, most of which are in southern Ontario and Quebec.

## 3.6.4 Reptiles and Amphibians

There are 33 species of amphibian and reptile in the Ottawa River and its watershed (DDEPQ). The health of these populations depends intimately on the health of the river itself. Some amphibians and reptiles depend exclusively on the river and associated bodies of water for their habitat, while others use the river during only a short cycle of their life.

This is the case for many salamanders and frogs that lay their eggs in ponds and swamps. Young salamanders and frogs inhabit ponds and swamps during their juvenile life cycle. The Mudpuppy is strictly aquatic and therefore found in the river year-round. The Spring Peeper, Bullfrog, and Green Frog are abundant and common in almost all areas of the river. Considered a vulnerable species in Quebec, the Western (Striped) Chorus Frog has been reported in the vicinity of Allumette Island.

Numerous turtles can also be observed in the slow-moving waters and wetlands bordering the Ottawa River. The most common and noticeable are the Common Snapping Turtle and the Midland Painted Turtle. These species are mostly found in the southern reaches of the river, although they live in other parts as well. The Red-Eared Slider turtle is a common aquarium species that has been introduced in many areas in Canada. Unfortunately, it competes with the Midland Painted Turtle for habitat and food.

Rare, and only in the Lower Ottawa River, are the Eastern Spiny Softshell Turtle (at risk in Canada, Quebec, and Ontario), the Common Map Turtle (at risk in Ontario) and the Wood Turtle, also at risk.

**Figure 3.36 Wood Turtle**



Source: Petawawa Civic Centre

COSEWIC recently added the Stinkpot Turtle (2002) and the Blanding's Turtle (2005), both present in the Ottawa River, to the list of species threatened in Canada. (COSEWIC: "Species Database"). The Wood Turtle is widespread but in low densities and numbers across much of southeastern Canada. Its populations are highly sensitive to commercial exploitation for the pet trade. The species is close to extirpation in southern Ontario. This turtle has a low reproduction rate and a late age at maturity. Its population is probably limited by temperature and habitat requirements (particularly clear, sandy or gravel-bottomed streams) (CWS:

"Species at Risk"). In addition, two populations of Spotted Turtle have been discovered in the Ottawa Valley. This endangered species is the rarest turtle in Algonquin Park.

### The Spotted Turtle: An Endangered Species Along the Ottawa River

The Spotted Turtle, *Clemmys guttata*, is an endangered species in Canada present in Ontario and Quebec. The turtle occurs at low density, has an unusually low reproductive potential, combined with long-lived history, and occurs in small numbers in bogs and marshes that are fragmented and disappearing. In small protected areas, these turtles have a low probability of persistence, as low population numbers and isolation reduce population viability. Another threat to their persistence is from collection for the pet trade (COSEWIC: "Species Database").

**Figure 3.37 Spotted Turtle**



Source: Petawawa Civic Centre



As with other wildlife along the Ottawa River, threats to turtle populations include substantial habitat loss, often restricting the distribution of turtle species to only portions of their former range. Habitat degradation through development and recreation may block access to nesting, hibernation, feeding and basking sites. Other potential threats include the partial or complete isolation of segments of turtle populations by dams and other structures, the reduction of juvenile recruitment by high predation rates on nests, and high mortality rates due to collisions with motor boats, trapping, and incidental mortality from fisheries (CWS: “Species at Risk”).

At least seven species of snake have been reported in the Ottawa River area. Water snakes are often sighted in the river. The Eastern Milksnake and the Eastern Ribbon Snake are both considered species of special concern by COSEWIC.

### Two Snake Species of Special Concern Along the Ottawa River

**Figure 3.38 Milksnake**



Source: Petawawa Civic Centre

#### The Milksnake

The name “Milksnake” stems from the erroneous belief that these snakes would enter barns and steal milk from cows. This is definitely false, as the snake’s jaw is not adapted for sucking, and its teeth are very sharp! Instead, Milksnakes visit barns in search of rodents, which they consume in large numbers. Young Milksnakes eat worms and young snakes of other species. Milksnakes are constrictors, suffocating their prey before swallowing it.

Milksnake habitat is ideally close to water, and provides opportunities for basking and egg laying (CWS: “Species at Risk”). The Milksnake is still widely distributed in Ontario, but anecdotal information indicates that it occurs in small numbers. The species maintains a small but seemingly stable population in Quebec.

The Milksnake is subject to high levels of road kill and is still deliberately killed because it resembles venomous species. In addition, milksnakes are affected by habitat loss and modification due to urbanization (COSEWIC: “Species Database”).

#### The Eastern Ribbonsnake

The Eastern Ribbonsnake strongly resembles the more common Eastern Garter Snake in both colour and size. However, ribbonsnakes are more slender and have longer tails than garter snakes. The Eastern Ribbonsnake is semi-aquatic. It is most frequently found along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. It feeds primarily on amphibians, particularly frogs.

This snake has probably always been rare in Ontario. However, there is evidence that it is becoming increasingly localized, even extirpated, in areas where it was once widespread.

Threats to the Great Lakes population of the Eastern Ribbonsnake include loss and degradation of wetland and lakeshore habitats, declines in amphibian prey, persecution, collecting, accidental death on roads, and predation by pets and native wildlife (CWS: “Species at Risk”).

Riparian zones are home to many organisms. The Tremblay’s Salamander is one example deserving particular attention. It occurs at the southern limit of the Blue-spotted Salamander’s range. These salamanders reproduce by parthenogenesis: they have to mate to stimulate their eggs to develop into embryos. Since there are no male Tremblay’s Salamanders, all females must mate with a male Blue-spotted Salamander (Collicutt: “Blue-spotted Salamander”).

### 3.6.5 Invertebrates

Invertebrates are excellent indicators of the health of an aquatic system. Many breathe through a sensitive epidermis that readily absorbs and accumulates pollutants. Studying invertebrates such as insect larvae and mussels can often enable scientists to assess the health of an overall ecosystem.

The Ottawa River is home to insect species associated with most rivers, including Clubtails, Damselflies, Dragonflies, Backswimmers, Water Boatmen, and Water Striders. Mayflies are the primary indicators of pollution because they require clean, well-oxygenated water that is free of pollutants. Thus, they are one of the first aquatic species to disappear when water pollution occurs.

Various snails, crayfish and mussels can be found in the Ottawa River. The Yellow Lampmussel is found in the Lower Ottawa River (NEWP: “Mussel Atlas”). Unfortunately, the Zebra Mussel has found its way into the river as well. It was inadvertently introduced in the mid-1980s from the drainage of ballast water from cargo ships. The Zebra Mussel impacts the river system by competing with native mussels and by clogging water pipes from water inlets and outlets (GLIN: “Zebra Mussels”).

#### Species at Risk Along the Ottawa River

The recent acceptance of the federal Species at Risk Act in 2003 reflects Canada’s increasing commitment to preserving the nation’s biodiversity. In addition to a Canada-wide list of species at risk, both Ontario and Quebec maintain separate lists of Species at Risk specific to each province.

At least 50 provincially or nationally at-risk species of flora and fauna exist within the Ottawa River Valley, many of which have been mentioned previously in this study; please refer to Appendix H for a full list. The region is one of the most threatened landscapes in Canada, although its microclimate, sand and limestone substrate support rich habitats with a diversity of flora and fauna (Nature Conservancy of Canada: “Ottawa River Valley”). A variety of factors, including urban sprawl, agriculture and recreational activities play a role in the disappearance of habitat and therefore species along the Ottawa River; this is symptomatic of changes happening on a global scale. These factors are explored in more detail in Chapter 6.2.2: Potential Challenges in Managing the Ottawa River as a Canadian Heritage River.

## 3.7 Ecosystems

A variety of ecosystems can be found along the Ottawa River. Numerous provincial parks, conservation areas, ecological reserves, and Areas of Natural and Scientific Interest (ANSI) have been established along the river's course. Twenty-nine environmentally sensitive areas have been identified between Lac Dollard des Ormeaux and Lac la Cave on both the Ontario and Quebec shores (Haxton and Chubbuck 22). Each of these communities contains a fascinating array of species that interact in unique ways to produce a variety of distinct natural communities.

Often, conservation groups and governmental organizations are working in tandem for the protection of these ecosystems. In many cases, these same groups provide excellent educational opportunities for the public through on-site visits and guided tours. However, when ecosystems are highly sensitive, visitors must be cautious of making even seemingly small impacts on the natural environment.

### 3.7.1 Riverine Systems

Rivers shape neighbouring ecosystems by providing drinking water, microclimates, barriers to migration, and food. Dams and reservoirs along the Ottawa create significant changes to the river's ecosystems. Dams have benefited Walleye along the river because they spawn in the resulting turbid waters. However, dams disrupt the migration and survival of other fish species, such as the River Redhorse. This fish is highly sensitive to siltation and pollution – siltation often occurs upstream of dams. The Northern Brook Lamprey, another species of concern, is adversely affected by changes in the average water temperature due to lowering water levels, often a result of dam functioning (CWS: "Species at Risk").

Figure 3.39 Along the Ottawa River



Source : Francis Lavigne

#### The McLaurin Bay Project

The McLaurin Bay project in Gatineau aims to ensure the protection and the enhancement of habitats with fauna of particular interest. It presently encompasses 520 hectares of wetland and riverine habitats, and is part of a larger project seeking to protect the north shore of the Ottawa River between Hull and Calumet, a stretch within which a great deal of the wetlands of the Ottawa River are found. The project is working to acquire privately owned lands in order to consolidate the properties presently belonging to the Quebec government. One desired outcome of this would be the creation of further wetlands in order to increase the biological productivity of the region.

### 3.7.2 Lacustrine (Lake) Systems

The Ottawa River flows through numerous lakes, the largest of which are Grand Victoria, Simard, Temiskaming, Allumette, Chats, and Deschênes. Many of these lakes have been formed by dams

that flooded immense forested areas. Flow regulation for hydroelectric production results in the conversion of lotic ecosystems to lentic ecosystems upstream of dams. In other words, water accumulates upstream of dams and floods the land, creating a lake in which water is relatively static and in which sediment accumulates with time. Downstream of the dam, water is generally in constant movement.

Rare plant species can be found in various lakes along the Ottawa River, including Braun's Quillwort, Bald Rush, Torrey's Bald Rush, Water Crowfoot and four species in the potamogeton family (*Potamogeton pusillus*, *Potamogeton perfoliatus*, *Potamogeton robbinsii* and *Potamogeton spirillus*). Ontario has identified the Map Turtle as a species at risk. Increases in shoreline development, declines in habitat quality, and increases in human disturbances are probable culprits. Alternately, invasive Zebra Mussels may be responsible, as this species has reduced the population of the Map Turtle's traditional prey (ROM: "Species at Risk").

### 3.7.3 Wetlands

**Figure 3.40 Wetland Along the River**



Source : Claude Beaudoin

Wetlands are the most productive and diversified ecosystems along the Ottawa River. They act as purifying sponges, filtering pollutants and excess nutrients. They also retain water, and then slowly replenish ground water sources as they diminish. Wetlands are vital to many microbes, plants, fish and wildlife, some rare or threatened, as these unique systems provide feeding and breeding grounds, habitat, migration halts, and shelter. There are five types of wetland: swamps, marshes, bogs, and fens. Each type is found at various points along the Ottawa River.

#### Swamps

Swamps are flooded areas that support ligneous (woody) species. Water levels are often high in the spring and then quite low in the summer. In springtime, swamps are true outdoor concert-halls, as they are important reproduction sites for various species of frogs and salamanders. The Wood Street Swamp, a municipal park, protects one of the Ottawa River's southern swamps. The Westmeath Provincial Park has a significant swamp that is alive with migrating ducks in spring and autumn.

#### Stony Swamp Conservation Area

Stony Swamp Conservation Area is located just south of the Ottawa River in the National Capital Greenbelt. The area comprises almost 2000 hectares of woodland, wetland and regenerating old field, and represents over 700 species of plant. Many interesting plant communities can be found here including a Sugar Maple forest, small alvar clearings, marsh wetlands and beaver ponds, and regenerating pastures. Stony Swamp Conservation Area also supports a large variety of wildlife, including Canada Geese and other waterfowl, Beaver, woodland birds and the Northern Flying Squirrel (NCC: "Stony Swamp").

## Marshes

Marshes are wetlands that are frequently or continuously inundated with standing or slow-moving water (in the shallow water along the boundaries of lakes, ponds, and rivers). They are considered the most productive of all wetlands, and are characterized during the summer months by emergent soft-stemmed vegetation that is adapted to saturated soil conditions.

Several protected areas have been established to conserve the numerous marshes found along the Ottawa River. Muskellunge and Pike are known to spawn in the marshes of the Ottawa River. The Eastern Spiny Softshell Turtle is one of the rarest turtles in Canada, and is at risk both provincially and nationally. These turtles have been found along the Ottawa River in a variety of marshy habitats, including marshy creeks, marshy lagoons, ditches, and nearby ponds.

## Bogs

Bogs are covered with a layer of floating vegetation that looks like solid ground, and are usually found in northern territories. Exceptions to this rule, the Alfred Bog and the Mer Bleue Bog are two boreal peat bogs along the Ottawa River. Both are situated near the Ottawa River, east of the city of Ottawa. A number of the plants and animals in these park areas are considered rare, either regionally, provincially or nationally. Drainage around the margins of the bogs threatens the health of these unique ecosystems.

### Alfred and Mer Bleue Bog

#### Alfred Bog

The Alfred Bog is a boreal peat bog hundreds of miles south of anything like it. At 4,200 hectares (10,000 acres), it is the largest bog of its kind in southern Ontario, large enough to give refuge to many plants and animals that were stranded as the warming climate caused the boreal forest to retreat northward with the end of the last Ice Age.

This peat bog has been accumulating for 10,000 years, and shelters many plants and animals that are rare or endangered, some of which are of national significance. Examples include the Bog Elfin Butterfly, Fletcher's Dragonfly, Spotted Turtle, White Fringed Orchid, Atlantic Sedge and Rhodora. In fact, the bog has been designated by the Ontario Ministry of Natural Resources as a "Class 1 Wetland" and an "Area of Natural and Scientific Interest (ANSI)".

Being a domed peat bog, the Alfred Bog is unlike the kettle bogs most commonly encountered south of the Hudson's Bay lowlands. Domed bogs, unlike kettle bogs, drain in all directions from the dome and only receive nutrients from rain and snow. The dominant vegetation in both types of bog is Sphagnum Moss, known to gardeners as peat moss. Sphagnum Moss thrives in the interior of bogs where cool, wet, oxygen starved, nutrient poor, acidic conditions prevail. The dome is formed over millennia as sphagnum moss gradually wicks up water from below.

Alfred Bog lies in the east end of an abandoned channel of the Ottawa River. This was once the main channel of a great river flowing down the Ottawa Valley and into the Atlantic Ocean, draining a glacial lake centred in Manitoba. Because of reduced flow and glacial rebounding, the river abandoned its old channel and moved to its present location.

The most significant impact upon Alfred Bog over the years has been the conversion of bog land for agricultural purposes. The first settlers in the area found the bog to be of little use for farming and an obstacle to building roads. Nevertheless, over the years, drainage around the margins has reduced it to about a third of its original size (Pope: "Alfred Bog").

### Mer Bleue Bog

The Mer Bleue Bog is Alfred Bog's "smaller twin." It is designated as an Ontario Provincial Conservation Area, and is situated in the eastern portion of the National Capital Region less than 10 kilometres from Ottawa. Like Alfred Bog, it is of great ecological value as an example of a northern ecosystem, justifying its designation as an Internationally Significant Wetland under the United Nations' Ramsar Convention (NCC: "Mer Bleue Bog").

Approximately 50% of Mer Bleue is a raised boreal peat dome, or *Sphagnum* bog, a system typically occurring in the boreal forests of northern Canada. The bog's hydrological features are unusual, with saline groundwater sources as well as peat deposits of up to six metres thick. Much of the border of the bog has been transformed by beaver dams into ponds and marshlands. Underlying clay deposits further reduce drainage, such that water levels remain at or near the surface of the bog for most of the year (Ramsar: "Canada").

The bog is particularly striking because of the bog mat itself, a "sea" of deep, saturated peat covered by open heath. The mat is home to a variety of plants, some of which are rare, and almost all of which exhibit unusual characteristics enabling them to survive under the bog's challenging conditions. These include the Sundew, Pitcher Plant, Bog Rosemary, Labrador Tea, several species of rare orchid and of Cotton Grass, as well as a variety of low heath shrubs. Also present are stunted to moderate-sized Black Spruce and Tamarack trees (Ramsar: "Canada").

Due to the relatively undisturbed and unique habitat, numerous significant or rare fauna are also found in the conservation area, including 22 species of mammals (Ramsar: "Canada"). The area provides habitat for the nationally rare Spotted Turtle, and Fletcher's Dragonfly, an insect observed in only a handful of sites worldwide. Some of the site's more common inhabitants include the Snowshoe Hare, Beaver, and Muskrat, as well as a variety of waterfowl (NCC: "Mer Bleue").

Figure 3.41 Aerial View of the Alfred Bog



Source: Ottawa River Legacy Landmark Network

### Fens

A fen is a type of peatland that resembles a bog but also contains at least 40 centimetres of peat. However, fens support marsh-like vegetation including sedges and wildflowers. The main differences between fens and bogs are in their flora, hydrology and water chemistry. Both bogs and fens along the Ottawa River foster the growth of similar insects, including the smallest dragonfly in the north, the Elfin Skimmer. The Skillet Clubtail is a rare species that had not been observed for many years, although it may still inhabit the fens and bogs of the Ottawa River.

### Wetland Restoration in Atocas Bay

Partnerships and volunteer work have been the basis for the successful restoration of the wetlands of Atocas Bay in the community of Lefaivre along the Ottawa River. In 1999, Atocas Bay was a “forgotten stretch of farmland” with only two or three pairs of ducks nesting on the property. Now this habitat on the north-south Atlantic flyway is considered to be one of the most productive sites in Ontario for breeding waterfowl. Through \$1 million in funding and after restoring over 250 wetland basins on the unique undulating landscape, surveys indicate the presence of 11 species of nesting ducks and a variety of other bird species, as well as Moose, White-tailed Deer, and Short-eared Owls.

This project demonstrates that both conservation goals and agricultural priorities can be achieved if appropriate agricultural methods are put in place, such as rotational pasturing and late-season haying. Partners in this project included Environment Canada's Canadian Wildlife Service, Ducks Unlimited Canada, the Ontario Ministries of Natural Resources and Agriculture and Food, the Nature Conservancy of Canada, and Wildlife Habitat Canada. Contributions for Atocas Bay came from all of the partners in the form of direct dollars and in-kind support (WetKit: “Successful Wetland Restoration”).

#### 3.7.4 The Riparian Zone

Riparian zones are the transition areas between terrestrial and aquatic ecosystems. They are also called *vegetated buffer zones* because vegetation in these zones is strongly influenced by the presence of water. In riparian zones, upland areas merge with water bodies, enabling a crucial exchange of energy and matter, and providing diverse habitats for plants, fish, and other wildlife.

Along the Ottawa, numerous islands have been formed from sandbars, including Kettle Island and Petrie Island. Such islands provide excellent examples of riparian ecosystems. The size of the islands varies greatly, and some include human residences or other signs of development while others remain relatively untouched. These islands support the existence of Blue Herons, Kingfishers, and a variety of ducks, which use the submergent vegetation found along the islands. Several mammal species also use these islands for breeding. They support many rare plants (Rivers, Inc.: “Ottawa River”).

Along the shore of the wider, slower flowing reaches of the Ottawa River, natural and artificial beaches can be found, including Norway Beach and Britannia Beach. Agricultural lands also occur along the river. Some shoreline areas are privately owned and are increasingly occupied by cottages and homes. The riparian zone is important to the health of the river system because it forms a buffer between the channel of the river and more developed areas or pasturelands. In particular, the zone serves to filter runoff from the land before it drains into the river.

Many of the Ottawa River's islands contain unique floodplain habitat. These, such as Petrie, Kettle, and Duck Islands, are almost completely flooded in the spring, a special feature to which many species are adapted and, in several cases, is even required to maintain healthy populations. A process of continual erosion and deposition of sediments around the islands provides a renewal of shoreline habitats and enables plant and animal communities to evolve. The islands' quiet backwaters are also extremely rich habitats, providing shelter and nutrients to a wide variety of plants and animals not found in the open river (Hanrahan and Darbyshire).

Many plant species can only be found in the region along the floodplain of the Ottawa River. Some of these plants require water systems and flooding for their seeds to be dispersed. Some need the continual shifting of shoreline sediments, while others require that their habitat be inundated in the spring but dried out in the fall. All of the plant communities found on the Petrie Islands, for example, are specially adapted to extensive spring flooding (Hanrahan and Darbyshire). Prairie-like conditions as well as alvars can be found along the Ottawa River and are maintained by spring flooding. Please refer to Chapter 3.5.2: Riparian Vegetation for a more complete description.

### Petrie Island

Petrie Island on the Lower Ottawa River near Cumberland, Ontario, just east of the city of Ottawa may leave visitors feeling like they have “entered another world” (Rivers, Inc.: “Ottawa River”).

Petrie Island was formed by sand deposited at the end of the last ice age; over thousands of years, the sand was eroded into marshes, beaches, dunes, and riverside thickets. Now only 12 kilometres in length, the island complex is a tiny vestige of the vast delta that covered the area more than 8,000 years ago.

The flood-prone area supports at least 29 rare species of plant, including Gattinger's Panic Grass, Moss-Like Love Grass, Wild Madder, and the only major stand of Hackberry trees in the region. (Hackberries are common in the American South.) Many plants depend upon the Ottawa River's annual spring flooding and continual shifting of shoreline sediments for their survival, and have adapted their reproduction and growth patterns to this cyclical water inundation.

The quiet backwaters, flooded forests and sandy dunes of the Petrie Island ecosystem attract a wide variety of resident and migratory birds, including the Red-winged Blackbird, Bonaparte's Gull, the Black Tern and the Marsh Wren. Bird watchers have recorded in the area at least 16 species of warblers, including Magnolia Warblers, the Northern Waterthrush, and the Ovenbird. Woodcocks can be observed in the wooded areas.

The uniqueness of the Petrie Island environment has been recognized by a number of official designations, including classification as a Provincially Significant Wetland (Class I, the highest rating in the Ontario system) and as a regionally significant area of natural and scientific interest. Since 1998, Friends of Petrie Island, a local volunteer organization, has promoted conservation and passive recreation in the area. Recent proposals to expand nature trails and active recreational activities have drawn further attention to the exceptional and fragile nature of this unique natural environment.



### 3.7.5 Forest Ecosystems

Both the boreal forest and the mixed wood plains ecozones border the Ottawa River. Both of these forest types provide a range of vital ecosystem services, such as air purification, storage of carbon dioxide, stabilization of riverbanks, and reduction of erosion. Forests along the shores of rivers such as the Ottawa also serve as filters, helping to protect the river from runoff carrying excess nutrients and pollutants. Furthermore, forests provide habitat for a variety of wildlife species, some of which are endangered or at risk. These forests also provide excellent recreational opportunities for humans, and fuel the region's forestry economy.

Logging has significantly altered the landscape of the Ottawa Valley. The booming squared timber business, succeeded by the lumber industry was, by the 1880s, responsible for the disappearance of about 75% of the region's forests. Today, along the Ottawa River's shore, most of the forests are less than a century old (Rivers, Inc.: "Ottawa River").

**Figure 3.42 Large Flowered Trillium**



Source : Ottawa River Legacy Landmark Network

#### The Boreal Forest

Because it is located along the northern stretches of the Ottawa River, the boreal forest is less threatened by urban development than the mixed wood plains forests to the south. However, it contains highly valuable lumber. Canada's boreal forest is one of the world's ancient forests, but its southern reaches, such as those along the northern portions of the Ottawa River, are increasingly fragmented (The Nature Conservancy).

#### The Mixed Wood Plains Forest

The mixed wood plains region, located in the lowland part of the river, is also called the Great Lakes-St. Lawrence Forest. Centuries ago, when the area was heavily forested, it may have supported the greatest vegetal biodiversity in the country. Today, the mixed wood forest of the Outaouais region is still considered the richest forest area in Quebec.

This region is now extensively occupied by humans. Forests have been cleared for orchards and other agricultural purposes, lumbering and mining activities, and highways and cities. The Ottawa River Valley was once famous for its White and Red Pine forests. Today, only remnants of these can be found, such as Gillies Grove near Arnprior.

#### Gillies Grove

Gillies Grove is home to one of the tallest White Pines in Ontario, reaching 50 metres, and still only middle-aged. The grove contains many examples of the Ottawa Valley's legendary huge White Pine, and is also comprised of Eastern Hemlock, Sugar Maple, Yellow Birch, American Beech, and

Basswood. This unique forest habitat is a haven for a wide variety of bird species, including Downy, Hairy and Pileated Woodpeckers, Northern Flickers, Yellow-bellied Sapsuckers, White and Red-breasted Nuthatches, Black-capped Chickadees, Purple Finches, Pine Siskins, American Goldfinches, Cardinals, and the elusive Red-shouldered Hawk. Today the grove is open to the public as an “outdoor museum.”

## 3.8 Conservation Along the Ottawa River

The significant and increasing loss of biodiversity and natural heritage areas worldwide has created widespread concern, and is generating a new commitment to conserve and protect threatened species and spaces. In recent years, a succession of world charters have called for accelerated protection of natural heritage. As part of this growing movement, Canada and 159 other countries signed the *United Nations Convention on Biological Diversity* at the Earth Summit in Brazil in 1992. There, Canada pledged to establish more protected areas, and to find new ways of managing these areas while promoting environmentally sound and sustainable development of natural resources. Conservation initiatives along the Ottawa River, administered by provincial and municipal parks and by other conservation organizations, make a considerable contribution to Canada's commitment.

**Figure 3.43 Open Water Along the River**



Source: Francis Lavigne

### 3.8.1 Parks Along or Near the Ottawa River

In addition to offering excellent recreational opportunities (as discussed in Chapter 4: Recreational Values), parks and nature reserves contribute to environmental conservation efforts in several ways. First, they provide an important service to the species living in their region: habitat protection. Protecting habitat by restricting development and natural resource extraction means supporting the ecosystems that this habitat sustains. It therefore contributes to the well-being of the species that make up the fabric of these ecosystems. In addition, parks and conservation areas frequently support scientific studies, the findings of which are often widely applicable and can guide conservation initiatives both within the protected area and more broadly. Finally, parks and nature reserves contribute to the health of our ecosystems more generally by educating the public about the areas that they protect, fostering sensitivity to the importance of sustaining Canada's natural systems.

Numerous parks line the waters of the Ottawa River, with the combined goals of conservation, education, and recreation. Each of these parks and reserves contributes to the protection of the natural environment of the Ottawa River valley. On the Quebec side of the Ottawa River, there are three provincial (Quebec National) parks, two large nature reserves and several small ones, and several ZECs (Zone d'Exploitation Contrôlée, or fishing, hunting and recreation reserve). On the Ontario side are seven provincial parks and three non-operating provincial parks near the Ottawa River. Municipal parks on both sides of the river also contribute significantly to conservation efforts along the river.

### Parc National d'Oka

Parc d'Oka is a Quebec national park located about 35 minutes from Montreal. The park represents Quebec's second largest protected area for threatened or vulnerable plant species (TVP). Oka's 60-nest heron colony and wood duck nesting grounds (Quebec's most productive) make it a popular destination for bird watchers. Four Romanesque oratories and three chapels built around 1740 are located within the park (SEPAQ: "Oka").

### Parc National de Plaisance

The Parc National de Plaisance, located east of Papineauville along the Ottawa River, is renowned for its biodiversity. Over 235 bird species, 30 varieties of fish, Quebec's second highest concentration of beaver colonies, and a large number of threatened and vulnerable land vertebrates call the park home. A rare population of more than 22 pairs of Least Bittern are also found here. The extensive wetlands that lie along the banks of the Ottawa are important habitat for migratory waterfowl (SEPAQ: "Plaisance").

### Parc National d'Aigubelle

With its 268 square kilometres located in the Abitibi-Témiscamingue region northeast of Rouyn-Noranda, this park features unique geological formations, and houses a great deal of northern wildlife, including hundreds of beaver dams on its many lakes (SEPAQ: "Aigubelle").

### Voyageur Provincial Park

Voyageur Provincial Park on the shores of the Ottawa River represents land that was expropriated as a result of the flooding following the construction of the Carillon Dam in 1959. As a result, the parklands demonstrate a process of ecological succession as old fields develop into young forests and waterfront areas into marshlands. The changing landscapes provide important habitat for a wide range of plant and animal species. The varied landscape of beaver ponds, fern swamps, and hills of mixed forest provides habitat for Deer, Woodchucks, Muskrats and Beaver. Bird species include Bobolinks, Meadowlarks, Goldfinches, Robins, and Warblers. In the spring and fall, the bays are filled with migrating ducks and Canada Geese. Terns, Gulls, Sandpipers, Herons, Kingfishers and Osprey live along the shore. The park is also home to the Midland Painted Turtle and the Snapping Turtle (ORHDC: "Landmarks – Voyageur").

**Figure 3.44 Voyageur Provincial Park**



Source : Ottawa River Legacy Landmark Network

### Fitzroy Provincial Park

Fitzroy Provincial Park upstream of Ottawa protects a locally significant example of southern mixed forest region. A stand of 300-year-old Bur Oak by the Carp River as well as towering, 100-year-old White Pine serve as a reminder of what originally drew the lumbermen into the Ottawa Valley. The forest provides habitat for migratory birds as well as various other plant and animal species, including Killdeer, Goldfinches, Flickers and White-tailed Deer (Ontario Parks: "Fitzroy").

**Figure 3.45 Stream, Fitzroy Provincial**



Source : Ottawa River Legacy Landmark Network

### Algonquin Provincial Park

Algonquin Park's 7,725 square kilometres of forests, lakes and rivers, was established in 1893 as a wildlife sanctuary by members of the lumber industry who realized that unmanaged logging and the spread of agriculture threatened the sustainability of the forest. Today, the park plays an important ecological role by preserving a high level of biodiversity and protecting the headwaters of various streams.

The park is particularly famous for its Wolves, which are heard but rarely seen, but is also home to significant populations of Moose, White-tailed Deer and Bear. More than 260 bird species have been recorded in the Park. Many southern and overseas birders make special trips to Algonquin just to see northern specialties such as the Gray Jay and the Spruce Grouse, not to mention the rich variety of Warblers or Algonquin's most famous bird of all: the Common Loon, found nesting on most of the park's lakes.

### Ottawa River Provincial Park

The Ottawa River Provincial Park is a non-operating Ontario waterway park protecting 125 hectares of shoreline between Mattawa and the Chenaux dam on the Ontario side.

### Samuel de Champlain Provincial Park

Samuel de Champlain Provincial Park is a 2,550-hectare natural environment park along an eastern section of the Mattawa River, one of the Ottawa's main tributaries. The park contains a variety of wildlife typical of the area, including Moose, Wolves, Bear and White-tailed Deer, as well as more than 200 species of birds and waterfowl such as Loons, Common Mergansers, Black Ducks and Wood Ducks. Natural heritage and ecological education programs are available.

### Westmeath Provincial Park

Westmeath Provincial Park is a non-operating Ontario natural park located east of Pembroke on Lower Allumette Lake. Its 610 hectares of land are situated on a former channel of the Ottawa River, mainly consisting of an active sandspit that encloses Bellows Bay. This habitat is significant for migrating birds, waterfowl, shorebirds, and turtles (Ontario Parks: "Westmeath").

### **Bonnechere Provincial Park**

Bonnechere Provincial Park covers 162 hectares of forest and wetland. Located about 45 kilometres west of Pembroke, the park takes its name from the Bonnechere River, an important tributary to the Ottawa. The Bonnechere meanders around several tiny oxbow lakes before reaching Round Lake. Other natural features include a beaver pond and a marsh (Friends of Bonnechere Rivers: “Bonnechere Provincial Park”).

### **Bonnechere River Provincial Park**

Bonnechere River Provincial Park is a non-operating but accessible 1198 hectare, or 23 kilometre, waterway. It encompasses a scenic stretch of the Bonnechere River, historically called the “Little Bonnechere” that connects Bonnechere Provincial Park, on the shores of Renfrew County’s Round Lake, with Algonquin Park to the north. Stands of trees, wetlands, and sandy shorelines provide important habitat for a wide variety of natural resources. The waterway also acts as a corridor for southern plant species such as the Cardinal Flower in the northern portion of its range, and the White Oak (Ontario Parks: “Bonnechere River Provincial Park”).

### **Driftwood Provincial Park**

The construction of the Des Joachims hydroelectric dam in 1950 created a sheltered bay on the Ottawa River, later designated an Ontario Provincial Park. More than 200 species of birds have been identified in this riverside park. The southern section of the park was ravaged by a forest fire in 1975, allowing visitors to observe the fascinating process of forest succession. At present, Aspen, Poplar, Jack Pine, and Blueberry bushes are thriving in the ashy soil.

### **Kap Kig Iwan Provincial Park**

Kap-Kig-Iwan Provincial Park is located northwest of Lake Temiskaming near Englehart. The park includes 325 hectares of land and features the Englehart River Valley, providing an excellent opportunity for observing flora, fauna and geological features. The park sits on the northern edge of the Little Clay Belt, one of the richest farming areas in northern Ontario. Although the park is in the boreal forest, its Aspen, Birch and Red and White Pine grow alongside White Elm and Black Ash, species of trees more usually found in the Great Lakes-Saint Lawrence lowlands (Town of Englehart: “Kap-Kig-Iwan”).

## **3.8.2 Nature Reserves Along or Near the Ottawa River**

### **Réserve Faunique La Vérendrye**

The 13, 615 square kilometres protected by the La Vérendrye Faunic Reserve are managed by the Société des établissements de plein air du Québec (SEPAQ). La Vérendrye is SEPAQ’s second largest natural territory. Located at the large reservoirs found on the Upper Ottawa River (including Dozois and Cabonga), the reserve offers an extensive lake and river system (SEPAQ: “La Vérandrye” and Québec Vacances: “La Vérandrye”).

## Parc de la Gatineau

Gatineau Park extends over 50 kilometres to the northwest of the Ottawa/Hull urban area, between the Ottawa and Gatineau rivers, and covers an area of 36,131 hectares. The park is managed by the National Capital Commission (NCC). An important nature reserve, the park is 80% blanketed in forest, including five species of endangered trees: White Oak, Eastern Red Cedar, Black Maple, Common Hackberry and Rock Elm. Altogether, the park is also home to 121 endangered plant species, the largest concentration of rare species in the province of Quebec. In addition, 54 species of mammals live in the park, 14 of which are designated as endangered species in Quebec and/or Canada. Two of the park's potentially endangered mammals are the Wolverine and the Silver-haired Bat. The park's 237 bird species, including the Pileated Woodpecker and Common Loon, draw birdwatchers to the park.

Twelve species of reptiles, three of which are rare in Quebec (the Northern Water Snake, the Wood Turtle and Blanding's Turtle), may be found in the Park. There are 17 species of amphibians, three of which are rare in Quebec: the Western Chorus Frog, the Pickerel Frog and the Four-toed Salamander. Many resident bird species are considered endangered in Quebec and/or Canada, including the Golden Eagle and the Redheaded Woodpecker. One of the park's molluscs, the Gatineau Tadpole Snail (*Physella parkeri litchfordi*), is very rare and considered to be on the verge of extinction. A rare butterfly, the Juniper Hairstreak (*Mitoura gryneus*), may also be observed in places within the park with Eastern Red Cedars (NCC: "Gatineau Park").

### 3.8.3 ZECs Along the Ottawa River

There are several ZECs (Zones d'Exploitation Contrôlée) along the Ottawa River. The ZEC system was established by the Quebec government in 1978 to replace privately-owned hunting clubs. ZECs are managed by non-profit organizations in order to conserve the territory's fauna, ensure accessibility of the territory and of the recreational uses of its fauna, and to ensure the participation of territory's users in the ZEC's management. These areas are popular for hunting and fishing as well as for nature appreciation, hiking, camping, and other recreational activities. Unlike most national and provincial parks, forestry is also commonly practiced within ZECs.

**Capitachouane** - The Capitachouane ZEC located around Saint-André-Avellin, near the Ottawa River's headwaters, covers an area 858 square kilometres and contains 88 lakes and 10 rivers (Hydro Québec: Bassin supérieur 5-2).

**Kipawa** - The Kipawa ZEC, located around Ville-Marie, covers an area of 2,500 square kilometres and includes 750 lakes and 17 rivers. In addition to the fauna and flora typical of the region, this ZEC also contains some natural features of particular interest, such as the Chute au Lac Pants waterfall, Lake Pommeroy, which displays some interesting geological formations), and several sandy beaches (Hydro Québec: Bassin supérieur 5-2).

**Festubert** - ZEC Festubert, located around Blainville, covers 1,427 square kilometres and contains 148 lakes and 4 rivers (Hydro Québec: Bassin supérieur 5-2).

**St-Patrice, Rapides-des-Joachims, Dumoine, and Magnasipi** – These four ZECs span the provincially-owned land on the Quebec side of the Ottawa River from Petawawa to beyond Mattawa. They include about 150 kilometres of undeveloped shoreline essential to the viability of many animal populations.

### 3.8.4 Other Conservation Areas Along or Near the Ottawa River

Along the Ottawa River, there are a remarkable number of conservation initiatives, bearing testament to the river's unique and varied natural systems and to the commitment of local citizens to the health of their natural environment. To list each of these initiatives would be outside the scope of this study. Conservation projects such as those taking place at McLaurin Bay, Mer Bleue, Alfred Bog, Petrie Island, and Atocas Bay, described earlier, are excellent examples of successful smaller-scale conservation projects along the Ottawa River. A few additional initiatives, of varying scale, are highlighted below.

#### **National Capital Greenbelt**

The National Capital Greenbelt is a 20,350-hectare band of open lands and forests surrounding the nation's capital on the Ontario side of the Ottawa River. It was first proposed in 1950 by French planner Jacques Gréber as part of an overall plan to beautify the National Capital. The Greenbelt was also intended to protect the rural land bordering the Capital from urban sprawl. The Greenbelt has expanded over the years to encircle the Capital from Shirley's Bay on the west to Green's Creek on the east. Most of the total area, or 14,950 hectares, is owned and managed by the National Capital Commission. The rest is held by other federal departments or privately.

The Greenbelt provides residents and visitors with an accessible rural environment rich in natural and historic resources. It offers a range of experiences from rolling farmlands to peaceful forests and wetlands. Each of these supports an array of plant and animal life. The Greenbelt includes the Mer Bleue Conservation Area and Stony Swamp Conservation Area, two wetland communities described earlier, as well as several other natural areas of interest, such as Green's Creek Valley, which cuts through clay and post-glacial fossils from the ancient Champlain Sea, and offers striking natural lookouts (NCC: "Greenbelt").

#### **Petawawa Terrace**

Petawawa Terrace, owned by the Province of Ontario and until recently housing a fish hatchery, has been proposed as a provincial nature reserve to protect the area's unique natural features, both ecological and geological. Situated in the heart of the Town of Petawawa, the Terrace is a 150-metre high bluff supporting a forest of middle-aged Jack Pine, Red and White Pine, Oak, and various deciduous trees. Several freshwater streams rush from the Terrace to the flats below, which are covered by fields, treed swamp and natural shoreline of the Ottawa River. Wildflowers hide in shadows and over 60 bird species nest on the land. Petawawa Terrace is an area protected for its forest, plant and wildlife communities, as well as to provide opportunities for public enjoyment, research, and education (Destination Ontario: "Petawawa Terrace").

## Gillies Grove

Along the Ottawa River's shore, near Arnprior, lies one of Canada's treasured vestiges of old growth forest: Gillies Grove. The grove features a diversity of forest habitats including old growth hardwood forest, old growth white pine forest, and mature hemlock forest. For more information about the ecological significance of the site, please refer to Chapter 3.7.5: Forest Ecosystems.

**Figure 3.46 Gillies Grove**



Source: Adrienne Blattel

Ironically, this old growth grove has survived because it belonged to the Gillies family, who, immigrating from Scotland in 1820, soon presided over one of the largest logging operations of the Ottawa River Valley. In 1990, when it appeared that the forest would be destroyed by a housing development, conservationists began campaigning for its ensured protection. As a result of collaborative efforts between non-profits, individuals, and corporations, the site was purchased in 2002 by the Nature Conservancy of Canada and placed under the stewardship of the Ottawa Valley Land Preservation Society. This society is committed to the preservation of the old-growth forest.

Visitors are invited to follow the Gillies Trail, part of Arnprior's municipal Millennium recreational trail system, as it winds through the 23 hectare site along a natural section of the Ottawa

River. The grove is a throwback to the days before the lumber-baron era of the Ottawa Valley, enabling visitors to admire the rich plant and animal diversity, to imagine the "endless hills of pine" described in the journals of the earliest Ottawa Valley settlers, and to reflect upon the impact of forest exploitation.

## Omega Park

Omega Park is quite unlike the other parks described in this report. Its function is more like that of a zoo than of a conservation area. Located near Montebello, Quebec, the park is a 607-hectare enclosure containing walking trails and a 10 kilometre driving route through the varied landscape. Its purpose is to offer the public an opportunity to view a range of fauna in a re-creation of their natural environments. Some of the animals in the park are native to the region, but many are introduced. The species featured include the Red Deer, Corsican Moufflon, Wapiti, Alpine Ibex, White Tail Deer, Bison, Wild Boar, Beaver, Black Bear, Raccoon, Moose, and Wolf (Parc Oméga). The Omega Park is included here in virtue of the unique educational opportunities that it offers.

## Four Seasons Forest Sanctuary

This forest sanctuary contains 400 hectares of predominantly mature forest, a secluded bay and a wetland along the Ottawa River. It was purchased in 1995 from Atomic Energy of Canada Limited, who had protected the area for half a century. Now owned jointly by the Town of Deep River, the Four Seasons Conservancy organization and private individuals, it contains many walking and skiing trails, and is used for educational purposes.



### 3.8.5 Organizations with a Conservation Mandate

Just as there are many conservation initiatives along the Ottawa River, so too are there several organizations with a mandate to protect the health of its natural systems and environment. The following section highlights just some of the many organizations working towards the goal of environmental conservation along the Ottawa River.

#### The Ottawa Riverkeeper

The Ottawa Riverkeeper is a citizen-based, non-profit organization dedicated to the ecological welfare of the Ottawa River. The Ottawa Riverkeeper aims to achieve a healthy, ecologically sustainable Ottawa River, available for the enjoyment and benefit of its Ontario and Quebec communities. It seeks to do so by working independently as well as with individuals, businesses, community groups, and all levels of government on both sides of the river.

The Ottawa Riverkeeper facilitates the maintenance and enhancement of the ecological integrity of the Ottawa River through the following activities:

- monitoring water quality
- conducting original research
- identifying breaches of the law and reporting them to the appropriate authorities
- developing and maintaining an expert understanding of the river's ecological values, processes and special features, and the protective framework offered by various federal, provincial and municipal jurisdictions
- creating additional methods to sustain and enhance the ecological health of the river
- developing educational programs and projects in order to increase the public's understanding of the Ottawa River, so that they are able to become stewards of the river, and carry out habitat restoration projects along the Ottawa River

Website: [www.ottawariverkeeper.ca](http://www.ottawariverkeeper.ca)

**CREDDO** (Conseil régional de l'environnement et du développement durable de l'Outaouais/Regional Council for the Environment and Sustainable Development of the Outaouais Region)

**Figure 3.47 Wetland - Outaouais Region**



Source: Francis Lavigne

CREDDO is one of sixteen regional environmental councils in Quebec. CREDDO's members include various groups, companies, individuals, and local government bodies with an interest in the conservation of the Outaouais region's natural environment and in the region's sustainable development.

CREDDO's objectives are to:

- Promote well-planned development in the Outaouais region so that future generations will be able to benefit from a quality of life and an environment comparable with what we experience

today.

- Develop a regional vision regarding the Outaouais environment by promoting dialogue between the region's decision-makers.
- Encourage people to work together to address important environmental issues, such as issues related to particular ecosystems, riverbank development, and educational programming, in order to increase people's awareness of environmental issues in the region.
- Contribute to the well-being of people in the Outaouais region.

Website: [www.creddo.ca](http://www.creddo.ca)

### **Ottawa River Institute (ORI)**

The Ottawa River Institute (ORI) is a federally-incorporated non-profit organization based in Pembroke dedicated to fostering sustainable communities in the Ottawa River watershed. Specifically, its objectives are:

- To organize or to participate in environmental projects designed to: preserve and protect flora and fauna of the Ottawa River watershed; preserve, protect and restore rivers in the Ottawa River watershed; improve urban environments in the Ottawa River watershed.
- To educate and increase the public's understanding of the environment in the Ottawa River watershed and its importance by offering courses, seminars, conferences and meetings, and by collecting and disseminating information on that topic.
- To develop and provide programs promoting the protection and preservation of the environment in the Ottawa River watershed.
- To conduct research relating to the environment in the Ottawa River watershed and to disseminate the results of such research.
- To do all such other things as are incidental or conducive to the attainment of the above objects.

Website: [www.ottawariverinstitute.ca](http://www.ottawariverinstitute.ca)

### **The National Capital Commission (NCC)**

The National Capital Commission (NCC) is a Crown corporation that was created by Parliament in 1959 with a mandate to "develop Canada's Capital Region as a source of pride and unity for Canadians." The National Capital Region is much more than simply the Parliament buildings: it encompasses about 4,715 square kilometres of land in and around Canada's Capital.

Since 1903, when the first general plan for this area was drafted, there has been a sense that if Canada's Capital is to represent Canada and be meaningful to Canadians, then it should be a "green Capital." Certainly, the landscape around Ottawa and Gatineau has extraordinary natural potential, with ancient rocks of the Canadian Shield bordering the region to the north, a rich river valley extending to the south, and, of course, with the Ottawa River itself flowing through the heart of the Capital Region.

The NCC is not only responsible for the Gatineau Park and the National Capital Greenbelt, but also for urban lands and green spaces. The many urban parks and green spaces that exist in the Capital Region today are a result of careful planning, and reflect the NCC's vision to develop a system of linked parks, with small urban parks, larger suburban parks, and very large conservation areas in the outskirts. The

green spaces of the Capital Region are linked by some 170 kilometres of recreational pathway, designed for walking, cycling and in-line skating.

Website: <http://www.canadacapital.gc.ca>

### Club des ornithologues de l'Outaouais

The Club des ornithologues de l'Outaouais (Outaouais Ornithologists' Society) is a non-profit organization that has been working since 1978 to further develop knowledge about the birds of the Outaouais region. It has compiled a list of the bird species most commonly seen in the Outaouais region.

The organization regularly engages in conservation initiatives. For example, in the summer of 2004, the club collaborated with the Canadian Wildlife Service (Quebec region), McGill University's bird research and conservation centre and the Nature Conservancy of Canada to re-introduce the endangered Eastern Loggerhead Shrike in Pontiac County along the Ottawa River.

Website: <http://coo.ncf.ca>

### Ducks Unlimited Canada

Ducks Unlimited Canada (DUC) is a non-profit organization working to achieve "a mosaic of natural, restored and managed landscapes capable of perpetually sustaining populations of waterfowl and other wildlife in Canada." DUC's conservation efforts take many forms, including research on-the-ground as well as policy-level work aimed at changing policy in favour of wetland and habitat conservation. Ducks Unlimited Canada also delivers wetland and environmental education programs to teach Canadians about wetlands and the importance of their conservation.

**Figure 3.48 Common Mallard**



Source: Ottawa River Legacy Landmark Network

In 1973, DUC undertook the protection of its first site in Quebec: a wetland near Thurso along the Ottawa River. DUC invested over three million dollars into the protection and the restoration of 2,500 hectares of wetlands and adjacent areas along the Ottawa, between Plaisance and Gatineau. The organisation has also worked to promote public education and engagement, as well as ecological responsibility among farmers in the region.

More recently, DUC has completed a three-year program to conserve habitat threatened by development along the Ottawa River. DUC

worked hand-in-hand with Quebec Wildlife and Parks, as well as with landowners, to conserve 149 hectares of habitat east of Ottawa. The main focus areas for this conservation action plan were wetland restoration, planning farm management to conserve upland habitats, and habitat purchases. Today, the area is used by hunters, birdwatchers and thousands of migratory waterfowl.

Website: [www.ducks.ca](http://www.ducks.ca)

### **Ontario Stewardship Councils**

Ontario Stewardship is an initiative of the Ontario Ministry of Natural Resources. Individual Stewardship Councils (defined usually by counties) provide a local and community-oriented means of linking landowners with funding, information, and expertise to ensure that good management practices flourish.

Both the county of Prescott-Russell and the city of Ottawa have Stewardship Councils. The county of Lanark, within the Ottawa River Watershed, also has a Stewardship Council. These councils are engaged in a wide range of initiatives, including tree-planting, water quality monitoring, various education and outreach programs, and creek restoration projects.

Website: [www.ontariostewardship.org](http://www.ontariostewardship.org).

### **Comités de Bassins Versants**

In 2002, the Quebec Ministry of Sustainable Development, Environment, and Parks developed the Quebec Water Policy regarding the protection and proper management of water in the province. As part of this policy, the province implemented a mechanism for citizen-based integrated watershed management (DDEPQ: "Politique de l'eau").

Through this mechanism, community members representing a range of interests become stewards of their local watershed by forming a Watershed Council. These organizations take a watershed-based management approach. That is, they take into account everything that occurs within a watershed, including both naturally occurring activities and human activities. In this regard, soil, vegetation, animals and humans are all an integral part of a watershed. Watershed Councils exist for 38 rivers all over Quebec, including two tributaries of the Ottawa River: the Gatineau and the Lièvre rivers.

Website : [www.robvq.qc.ca](http://www.robvq.qc.ca)

### **River Recreation Improvement Association**

This volunteer organization has cleaned and maintained beaches and provided picnic tables and outhouses along the Deep River stretch of the Ottawa for thirty years. Donations from local area users and supporters fund these ongoing initiatives.

# Chapter 4

## Recreational Values

The Ottawa River's rich combination of human history, natural beauty and ease of access means that it supports a wide variety of recreational activities. Opportunities for recreation and education for communities along its shores and visitors from outside the region are numerous, diverse and high-quality. Activities include visiting museums, participating in festivals, fishing, boating, paddling, camping, hiking, cycling and skiing. These diverse activities cater to different tastes, and offer something for all seasons.

The Ottawa River and its tributaries afford opportunities for outdoor and sporting activities based on the natural features of the river, its valley and wildlife. The quality of these natural features greatly contributes to the enjoyment of these recreational activities. Many of these outdoor activities follow routes or use techniques that echo the early explorers, fur-traders and First Nations Peoples that preceded them, adding an exciting historical dimension to the experience. The many festivals, museums, historical tours and plaques demonstrate a strong interest in the human and cultural history of the river valley, and are based on an extraordinary history that contributes to growing cultural tourism along the Ottawa. The river's northern stretches provide a rugged wilderness experience, whereas its lower stretches offer more structured recreational opportunities.

**Figure 4.1 Sea Kayaking**



Source : Christian Guimond

### 4.1 Watersports

#### 4.1.1 Boating and Paddling

The Ottawa River provides significant opportunities for travel, nature enjoyment and sport through boating. A long tradition of boating as a means of travel, trade and exploration along the Ottawa River dates back to the era of the canoe, followed by the steamboat. Today, boating on the Ottawa River is recreational, and the boating industry, including power boating, rafting, kayaking, canoeing and sailing, is an important contributor to the economies of both Quebec and Ontario. The industry directly creates employment in pleasure craft construction (Quebec is a leader in this sector), marinas and the paddling industry. Complementary services associated with the recreational boating industry generate additional employment.

## Paddling

The Ottawa River is well known for its excellent paddling opportunities. Every year, paddlers are drawn to the river in search of adventure, connecting to nature, retracing Canada's history and spiritual renewal. Popular paddle sports along the river include rafting, canoeing and kayaking. Several paddling clubs and youth organizations provide opportunities for recreation and leadership on the river. Many of the Ottawa River paddlers sense a connection between the health of the river and their own well-being (Ottawa Riverkeeper: "Canoeing").

The natural setting and hydrology of the Ottawa River provide the ingredients for a high quality eco-tourism product that has been developed by local entrepreneurs and communities. Today, the river has become one of the world's most important paddling-based adventure and eco-tourism destinations. The famous Rocher Fendu whitewater section, located around Beachburg, Ontario and Davidson, Quebec, is home to at least five major whitewater rafting companies and four kayaking and canoeing instruction centres (Ottawa Riverkeeper: "Canoeing"). Several paddling tourism companies have operations on either shore of the river, from Lake Temiskaming to the confluence with the St. Lawrence. The *Fédération québécoise du canot et du kayak* has produced a paddling map-guide of both the Upper and Lower Ottawa River.

Paddling and rafting businesses directly employ over a thousand people. Thousands more are employed in the travel, outdoors equipment, and other related businesses, making paddling and rafting businesses a major employer in the Ottawa Valley. Paddling-based businesses rely on a sustainably-managed river and watershed.

## Rafting and Whitewater Kayaking

The same rapids that once proved a dangerous obstacle to European explorers and fur traders now provide an excellent opportunity for rafting and whitewater kayaking. Every summer, tens of thousands of paddlers descend the rapids of the world-famous, 12-kilometre stretch of whitewater known as the Rocher Fendu section, meaning split rock in French.

**Figure 4.3 Rafting in Big Waters**



Source: Benoit Chailfour

**Figure 4.2 A Long History of Recreation**



Source: Library and Archives Canada

The Rocher Fendu section boasts warm water and high-volume, relatively safe rapids, giving it the well-deserved reputation as one of the world's top whitewater destinations. In this section, the river flows through a complex maze of islands and channels and is largely untouched by dams and diversions. The two most popular

channels in this section offer paddlers the choice between the higher volume rapids on the Main Channel, and the more technical, lower-volume rapids on the Middle Channel, often appropriate for novices or family rafting. Both channels feature pool-drop rapids separated by lakes, with some continuous sections. The Rocher Fendu section attracts the world's top paddling experts, yet can be enjoyed by beginning paddlers if accompanied by a paddling school or rafting company.

### The Ottawa River Rodeo

Every Labour Day weekend since the early 1990s, North America's top freestyle paddlers (kayakers and decked canoeists) gather at McCoy's Chute, the first rapid of the Rocher Fendu section, to compete at the Ottawa River Rodeo. This event is part of a nation-wide circuit of freestyle paddling competitions facilitated by the National Organization of Whitewater Rodeos (Kayak International). Recently, the event has been expanded to include vendors and off-river events, and has been renamed the Ottawa River Festival.

Whitewater rafting is an important component of the Ottawa Valley's ecotourism sector, with several major whitewater rafting companies concentrated in the Rocher Fendu section alone, initiating tens of thousands of clients to rafting every summer. Whitewater kayaking on the Rocher Fendu section experienced a major boom in the 1990s, resulting in the development of a number of paddling schools in the region. In 1980 the whitewater sector was already generating \$2.5 million (Hydro Québec: Bassin inférieur 5-1). Despite the significance of the paddling sector to the economy of the Ottawa Valley, there is a lack of recent studies evaluating its impact.

**Figure 4.4 Rafting on the Ottawa River**



Source : Esprit Rafting

Rapids at the Champlain Bridge in Ottawa provide city paddlers with accessible paddling opportunities and are often the site of a spring rodeo competition. Slalom paddlers, including Canada's National Team, practice and compete at an artificial course at a small diversion from the Ottawa River at the Pumphouse rapids at the LeBreton Flats in Ottawa.

**Figure 4.5 Running the Rapids**



Source : Picturessque Canada

### Canoeing and Recreational Kayaking

For over eight thousand years the canoe has been one of the primary methods of transportation for people living in the Ottawa Valley. Originally built and used by Aboriginal traders, the canoe later became pivotal in the exploration and development of the Canadian wilderness by European explorers, settlers, and industrialists. Today, canoes are treasured by

countless people looking for a relaxing way to explore the Ottawa River.

A canoe route links Lake Outaouais with Lake Temiskaming on the upper section of the river, although wind is an impediment to canoeing on the upper reservoirs. Below Rapides-des-Joachims, the canoe route is considered easy, with a portage at Bryson.

Many of the Ottawa's tributaries are particularly suitable for backcountry whitewater and flatwater canoe tripping, including the famous Dumoine River, and the Petawawa River flowing through Algonquin Park. Algonquin Provincial Park, Ontario's oldest park, offers over 2000 kilometres of canoe routes through its thousands of lakes, ponds and streams. Four major gateways to the interior of the Park are located in the Ottawa River basin: near Whitney, Pembroke, Deux-Rivières and Mattawa (Friends of Algonquin Park).

**Figure 4.6 Paddling in Downtown Ottawa, Rivers Day 2005**



Source : Frédéric Ménagé

### **Power Boating and the Ottawa River Waterway**

Power boating is another way to explore and experience the natural and human communities of the Ottawa River, and also contributes to the local economy. In the Ottawa-Gatineau region, 14,000 pleasure craft have been noted annually. Some boaters still navigate along the historic military and shipping route, "The Blue Triangle" by connecting the Ottawa River, the Rideau Canal and the St. Lawrence River.

Numerous wharves and ramps along the Ottawa between Fort Coulonge and the Argenteuil MRC exist. In the Carillon reservoir, there are 10 federal wharves, 14 public ramps and 5 marinas. Above Chats-Falls, there are 2 federal wharves, both with a boat ramp. Upstream of Bryson there are 2 federal wharves, 6 boat ramps and one marina. The "Pontiac Princess" offers a boat cruise on the Ottawa departing from Bryson (Hydro Québec: Bassin inférieur 5-1).

Every summer, between 400 and 500 pleasure craft frequent Lake Temiskaming, mostly from the surrounding regions. Lakes Quinze and Temiskaming have federal wharves as well as private and public wharves, boat ramps and one marina each. Powerboating upstream of Quinze Lake is less common and is linked to fishing and hunting. There are two boat ramps near Bourque dam in the Dozois reservoir (Hydro Québec: Bassin supérieur 5-1).



## The Ottawa River Waterway

Since 1993, a recreational waterway from Notre-Dame-du-Nord (upstream of New Liskeard) to Arnprior has offered boaters almost 500 kilometres of chartered routes flowing past mountains, waterfalls and sandy beaches. Previously known as the Temiskawa Waterway, the Ottawa River Waterway allows boaters to experience much of the pristine wilderness that was familiar to some of Canada's earliest explorers.

A series of hydraulic trailers exists along the entire length of the Waterway, safely transporting boats beyond each of the Waterway's dams and rapids. The trailers are designed to lift boats of up to 10 metres in length and weighing up to 6,800 kg (Destination Ontario). This simple by-pass system allows boaters to enjoy one of Canada's most scenic wilderness waterways, without going through the treacherous portages and rapids faced by the river's early traders and voyageurs (Town of Petawawa).

Pleasure boaters can plan day-trips or week-long journeys along the waterway. Marinas along the route allow boaters to enjoy local culture and community flavour (Real Ontario). To assist boaters with the planning of this adventure, the Ottawa River Waterway has developed a cruising guide featuring three routes: the Pioneer, the Voyageur and the Trader Routes (Ottawa River Waterway).

### Other Pleasure Boating

Sailing and pleasure boating are popular in the capital region, particularly from Lac Deschênes to the Chats Falls dam, a distance of 47 kilometres (McGoldrick). Located in Ottawa on the river, the Ottawa

**Figure 4.7 Cruise on the Ottawa River**



Source: Benoit Chailleur

Rowing Club is the oldest in Canada (founded in 1867). The Rideau Canal provides additional opportunities for boating and fishing in Ottawa. Upstream of Montreal, the Lake of Two Mountains is used for an array of nautical activities. This natural broadening of the Ottawa River is up to 6 kilometres wide, and runs a distance of over 33 kilometres from the dam at Carillon to the Grand-Moulin rapids in Laval. Along this same stretch of river, Oka National Park provides opportunities to swim, cycle, hike, windsurf, sail, and rent pedalos and dinghies (Boucher). Sailing is also popular on Lake

### 4.1.2 Swimming

The water quality of the Ottawa River and its main tributaries improved significantly in recent years; this has resulted in the growth of both boating and swimming. Sand beaches on the many islands of the Ottawa River make swimming a popular summertime activity. The Lower Ottawa River offers some 34 swimming beaches (Hydro Québec: Bassin inférieur 5-1).

The shores of the Ottawa River are home to the Parc des Cèdres beach, the YMCA Camp beach, Britannia Beach, Westboro Beach, Moussette Beach and Lake Leamy Beach. Less-known beaches can be found on the Finlay Islands between Waltham and Fort Coulonge. There are many island beaches between Allumette Island and Rapides-des-Joachims. Some swimming spots are only accessible by boat or trail, whereas others can be reached by car, including those at Sandy Bay, Norway Bay, Rocher Fendu Park, Fort William, Fort Coulonge and Bryson. On the Upper Ottawa River, swimming is popular at Ville-Marie, Latulipe, Laforce, Saint-Eugène-de-Guigues, Guérin and Rouyn-Noranda. There are three beaches along Lake Temiskaming, one at the small reservoir des Quinze, three at the Quinze and Simard lakes and three at Dozois reservoir (Hydro Québec: Bassin supérieur 5-1).

Two of the beaches on the urban section of the Ottawa River - the Parc des Cèdres and Moussette beaches - are monitored by the Quebec Minister of the Environment (MENV) through the program called *Environnement-Plage*. In addition, the NCC monitors the water at its own beaches. The quality of the swimming water on the two beaches is generally rated excellent. MENV monitors the bacteriological quality of the water over a five-year period (Ottawa River Integrated Development Plan 35).

## 4.2 Fishing and Hunting

Fishing and hunting along the Ottawa River represent a popular form of recreation for many. For others, it is a way to earn a living and a source of food. Fishing and hunting along the Ottawa River echo a long tradition by First Nations Peoples long before the arrival of European explorers. This was particularly important along the Upper Ottawa River, where the colder climate was less suitable for farming.

Champlain and other early European explorers relied on the abundance of wild fish and game along the river in the 17<sup>th</sup> and 18<sup>th</sup> centuries to fuel their journeys upriver. Early European fur traders began trapping beaver and other mammals, beginning a large-scale hunt that had such a great impact on the ecosystem and political development of the region.

Today, fishing and hunting represent significant recreational opportunities along the river. Some 34 fishing and hunting outfitters on the Upper Ottawa River underline the importance of this sector (Hydro Québec: Bassin supérieur 5-1).

### 4.2.1 Fishing

The Ottawa River has long had the reputation of being a great fishing spot. In his book *Spectacular Fishing: Ken Schultz's Guide to the Best Freshwater and Saltwater Sites in North America*, internationally-renowned sport fisher Ken Schultz lists the Ottawa River as one of the top fishing spots in North America (178). The Ottawa and its many lakes and tributaries offer a great diversity of fish species, surroundings, and types of fishing. Fishers are also drawn to the natural beauty of the setting.

The most popular fishing places are along the Upper Ottawa River, where there are around 50,000 fishers. Visitors prefer Lake Temiskaming because it is more accessible. Sport fishing brings in \$33 million annually to the Abitibi-Témiscamingue region (Hydro Québec: Bassin supérieur 5-1).

One of the greatest assets of the river is its natural diversity of fish species, including over 80 species. The Ottawa River is home to one of only a handful of naturally reproducing Muskellunge fisheries. In summer months, many nearby lakes provide trout fishing. Species found in the river include Northern Pike, Walleye, Whitefish, Sturgeon, Brown Trout, Largemouth and Smallmouth Bass, Muskellunge,

**Figure 4.8 Recreational Fishing**



Source : Fairmont Le Château Montebello

Bullhead, Sauger, Gar, Carp, Catfish, Crappie, Eels, and panfish.

The size of fish in the river is also impressive, and the Ottawa has consistently produced large released fish that have won world records. In particular, Large-mouth Bass and Catfish often reach large sizes (La Toile des Robinsons: "Pontiac"). These trophy-sized fish are regularly caught and released to maintain the vitality of the fishery. Some lakes and tributaries are stocked by the Ontario Ministry of Natural Resources to ensure sufficient catches during peak fishing times, including the southern end of Renfrew County (Colonial Fireside Inn).

Sport fishing is popular and accessible on several stretches of the river. On the Lower Ottawa River, both fishing and ice fishing are popular at Pentecôte Bay, Grenville, the Grand-Calumet channel, between Montebello and Pointe-au-Chêne, and between Carillon and Crushing dams.

Petrie Island (downstream of the Chaudiere Falls) is a major recreational site and significant wetland. In the spring, people fish for Bullhead near the road and Northern Pike and panfish in the inland bays and channels. In the summer, Largemouth Bass populate the inland waters. On the north side of the island, the Ottawa River attracts Smallmouth Bass, Northern Pike, Muskellunge, Yellow Perch and Black Crappie. In the deeper channels near the Quebec shore, Walleye and Sauger are common. Ice fishing for Walleye, Pike and Black Crappie is popular in the bay. Although Sturgeon is not common in the area, some have been reported (Ottawa River Integrated Development Plan 42).

**Figure 4.9 The Legacy of Fishing**



Source : Library and Archives Canada

The McLaurin Bay-Clément Bay area has extraordinary aquatic life, with a total of 15 fish species that use McLaurin Bay to spawn, raise their young and feed. Common species include Yellow Perch, Brown Bullhead, Largemouth Bass and Northern Pike, supporting recreational fishing. There is also commercial fishing on this section of the Ottawa River, mainly for Brown Bullhead and Common Carp. In 1999, a plan to develop the area called for the conservation of wildlife habitats and the development of compatible recreational activities (Ottawa River Integrated Development Plan 42).

Fish populations in the Lièvre and Gatineau rivers, two main tributaries of the Ottawa, have been damaged by decades of log floating and possibly as a result of water flow management for hydroelectric generation. Rehabilitation measures could improve the fishing potential of these rivers.

Lake Deschênes is one of the most popular places in the Ottawa area for fishing. The best fishing spots are found in Shirley's Bay, along Pontiac Bay/Fitzroy Harbour. Walleye, Smallmouth Bass and Northern Pike are the mostly commonly fished species. Yellow Perch and Black Crappie can be found in shallow bays. Common Carp, Suckers, Long-nose Gar and Mooneye also occur in this part of the river, but are not as popular for fishing. Winter fishing is mostly done in Shirley's Bay and Constance Bay, for Walleye and Pike, with Yellow Perch as a secondary catch. The marshes of Shirley's Brook are important spawning grounds for Northern Pike, panfish and other common species.

On the Upper Ottawa River, main species caught for recreation include Walleye, Smallmouth Bass, Northern Pike, and Char. Ice fishing is practiced on Lake Temiskaming and surrounding bodies of water such as Lake Opasatica.

#### 4.2.2 Hunting

Game hunting, both by rifle and bow, is popular in the Ottawa Valley. The regulated annual harvest is open for small game, Black Bear, Moose, Hare and White-tailed Deer. Other species include waterfowl, Turkey, and Ruffed Grouse. Crown land along the river is generally open to hunting.

Duck hunting is particularly popular along the Lower Ottawa River. Hunting for White-tailed Deer is common around Bryson and Carillon. Two outfitters operate along the river near Carillon.

On the river's upper stretches, Moose, White-tailed Deer and Black Bear are the main species that are hunted for sport. Every year, 26,000 hunters including both residents and visitors from outside Quebec and the region come to Abitibi-Témiscamingue, with non-resident hunters preferring large game. Hunting brings in approximately \$17,000,000 annually to this region (Hydro Québec: Bassin supérieur 5-1).

Trapping is a popular activity that also generates revenue. Trapping for muskrat is significant around Carillon and the Réserve Faunique de Plaisance, with 11,000 Muskrat trapped annually. There are over 20 fur-bearing animals that are sought for trapping in the Abitibi-Témiscamingue region, of which Beaver and Mink are the most commonly trapped (Hydro Québec: Bassin inférieur 5-1).

### 4.3 Winter Activities

Winter recreation activities along the Ottawa River include snowmobiling, downhill and cross-country skiing, skating, winter camping, snowshoeing and ice fishing.

Snowmobiling is an important winter activity for residents and visitors to the Ottawa Valley.

Figure 4.10 Snowmobile Excursion



Numerous snowmobiling clubs, groomed trails, competitions and inn-to-inn packages exist. Snowmobiling is very popular along the Lower Ottawa River, with trails crossing the frozen river by way of ice bridges. Around Carillon and Chats-Falls, Trans-Québec's snowmobile trails bring recreationalists close to the river. Additional trails exist in the Réserve Faunique de Plaisance, and connect to the regional trail network (Hydro Québec: Bassin inférieur 5-1). Trails take snowmobilers by other exceptional sites, including Voyageur Provincial Park and the Alfred Peat Bog. The Quebec and Ontario snowmobile trail networks connect at Sand Bay. Along the Upper Ottawa River, there are extensive snowmobile trail networks crossing the river at several places.<sup>1</sup>

Cross-country skiing in the Gatineau Park is highly popular. Deep River and Algonquin Park both host community cross-country ski competition events in winter. Four cross-country ski clubs along the upper stretches, mostly located near Rouyn-Noranda, offer a total of 150 kilometres of trails (Hydro Québec: Bassin supérieur 5-1).

Downhill skiing is popular at Calabogie Peaks, Mount Pakenham, and Camp Fortune, just to name a few of the resorts close to the Ottawa River. Frozen rivers, ponds and arenas provide ample surface for skating near the Ottawa River. The famous Rideau Canal in Ottawa draws crowds of skating enthusiasts each winter.

**Figure 4.11 Cross Country Ski Race**



## 4.4 Trails and Corridors

### 4.4.1 Hiking and Walking

Numerous recreation trails exist along the Ottawa River, including converted railways, cycling paths and trails in parks along the river. Several communities have developed local trail systems, such as the Emerald Necklace Trail System in Petawawa, the Greenbelt in the National Capital Region and the Cycloparc PPJ cycling trail in Pontiac County. Both the Gatineau Park and Algonquin Park offer extensive hiking trail networks. A 40-kilometres trail following the rail bed of the original K&P links Renfrew to Calabogie, and also extends further south. Along the Upper Ottawa River, hiking is popular at Mount Bell, in the Aiguebelle Park and in the Réserve de la Vérendrye, for a total of 27 kilometres of trails. The tributaries of the Ottawa River, including the Bonnechere and Madawaska rivers, offer further trails.

The Trans-Canada Trail crosses the Ottawa River east of Ottawa, linking Ontario's Rideau Trail to the south with the Sentier National in Quebec's Outaouais region. The goal of the partially-built Trans-Canada Trail is to create a scenic foot trail and corridor connecting Canada's two coasts (Trans Canada Trail Foundation, Fédération québécoise de la marche).

<sup>1</sup> In summer, ATVs are used along snowmobile trail networks along the Lower and Upper Ottawa River.

## 4.4.2 Cycling

### The Route Verte

The Route Verte, conceived and developed by Vélo Québec and the Quebec Ministry of Transport, is an ambitious project to create a nearly 5000 kilometre-long cycling network throughout Quebec. Once completed, the Route Verte will be the most important cycling network in North America.

Cyclists following the Route Verte will have the opportunity to accompany the Ottawa River for several hundred kilometres, in both the Outaouais and the Abitibi-Témiscamingue regions. In the Outaouais region, the network begins in Aylmer, and continues all the way to Montreal. In Abitibi-Témiscamingue, the route links the communities of Angliers and Ville-Marie near Lake Temiskaming (Vélo Québec). The Route Verte includes the Parc linéaire du Témiscamingue along converted train tracks as well as the Parc linéaire Rouyn-Noranda-Taschereau (Hydro Québec: Bassin supérieur 5-1).

**Figure 4.12 Biking on the Route Verte**



Source : Benoît Chailifour

Mountain biking is popular around Grenville. The converted railway tracks in Pontiac (PPJ Cycloparc) have opened up 90 kilometres of biking trail along the Ottawa River (Hydro Québec: Bassin inférieur 5-1).

## 4.5 Parks and Nature Reserves

Numerous parks line the waters of the Ottawa River, with the goals of conservation, education and recreation. Parks and nature reserves represent managed areas in which recreation is promoted sustainably. In Quebec, 3 provincial parks (Quebec National Parks) exist along the Ottawa River, as well as one major nature reserve and several ZECs (zone d'exploitation contrôlée, or fishing, hunting and recreation reserve). Ontario runs 7 provincial parks and has 3 non-operating provincial parks along the Ottawa River. Some of Ontario and Quebec's most important parks in terms of recreational use are located along the river, including La Réserve Faunique la Vérendrye and Algonquin Provincial Park. For a more complete list and description of each park and reserve, including their conservation roles, please refer to Chapter 3.8: Conservation Along the Ottawa River.

### 4.5.1 Provincial Parks

Parc national d'Oka features interpretation services, cross-country ski trails, a skating rink, a 7 kilometre white sand beach, a riding stable, and camping facilities (Tourisme Québec: "Outaouais"). Oka's 60-nest

heron colony and wood duck nesting grounds make it a popular destination for bird watchers. Four Romanesque oratories and three chapels built around 1740 are located within the park (SÉPAQ: "Oka"). Parc National de Plaisance offers various opportunities for recreation, including numerous walking and biking trails, canoeing and kayaking, a boat ramp and campgrounds. Fishing and berry picking are popular within the park (SÉPAQ: "Plaisance"). Parc national d'Aigüebelle features unique geological formations, including ancient lava flows, traces of the passage of glaciers, faultlines and kettles. Within the park, visitors will find a 64 metre high suspended bridge, hundreds of beaver dams, many lakes for canoeing and sea kayaking, biking, hiking and ski trails. Snowshoeing and fishing are also possible in the park (SÉPAQ: "Aigüebelle").

Voyageur Provincial Park, located on the Ontario shore, has extensive campground facilities. Fitzroy Provincial Park contains towering, 100-year old White Pine, serving as a reminder of what originally drew the lumbermen into the Ottawa Valley (Ontario Parks: "Fitzroy"). Bonnechere Provincial Park offers canoeing, hiking, camping, wildlife viewing, swimming, cross-country skiing and interpretive programs (Friends of Bonnechere Parks: "Bonnechere Provincial Park").

Ontario's oldest and best-known park is contained mostly within the Ottawa River basin. Algonquin Provincial Park's 7,725 square kilometres of forests, lakes and rivers offer unparalleled recreational opportunities for backcountry camping, canoeing, hiking and cross-country skiing, as well as less remote day trips. The park's rich human history centres around the timber and lumber era, when the Algonquin highlands served as a source of wood to be floated down to the Ottawa River. The park was established in 1893 as a wildlife sanctuary by members of the lumber industry who realized that unmanaged logging and the spread of agriculture threatened the sustainability of the forest. Tom Thomson and The Group of Seven "discovered" the park's landscapes through their paintings, and were followed by thousands of recreationalists in search of a wilderness experience (Friends of Algonquin Park).

The Ottawa River Provincial Park is a non-operating Ontario waterway park featuring untouched stretches of shoreline as well as spectacular white water. There are no visitor facilities. Wilderness canoeing, kayaking, trekking and whitewater rafting are the primary recreational activities in the Park (Ontario Parks: "Ottawa River"). Westmeath Provincial Park is another Ontario natural park without visitor facilities in the park, but offering opportunities for hiking, boating, swimming and nature appreciation (Ontario Parks: "Westmeath").

Driftwood Provincial Park offers camping with spectacular views of the Ottawa River and Laurentian Hills. Swimming, hiking and canoeing as well as fishing for Walleye, Northern Pike and Smallmouth Bass are available in the Ottawa River. The Dumoine River enters the Ottawa directly across from the park and is known for its excellent fishing (Ontario Parks: "Driftwood"). Samuel de Champlain Provincial Park covers natural environment along the eastern part of the Mattawa River, a Canadian Heritage River. The park features a replica birchbark freighter in the heritage centre. Shooting rapids, hiking, camping and interpretive trails are some of the recreational activities available in the park (Ontario Parks: "Samuel de Champlain"). Kap-Kig-Iwan Provincial Park is a day-use only Ontario park located northwest of Lake Temiskaming near Englehart. The park includes 325 hectares of land and features the Englehart River Valley, an excellent opportunity for observing flora, fauna and geological features. Scenic waterfalls and rapids make hiking a popular activity in the park, as are birdwatching and spring fishing (Town of Englehart: "Kap Kig Iwan").

## 4.5.2 Nature and Recreation Reserves

The 13 615 square kilometres protected by the La Vérendrye Faunic Reserve are managed by the Société des établissements de plein air du Québec (SEPAQ). Located at the large reservoirs found on the Upper Ottawa River (including Dozois and Cabonga), the reserve offers an extensive lake and river system making it particularly popular for fishing and canoe camping. There is easy highway access to this reserve (SÉPAQ: “La Vérendrye”, Québec Vacances).

The Gatineau Park, located in Gatineau, Quebec, is a nature reserve managed by the National Capital Commission (NCC). Some 237 bird species including the Pileated Woodpecker and Common Loon draw birdwatchers to the park (NCC: “Gatineau Park”). The Gatineau Park overlooks the Ottawa River, and contains hundreds of kilometres of trails renowned for cross-country and back-country skiing as well as hiking and cycling. Swimming, camping, snowshoeing and downhill skiing are also available.

**Figure 4.13 Pink Lake, Gatineau Park**



Source: NCC

ZEC Capitachouane offers hunting, fishing and gathering, as well as boat ramps and nearby services (Hydro Québec: Bassin supérieur 5-2). ZEC Kipawa also offers hunting, fishing and gathering, as well as 5 canoe-camping loops and 2 hiking trails. A waterfall, traces of the log drive, two Aboriginal sites and exceptional geological formations are present within this ZEC, which also has nearby services, outfitters and campsites (Hydro Québec: Bassin supérieur 5-2). ZEC Festubert offers hunting, fishing and gathering, with 3 boat ramps and basic services for visitors (Hydro Québec: Bassin supérieur 5-2). The ZECs bordering the Ottawa River between Petawawa and Mattawa have no services but offer almost limitless opportunities for fishing, hunting and wilderness recreation.

## 4.5.3 Other Examples of Parks and Recreation Areas

- Oméga Park: This 607 hectare animal park features animals in their natural habitat. Located near Montebello, Quebec.
- PPJ Cycloparc: This regional park and cycling corridor is located along converted railtracks between Waltham and Quyon, and around Allumette Island. It is used for snowmobiling in winter.
- Parc régional du Long-Sault: Located at Saint-André-Est (Grenville), this park features interpretation of the Long-Sault canal and the logging industry.
- Gillies Grove: Located in Arnprior, Ontario, bordering the Ottawa River, this stand of old-growth forest has public trails and nature appreciation opportunities.
- Enchanted Gardens: Located east of Beachburg, these privately-owned thematic gardens are open to the public.



- Petawawa Terrace Park and Nature Reserve covers an area of 217 hectares. The Park contains an extensive trail system through the forest, with interpretation highlighting various species at risk and common species present in the area. The trails are used for cross-country skiing in the winter.

## 4.6 Camping

Camping is a recreational activity that gives people access to a wilderness, experiential education, and serenity. There are numerous campgrounds in the Ottawa River area, and many are located within parks. Along the Lower Ottawa River, there is an abundance of river-side campgrounds, with 6 along the Carillon reservoir on the Quebec side alone (Hydro Québec: Bassin inférieur 5-1). Voyageur Provincial Park at Chute-a-Blondeau offers 416 campsites (Destination Nord). In Abitibi-Témiscamingue, there are 618 campsites in the Aiguebelle Park and the Réserve Faunique de La Vérendrye. There are an additional 2,500 campsites in private campgrounds in the region (Hydro Québec: Bassin supérieur 5-1).

**Figure 4.14 Camping in the Old Days**



Source: W.J. Bolton/Canada Department of Manpower and Immigration/Library and Archives Canada

## 4.7 Nature Appreciation

Opportunities for nature appreciation near or beside the Ottawa River are innumerable. Parks and conservation areas along the river, listed in Chapter 3.8.1: Parks Along or Near the Ottawa River, offer exceptional opportunities to view and appreciate nature all along the length of the Ottawa River. In addition, natural areas such as wetlands and forests with public access near the Ottawa River include Petrie Island's provincially-classified wetlands at Cumberland, Ontario; Stony Swamp Conservation Area in the National Capital area with its woods and wetlands; and the Shaw Woods at Lake Dore, Ontario, to name only a few.

Bird-watching is a popular way to observe nature along the river. A few examples of popular bird watching sites include Britannia Bay on Lac Deschênes, Ontario, particularly for migratory birds; the Britannia and Mud Lakes Forest, Rapids Basin, Ontario; Petrie Island at Cumberland, Ontario; and the Casey and Hilliarton Marshes on Lake Temiskaming. Quebec has plans to develop a bird-watching route in the Abitibi-Témiscamingue region.

**Figure 4.15 Grande Chute, Fort Coulonge**



Source: Mr. Cheng

Many nature-based clubs and organizations exist, including the following:

- Club des ornithologues de l'Outaouais
- The Ottawa Field Naturalists' Club
- The Ottawa Duck Club
- The Vankleek Hill Nature Society
- The Macnamara Field Naturalists (Arnprior)
- The Pembroke Area Field Naturalists
- Upper Ottawa Valley Nature Club (Deep River)
- Field Botanists of Ontario
- Ontario Field Ornithologists
- Société du loisir ornithologique de l'Abitibi
- Société d'ornithologie du Témiscamingue
- Club des observateurs d'Abitibi-Ouest

## 4.8 Human Heritage Appreciation

The extraordinary history and human heritage of the Ottawa River is a source of pride for numerous communities along its shores. These are reflected in the many special events, festivals, museums, plaques and other interpretive structures that exist along the length of the river. The Ottawa River flows through the Nation's Capital, right by the Parliament Buildings, with sites and museums of national importance. Along the entire stretch of the river there are opportunities for human heritage appreciation related to the main heritage themes of the river. This section highlights a number of popular human heritage sites, focusing on museums and events along the river.

Cultural heritage tourism is growing worldwide, and is seen by the Ontario Tourism Marketing Partnership Corporation as a significant opportunity for Ontario's rural and northern communities to increase their economic vitality (Professional Edge 3). The Outaouais region is Quebec's third most popular tourism destination, although marketing of this region places a greater emphasis on natural heritage. Ottawa draws more than 5 million visitors annually, of which currently only 20 to 25% cross the Ottawa River to visit the Canadian Museum of Civilization and Gatineau Park (Ville de Gatineau: "Planification").

**Figure 4.16 Looking Up the Ottawa From the Parliament Grounds**



### 4.8.1 Cultural Heritage Routes

Cultural heritage routes have been developed on both sides of the river. Thematic visits and driving loops have been developed by tourism associations such as Tourisme Outaouais and the Ottawa Valley Tourism Association. Examples of cultural heritage routes with accompanying interpretation include the following:

- **Ottawa River Living Legacy Kiosks:** A series of 12 interpretive kiosks have been placed along the length of the Ottawa River to recognize its history and unique ecology, as part of *Ontario's Living Legacy* Landmarks program. The kiosks describe the historic and natural heritage values of the Ottawa River and point out opportunities for recreation. The program was designed to protect and promote the unique heritage of the Ottawa River while enhancing opportunities for tourism and recreation. The Ottawa River kiosks are located in Voyageur Provincial Park at Chute-a-Blondeau, Hawkesbury, Atocas Bay, Westboro Beach, Fitzroy Provincial Park at Fitzroy Harbour, Amprior, Pembroke, Petawawa, Deep River, Mattawa, Haileybury, and New Liskeard (OMNR: "Eves Government").
- **Quebec Heritage Trails:** Bilingual interpretive driving tours with pamphlets and web-based information have been developed by the Quebec Anglophone Heritage Network. The Outaouais Pontiac Heritage Trail takes visitors from Deschênes Rapids to Fort Coulonge, noting the history and significant heritage sites at each. The Vaudreuil Hudson Heritage Trail takes visitors by the Ottawa River, beginning at the Lake of Two Mountains and following the south shore of the Ottawa River until Choisy, west of Alstonvale. The Abitibi-Témiscamingue Heritage Trail follows the Ottawa River from the town of Témiscaming up through Ville-Marie; it then explores Rouyn-Noranda and Val d'Or. Finally, the Bas Gatineau Heritage Trail covers this important tributary to where it joins the Ottawa River (QAHN).
- **Talking Up the Ottawa Driving Tour:** A heritage tour by car of the Lower Ottawa River called "Talking Up the Ottawa" was developed by *Rideau Watch*, an organization that no longer exists. The tapes accompany drivers on a loop through the Quebec and Ontario sides of the Lower Ottawa River between Montreal and Ottawa, and make use of the ferry crossings. The layered history of riverside landmarks is explored in detail, and visible traces in the landscape are indicated. The tapes now have limited availability but can be found in public libraries.
- **Circuit Champlain en Nouvelle-France:** This driving tour follows Samuel de Champlain's extensive travels in Ontario and Quebec, taking visitors to important francophone sites and landscapes. The Ottawa River is part of this driving tour.

## 4.8.2 Museums and Cultural Centres

There are numerous museums and cultural centres of note along the Ottawa Valley, many of which focus on the history and cultural heritage of the river valley. This section will describe a few outstanding examples in detail. Several of Canada's national museums are concentrated in the National Capital region. The Ottawa River is home to at least 8 national historic sites linked to the exceptional history of the river. Numerous pioneer villages, community museums, and historic houses offer opportunities for visitors and residents for local heritage appreciation.

### National Museums and Historic Sites

- The **Sainte-Anne-de-Bellevue Canal National Historic Site** links Lake Saint-Louis and the Lake of Two Mountains, at the mouth of the Ottawa River. The canal, built in 1843 for commercial purposes, was an integral part of the Montreal-Ottawa-Kingston shipping route.
- **Carillon Canal National Historic Site** is located between the Carillon generating station and the Dollard-des-Ormeaux Park. It gives access to the current Carillon canal and the remains previous canals.
- The **Carillon Barracks National Historic Site** houses the Museum of the Argenteuil County Historical Society in the original buildings of the canal superintendant and the toll collector, as well as the historic British military barracks. An interpretation centre at the Carillon hydroelectric generating station is open to the public. In 1995, there were 45,000 visitors to the site (Hydro Québec: Bassin inférieur 5-1).
- Located on the shores of the Ottawa River in Gatineau, the **Canadian Museum of Civilization** tells the story of Canada's past, as well as housing several exhibitions related to the heritage of Canada's Aboriginal Peoples.
- Located across the river in Ottawa, the **Laurier House National Historic Site** was the home of two Canadian Prime Ministers, Sir Wilfred Laurier and William Lyon Mackenzie King.
- The **Billings Estate Museum and National Historic Site** is a local Ottawa history museum built in 1829 by Braddish Billings. It is Ottawa's oldest wood-framed house. The museum interprets Ottawa's history and heritage (City of Ottawa: "Billings Estate Museum").
- The **Rideau Canal National Historic Site** enters the Ottawa River at Ottawa. The Rideau Waterway is also a Canadian Heritage River, and the Rideau Canal is included on Parks Canada's list of the top 11 sites that will be nominated for UNESCO World Heritage Status (Friends of the Rideau).
- The **Manoir Papineau National Historic Site** is located in Montebello and commemorates Louis-Joseph Papineau, his manor house and the domain of Montebello.
- **Fort Témiscamingue National Historic Site** commemorates the role played by this trading post

**Figure 4.17 Manoir Papineau National Historic Site**



over nearly 200 years. Built between 1679 and 1685, this was the largest trading post on the Ottawa built under the French. Run by Parks Canada, the Historic Site interprets the long First Nations presence in the region, and the fur trade merchants and monopolies (Tourisme Québec: “Fort Témiscamingue”).

In addition, numerous historic plaques commemorating national historic sites, events and people can be visited along the Ottawa River, with many more in Ottawa itself (see Appendix C for a list of federal plaques). The Ontario Heritage Foundation has placed a number of provincial plaques along the river that directly relate to the human heritage themes identified in this Background Study (see Appendix D for a list of provincial plaques).

### **Regional Museums and Interpretation Centres**

There are several community museums along the river, with displays that relate to one or more of the major themes of Ottawa River history, including fur-trading, logging, hydroelectricity development and settlement. The following is not an exhaustive list of museums along the river.

- Chez l’Ancien Agricultural Museum located in Casselman, Ontario, features 19<sup>th</sup> century agricultural equipment.
- The Centre d’interprétation du Patrimoine de Plaisance presents Plaisance in three different historical periods, and explores the forestry industry in the Outaouais region.
- Musée des Pionniers, Saint-André-Avellin, Quebec, houses artefacts linked to 19<sup>th</sup> century pioneers of the area.
- The Bytown Museum, located on the Rideau Canal in downtown Ottawa in a historic building, focuses on the history of Ottawa, including the logging industry.
- The Musée de l’Auberge Symmes, a regional history museum in Aylmer, Quebec, is located at the site of a former Ottawa River wharf and steamboat stopover.
- The Arnprior and District Museum houses items from Scottish Laird Archibald McNab, as well as the lumbering era.
- McDougall Mill Museum, Renfrew.
- The Waba Cottage Museum, at White Lake along the Madawaska River, tells the story of infamous Scottish settler Archibald McNab.
- Madonna House Pioneer Museum, Combermere.
- The Ross Township Museum, Foresters Falls, is a former pioneer home from the Muskrat Lake area that depicts life in the mid to late 1800s.
- The Bonnechere Museum, Eganville, interprets local history along this tributary as well as the forestry industry.
- The Coulonge Chutes nature and heritage site offers outdoor interpretation of the logging era.
- Polish Kashub Heritage Museum and Wilno Heritage Park, Wilno, Ontario.
- The Murray L. Moore Hydro Museum, Pembroke, is housed in the original diesel room of the Pembroke Electric Light Co. Ltd.

- The Pembroke Heritage Murals form an outdoor art gallery illustrating scenes from Pembroke's past, many of which relate directly to the Ottawa River, including the Timber Raft, the Steamboat, and the Pointer Boats.
- Canadian Forces Base Petawawa Military Museums.
- The Canadian Clock Museum, Deep River.
- The School House Museum in Rolphton explores the development of hydroelectric and nuclear power.
- The Voyageur Heritage Centre/Musée du Voyageur, Mattawa, Ontario, displays the fur-trading and voyageur era, complete with a fur-trader's birchbark canoe.
- The Algonquin Trading Post, Deacon, Golden Lake, is a craft store with interpretation of traditional objects.
- The Algonquin Culture and Heritage Centre, Pikwàkanagàn, Golden Lake, displays Algonquin traditions and history including birch bark canoes.
- The Northern Ontario Mining Museum, Cobalt.
- The Musée du Patrimoine de Haileybury explores local heritage and events.
- The Little Claybelt Homesteader's Museum commemorates the settlement of the northwest shore of Lake Temiskaming, including pioneer life and commerce.
- Latchford Logging Museum.

**Figure 4.18 Pembroke Heritage Murals: The Timber Raft**



Source: Adrienne Blattel

## Heritage Houses

The Ottawa River's exceptional heritage houses are open to visitors and include the following:

- The **Macdonell-Williamson House** in East Hawkesbury is the historic home of 19<sup>th</sup> century fur trader John Macdonell. The house was used for milling, warehousing and freight-forwarding. Guided tours are available upon request (Maison Macdonell-Williamson House).
- **Pinhey's Point Historic Site**, located on the shores of the Ottawa River, is the former "Horaceville" estate of Hamnett Kirkes Pinhey, a British settler who became a leader in Upper Canadian Society. The 19<sup>th</sup> century stone house serves as a museum today (City of Ottawa: Pinhey's Point).
- **Maplelawn Estate and Gardens** is a classified national site and the second oldest stone building in Ottawa. Established in 1831 by a Scottish immigrant, it is one of the few known surviving early 19<sup>th</sup> century walled gardens in Canada.
- The **George Bryson Cultural House** is located near Fort Coulonge-Davidson in the Pontiac Region. Scottish farmer,

**Figure 4.19 Maplelawn Estate and Gardens**



Source: Ottawa River Legacy Landmark Network

lumber merchant and early pioneer, George Bryson Sr. built the house, which contains typical features of 19<sup>th</sup> century Scottish merchant houses in both Lower and Upper Canada. Buildings associated with the house are also open to the public, including a blacksmith's shop, ice room, stables, barns and depots. Exhibition rooms display key themes linked with the Ottawa River, including forestry, timber driving and fur trapping. In 1980, the Bryson House was declared a Historical Monument.

- La **Maison du Colon** is Ville-Marie's oldest house, and interprets the history of the settlement of the Quebec Témiscamingue region as well as the role of the Oblates in colonizing the area (Société de développement du Témiscamingue: "Maison du Colon").

### Re-Created Villages

Pioneer and demonstration villages along the Ottawa River include the following:

- The **Cumberland Heritage Village Museum** explores village and rural life in the Lower Ottawa Valley between 1890 and 1930, focusing on the changes brought about by industrialization. This pioneer village includes 27 buildings and a functioning sawmill (Destination Ontario: "Cumberland Heritage Village Museum").
- The **Champlain Trail Museum and Pioneer Village**, located in Pembroke, Ontario, showcases Ottawa Valley history with interpretive displays, a 19<sup>th</sup> century log home, a schoolhouse, church and other heritage buildings. The museum is noted for its collection of lumber-related artefacts (Ottawa Valley Guide: "Pembroke Museum").
- The **Village of Douglas**, Ontario, is an entirely Irish-themed village.
- The **T.E. Draper**, the biggest steamtug on the Lac des Quinze, can be visited in Angliers, Quebec. Just next-door is the **Chantier Gédéon**, a re-created logging camp from the 1930s and 40s.

### 4.8.3 Festivals and Events

Along the Ottawa River, many festivals and events highlight local culture and heritage. Others centre around sporting events and outdoor activities. The National Capital Region hosts several large-scale annual festivals, including the **Canadian Tulip Festival** in May and the **Ottawa International Jazz Festival**. The riverside MRCs on the Quebec side of the Lower Ottawa River are home to over 40 events – for the most part, local festivals (Hydro Québec: Bassin inférieur 5-1). The region of Abitibi-Témiscamingue hosts over 30 cultural and sporting events.

Festivals highlighting local culture revolve around regional food, craft, trades and traditions. Along the Lower Ottawa River, events include the **River Fest** (Festival de la rive), in Hawkesbury in late July, featuring fairgrounds, kayak demonstrations, regional and ethnic food sampling, and an outdoor craft exhibition (PRTA 43). **Agri-Tour** takes place in September in Prescott-Russell, during which non-traditional agribusinesses open their doors to the public for tastings

**Figure 4.20 Canadian Tulip Festival**



Source: Ryan Pfeiffer

and tours. **The Curd Festival**, in St-Albert, Prescott-Russell, is a popular wine and cheese tasting event hosted by the local St-Albert Cheese Factory cooperative in mid-August. The Cheese Factory produces the famous St-Albert cheddar using century-old traditions. **L'écho d'un people** – an annual, large-scale production covering four centuries of francophone history in North America and Ontario – is held in Casselman in the summer.

In the Ottawa Valley, waterfront festivals such as the **Pembroke Waterfront Festival** highlight local culture in the summertime. The **Canadian Polish/Kashub Festival** in Wilno in May focuses on the unique Polish community of Wilno. Barry's Bay hosts **Timberfest**, an event celebrating timbering heritage each February.

Along the river's upper stretches, the **Minopijawok-Wigwamada Festival** in Abitibi-Témiscamingue highlights Algonquin culture. The **Pikwakanagan Traditional Pow Wow** is held each August at Golden Lake. A **Lumberman Competition** takes place in mid-July in Ville-Marie, and in August the **Foire Gourmande de l'Abitibi** in Ville-Marie features regional products, tastings, meals, cooking, and workshops.

**Canada Day Celebrations** on the 1<sup>st</sup> of July take place in communities all along the river and are another opportunity to experience the flavour of each region. Many communities in Quebec celebrate the **Fête nationale du Québec** on June 24<sup>th</sup>. In winter, many communities on both sides of the river hold carnivals or winter festivals, the most popular of which is **Winterlude – Bal des neiges** – North America's biggest winter festival on the frozen Rideau Canal in Ottawa in February, featuring ice sculptures, skating, fireworks and other events. Various other winter carnivals take place in communities including Aylmer, Arnprior, Quadeville, Pembroke, Chalk River, Rankin, and Deep River.

The Ottawa River is the site of several large music festivals, the best known of which is Fiddle Week, including the **Fiddling and Step-Dancing Championships** in Pembroke on Labour Day Weekend.

**Figure 4.21 Gatineau's Hot-Air Balloon Festival**



Source: René Binet

Additional music festivals include the **Franco-Ontarian Festival** in Ottawa in June, **Voyageur Days**, an annual summer music festival in Mattawa, the **Valley Bluegrass Festival** held in Renfrew in July, and the **Alfred Country Music Festival**, Ontario.

Festivals featuring the arts are also popular: an **International Film Festival** is the best-known event in Abitibi-Témiscamingue. The annual **Wilno Film and Video Festival** takes place in September. An **Annual Pontiac Artists' Studio Tour** takes place each June.

Numerous sporting and outdoor events offer additional opportunities for recreation. River and paddling festivals include the **Ottawa River Festival** (formerly the Ottawa River Rodeo) and **River Palooza** on the Rocher Fendu section. The **Festival d'eau vive de la Haute-Gatineau** takes place in Maniwaki each August. Fishing events are popular, such as the **Ontario Family Fishing Weekend** each July. The return of Canada Geese in spring is celebrated through **Le retour des Bernaches** in Plaisance Provincial Park each May.



Winter sporting events include the **Silver Spoon Ski-Fest** in Deep River, a cross-country ski event, Mount Pakenham's **Snowfest**, an amateur snowboarding competition, the **Keskinada Loppet** in Gatineau, a cross-country ski race, and an **Ice Fishing Derby** on the Ottawa River, Pembroke. All of these events occur in February.

Finally, the Upper Ottawa River is home to cycling events including **Rando-vélo**, **Le Tour de l'Abitibi**, **Vélo-Tour 48e Nord** and the **Raid des Conquérants** (Hydro Québec: Bassin supérieur 5-1).

# Chapter 5

## Ottawa River Community Heritage

All along the Ottawa River, regional committees have been conducting research about their community histories in relation to the Ottawa River. This has contributed valuable, locally-based information about the human heritage of the Ottawa River. In addition, committees have provided written contributions to the background study. Research and writing provided by the committees is a strong indication of their commitment to the heritage nomination initiative. What follows are condensed versions of regional, site-specific histories that complement the river-length studies presented earlier in this Background Study.

**Figure 5.1 View of a Town on the North Shore of the Ottawa River, ca. 1850**



Source : James D. Duncan/Library and Archives/C-115898

### 5.1 Lake Temiskaming Heritage (Ontario)

Heritage Committee of the City of Temiskaming Shores  
Edited by Norman R. Hawirko

This paper will describe the human heritage of the key places and communities along our section of the river. The fact that this part of Ontario was settled only in the early 1900s, coupled with geographical considerations, has meant that the unsettled shoreline of the lake/river has always been considered a wilderness area in spite of over 100 years of logging and mining.

At the head of the lake lie the towns of Cobalt, Haileybury and New Liskeard. Recently, Haileybury and New Liskeard were amalgamated under the new City of Temiskaming Shores, along with Dymond Township. In the late 1890s, agricultural settlement began, accelerated with the construction of the railroad from North Bay, and finally 'boomed' in 1903 with the largest silver mining centre in the world at Cobalt.

#### Blanche River

Entering the lake, the Blanche River (or White River), is the second largest tributary after Rivière des Quinze in Quebec. Along a tributary creek was the site of a major silver mine, one of the few outside of the immediate Cobalt camp that were economically operated for a time. Farther up the Blanche were

smaller 'landing' communities such as Judge, Pearson's Landing, Bell, Hilliardton and Tomstown – all were centres for the developing Claybelt farming community and are still, today, important to people living in the area.

In the pre-railway era the Blanche provided a transportation route during the season as roads were still very rough. The sticky clay of the area could bog down people walking, horses and wagons. The Blanche River lies within a marshy lowland. Farms have been created by the use of extensive drainage systems but many areas have not been turned into arable land.

### **New Liskeard – Wabi River and Bay**

The name Wabi is a simplified version of Wabigijic. Joachim Wabigijic, known locally by the nickname Swisha, made a small clearing at the mouth of the Wabi River, erected a cabin there, and apparently lived there for fifty years.

An Ontario Heritage Foundation plaque tells the story of the founding of New Liskeard:

*The Little Clay Belt, the rich agricultural belt extending north from New Liskeard, was originally inhabited by the Algonquin First Nations, including Joachim "Clear Sky" Wabigijic and Angela Lapointe who lived by the mouth of the Wabi River. In 1891, William Murray and Irvin Heard settled here and two years later Crown Lands Agent John Armstrong arrived to supervise development. The abundance of good, inexpensive farmland attracted people from southern to "new" Ontario and the town quickly grew. It was incorporated as New Liskeard in 1903 and Armstrong became its first mayor. The Temiskaming and Northern Ontario Railway arrived two years later, helping to develop New Liskeard into the commercial centre of south Temiskaming.*

In the early settlement period, people were dependent on, influenced by and enjoyed Lake Temiskaming and the rivers and creeks draining into it. The summer provided everyone with the chance to swim at the beach or congregate for the grand fairs and racing at New Liskeard's beach – which became famous throughout northern Ontario.

**Figure 5.2 New Liskeard**



Source: Ottawa River Heritage Legacy Landmark Network

Steamboats were the only viable form of transportation for settlers, supplies and the hauling of logs. Before the railway, food and other goods sometimes ran low, and people recall the anticipation within the community for the arrival of the first steamer bringing in badly needed flour.

In winter, teams and sleighs transported people and freight between Ontario and Quebec. The mail was brought in over the ice. The spring brought problems for New Liskeard's downtown though, with severe spring floods that brought water right into the downtown area of New Liskeard.

## **Cobalt**

Although Cobalt is not located right on the shoreline of Lake Temiskaming, its history is intimately tied to the Lake. The area was rich in forest, and the meandering lakes and streams allowed travel and trade. The Montreal River was used for canoe travel. Charles C. Farr, the founder of Haileybury and originally the factor at Fort Témiscamingue, used this route for his travels to reach Portage Bay and the upper reaches of the Montreal River. The whole area was under the control of lumbermen decades before Cobalt even existed. J. R. Booth's men were collecting timber in Long Lake (Cobalt Lake), damming the water and then letting loose the boomed logs that would fly down Mill Creek along timber log chutes.

As the railway bed was being excavated near the future town of Cobalt, rocks were collected, sent away for tests and the presence of silver was verified. The impact of the subsequent explosion in development from Cobalt overshadowed the fledgling agricultural development that was fanning out from New Liskeard.

The commercial underpinning for the whole area became mining, with significant amounts of money coming in and being spent to house, feed and clothe men. Timber was needed for mine shafts, and mechanical equipment needed to be repaired, so the Wabi Iron Works in New Liskeard developed into a major foundry. Horses needed hay, so farmers grew it and most was consumed locally. Farm produce was brought to the Cobalt market. Farmers in the upper townships got up before dawn, boarded the train to take their meat, vegetables, butter and milk to Cobalt.

Mine owners and managers did not live in the noisy and dirty Cobalt but in new houses built in Haileybury. Hotels like the Matabanick were home to businessmen, prospectors and government people who had business to do with Cobalt mining. Cobalt was the hub for the region's economy until silver mining declined in the 1920s and 30s.

## **Maiden's Bay**

The bay was named after Norman Maiden – a prospector who found silver nearby, which resulted in the Maiden's Mine. A small community grew up here, including a government dock, a school, several stores and boarding houses. As silver mining declined in the 1930s, people gradually moved away. To reach mine interests farther south, a government wagon road was constructed to Silver Centre in 1909. Silver Centre boomed in its early days while the area was still best reached by steamboat. Accordingly, a government dock was built just south of Maidens Bay.

## **Montreal River**

Two rivers come together at the bottom end of South Lorrain Twp. – the great Montreal River that drains down from the northeast and the Matabitchuan flowing from the southwest and connecting travelers to Temagami.

The Notch is a high cliff channel through which the Montreal River flows. Early travelers had to cross it. In the late 1890s a colonization road was broken through from North Bay to the Montreal River. Huge pine logs were laid down to span the gap to create a bridge.

## Matabitchuan River

The mouth of the Matabitchuan River was where two French Canadians settled to farm. Jolicouer and Bonin were both from Beauharnois, Quebec. In the 1900s, other families joined them. The farms grew hay and produce for the lumbermen working in the area.

Before a major dam was built on the Matabitchuan for hydroelectricity, travelers had to portage around a series of rapids and falls about 3 kilometres up from the mouth of the river. In 1909-10, a hydro dam was constructed to supply power to the booming Cobalt mining camp. Lumbermen could still send their logs down a long steel chute to the river below. The logs then flowed out to the lake. This historic chute still exists. A boarding house was built to serve the dam workers.

## 5.2 A History of Mattawa

Mattawa Heritage Designation Committee

The word Mattawa comes from Matonawang, meaning the meeting of the waters.<sup>1</sup> Mattawa is located at the crossroads of a vast water highway that opened up the country. Mattawa was at the centre of the routes taken by Aboriginal Peoples, European explorers, missionaries, fur traders, loggers, miners, and settlers wishing to access central, western and northern Canada.

### The Mattawa Area under New France

When early French explorers like Champlain and Lasalle moved up the Ottawa River and into the interior of the continent via the Mattawa River, they thought they would find a way to the Pacific and on to China. Many of the early French explorers who traveled through the Mattawa area were accompanied by Recollet and Jesuit priests who came to convert the Algonquin, Nipissing and Huron peoples to Christianity. The Jesuits established a major mission at Sault-Saint-Marie among Huron peoples, and accessed Huronia via Mattawa. The waterway also served as a communication link between Huronia and Jesuit missions on the St. Lawrence River.

The French soon became involved in fur trading. The earliest fur trading post near our area was established by the French in 1679 on an island where the Montreal and Matabitchuan Rivers flow into Lake Temiskaming. In the late 1600s, the post was moved across the river and Fort Temiskaming was established near Ville Marie, Quebec. Since the fur trade in New France was based in Montreal, Ottawa River navigation routes through the Mattawa area were of strategic importance in the movement of trade goods inland and furs down to Montreal.

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<sup>1</sup> As mentioned in Chapter 2.3: Algonquin History in the Ottawa River Watershed, the origin of the word Mattawa is not entirely clear.

## The Development of the Mattawa Area Under British and Canadian Administration

After the fall of New France, two fur trade companies, the Hudson's Bay Company and the North West Company were in fierce competition. The North West Company was based in Montreal. Every spring, flotillas of huge voyageur canoes came through Mattawa. These canoes were loaded with all the trade goods necessary to service their trading posts all across Canada. These canoes would come up from Montreal to Mattawa and follow the Mattawa River. After a series of portages they would cross the watershed into Lake Nipissing. From there, they would journey down the French River into Georgian Bay and on to the west.

In the early 19<sup>th</sup> century, Philemon Wright, the founder of Hull, was the first to make a large raft of squared timber and float it to Quebec City for shipment to England. So quickly did this demand for timber develop that logs were being cut as far north as Lake Temiskaming by 1832. By the mid-19<sup>th</sup> century, many Ottawa Valley men spent their winters working in the forests of eastern and northern Ontario and western and northern Quebec.

Famous lumber barons associated with the Upper Ottawa area include: The Gillies Brothers, The Mackeys, The McLaren, The McLaughlin Brothers, The Hurdmans, The Calvert Brothers, Alex Lumsden, J .B. Klock, E. B. Eddy, and of course the king of the lumber barons J .R. Booth.

As this industry developed, Mattawa became an important place. The Hudson's Bay post and other businesses that developed began supplying the shanties with everything they needed, including oats, feed for the horses, flour, salt pork, and molasses. Axes, saws, building materials, and tools were shipped into the bush from Mattawa.

The high point of the logging season for Mattawa was the spring log drive. All the logs harvested from the Mattawa River watershed floated through Mattawa. Even more logs came from Lake Temiskaming and the upper reaches of the Ottawa River. These had to pass through the rapids at Mattawa in order to move on to the sawmills at the lower end of the river. The men who had been in the bush for months arrived in Mattawa with their winter's wages looking for a little R&R before returning home for the summer.

As the logging industry expanded, Mattawa developed from a trading post to a village, and in 1892, became an incorporated town. The logging industry led to the development of many other communities in the area. In the 1850s, several people settled along the Long Sault Rapids. A small sawmill known as Lumsden Mill was built at the mouth of Gordon creek. In 1918, the Kipawa Fibre Co., a subsidiary of the Riordan Pulp and Paper Co. opened a pulp mill on the Lumsden mill site. The Riordan Pulp and Paper Co. then built the town site of what today is the town of Temiskaming. Other communities that developed in the Upper Ottawa River area because of the log drive, shanties or sawmills on the river include Deux-Rivières, Bissett Creek (Rocher Capitaine), Stonecliffe (Rockcliff), Mackey, and Des Joachims,

**Figure 5.3 Historic Mattawa**



Source: Ottawa River Heritage Legacy Landmark Network

which loggers referred to as Swisha.

Although the spring log drive is a thing of the past on the Ottawa River, this area is still very much associated with the wood products industry. Tembec is the major employer in Temiskaming and Mattawa. Columbia Forest Products operates a veneer mill at Rutherglen. There are many logging companies that continue cutting operations for the companies that have timber permits in our area.

In 1881 the Canada Central Railway (later part of the CPR) reached Mattawa. In 1884, the Colonization Society of Temiskaming was established to attract French Canadian settlers to develop farms on the rich soil of the little clay belt in the Quebec townships of Guigues and Duhamel. In 1893, C.C. Farr published a pamphlet outlining how Crown Land could be purchased in the Bucke and Dymond townships on the Ontario side of the same clay belt. The most efficient way to get to this farmland was to come to Mattawa by train and continue to Lake Temiskaming via a series of steamboats and tramways known as the "Moccasin Express Line". This was replaced by a CPR spur line by 1894. Once on Lake Temiskaming a steamboat would take you to the nearest landing to your farmland.

Mattawa became the gateway to the development of this farmland. Everything these pioneer settlers needed was shipped in from Mattawa. Any contact with the outside world came via Mattawa, since the mail for these northern settlements was brought in by the Mattawa postmaster. As the 20th century dawned, Mattawa was the regional centre for the growing Upper Ottawa Valley.

In 1903 Fred Larose found silver near Cobalt. This led to a major silver rush in the area. Prospectors outfitted in Mattawa moved north to make their fortune. Mattawa merchants Noah and Henry Timmins, along with their lawyer Dave Dunlap, purchased Fred Larose's share of his new mine for a few thousand dollars. They went on to become multi-millionaires. Their wealth continued to grow with the purchase of Benny Hollinger's gold claims in the town that came to be known as Timmins, and the gold and copper mine at Noranda, Quebec. People from the Mattawa area made a major contribution to the silver and gold rushes in northeastern Ontario and northwestern Quebec.

In the last several decades, there has been a gradual population decline in most of the small communities along the Upper Ottawa River. There are many factors that account for this. The construction of the hydro dam at Des Joachims flooded out or drastically changed the communities of Mackey, Stonecliffe, Bissett Creek and Deux-Rivières. The disappearance of the log drive meant that these communities lost their initial purpose. These communities also saw job losses from the closure of the MNR offices at Stonecliffe and the sawmill at Deux-Rivières.

The town of Mattawa and the village of Rolphton were negatively affected by the automation of the Ontario Hydro Dams in their communities. The entire region felt the effects of the withdrawal of passenger service on the main line of the CPR and the closure of the CNR rail line through Algonquin Park.

Temiskaming and Mattawa have also been hurt by job losses in the forest products industry. The major forest employers in the area are: Tembec with its sawmill and pulp and paper mill in Temiskaming, and its saw mill in Mattawa; Columbia Forest Products -Veneer mill in Rutherglen; and Commonwealth Plywood - saw mill at Des Joachims. There are also many forest contractors (Jobbers), ranging from family businesses to fair-sized operations, who harvest the forest on sustainable forest licenses.

## 5.3 Highlights in the Settlement History of Renfrew County

Len Hopkins  
Co-Chair, Ottawa River Heritage Designation Committee

Renfrew County follows the Ottawa River from Arnprior all the way to the Township of Head, Clara and Maria upriver from Rolphton. It is the largest county in Ontario. Before human presence, the Champlain Sea stretched as far inland as Deep River. The original shoreline of the Champlain Sea passes through Petawawa.

The modern settlement history of Renfrew County begins with today's Arnprior, Braeside, and McNab along the Ottawa River. In 1825, McNab Township included today's Arnprior, Braeside, and McNab. It consisted of a strip of land about six miles wide along Lac des Chats (Shaw), which was a deep clay deposit dating from the Champlain Sea. While much of McNab Township had excellent agricultural land, in parts of the township the surface was a challenge to farm.

Chief Archibald McNab, the 13<sup>th</sup> Chief of Clan McNab, immigrated from Killin, Scotland, to Upper Canada in 1823. He then went to York (later Toronto), the provincial capital and proposed to the Government that he settle a township with his clansmen. The Laird of McNab was given directions to a surveyed township which he later called McNab. The Laird himself was granted 1200 acres. He then wrote to his cousin in Scotland, Dr. Hamilton, to send out settlers. Laird McNab built Kinnell Lodge near the mouth of the Madawaska River, in today's Town of Arnprior. Later he built Waba Cottage at White Lake, which has been restored.

The Laird of McNab was given authority to issue patents to settlers that included stipulations similar to the feudal system that the new settlers had faced in Scotland. The Family Compact made a "private" understanding between the Chief and the Government to the effect that the Chief was to have for his own use and benefit all the timber growing on the township. The settlers rose up against him and the government had to step in to investigate. In August 1841 an order-in-council arranged for the settlers to gain title to their land.

McNab lost control over the settlers and eventually returned to Scotland. Arnprior, Braeside and McNab, all on the Ottawa River, became separate communities. The Ottawa River played a major role for transportation in this area of Renfrew County, and the first settlers chose their lots along the waterways.

The name Arnprior comes from the association with the McNab family in Scotland. It received this name in 1831 by the Buchanan Brothers who operated the first sawmill in the town. An "Arm" is a small stream in Scotland and a "priors" was a monastic house presided over by the prior or a prioress on the Arm's shore. Shortly after the Laird of McNab departed for Scotland in 1843, Arnprior and the Township developed separately. Daniel McLachlin came to the town eight years later and transformed Arnprior into a thriving lumber centre. He surveyed the Town into lots and gave them to the residents. As a result, he has always been known as the father of Arnprior.



Continuing up the Ottawa River, the mouth of the Bonnechere River enters the Ottawa at Castleford in Horton Township. When the first survey was made of Horton Township in 1825 it showed that Horton had two qualified farmers – both on the Ottawa River. Later some settlers came from McNab and others came up the Ottawa to the famous Farrell's Landing. This was the beginning of the Opeongo Line settlement road on the shore of the Ottawa. This Government Road was supposed to join the Ottawa River to Georgian Bay in order to settle the land in between. Ultimately, the Opeongo Line fell victim to competing railway development and ended between Madawaska and the eastern border of Algonquin Park.

The road was rough, stony, and with corduroy roads through swampy areas. Settlers from Britain, Ireland, Holland, Germany, Poland, and Scotland came up the Opeongo Line. Many settled in the immediate area, but others, such as the Germans, Polish, and Irish, settled in the communities in the beautiful hill country of Renfrew County. Polish settlers took up many farms in Wilno, named after Vilno in Poland because it reminded them of their homeland; Wilno, located in Renfrew County, is the oldest Polish settlement in Canada. Irish and Scottish settlers founded communities as well. In many homes, German and Polish are still spoken.

Upriver, Ross Township contains both good agricultural land and other areas that have rock outcroppings. White water rafting in this area has become a major part of the local tourism industry, attracting several companies and many daring tourists.

Champlain's Astrolabe was found by a farm boy, Edward George Lee, then 14 years old, near Green Lake, Ross Township, in 1867, and is believed to have been lost by Samuel de Champlain about June 7, 1613. It is now in the Museum of Civilization in Ottawa after being repatriated from the New York Historical Society in New York City. Harold Dobson of Cobden led the effort to have Champlain's Astrolabe returned to Canada in 1989.

Pembroke Township was been named after the Welsh County of Pembroke. Robert Gourlay corresponded with the Earl of Pembroke seeking settlers to the area. Both the former Townships of Pembroke and Stafford have strong agricultural bases and industry.

Today's Town of Petawawa was settled by large numbers of German families. There were also many early French speaking settlers as well as First Nations Peoples. Petawawa is said to have been named after an elderly First Nations woman living on the banks of the Ottawa River in the 1800s.

In 1905, the Federal Government purchased land from many of the German and French settlers, providing them with land in a neighbouring township. The area became Camp Petawawa, today the Canadian Forces Base Petawawa, one of the largest military bases in Canada. This year Base Petawawa is celebrating 100 years on the Ottawa. Base Petawawa contains almost 100 square kilometers of land and its shoreline on the Ottawa extends for about 16 kilometres. Base authorities have spent six million dollars cleaning up the beaches and unexploded shells along the shore of the Ottawa River.

The present Town of Deep River was built to house employees of the Chalk River Laboratories. This move followed the decision in 1944 to build an atomic plant on the Ottawa River, 8 kilometres east of Chalk River Village. The Town of Deep River is said to have more professional engineers, scientists, and trades than any other Canadian community of 4500 people.

The former Village of Chalk River and the former Townships of Rolph, Buchanan, Wylie, and McKay saw their heyday during the timber and lumber boom. The same was true of the Townships of Head, Clara, and Maria at the northern end of the County of Renfrew. Some “bush camps” and “crown cutting” operations still exist. The Village of Chalk River went from being a logging town to a CPR Divisional Centre and today is home to many AECL employees as are the other townships.

## 5.4 Pembroke Area History

Pembroke Heritage Designation Sub-Committee, led by Marian Patterson

### Geology

Over one half million years ago, the country stretching from Fitzroy Township (known as the Upper Ottawa Valley) was covered by the sea. As the last ice age receded, a long, wide (and in some places, extremely deep) trench was left. The land exposed was rich in minerals, and is well known to mineral collectors. Minerals found in the region include corundum, hematite, magnetite, radioactive minerals, chalcopryrite, graphite, rose quartz, garnet, mica, molybdenite, galena, selenite, tourmaline, brucite, sphalerite, feldspar (including amazonite), apatite, fluor spar, nepheline, zircon, beryl, pyrite, tremolite and celestite.

European settlers in the area quarried limestone, sandstone and feldspar. Many of the fine, older homes are made of locally quarried limestone. The closest lime kilns (for making mortar) were located on Allumette Island, just opposite Morrison's Island. The bricks were made locally from the many deposits of clay found along the banks of the Muskrat, Indian and Ottawa Rivers. Pembroke's City Hall is built from beautiful red sandstone that was quarried on Beckett's Island in the 1880s. These minerals were brought to the Pembroke area by boat. In the case of the feldspar, a short boat ride across Hazley's Bay to the railroad spur was all that was needed.

### The Fur Trade

In 1613 Champlain and his party paddled up the Ottawa River and traveled overland to the foot of Muskrat Lake. They paddled up the lake and walked across to the shore of Lower Allumette Lake, where they met Chief Tessoüat, who had a lookout at the foot of Morrison's Island. Champlain's goal was to establish fur trading in the region. Morrison's Island near Pembroke played a key role in the fur trade. As flotillas of furs were transported to Montreal, a major portage was necessary to avoid the rapids at Morrison's Island, where the island's Aboriginal inhabitants were said to have extracted a toll. Two centuries later, the North West Company established a number of trading posts in the Upper Ottawa Valley near Pembroke, including Fort William (1823-1869), Fort Coulonge (1680) and Des Joachims (1600s).

### European Settlement

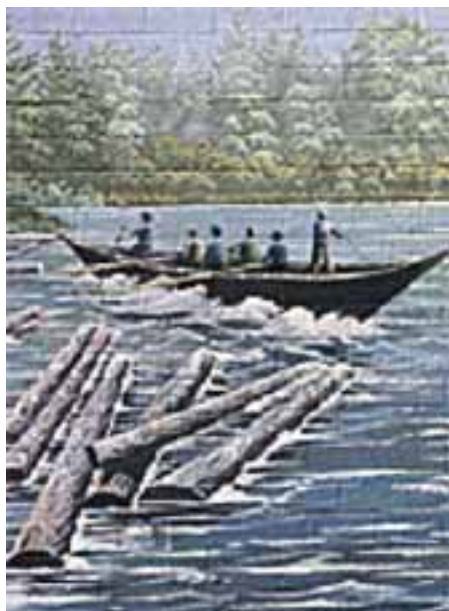
Many settlers built homesteads along the shores of the Ottawa River at the present site of Pembroke. One notable settler was Colonel Peter White and his family from Scotland, arriving May 24, 1828. He made a clearing and erected a log cabin, which was the beginning of the present city of Pembroke as we know it today. This early settlement on the Upper Allumette Lake was initially called Miramichi. Later, the

Pembroke Township area was divided into Lower Town, Middle Town and Upper Town, with the Muskrat River dividing Middle and Upper Town. Upper Town was known by various names over the years: Miramichi, Moffat Town, and Pembroke. In 1839 the communities united to become Pembroke. The boundaries of Pembroke expanded after 1912 to include Fraserville (east of Cecilia Street), Churchville (south of Indian River) and Girouxville (west of Trafalgar Road). Lower Town became part of the city in the late 1950s.

### Lumbering and the Pointer Boat

The Pembroke area began to gain prominence and became an important lumbering centre. Many economic benefits accrued to the area as a result of the Ottawa River being the main artery for the transportation of logs. Massive timber rafts were a common sight floating by Pembroke. Many prominent lumber barons established their operations in the Ottawa Valley, including the McConnell Brothers. In

**Figure 5.4 Pembroke Heritage Mural: The Pointer Boat**



Source: Ottawa River Heritage Legacy Landmark Network

1939 and 1940, they began cutting logs along the Temiskaming River, which they floated to Pembroke via the Ottawa River.

The prestigious Pointer Boat was for many years the “workhorse” of Canadian rivers. John R. Booth commissioned an Ottawa boat builder, John Cockburn, to design and build a strong logging boat. The boats had identically shaped ends, which served as either bow or stern. They were between 5 and 15 metres in length, with 6 to 8 men wielding 3 metre oars. The boats were preserved with boiled oil and jeweller’s rouge, giving them a distinctive red Venetian look. They were famous for being able to “float on a strong dew”.

These boats had to be transported to Pembroke by horse and sleigh over a distance of 166 kilometres for logging operations around Pembroke. Consequently, John Cockburn moved his boat building business to Pembroke in 1858. The property extended to the Ottawa River and was known as Cockburn Bay, the present site of the Cockburn Pointer Boat Monument at the Pembroke Waterfront. Three generations of the Cockburn family built these boats in Pembroke, only stopping

in 1969. The Pointer Boat was the subject of two paintings by Tom Thompson – “Le Bateau” and “The Pointers”.

The “Alligator” Boat, also used extensively in the Ottawa Valley, was developed by a Canadian, John Ceburn West, and was made in Simcoe, Ontario. The lumbermen’s steel spike boots were produced by Farmers Brothers Limited in Arnprior. Logging led to a number of spin-off industries, including the Pembroke Axe Factory, the Pembroke Box Factory, the Consolidated Mills, Pembroke Eddy Match and Canada Veneers.

### Steamboating

The development of steamboat travel in the Pembroke area improved communications with communities upstream and downstream. Jason Gould of Smith’s Falls built a steamer named *The Muskrat* which

traveled along the Muskrat River. Gould built a second vessel in 1852, *The North Star*, and a third, *The Jason Gould*, in 1862.

The first steamboat to sail from Pembroke to Rapides-Des-Joachims was the *Pontiac* in 1852. It made daily trips, leaving Pembroke at 1 p.m. The following morning it returned from Des Joachims at 6 o'clock to connect at Pembroke with *The Jason Gould*, which embarked from Pembroke Landing at 2 p.m. This traveled to the eastern end of Muskrat Lake where the passengers transferred to a stage coach for the balance of the trip to Portage-du-Fort.

Other notable steamboats plying the river from Pembroke included *The John Egan* 1872 built by The Union Forwarding Company, *The E.H. Bronson* in 1895, and *The Victoria*, 1897 which later became *The Oiseau*. Steamboat excursions continued till the mid-twenties. Prominent ferry boats connecting the Pembroke wharf to Allumette Island were *The W.L. Murphy* and *The S.S. Pontiac*. *The S.S. Pontiac* operated from 1943 until 1956 when the inter-provincial bridge between Ontario and Quebec was built.

Hydroelectric power development in the area was established in Bryson in 1925, and in Chenaux and Des Joachims in 1950. In 1882, Pembroke became the first town in Canada to have electric lighting.

### **Recreation and Tourism**

The Ottawa River also enabled Pembroke to flourish through its many opportunities for recreation. In particular, hockey has been an important sport in Pembroke as early as the 1880s on the frozen Ottawa, Muskrat and Indian Rivers. An early hockey team in Pembroke was established by a young lawyer and hockey enthusiast named Lennox Irving who came to Pembroke in the late 1880s. Around 1895, residents started setting up hockey rinks in their backyards. Schools built outdoor rinks. Privately owned buildings soon brought the hockey games indoors. In 1898, the Ottawa Valley Hockey League was created. Suddenly this sport was turning out to be a great economic boost for Pembroke. As early as 1909, Pembroke boasted a girls' hockey team called "The Pembroke Cyclones".

The economy of Pembroke still benefits from this sport in both winter and summer. People from all parts of Ontario and beyond travel to "Hockey Town Canada" (Pembroke) to participate in tournaments such as the House League, Competitive and Old Timers. Pembroke has produced several NHL stars and some have been recorded in the Hockey Hall of Fame, including Frank Nighbor, Hugh Lehman, and Harry Cameron.

The tourism industry in the Pembroke area has greatly benefited from Ottawa River white water and the establishment of several rafting companies.

Every Labour Day weekend, Pembroke's Riverside Park becomes Fiddle Park and hosts the Old Time Fiddling and Stepdancing competitions. Over 1800 recreational vehicles and campers who travel to Pembroke participate in Fiddle Week.

## 5.5 Settlement History and Archaeology along the North Shore of the Ottawa River, Pontiac County, Quebec

Shawn Graham and Gord Graham

Champlain was the first to map this area, and local folklore claims that a cross with an iron plaque was erected on an island in the Chats Lake section of the river, claiming the region for France. One of the earliest trading posts in western Quebec / eastern Ontario was established in the first half of the 17<sup>th</sup> century at Big Bay, opposite Fitzroy Harbour at the southeast end of the Pontiac. Joseph Mondion, a squatter, set up a limited trade from his squatter's shack. After a few winters, he gave up and left the area.

A much more successful establishment was at Fort Coulonge, between Calumet and Allumette Islands. In 1694-95, Nicholas d'Ailleboust, Sieur de Coulonge, spent the winter at the confluence of the Ottawa and Coulonge Rivers, where he built his trading post. The actual fort appears to have been near today's village of Davidson, just outside today's Fort Coulonge. A farm of over 600 acres was carved out of the wilderness to support the post, which was managed by the North West Company by 1760.

The legend of Jean Cadieux, connected with this section of the Ottawa River, is one of Quebec's famous *coureurs-de-bois* legends. The story takes place at the head of the Calumet rapids, where Cadieux is said to have sacrificed himself to save his wife and companions from the Iroquois, diverting their attention while the group passed the rapids. Cadieux is forced to hide on Calumet Island, where some years later his companions almost find him. He expires just before they arrive, laying in a shallow grave he dug for himself. In 1905, workers in Bryson petitioned to build a memorial to Cadieux, provoking conflict between Bryson and the people of Calumet Island, who both wanted the memorial on their own side of the channel. The islanders 'kidnapped' the memorial and re-erected it in the village of Calumet Island itself.

As the 19<sup>th</sup> century progressed, the timber industry gained importance and Fort Coulonge became one of its major centres in the Valley. Lumber barons controlling the timber trade built enormous stone mansions at Fort Coulonge, an expression of their power and wealth, given that stone buildings were uncommon in this area.

George Bryson, lumber baron and Member of Parliament, almost single-handedly developed the Upper Pontiac. The farm he built outside Fort Coulonge is an important architectural milestone because it incorporates both Anglophone and Francophone building traditions. He combined barns, workshops, smithies, and storage into a unified structure within a single courtyard. The Ministry of Culture of Quebec has recognized the Bryson House as a heritage building of provincial importance.

The Calumet and Chenaux rapids at today's Bryson and Portage-du-Fort were tamed in the early part of the 20<sup>th</sup> century. The Bryson dam was one of the first built in Quebec; it belonged to the Gatineau Power Company. The bottom end of the Chenaux rapids was tamed in the 1930s by the construction of Ontario Hydro's Chenaux Dam. This complex of coffer dams destroyed some of the village of Portage-du-Fort, which had spread to several islands. An enormous sluice channel was blasted through the middle of Limerick Island, creating 'Big Limerick Island' and 'Little Limerick Island'.

Portage-du-Fort is one of the oldest villages along the Ottawa. Many of its earliest buildings are still standing, including a North West Company trading post and a Hudson's Bay trading post (both converted into private homes). The Rattray Hotel, a famous stopping place from the lumber-trade days, still exists, as well as homes of famous river captains, stores renowned for their goods, and depots for the timber trade. The Canadian Illustrated News, a Montreal newspaper, ran a series of articles in 1874 profiling up-and-coming Canadian towns and cities, including Portage. The engravings illustrate a prosperous and well-built city, where lobster was offered for sale in its pubs and restaurants. As a measure of the town's prosperity, the Lady Bond Head stayed for a number of days there during the Governor General's tour in the mid-19<sup>th</sup> century.

The newspaper also tells of a disease peculiar to the town: The Calumet Fever. The Calumet rapids and falls were so dangerous and scary that lumbermen preferred to walk from the town of Havelock (now Bryson) at the top of the falls to Portage, some miles distant, rather than ride the rafts through the rapids. Paired towns such as Havelock and Portage were another peculiarity of European settlement on the north shore of the Ottawa River. Since the rapids and waterfalls were so long, towns would emerge at either end of them, twinned by their role as trans-shipment points. The road between Portage and Havelock (Bryson) was the first 'macadamized' road in the County. Another paired village, Union and Pontiac at the Chats Falls, were connected by a horse-drawn railroad through the bog.

In Portage's harbour, there lies the wreck of the Prince Arthur. Tied up at shore one night, the Prince Arthur took fire. Afraid for the goods in the warehouses lining the shore, the townspeople cut the Prince Arthur adrift. It floated out into the harbour before burning to the water line. The disaster was averted... but a few short years later, in 1914, the entire centre section of the town went up in smoke (which it is said began in the Telegraph office). The town never recovered from the disaster.

The limestone and marble quarried in Portage make for an imposing village; many of the surviving buildings bear impressive stonework. The foundations and corner stone for the Peace Tower on Parliament Hill came from Portage. When the dams were built, quarries along the water's edge became flooded. These may be seen below the village today from the bridge.

The extraction of mineral and forest wealth out of the interior was made possible by the Ottawa River. So many logs had to be shepherded down the river that the major timber operators banded together and created a company to manage the river traffic – the Union Forwarding Company. This company, which existed in one form or another for nearly 150 years (in its final incarnation, the Upper Ottawa Improvement Company), was based on the north shore of the river. It built side-wheel steamships to act as tugboats and cargo carrying boats. Steamboat building was a major industry in the river town of Quyon in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Unlike the more famous Mississippi river boats, Ottawa side-wheelers were more maneuverable on account of the drive-wheels located amidships, had a deeper draught, and could steam through some of the smaller sets of rapids. In every river village, there were a number of people who made their living as river captains and pilots. There are a number of steamboat wrecks dotting the Pontiac section of the Ottawa River; some of these can be seen from the surface, and others can be observed while diving.

One of the original major shareholders of the Union Forwarding Company was John Egan, MP for Pontiac. In the mid-19<sup>th</sup> century, Ruggles Wright (son of the founder of the City of Hull), Joseph Aumond and John Egan started the construction of a ship canal to circumvent the Chats Falls, near Quyon and Fitzroy Harbour. These falls were described by one early visitor as 'grander than Niagara'. The trio had

invested heavily in timber slides and sawmills situated amongst the islands around the Chats. They had also built the unique Horse Railway to circumvent the falls. The route of the railroad may still be followed today, and visitors often note graffiti cut into the rock by the workers who made it.

The railroad was good, but Wright, Aumond and Egan felt the need for a canal. This was to be the first stage in a grand scheme to connect Ottawa to Lake Superior. They persuaded the Legislature to support the scheme, and in 1852, \$50,000 was voted towards the project. Work began in 1853, and even the Governor General, Lord Elgin, visited. Over 500 men were employed on the project. The canal was blasted to within 50 feet of completion when funds ran out; no more were forthcoming, and when cholera took John Egan in Quebec City in 1857, the project collapsed completely. The workers were by and large famine Irish, used to hardship; but they rioted at least once when they were not paid. The militia from Ottawa had to come and control the riots. Much of this canal was drowned by the construction of the Ontario Hydro dam across the Chats, but sections are still visible, and its course can be followed on marine charts of the Ottawa where it is submerged.

The dream of an inland waterway, safe from the Americans, was a constant in the history of Canadian canal building in eastern Canada. Certainly, it was the same impetus that resurrected Egan's dream of the Ship Canal in the early part of the 20<sup>th</sup> century, under Sir Wilfrid Laurier. The dream was to build a series of canals connecting Montreal with Georgian Bay - a route several hundred miles shorter than the alternative proposed for the St. Lawrence. It would have gone up the Ottawa, across the Mattawa into Lake Nipissing and down the French into Georgian Bay. Laurier even campaigned for the idea. Laurier lost the election and the large-scale industrialization promised on the heels of the so-called Georgian Bay Canal never materialized. Today, the Ottawa River Waterway is the modern successor of these schemes and calls for a series of bypasses to be built around the hydro dams that have tamed this great river, to open up the interior once again to the outside world and to pleasure boaters.

## **5.6 The History of the Upper Canada Side of the Ottawa River Between Shirley's Bay to the East and the Madawaska River to the West**

Bob Sherrif

This section outlines local history by township, including the March, Torbolton and Fitzroy Townships.

### **March Township**

This township was named after the Earl of March, son of the ill-fated Duke of Richmond.

The end of the War of 1812 found many military men more or less at loose ends here in Canada. Whitehall found it more expedient to encourage the Officers to remain here in Canada by offering land grants upon which they could retire and, at the same time, further the settlement of this new land. There were already many military men settled in and around Perth and Richmond, so Sir John Colborne promoted the settlement in what became March Township.

The first person to settle here was Captain John Benning Monk, late of the 97<sup>th</sup> Regiment, and a veteran of the Napoleonic Wars. Captain Monk was born in Windsor, Nova Scotia. His beautiful stone residence situated on the Ottawa shore was called "Beechmont".

The second settler on the March township shoreline was Hamnet Kirkes Pinhey, born in Plymouth, England, in 1784. He became a wealthy businessman in England with his own ships trading on the European continent. These connections made him an excellent candidate to become an agent for the British Government. He served as a blockade runner and, due to his proficiency in both French and German, he was able to move about and carry dispatches to England's Prussian allies. For his service, he was publicly thanked by King George III and awarded a land grant of 1000 acres in March Township. He arrived in 1820 and by 1827 his homestead was well established. His home, named "Horaceville" after his son, still stands today as a beautiful example of our heritage. This stretch along the river became known as the "March Colony", a settlement of the 'Officers and Gentlemen'.

### **Torbolton Township**

Long before this land was surveyed settled, colonial administrators were aware of its timber potential. A trail through the forest, in what is now Torbolton Township, was dubbed the "Mast Road" because of the exceptional pine that was hauled out of the woods to supply the Royal Navy with masts and spars. The harvesting of these virgin woods would continue to be an economic resource for this area for many years.

This township's name is also connected to the Duke of Richmond. One of his titles was Baron Methuen of Torbolton. It is also the name of a quaint village in Ayrshire, Scotland. This is very appropriate as most of the early settlers were Scots. The township was surveyed in the winter of 1822-23. The granting of land ceased in 1824 which no doubt contributed to the slow settlement of the area.

Lt. Daniel Baird is recognized as the first settler in Torbolton Township. Lt. Baird had a distinguished career in the Royal Navy during the Napoleonic Wars, spending some time as a prisoner of war. It is recorded that he took possession of Baird's Grant May 26, 1824. His fine stone home is still in use today overlooking Buckham's Bay of the Ottawa River.

### **Fitzroy Township**

Charles Shirreff, and his four children, Robert, Charles Jr., Mary and Alexander, arrived in Fitzroy Township in 1819, just before it was surveyed. Charles' brother, John, was also with them. Their original grant of 3000 acres was later increased to 4500 acres. Charles Shirreff had a large impact on the early settlement of Fitzroy, which the Shirreffs founded. They went on to establish mills on the Carp River which flows into the Ottawa at this point. Settlement did not begin until 1823.

In March 1825, John Marshall and his wife, in-laws to the Shirreffs, built a foundry at Marshall's Bay on the Ottawa above the Chats. Here he made boom chains, axes, sleigh runners, etc. to the river trade.

The youngest Shirreff son, Alexander, who worked for Col. By in Ottawa, took a leave of absence to explore and map the Upper Ottawa through Lake Nipissing into Georgian Bay. This exploration was to further Charles Shirreff's plans for an Ottawa River waterway. While this concept was not new, Charles Shirreff seized the idea as an excellent means of spurring settlement to the west. He undertook to promote the scheme widely. He succeeded in enlisting the support of many influential people at Whitehall and at



Court; he produced an extensive paper on the virtues and benefits to Canada, which was widely circulated within England; a company was incorporated; and a personal fortune spent – all to no avail - the Government could not be persuaded of the value of such a project. Thus Fitzroy Harbour was destined to remain the quiet village it is today and not the bustling commercial centre on a busy waterway, envisioned by Charles Shirreff.

### **The Great Fire of 1870**

The exploitation of the vast timber stands in this area was dealt a devastating blow by the Great Fire of 1870. Starting in Lanark County in the west, the fire swept through the southern portion of Fitzroy, much of Torbolton, the northern half of Huntley, and practically all of March Township. It destroyed thousands of acres of virgin forest and sadly wiped out the old “March Colony” along the riverfront. The only home of these Officers and Gentlemen that survived the fire storm was Horaceville at Pinhey’s Point.

### **River Steamers**

The *Lady Colborne* appears to be the first of the paddleboats to provide service between Aylmer and Pontiac. She was probably named after the wife of Sir John Colborne, Governor of Upper Canada. She was launched at Aylmer, October 29, 1832. Her journey up the Ottawa saw her stopping at March, Constant Creek, Grierson’s Landing, Buckham’s Bay, Mohr’s Clearing, Richard’s Stopping Place, Horaceville and Fitzroy Harbour. The *Lady Colborne* was destroyed by fire in August 1846 at her berth in Aylmer.

The *Jessie Cassels* traveled between Aylmer and Pontiac. At Pontiac, freight and passengers were transferred to the Horse Railway for a 60-minute journey, by-passing the Falls. The *Emerald*, built at Aylmer in 1845, traveled the same route as the *Jessie Cassels* and carried freight and passengers. She was later used to tow timber rafts, then converted to a barge and eventually junked in 1880. The *Ann Sissons* was another paddleboat built in Aylmer in 1857. In 1868 she was sold for towing purposes and finally dismantled in 1871.

In 1896 the *Queen of the River*, as she was affectionately called, was built at Quyon by early settlers in the March colony. This steamboat was designed to tow log booms, and was soon refitted for excursions between Aylmer and the Chats Falls, which had become an important tourist attraction. Moonlight cruises to Fitzroy Harbour became very popular. On July 27, 1916, she caught fire and burned to the water line with the loss of four lives. She was rebuilt and put back into service in early summer 1917. Excursions resumed, but only for that year. The *G. B. Greene* continued service as a towboat until 1929. She was sold for scrap in 1942.

## 5.7 La rivière des Outaouais : une rivière d'histoire et de patrimoine pour les Comtés unis de Prescott et Russell

Michel Prévost

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Au fil des siècles, la rivière des Outaouais a joué un rôle crucial pour l'Est ontarien.

En 1660, l'une des batailles les plus connues de la Nouvelle-France, opposant Dollard des Ormeaux et ses compagnons aux Amérindiens, se serait déroulée sur la rive sud de la rivière où se trouve aujourd'hui Chute-à-Blondeau. Bien qu'officiellement cette bataille se serait passée à Carillon, de l'autre côté de la rivière, les hypothèses que le conflit aurait plutôt eu lieu de ce côté ici sont de plus en plus sérieuses.

Au XIXe siècle, ce sont les draveurs et les cajoux qui prennent la relève puisque l'industrie forestière devient l'Éden de la vallée de l'Outaouais. La rivière des Outaouais sera une véritable autoroute du bois flottant avec des milliers de cages, de billots et de madriers en route vers le port de Québec ou vers les scieries sur les berges de la rivière, particulièrement à Hawkesbury.

À la fin du XVIIIe siècle, on trouve sur le territoire que l'on connaît aujourd'hui sous le nom de Prescott et Russell quelques habitants francophones dans la seigneurie de Pointe à l'Orignal connue aussi sous le nom de

seigneurie de Longueuil. Le peuplement de la rive ontarienne de l'Outaouais commence toutefois véritablement au début du XIXe siècle avec l'arrivée d'Américains, notamment Nathaniel Hazard Treadwell, de Plattsburgh, de Britanniques, d'Irlandais et d'Écossais. La plus ancienne maison sur la rive sud de la rivière encore debout, la maison Wyman de Chute-à-Blondeau, date de 1802. Les Canadiens français arrivent massivement des anciennes seigneuries québécoises surpeuplées après 1850 et ils deviennent rapidement majoritaires. Encore aujourd'hui, les Comtés-Unis de Prescott et Russell demeurent un des bastions de la francophonie en Ontario.

### Une voie navigable

Au début du XIXe siècle, le seul moyen de communication et de transport disponible dans la région est la rivière des Outaouais et son affluent la rivière Nation-Sud. En fait, c'est vraiment la rivière des Outaouais qui permet la colonisation des Comtés-Unis de Prescott et Russell, ainsi que les premiers développements économiques avec l'explosion de l'industrie forestière. De plus, il ne faut pas oublier que l'hiver la rivière se transforme en chemin que l'on peut baliser facilement. On trouve aussi plusieurs ponts de glace reliant le Bas-Canada et le Haut-Canada.

**Figure 5.5 Above Grenville on the Ottawa River, ca. 1830**



Source : James Pattison Cockburn/Library and Archives Canada/C-012633

Dans les premières décennies du XIXe siècle, la navigation s'organise afin de relier la région à Wrighttown (Gatineau) et Bytown (Ottawa). Ainsi, le premier bateau à vapeur naviguant sur la rivière entre Wrighttown et Hawkesbury, *l'Union*, est construit à Hawkesbury en 1819 pour le compte du fondateur de Gatineau, l'Américain Philemon Wright. Les passagers qui arrivent de Montréal quittent le bateau à la frontière puisque les rapides du Long-Sault empêchent toute navigation entre Pointe-Fortune et Hawkesbury. Une diligence conduit par la suite les visiteurs dans les localités environnantes.

Plusieurs compagnies de navigation vont exploiter des navires de marchandises et de passagers sur la rivière tout au long du XIXe siècle et au début du XXe siècle. Presque chaque village de la rive ontarienne possède alors son quai. Par exemple, encore au début des années 1900, les résidants du hameau de Treadwell peuvent prendre le bateau à vapeur pour se rendre à Ottawa. Ces anciens quais disparaissent dans les années 1960 lorsque le niveau de l'eau monte suite à la construction du barrage de Carillon. Plusieurs habitants de la région d'Hawkesbury et de Chute-à-Blondeau voient leurs terres et leurs maisons inondées. C'est aussi sur une partie de ces terres que l'on aménage le parc de Carillon, aujourd'hui le parc des Voyageurs.

Bien que la rivière des Outaouais constitue depuis 1791 une frontière entre le Bas-Canada et le Haut-Canada, puis entre le Canada-Est et le Canada-Ouest après 1841, et le Québec et l'Ontario depuis la Confédération, il ne faut pas croire que les populations des deux rives vivent sans contact. Bien au contraire, de nombreux traversiers l'été et des ponts de glace l'hiver permettent de relier les deux rives. Ainsi, on trouve au fil du temps des traversiers entre Pointe-Fortune et Carillon, Hawkesbury et Calumet, Lefavre et Montebello, Cumberland et Masson. Plusieurs de ces passages deviennent des ponts de glace l'hiver.

### **L'industrie forestière**

Pendant tout le XIXe siècle et la première moitié du XXe siècle, la rivière des Outaouais et ses affluents s'avèrent une plaque tournante de l'industrie forestière en Amérique du Nord. Les Comtés-Unis de Prescott et Russell n'échappent pas à cette réalité. Cela dit, les grandes forêts disparaissent rapidement dans l'Est ontarien pour faire place à l'agriculture. En fait, la rivière des Outaouais va permettre le flottage vers les scieries comme celles de Hawkesbury et de Rockland.

En 1822, Hawkesbury Mills compte 22 scieries en opération, c'est de fait la plus grande scierie au monde. En 1836, on y coupe 300 000 madriers par année. En 1895, on coupe 227 mètres de bois par jour pour une production annuelle de 22 700 000 mètres. C'est titanesque! La Compagnie Hamilton and Low emploie alors près de 1 000 ouvriers et s'avère le plus gros employeur de la région. Les usines de Hawkesbury brûlent en 1928 et c'est la Compagnie internationale de papier qui prend la relève avec les pâtes et papiers. La CIP embauche pendant des décennies des centaines de résidants de Prescott et Russell. Aujourd'hui, il ne reste plus aucune trace de cette papetière qui a grandement contribué au développement démographique et économique de la région.

### **Caledonia Springs, la plus importante station thermale du Canada**

Entre 1835 et 1915, Caledonia Springs, au coeur de l'Est ontarien, s'avère la plus importante station thermale du Canada avec ses quatre sources d'eau minérale. Ces eaux sont réputées pour leurs propriétés curatives, particulièrement les rhumatismes et les problèmes digestifs. L'eau embouteillée est vendue dans les grandes villes nord-américaines et même à Londres. Les visiteurs arrivent de partout du Canada

et des États-Unis pour loger au Grand Hotel, un véritable palace princier. Jusqu'en 1896, année de l'arrivée du train à la station thermale, les visiteurs utilisent d'une façon ou d'une autre la rivière des Outaouais. Ainsi, les visiteurs d'Ottawa de l'Ouest prennent le bateau pour se rendre au quai de L'Original alors que ceux de Montréal et de l'Ouest empruntent la rivière jusqu'à Pointe-Fortune. Après 1877, plusieurs prennent le train sur la rive québécoise, mais doivent utiliser le traversier pour joindre la rive ontarienne. Bref, la rivière des Outaouais joue un grand rôle dans le développement de la plus importante ville d'eaux du Canada, aujourd'hui un village fantôme.

### **Sports et loisirs sur l'Outaouais**

Depuis plus de deux siècles, la rivière des Outaouais est utilisée comme lieu pour les sports et les loisirs. On pense bien sûr en premier lieu au canot, à la pêche traditionnelle et à la pêche blanche, mieux connue sous le nom de pêche sous la glace. De nombreux tournois de pêche sont également organisés. Au fil du temps, on se sert aussi de la rivière pour des courses de chevaux sur glace, remplacées par les courses de motoneiges, et plus récemment de Poker Run. Les bolides quittent le Casino du Lac-Leamy, à Gatineau, pour se rendre à toute vitesse jusqu'à Hawkesbury. Cette compétition amicale attire près de 40 bateaux provenant de l'Ontario, du Québec et des États-Unis.

La rivière permet également d'organiser des régates dont les plus célèbres demeurent celles de Lefavre. En fait, ces régates sont alors les plus renommées dans l'Est canadien après celles de Valleyfield, au Québec. Les participants viennent de Montréal, Trois-Rivières, New York et Massina. C'est l'abbé Edgar Monty qui organise en 1955 les premières régates à Lefavre. Il l'avait fait avant à Treadwell. Quelque 5000 personnes peuvent observer une soixantaine d'embarcations provenant des États-Unis, du Québec et de l'Ontario. À la même période, on présente aussi des sauts en ski nautique qui sont très populaires. Ainsi, 8 000 spectateurs émerveillés sont présents en 1956. Ces activités cessent à la fin des années 1950 avec le départ du curé Monty. Bref, on peut dire que depuis 200 ans, la rivière des Outaouais contribue à la vie sociale et sportive de la population de Prescott et Russell et à ses visiteurs.

## **5.8 Life in the Logging Camps**

Lyal Campbell  
United Counties of Prescott and Russell

Note: The author was involved with the logging industry from 1940 to 1949, in the Parent and Clova area on the upper reaches of the Gatineau River for the E.B. Eddy Company.

### **Getting Paid for Your Work - The Scaler**

The lumbermen acquired timber limits or vast tracts of land on which they had the right to cut trees. This right was granted by the Crown and they remitted a certain amount of money to the Crown for this privilege. This was known as stumpage fees, because in the beginning a Crown employee was dispatched to determine what had been cut by a certain limit holder. Counting stumps was the only way to tell. The limit holders were assessed at a given amount per tree, depending on the type of tree. The scaler was required to provide the government with an accurate certified document divulging the "foot board measure" count of all timber cut on Crown lands or limits. The limit holder paid a certain amount per MBM (thousand board measure) for the privilege of harvesting timber on Crown lands. If the logs cut

were used for pulp and the production of paper, all scaling was done in cords of 128 cubic feet, and the limit holder was assessed accordingly.

In the early 1900s, scalers were required to be licensed after being tested for proficiency. If there was a shortage of licensed scalers (as during the middle 1940s), an assistant scaler could apply for a permit that would allow him to measure logs. Quebec would grant a permanent license if you had worked as assistant for three seasons and you completed successfully a written and practical test. This practice was discontinued after a few years, after which the Quebec Government required a couple of sessions at the Duchesnay Forestry School before graduation to scaler.

Nowadays, logs for pulpwood are sold by weight converted into cords, and there is no need for the services of a scaler. However, this does not apply for logs destined for a sawmill. One might think that the day's work was done when the scaler had entered all his numbers from the tally sheets, having converted diameters and lengths to Feet Board Measure or cords. This was not so. These lumberjacks, in most cases, cut by contract: they would be paid a certain amount for each MBM or per cord. It was the scaler's responsibility to ensure that each cutter got his just dues.

Some cutters worked by the day. At the end of each day, the scaler and assistant had to enter all the figures on a specification sheet, balancing material cut by contract plus material cut by the day. In addition, the scaler had to issue what was known as a scale bill to each contract cutter certifying his production for that particular day's scaling. Scale bills were handed out to the various cutters.

When all operations for the year were over or when the lumberjack decided to leave, he would be paid according to the total denoted by the scale bills. In most cases, there was a deduction for board of \$1.00 per day in addition to what he may have purchased from the clerk. These articles could be socks, cigarettes, tobacco, or writing paper. Money rarely changed hands in the shanties - everything was charged against wages. At the end of the season the scaler had to balance the season's daily recordings for each contractor, cutter, etc. to agree with his grand total. Sometimes this could take a week. All these calculations were done without an adding machine, calculator, or mechanical device of any kind and by the light of a coal oil lamp or a Coleman lantern. The specification sheet consisted of the original plus three copies in 4H pencil. In cases where mistakes were made, a lot of erasing was accompanied by some very nice language.

There was also a check scaler and assistant who would appear unannounced and would re-measure what a scaler had done, to ensure that the process was impartial and not awarding too much to any individual contractor or cutter. Even with this second verification, the Provincial Government usually sent their own employee to check on all of these people. Failure in any of these inspections meant a loss of scaling license on Crown Lands.

The original and three copies of the specification sheets were distributed as follows: the original went to the Pulp and Paper Company, the first copy to the contractor, the second copy to the Provincial Government, and the third copy remained in the scaler's file. The scaler was never the most popular person in camp as every lumberjack, cutter, and hewer was a scaler in his own right. Most of the time their figures were way above that of the licensed scaler, and in their minds they were always being robbed.

## The Camp Set-Up

Camps were set up beside a lake or a creek and consisted of a cluster of buildings composed of a men's camp, cookery, stable and an office where the contractor, foreman and clerk resided. A small blacksmith shop was also a necessity. In the first half of the 19<sup>th</sup> century, the men's camp and cookery were combined in a low log building. Beds lining the walls were made of saplings lashed together and covered with spruce, pine, and balsam boughs arranged in as comfortable fashion as the lumberman could design, and covered with a blanket.

The cooking area was in the centre of the building and would be in a square of around six feet covered with six inches of sand over the floor - if there was a floor. The sand was held in place by small logs with rocks here and there to complement the fire in the centre. All the cooking would take place in and around the fire. Clothing hung to dry around the fire. Directly above the fire in the centre of the roof was a hole to allow the smoke to escape. All buildings were made of logs and except for mornings and nights, all men and animals ate outdoors except, of course, the cook. In the beginning the boss would also be the clerk and sometimes the scaler. The first men's camp cookeries were called caboose shanties and were mostly used by the hewers of square timber.

Eventually wood stoves came into the kitchens, sleep camps and all other buildings. Camp stoves were what we would call box stoves, and the kitchen or cookery stove had a flat top and six or eight lids. A seven-inch diameter stove pipe usually ran through the gable end of the building – there were no conventional chimneys. The cookstove had a large metal ring on each corner allowing it to be carried by four men if necessary.

The old "bull beds" were later replaced with double decker metal beds in the men's camp and each man was given a tick that he could fill with hay from the stable instead of spruce and pine boughs. The ticks were eventually replaced by a thin mattress and three blankets.

Eventually the Provincial Government established rules for the camp size and space allotted to each man, as well as for the cook house. These rules were enforced by inspectors, who rarely checked the more remote camps.

The outhouse or biffy was the one small building common to all campsites. Outhouses were built out of small logs and measured around eight feet long and four feet wide. They were half floored, with the other half being a hole in the ground around 24" or 30" deep. Across the hole there was a small log or pole extending the length of the building which could support the weight of four men at a sitting. This piece was not debarked for its end use, and after being in use for a month or so was as smooth as a baby's bottom, the bark having all ended up in the users' pants. When it was -20 degrees Celsius no one lingered. A Saturday night bath in camp was optional.

# Chapter 6

## Managing the Heritage Values of the Ottawa River

The Ottawa River Heritage Designation Committee members (ORHDC), representing individuals and organizations along the river, have great hopes for the Ottawa River, and believe that their visions could be achieved through Canadian Heritage River (CHR) designation. The advantages and opportunities of CHR designation of the Ottawa River are many and wide ranging, from setting the stage for greater conservation of natural resources to strengthening communities and building bridges between them.

The two provinces and numerous communities, organizations, agencies, and industries with a stake in the future of the Ottawa River will need excellent coordination and a common vision to sustainably manage the Ottawa River as a CHR. Multiple uses of the river and complex jurisdictions over its waters are the two greatest challenges to the management of the Ottawa as a CHR.

This section outlines the existing land and water use of the Ottawa River, identifying key resource uses to set the stage for the future development of an integrated management plan for the river. It then explores the opportunities available through CHR designation as well as challenges to managing the Ottawa River as a CHR, through which key conservation issues are highlighted. Each of these challenges also represents an opportunity for stakeholders to work together to develop a shared vision for the Ottawa River's natural, cultural, and recreational opportunities.

### 6.1 Existing Land and Water Use

As the Ottawa River heritage designation initiative proceeds, ORHDC will develop an approach to managing the river's heritage values, based on an understanding of the natural resource uses associated with the river and its watershed. The following section aims to contribute to this effort by highlighting some of the land and water uses along the Ottawa. It presents an overview of water extraction, forestry, agriculture, and urban development along the river.

**Figure 6.1 Aerial View of the Ottawa River, Outaouais Region**



Source: Alexandre Baker

## 6.1.1 Water Extraction

### Small Scale Domestic Use

Before water supply support systems were introduced in Canada, residents relied upon local wells or nearby ponds, creeks, or rivers as sources of water. Early European settlers relied upon water from the Ottawa River and its tributaries for domestic use. For many decades, such easy access to fresh drinking water (and for much of the year, to ice cut in winter) contributed to the valley's development.

Today, some residents still rely on private wells. The exact number for the entire river is unknown, though Haxton and Chubbuck indicate that between La Passe and Rapides-des-Joachims, over 1000 homes and cottages are outside areas served by a piped water supply (Haxton and Chubbuck 46).

### Groundwater

Groundwater provides much of the water used for residential and agricultural purposes along the Ottawa River. It also moves nutrients to vegetation and provides flow to streams. Groundwater is stored in and moves through porous sand and gravel and porous or fractured bedrock (aquifers). Aquifers are recharged by rainwater or snowmelt from the ground surface. However, throughout much of the Ottawa Valley, an impervious blanket (aquitard) of Champlain Sea silt and clay limits aquifer recharge. Excessive pumping of groundwater can therefore deplete aquifers.

Slow flow rates and long residence times in aquifers cause groundwater quality to be controlled by the chemical composition of the aquifer. Pyrite-bearing rocks yield water with a rotten-egg odour. Water from salt-rich Champlain Sea sediments can be saline. When calcium and magnesium dissolve from limestone and dolostone, they produce what is known as hard water (Geoscape Canada: "Ottawa – Land Use").

### Municipal Water Extraction

As Canadian communities grew, houses were constructed farther from rivers, so settlers no longer had convenient access to river water. In addition, as the population along the Ottawa River rose, so too did river pollution, particularly as a result of debris from the lumber industry. A need for municipal storage reservoirs developed.

There are a large number of municipal drinking water systems serving the communities along the Ottawa River. These include ones at Fort Coulonge, Deep River, Petawawa's Canadian Forces Base, Pembroke, Bryson, and Campbell's Bay (Haxton and Chubbuck 43 and 46). Of course, they also include facilities such as the purification plants at Britannia and Lemieux Island that service the city of Ottawa.

### Industrial Water Extraction

Water is also extracted from the Ottawa River for industrial purposes. For example, between La Passe and Rapides-des-Joachims, industrial water intakes include the Petawawa Golf Club, County of Renfrew Roads Department, Commonwealth Paper Mill, Deep River Golf Course, Chalk River Laboratories, and



the Nuclear Power Demonstrator at Chalk River (Haxton and Chubbuck 46). There were no municipal or industrial water intakes identified in the stretch between the Des Joachims and Otto Holden Generating Stations (Haxton and Chubbuck 53).

### 6.1.2 Urbanisation and Shoreline Development

In the 20th century, urban areas around the world expanded greatly at the expense of natural areas and agricultural land. This is true of many communities along the shores of the Ottawa River, where, in many cases, towns and cities continue to occupy an increasing portion of the land. Managing this development has become a priority for municipalities.

The City of Ottawa's growth, for example, has been managed by the National Capital Commission (NCC), and greatly affected by the NCC's Greenbelt, almost 20 000 hectares of publicly owned lands in a rural setting. The founding purpose of the NCC was to keep in check the urban sprawl occurring in other cities of North America.

Shoreline development refers here to built structures near the river's shore and to other significant alterations of the shoreline for residential, commercial, industrial, or recreational purposes. Shoreline development along the Ottawa River must be carefully managed if communities wish to ensure the health of the river's natural systems.

**Figure 6.2 Urban Development Along the Ottawa River**



Source: Alexandre Baker

The following section highlights some of the key developments along the Ottawa River, with particular attention to shoreline development, beginning with the river's source at Lake Capimitchigama and following it to its confluence with the Saint Lawrence. Table 6.1 gives an overview of the differing land uses per section of river.

**Table 6.1 Mean Percentage of Land Use Class Per Tributary Sub-basin of the Ottawa River**

Section of the River	Tributary	Area of Sub-Basin (km <sup>2</sup> )	% Forest	% Agriculture	% Built-up Area	% Open Water
<b>Lac Dollard des Ormeaux</b>	Rideau	4232	34.6	59.3	2.4	3.7
	Gatineau	24581	92.2	2.1	0.2	5.6
	Lièvre	10650	94.2	3.6	0.1	2.1
	Petite Nation	2717	91.5	5.8	0.0	2.8
	South Nation	5697	22.7	77.0	0.0	0.3
	Rouge	7977	95.6	3.6	0.3	0.2
Subtotal		55854				
<b>Lac des Chats</b>	Bonnechere	4662	79.1	18.8	0.0	2.1
	Madawaska	9094	96.5	0.9	0.0	2.6
	Mississippi	4632	71.0	27.1	0.1	1.8
Subtotal		18388				

<b>Allumette Lake/Lac Coulonge</b>	Petawawa	4402	97.3	0.2	0.0	2.5
	Noire	2744	96.4	1.5	0.0	2.1
	Coulonge	5406	98.5	0.6	0.0	0.9
Subtotal		12552				
<b>Holden Lake</b>	Mattawa	5827	97.6	0.0	0.6	1.8
	Dumoine	4483	96.3	0.0	0.0	3.7
	Subtotal		10310			

Source: Haxton and Chubbuck 23

Shoreline development is linked to population density. Table 6.2 provides the populations of the main communities along the Ottawa River.

**Table 6.2 The Main Communities Along the Ottawa River: 1961 and 1996 Populations by River Reach**

Town/City	1961	1996	% Change
Carillon	427	258	-40
Hawkesbury	8661	10,162	17
Rockland	3037	8070	165
Hull	56,929	62,339	10
Ottawa	303,395	542,462	79
Arnprior	5474	7113	30
Campbell's Bay	1024	874	-15
Bryson	537	753	40
Fort Coulonge	1823	1716	-6
Pembroke	16,791	14,177	-16
Petawawa	4509	6540	45
Deep River	5377	4491	-35
Mattawa	3314	2281	-31

Source: Haxton and Chubbuck 23

Between the river's source at Lake Capimitchigama and Lake Temiskaming, there is very little development. This section of the river, exclusively within Quebec, is significantly altered by three large reservoirs: Cabonga, Dozois, and Decelles.

Along the shores of Lake Temiskaming, there is some limited development. Notre Dame du Nord, Quebec, at the tip of Lake Temiskaming, has a population of roughly 1,250, and Ville Marie, on the eastern shore of the lake, of roughly 2,855 (Société de développement du Témiscamingue). Specific information on shoreline development in these communities is not available. Developed areas in this stretch of the river include the town of Cobalt, Ontario with a population of roughly 10,200 (Statistics Canada), and the city of Temiskaming Shores, Ontario. Temiskaming Shores is the result of a recent amalgamation of the communities of New Liskeard, Haileybury, and Dymond. Its population is slightly over 10,000.

Further downriver, between Lake Temiskaming and the municipality of Rapides-des-Joachims, there is still relatively little shoreline development (Haxton and Chubbuck 58). Mattawa, a post founded by the Hudson's Bay Company in 1837, is the largest town in this region, and the 10<sup>th</sup> largest in population along the river. This community's population has been declining since 1961. In this stretch, there is little to no development along the Quebec shoreline, whereas the Highway 17 corridor extends along the Ontario

side of the river as far north as Mattawa. Several small communities, such as Deux-Rivières and Bissett Creek, are located in this stretch. The built-up area of the Mattawa sub-basin is somewhat higher than most other reaches of the river, and represents 0.6% of the Mattawa River sub-basin (Haxton and Chubbuck 53).

Between Rapides-des-Joachims and La Passe, the cities of Pembroke and Petawawa represent significant development along the Ontario shore of the Ottawa River. Other towns in this stretch of the river include Fort Coulonge, Waltham Station, Chapeau, and Deep River. Since 1961, some communities have experienced a population decline, such as Fort Coulonge, Deep River, and Pembroke, while others have experienced an increase, such as Petawawa (Haxton and Chubbuck 46).

In conjunction with the recently completed marine bypass system around Des Joachims Generating Station, the Corporation Passe des Rapides has proposed a tourist development plan for the island adjacent to Rapides-des-Joachims (Haxton and Chubbuck 46). On the Quebec side, development is quite heavy on the shoreline of Upper Allumette Lake between Petawawa and Pembroke. On the Ontario side, it is equally heavy between Petawawa and Moore's Beach downstream of Pembroke. The region's sandy beaches have resulted in numerous recreational buildings and heavy boating activities.

Further downriver, between La Passe Dam and Chenaux, population in some of the communities has declined since 1961, such as Campbell's Bay. Other communities in this stretch, however, have experienced an increase in population. At least three commercial white water rafting outfitters run expeditions on this section of the river. Two of these have lodges at Byces Point (Haxton and Chubbuck 43).

Most of the Ontario shoreline between Chenaux Dam and Chats Falls is privately owned and occupied by over 450 cottages and homes. Year round cottage habitation is increasing in this region. Since 1961, Arnprior, another major user of the river, has experienced a 30% population increase. There is little shoreline development in this reach of the river. However, there are ongoing proposals for large-scale works, including marinas, beaches, utilities, and waste treatment plants. There is a proposed boat bypass at the northernmost dam at Chats Falls on the Quebec side, with another proposed bypass through Fitzroy Harbour and Vagerge Point (Haxton and Chubbuck 36).

The National Capital Region, including the cities of Ottawa and Hull, is by far the area of the most concentrated development in the Ottawa River watershed. Both of these cities have a long history of settlement, and in addition, have experienced population increases since 1961. The former municipalities of Nepean and Aylmer also represent areas of concentrated population (Haxton and Chubbuck 27).

The stretch of the river between Chaudiere Falls and Carillon is bordered by several large towns, including Cumberland, Rockland, Gatineau, Hawkesbury, and Grenville. Since 1961, some of these communities have experienced a decline in population, such as Carillon, while others have increased in size, such as Hawkesbury and Rockland. Overall, in comparison to the entire river, this section has a high percentage of built-up areas. For example, 2.4% of the Rideau River sub-basin is developed land (Haxton and Chubbuck 17).

### 6.1.3 Industry

Some land is used for industrial purposes along the Ottawa River, and many of industries rely on the river's water for their operations. Atomic Energy Canada Limited (AECL) has its major research facility, Chalk River Laboratories, on the Ontario shore of the river. A Canadian forces base lies between AECL and Petawawa. Bryson and Portage-du-Fort have pulp and paper mills (Haxton and Chubbuck 43). The town of Braeside, with its Tembec mill, is a major water user (Haxton and Chubbuck 36). Industries between Chaudiere Falls and Chats Falls include Goldie Mohr Construction and M.G. MacDonald (Haxton and Chubbuck 27). Four pulp and paper mills, including J. MacLaren in Thurso and Masson, Canadian International Paper in Gatineau, and E.B. Eddy Paper in Hull, currently operate along the north shoreline between Carillon and Chaudiere Falls. Others are no longer in operation: Canadian International Paper shut down its Hawkesbury mill in 1982, Eddy discontinued its pulping operations in 1972, and log drives ceased in the Ottawa River in 1990 (Haxton and Chubbuck 17).

### 6.1.4 Agriculture

The underlying geological material along the Ottawa River determines how suitable the valley's land is for agriculture. Nutrient-rich silt and clay soils along the lower stretches of the Ottawa River Valley are highly productive as long as surface drainage is adequate. Networks of long drainage ditches are therefore common in these areas. Till that has a fine-grained matrix is also nutrient-rich, and retains moisture well. Farms on till often have rock fences or piles built from boulders pulled from the fields.

In contrast, sandy soils may be low in nutrients and retain moisture poorly, making them poor agricultural soils. For example, in the Bourget-Plantagenet area, abandoned farms on the dry sand plain of the early Ottawa River have been turned into pine plantations, and are now a public recreation forest (Geoscape Canada: "Ottawa – Land Use").

#### Upper and Middle Ottawa River

In the upper and middle stretches of the Ottawa River, agricultural land use is limited. For example, between Allumette Lake and Lac Coulonge, agricultural land use accounts for only 0.2 to 1.5% of the land use for each of the three principal tributary sub-basins (the Petawawa, Coulonge, and Noire rivers) (Haxton and Chubbuck 46).

The poorly drained soils of the upper stretches of the Ottawa River are not conducive to grain cultivation. For instance, the most important agricultural use of the land in the Abitibi-Témiscamingue Administrative Regions is the farming of fodder to support cattle, dairy, poultry, sheep, and pork farms. Horticulture also occurs in this region. In the MRC of Abitibi, Quebec, there are 23,630 ha of agriculturally productive land (Hydro Québec: Bassin supérieur 5-3).

## Lower Ottawa River

Further downriver, an increasing percentage of the land is used for agricultural purposes. For example, the stretch of river between Chats Falls and Chenaux Dam is quite high in agricultural land use, with farmland comprising up to 27% of the Mississippi River sub-basin (Haxton and Chubbuck 36) and 77% of the land in the South Nation River sub-basin (Haxton and Chubbuck 17).

This lower section of the river has a large number of dairy and beef farms, and also contains pork and poultry farms. For example, much of the cultivated land in the Outaouais Administrative Region supports the cattle and dairy industry. These lands are used to cultivate grain (8%), alfalfa (13%), and fodder (39%), with the remaining agricultural lands used as pastureland (24%). Most of the agricultural land in use in the Outaouais region is along the Ottawa's tributaries, the Gatineau, Petite-Nation, and Coulonge Rivers. Overall, there has been a decline in the area of cultivated agricultural land (Hydro Québec: Bassin inférieur 5-3).

### 6.1.5 Forestry

In the Ottawa River Valley, exploitation of the river valley's forests has played an important role in shaping the development of the valley's economic, social, and cultural character. The region's forests continue to support pulp and paper as well as newsprint production plants in Ottawa River communities such as Masson, Buckingham, Thurso, Hull, and Temiskaming (Rivers, Inc.: "Ottawa River").

## Upper and Middle Ottawa River

In the upper stretches of the river, forestry represents a major economic activity. For example, the Abitibi-Témiscamingue and Nord-du-Québec regions contribute 8.9% of Québec's total pulp, paper, and paperboard production (Rivers, Inc.: "Ottawa River"). In Abitibi-Témiscamingue, between 60% and 70% of the tree cover is comprised of coniferous trees. In the MRC of Abitibi, the main tree species are Balsam Fir (5%), Spruce (39%), Jack-Pine (18%), Birch (7%), and Trembling Aspen (30%). Cedar and Hemlock are also exploited.

In the MRC of Abitibi, there are two tree nurseries, 20 sawmills, and one pulp and paper factory (in Amos). In the Vallée d'Or, there are 11 factories for transforming wood and 30 forestry companies. In Rouyn-Noranda, there are 10 small factories for transformation and 14 forestry companies. In the Abitibi-Témiscamingue region, there were 10 primary transformation factories and 17 secondary transformation factories (Hydro Québec: Bassin supérieur 5-3).

In Ontario, the Ottawa Valley Forest, representing the forests of Renfrew County, contains ten primary wood industries and over 100 forest products companies (OMNR *Healthy Forests* 7 and 24). Most of the infrastructure in the county was originally designed to meet the needs of the forest industry.

**Figure 6.3 Historic Logging**



The forest of Algonquin Provincial Park, called the Algonquin Forest, is managed by the Algonquin Forest Authority, and is the most important source of wood supply in eastern and central Ontario.

### **Lower Ottawa River**

The Outaouais region, including plants in Hull, Masson and Thurso, contributes 12.5% of the total Quebec pulp, paper and paperboard production.

Trees grown in the Outaouais region include Maple, Birch, Beech, and Poplar. In the north, there is a higher proportion of coniferous trees. In Pontiac, for example, 40% of the harvested forest is mixed, and another 20% is coniferous. Species harvested further north include Fir, Spruce, Cedar and Hemlock (Hydro Québec: Bassin inférieur 5-2).

On the Ontario side, in Lanark County, south of the Ottawa Valley Forest and the Ottawa River, the Mazinaw-Lanark Forest contains four primary wood industries (OMNR *Healthy Forests* 7). While the economy here has diversified considerably in recent years, the forest industry remains very active, particularly in its northern portion. Approximately 90% of lumber production in Lanark County is in the high-value sector, particularly maple.

In both Quebec and Ontario, sustainable forestry is practiced. An objective of the Ontario Ministry of Natural Resources (OMNR) is to ensure the long-term health of the forest so that its benefits are available to future generations. To uphold these values, OMNR has implemented significant improvements in its forest management legislative and policy framework. For example, it has created opportunities to become involved in forest management planning. Also, the system for licensing forestry companies has undergone significant improvements. The CFSA (Crown Forest Sustainability Act), introduced in 1995, requires that an approved Forest Management Plan be in place before any forestry operations begin. Ontario's Living Legacy, announced in 1999, provides a land-use strategy for Ontario's forests including the creation of new parks and protected areas (OMNR *Annual Report* vii).

## **6.1.6 Mineral Resource Extraction**

### **Mineral Extraction in the Upper Section of the Ottawa River Watershed**

The Canadian Shield offers rich deposits of minerals, including iron, nickel, silver, gold, copper, and zinc. The discovery of the Larder-Cadillac Lake Fault at the beginning of the last century spurred the development of several communities along it, including Cadillac on the Ottawa River and also Rouyn-Noranda, Evain, Arntfield, and McWatters.

There are at least 276 mineral extraction sites in the general region of the Upper Ottawa Valley, with 65 mines (only four of which are active) in the Rouyn-Noranda MRC and 211 (mainly sand quarries) in the Abitibi MRC. There are four mines active in the Rouyn-Noranda MRC: Bouchard-Hébert, Francoeur, Gallan, and Mouska. In the MRC of Vallée D'Or, there are four: Sigma, Croinor, Beaufor, and Louvicourt. All but the last of these are gold mines.

In addition, there are 97 mineral exploration projects underway in the upper stretches of the river. These are aimed at the extraction of polymetallic minerals and diamonds. Of additional interest in the upper

portion of the Ottawa River watershed are a laboratory-mine in Rouyn-Noranda (CANMET), the regional centre for Mine Rescue and the Horne copper foundry.

### **Mineral Extraction in the Lower Section of the Ottawa River Watershed**

The major mineral resources of the Ottawa-Gatineau region are crushed stone, sand and gravel. As an aggregate, these are used by the construction industry to make concrete and build roads. Finely crushed aggregate is also used in plastics, glass, paint, wallboard, and roofing tiles.

Although no longer active, stone quarrying played an important role in the history of local construction. The stones of many buildings in Ottawa are from local quarries. For example, quarries east of Kanata provided the sandstone to face the Parliament Buildings and the Museum of Nature. Crushed limestone from quarries such as those near Carlington Hill in Ottawa and the casino in Gatineau supplied lime for the production of cement.

Metals such as iron, lead, molybdenum, zinc, and silver were mined from the mid 1800s to the mid 1900s in the Ottawa-Gatineau region. Industrial minerals such as feldspar, apatite, mica, graphite, and brucite were a source of even greater wealth.

#### **6.1.7 Peat Moss Extraction**

Peat moss, an important resource for the horticultural industry, is extracted at several sites in the Ottawa-Gatineau region, including Alfred Bog. Peat is plant material that slowly accumulates and decomposes in bogs. Because of the important role that wetlands play in the survival of wildlife and in the purification of water, peat mining is a controversial resource-extraction practice (Geoscape Canada: “Ottawa – Wealth”).

## **6.2 Managing the Ottawa River as a Canadian Heritage River: Challenges and Opportunities**

### **6.2.1 Benefits and Opportunities Associated With Canadian Heritage River Designation**

The ORHDC has worked hard to communicate the benefits of CHR designation to residents and community groups along the Ottawa River, using outreach tools such as a website ([www.ottawariver.org](http://www.ottawariver.org)), poster and brochure, as well as numerous meetings with community leaders. This grass-roots process is meant to lead residents, local organizations and government situated along the Ottawa to take ownership and responsibility of the river.

With two provinces and numerous municipalities, First Nations communities, organizations and agencies concerned with the river, a common vision and commitment to action is essential to reducing the duplication of efforts and coordinating the sustainable management of the river. Multiple uses of the river are widely diverse, ranging from wilderness canoeing to atomic energy research. Coordinating the stakeholders and users of the river will be essential to developing an integrated management plan for the Ottawa. Sustainable economic development hinges on the wise use and sharing of these resources. Healthy communities depend on water quality and the overall health of the river.

Designation could lead to the following direct benefits to communities along the river:

- A clean environment for living and raising children
- Healthy ecosystems rich in wildlife and biodiversity
- The preservation and transmission of a rich cultural heritage
- The protection of key cultural heritage sites
- Greater opportunities for cultural exchange along the river
- Greater contact and communication between communities and government in Ontario and Quebec
- Greater visibility and promotion for communities and for the river, e.g. through the CHRS website.
- A more inclusive and citizen-oriented decision-making process
- Opportunities to highlight the beliefs and teachings of Aboriginal Peoples about the river
- Enhanced opportunities for outdoor recreation and sustainable ecotourism development
- Opportunities for outdoor education and bringing history alive
- Increased business opportunities
- An enhanced sense of community pride
- Ideal communities for retirement

Gaining CHR designation will provide additional opportunities to highlight conservation success stories along the river, and will generate new possibilities for cooperation around conservation, education and economic development.

### **6.2.2 Potential Challenges in Managing the Ottawa River as a Canadian Heritage River**

For the most part, the Ottawa River is a managed river. The numerous agencies and private corporations that own and manage the reservoirs and generating stations of the Ottawa River are coordinated through the Ottawa River Regulation Planning Board (ORRPB).

CHR designation provides an opportunity for residents and organizations of the provinces of Quebec and Ontario to generate an integrated management plan for the river, further coordinating the river's management along the themes of preserving ecosystems, species at risk, and cultural heritage, as well as sustainable community economic and ecotourism development. Community support for the initiative has been extremely positive, pointing to a willingness and a desire to manage the Ottawa River sustainably, and to honour its heritage through CHR status. This support will form the basis for management of the Ottawa River as a CHR.

In managing the Ottawa River as a CHR, certain challenges can be anticipated, the greatest of which may be negotiating the complexity of jurisdictions over the river. The Federal Department of Fisheries and Oceans has authority over fisheries habitat and waterway navigation. Federal jurisdiction over the river dates back to the Ottawa River Act of 1870:

*The navigation of the River Ottawa, as well by vessels and boats as by rafts and cribs of timber or logs, is hereby declared to be subject to the exclusive legislative authority of the parliament of Canada, and all canals or other cuttings for facilitating such navigation, and all dams, slides, piers,*



*borns, embankments, and other works of what kind or nature soever in the channel or waters of the said River, ... shall be held to be works for the general advantage of Canada, and ... shall be subject to the exclusive legislative authority of the Parliament of Canada ...*

Conservation Authorities in Ontario have some of the mechanisms necessary to protect the river for small sections of the watershed within Ontario. Quebec and Ontario provincial governments have various responsibilities including water level regulation, water quality monitoring, parks, sustainable forestry management and power generation. Dozens of municipalities and several First Nations communities have river-related responsibilities and a stake in the river's development. In addition to this complex jurisdiction, there are significant legal and linguistic differences between the Ontario and Quebec governments; hence communication will be an important factor in managing the river.

The number and scope of different stakeholders along the river means that any proposed development of the river will have to take into account potentially conflicting uses and divergent priorities. The Ottawa River plays many important roles: supporting species at risk, biodiversity, rich ecosystems, ecotourism, fishing, swimming, boating, hydroelectric power generation and nuclear power generation. These uses require careful planning to be compatible.

### **Conflicting Use For Water Resources**

The impacts of one usage of water resources often affects the quality of the resource itself, thus diminishing the capacity for other stakeholders to benefit from the same resource. Canadian Heritage River status may provide a mechanism by which stakeholders can negotiate potential resource-use conflicts with one another. In a report entitled "Portrait environnemental de la région de l'Outaouais," the Conseil régional de l'environnement et du développement durable de l'Outaouais (CREDDO) put forth several examples of conflicts related to water use in the Outaouais region and described the resolutions of these conflicts:

#### **Conflicting Uses for Water Resources in the Outaouais Region**

A spring-water bottling project initiated by Aquaterra Labrador was abandoned due to citizen pressure in the late 1990s. An environmental impact assessment had not been conducted, but was mandated for similar projects in 2002 under the *Règlement sur le captage des eaux souterraines*.

In Aylmer, the development of a golf course without authorization of the proper authorities and without conducting an environmental impact assessment sparked controversy in 1999. The enormous quantities of water used daily by golf courses may have caused over 25 wells in the municipality to dry up. Furthermore, the pesticides and herbicides used in large quantities can affect the quality of nearby water.

Gatineau City's water intake source is contaminated by waste effluents downstream from Aylmer. Containment cells and other mitigation measures are under development (CREDDO 19).

The above examples of resource-use conflicts in the Outaouais region illustrate two key challenges related to water management. First, there appears to be a lack of general knowledge about the likely

environmental impacts of resource-use activities. Second, the responsibilities of various actors are not clear.

### **Managing the Natural Heritage of the Ottawa River**

Several existing efforts to conserve the health of the Ottawa River's natural systems have been described in Chapter 3.8: Conservation Along the Ottawa River. These efforts respond to specific conservation needs along the river. To preserve the precious resource of the Ottawa River for future generations, challenges in conservation management will need to continue to be addressed. An integrated heritage strategy for the Ottawa River, facilitated through the CHRS process, would provide a framework through which stakeholders can respond effectively to many of these challenges.

#### *Loss of habitat*

Settlement and urban development have had a dramatic impact on the landscape and the wildlife, particularly along the southern stretches of the Ottawa River. Clearing the land meant that entire forests were cut down, wetlands filled, river flows altered, and creeks dried. Species respond to habitat loss in one of three ways: through emigration, adaptation, or population decline. Some species can respond to habitat loss by emigrating to a new area in which conditions are similar to those of their original habitat. A few species can adapt to their changed environment, becoming what we often call "urban wildlife." In many cases, a loss of habitat causes indigenous wildlife populations to fall dramatically, sometimes irreversibly. The population decline of one species can have important ramifications for other species in its ecosystem.

#### *Wildlife Diversity Decline*

The diversity and distribution of fish and wildlife species have been affected by development of the Ottawa River. In particular, hydroelectric dams have blocked migratory species such as the shad and eels, so that these species are today either very low in numbers or absent from the river (Haxton and Chubbuck 3).

Changes due to hydroelectric development have had other impacts on wildlife habitat. The loss of historic mud flats and the creation of new habitat has affected shorebird populations. Flooding has created wetlands for others such as waterfowl. Waterfowl nesting is common on floodplain wetlands within or next to the river (Haxton and Chubbuck 4).

Even before the hydroelectric era on the Ottawa, bird species and populations were greatly affected by human development. Species such as raptors (e.g. Breeding Golden Eagles) and migrating waterfowl were decreasing in number and variety by 1889 as a result of hunting (Haxton and Chubbuck 4).

#### *Ecological Effects of Dams*

Urbanisation and the increasing need for electricity resulted in the creation of reservoirs for hydroelectric production along the northern stretch of the river. Dams impact significantly on local wildlife. They alter the natural flow of the river and result in the flooding of large forested areas in a short period of time. This process has altered, reduced or destroyed the habitat of many plant and animal species.

When fish migration is blocked by a concrete wall, species such as the American shad can no longer reach their colder water spawning sites upriver. Management of the dams and water pumps often does not consider the biological clock of flora and fauna. Riverine organisms are adapted to seasonal flooding, often occurring in the spring. Fluctuations in water level may kill certain organisms, or delay their reproduction. Changes in the current may have driven certain species out of their habitat. Changes in the current and force of the water can cause increased erosion of the banks, further altering habitat. Siltation occurring upstream of dams can change the water quality and temperature in the lake-like environment above the dams.

### *Reduced Water Quality*

The water quality in the Ottawa River is considered much better than it was thirty years ago. This is primarily due to regulations on industrial effluents and the decline of the log drives along the river (Haxton and Chubbuck 3). Despite this, water quality remains a concern. Contaminant sources of groundwater in urban areas include industrial sites, gas stations, garbage dumps, snow-disposal dumps, and dry cleaning facilities. Municipal waste-disposal sites in Carp, Gloucester, and Aylmer have leaked, contaminating aquifers. In rural areas, livestock wastes, pesticides, and fertilizers have polluted groundwater (Geoscape Canada: "Ottawa – Land Use").

Forests and wetlands, two rich habitats with productive soils, are increasingly under pressure near urban areas. This has affected both terrestrial wildlife and the river's ecosystem health. Agricultural runoff carries sediment and chemical products. Pesticides and fertilizers join with soil particles and are carried to the river through the watershed or by wind. Without the tall and/or rooted vegetation associated with wetlands to retain particles, pollutants may more easily enter bodies of water. As a result, persistent pesticides such as chlorinated hydrocarbons and organophosphates enter the Ottawa River or its tributaries. Clear, deep lakes begin a process of eutrophication and become increasingly shallow and turbid. Nitrogen, an essential nutrient for plants and animals, represents a major source of pollution when present in excessive amounts. It promotes plant growth and decay, which in turn increases biochemical oxygen demand.

Deforestation reduces shady areas, warming the runoff into the Ottawa River. Deforestation also induces soil erosion, increasing the amount of suspended solids in the river's water. This turbid, cloudy water is more absorbent of the sun's energy, causing water temperatures to rise. As water temperatures rise, the rate of photosynthesis and plant growth increases. More plants grow and die, consuming oxygen and thus reducing the oxygen available for other living organisms (SEED: "Hudson River Project"). The effects of deforestation can be felt on both the Ottawa River and its tributaries.

Industrial development contributes to water pollution. Industries lacking an effective wastewater treatment process may release harmful substances directly into the water (SEED: "Hudson River Project"). The release of this wastewater into lakes and rivers has a negative effect on habitat quality. Petroleum waste harms wildlife and persists for a long time in riverbed sediments. Detergents cause algal blooms and eutrophication, reducing available light and oxygen for bottom organisms.

Some industries may use river water to cool machinery and release the warmed water back into the river, causing an increase in the rate of photosynthesis and plant growth, reducing available oxygen. This results in the formation of a microhabitat, forcing native organisms to either adapt or leave.

### What is Eutrophication?

Eutrophication is an increase in the concentration of chemical elements required for living things. Increased nutrient loading may lead to a population explosion of photosynthetic algae and blue-green bacteria that become so thick that light cannot penetrate the water. Bacteria deprived of light beneath the surface die; as they decompose, dissolved oxygen in the lake is lowered and eventually a fish kill may result.

Eutrophication caused by human-induced processes, such as nutrient-rich sewage water entering a body of water, is called cultural eutrophication (Botkin and Keller G-7).

#### *Exotic Species*

Since the increase of worldwide transportation, exotic species have fewer barriers. Exotic species are plants or animals that enter an ecosystem from beyond their native ranges. They are called *invasive* because they take over a habitat, competing with and threatening native species. Many aquatic species were introduced accidentally, such as the Zebra Mussel, which competes with native mussels (this species is mentioned in Chapter 3.6.5: Invertebrates). Other exotic species were deliberately introduced, such as game fish for sport and aquarium fish released in the wild. Plants imported for water gardens have found their way to rivers, ponds and lakes and have reduced their biodiversity as a result.

#### *Forest Fragmentation*

According to a recent study conducted in Prescott-Russell, the county forest is highly fragmented. Woodlands have been divided due to development, logging, and agriculture. There are 3405 woodland areas with an average size of only 18.8 ha. The implications for the health of the forest ecosystem are noteworthy. Fragmented forests are less resilient to disease, predators, parasites, climatic effects, and other damage resulting from acid rain or pesticide use (Van Der Velden).

#### *Impacts of Recreation*

Recreation has had local impacts on habitat and wildlife. For instance, a lake crowded with motorboats may have higher concentrations of pollutants in the water, affecting the shells of birds' eggs as well as other biota. Wakes caused by fast-moving boats and SeaDoos can impact negatively on bird reproduction. For instance, wakes can drown common loon nests, sweep eggs out of the nest or scare the parents away. They may kill riverine plants, doubling erosion of the banks and therefore water turbidity. An increase in the suspended sediments in the water column results in an increase of turbidity, which in turn increases the temperature and reduces the level of oxygen. Mussels feed by filtering food particles in the water and are often victims of increased turbidity. They are very sensitive to silt which clogs their feeding siphons.

Each of the challenges highlighted above represents a complex interaction between various human and natural systems. Each of these challenges also presents an opportunity for stakeholders to work together to develop and to implement a shared vision for the Ottawa River's natural, cultural, and recreational opportunities.

### 6.2.3 Toward a Shared Vision of the Ottawa River

Despite the multiple stakeholders and jurisdictions surrounding the river, common ground can be found within the core values of conservation, recreation, participation, celebration and sustainable economic

**Figure 6.4 Sunset on the Ottawa River**



Source : Christian Vollemont

development. In February 2005, the Executive Committee of the ORHDC met to begin to generate a shared vision of the Ottawa River. When asked what the river meant to them, Committee members had similar answers:

- A giver of life
  - A spiritual entity; not merely a commodity
  - A source of daily inspiration
  - A living, animate river deserving of our respect
  - A teacher
  - An important contributor to quality of life; a source of recreation as well as of tranquility and reflection
- A source of connections between people across distances, through time, between cultures, and with the greater ecological system
  - A traditional territory: the watershed corresponds to traditional Algonquin territory
  - A sense of home and of connection with ancestors
  - A fundamental aspect of the existence of the Algonquin people
  - An opportunity to honour history

While sharing their visions for the river 30 years from now, committee members suggested the following steps related to participation, education and tourism, conservation, and management. Many of these visions and suggestions could be achieved more readily if the Ottawa River attains designation as a CHR.

#### Participation

- Efforts to protect and showcase the river's cultural heritage, natural heritage, and recreational values should be coordinated for a comprehensive and therefore stronger approach.
- The Algonquin people should play an integral role in developing and implementing the CHR approach to managing the Ottawa River.
- A volunteer/citizen association that functions in this capacity could relate stories about successful conservation, education, or tourism efforts of one community to other communities along the river. In this way, more people may become inspired to share and act upon a coordinated vision for the river.

#### Education and Tourism

- This nomination/designation initiative can serve as an initiator of a project such as a museum that showcases Algonquin history and values and links these with a greater vision for respecting water on a societal level.

- Creating a common “brand” for the river could promote its cultural heritage, natural heritage, and recreational opportunities. By developing a “package” that encompasses the entire river and includes these different types of values, tourism could be both increased and directed to sustainable activities.
- The human and natural heritage of the Ottawa River should serve as a springboard for place-based history and nature education.
- The Algonquin people and their heritage should receive greater recognition.

### Conservation

- Industry and conservation must find common ground.
- Sources of pollution should be addressed, including the South Nation River
- The Chalk River Laboratories should receive additional funding to become cleaner.
- “Green” energy generation should be further supported.
- Sustainable transportation along the river could be an alternative to cars should be improved.
- The natural beauty of the Chaudiere Falls should be restored.

**Figure 6.5 Changeling**



Source : Kathrin Winkler

### Management

- The river should have Canadian Heritage River Status!
- A deepened pride in the river should translate into other planning and management decisions.
- Algonquin people should have a greater role in management decisions.
- The river’s original name, Kichi Sibi, should be restored.
- Conservation, education and tourism initiatives should be based on previous successes where possible.
- Features of the river and/or surrounding landscape that represent aspects of heritage (natural or cultural) need to be identified and protected.
- A review of existing development plans should be conducted, and these plans should be reviewed and consolidated.
- Development initiatives (such as constructing cottages, developing communities, and building tourism and recreational infrastructure) should be planned so that they enhance instead of destroy heritage features.
- More bridges between the river’s two shores should be constructed.
- Conservation and development goals should be aligned.

In reviewing the heritage values of the Ottawa and Mattawa Rivers, the Mattawa delegates to the designation committee developed a vision reflecting the multiple goals of conservation, economic development, recreation and visibility:

*It is our hope that if the Ottawa River is declared a heritage river, it will have a positive economic effect on our area... Heritage designation will publicize our river and its place in the history of our nation...*

*Heritage designation should help us to preserve the river and its watershed. We would like to see the water quality improved by better methods of pollution control. We hope that the management plan for our heritage river will find that successful balance between industrial and recreational needs on the one hand and the preservation and improvement of our environment on the other...*

*We live in one of the most beautiful places in Canada. Heritage designation will bring more people to see the beauty of the fall colors of the forest that lines the shores of the Ottawa and to skidoo and cross country ski the many trails that network our area...*

*It is our sincere hope that heritage designation for the Ottawa River will make these ideas not a dream, but a reality.*

*- Mattawa heritage designation committee, 2005*

Many individuals and organizations have great hopes for the Ottawa River, and believe that their visions could be achieved through CHR designation. Building the movement toward stewardship of the cultural, natural and recreational values of the river will help respond to the many conservation challenges inherent to the management of the Ottawa River. In addition, CHR designation could strengthen and build bridges between communities along the river, leading to greater inclusiveness and community health.

# Chapter 7

## Conclusion

Inclusion of the Ottawa River in the Canadian Heritage Rivers System could serve as a catalyst for individuals, organizations and local government to ensure the sustainable future of the river and its communities. Organizing to produce this background study has already brought people and organizations together to plan for a common vision.

The Ottawa River is an exceptional example of a river with outstanding human heritage, and as such, its inclusion as a heritage river would be of benefit to the CHRS. In addition, as an interprovincial river bordering Quebec, the Ottawa River would be the first river in the province of Quebec to be designated as a CHR. The Ottawa River would also be the first river in the System to have two designated rivers flowing into it: the Mattawa along its upper stretches, and the Rideau along the lower section.

The Ottawa River Background Study has outlined the outstanding human heritage, natural heritage and recreational values of the river. The river meets several of the CHRS Integrity Values Guidelines as defined in **Canadian Heritage Rivers System: Objectives, Principles and Procedures**. The following specific points support this conclusion.

### 7.1 Human Heritage Integrity Assessment

- The nominated area includes the entire length of the Ottawa River, from its source. It encompasses the entire Ottawa Waterway, including the canoe, exploration and fur-trading routes that were seminal to the history of Canada.
- The visual appearance of the river enables the appreciation of several different periods in history, from the routes and portages taken by early First Nations inhabitants to European settlement, logging and hydroelectricity.
- Numerous sites and artefacts associated with the river's human heritage values can be visited today and are unimpaired by impoundments and human land uses. In some cases, it is possible to view the progression of canal and hydroelectric development at the same site.
- The water quality, which has been steadily improving over the past decades, does not detract from the aesthetic appearance or the cultural experience provided by the cultural values of the Ottawa River.

In addition, the following human heritage values have been found to be exceptional:

- The Ottawa River has provided the setting for at least 8000 years of Aboriginal and 400 years of European settlement.



- The Ottawa River enabled the exploration of North America by major figures in Canadian history, including Champlain, Nicollet, Radisson, La Vérendrye, De Troyes, Jolliet, Mackenzie and Franklin.
- The Ottawa River was one of North America's most important trading routes for centuries, and was part of the famous fur trade route to the interior.
- The great white pines of the Ottawa River Valley built the warships of Britain in her war against France, and went on to construct Boston, New York, and Chicago.
- Mill sites along the river became the focus of settlement at Ottawa-Gatineau, today the Nation's Capital, as well as a number of smaller towns and villages.
- Immigrants drawn by the forestry industry went on to create a unique Ottawa Valley culture.
- The Ottawa River includes legendary sets of rapids that were circumvented by a series of military and commercial canals, leading to bustling steamboat traffic.

## 7.2 Natural Heritage Integrity Assessment

Although many aspects of the natural heritage of the Ottawa River have been found to be exceptional, the river cannot be nominated based on its natural heritage due to the several impoundments located within the nominated section.

However, the river has exceptional natural heritage values, including the following:

- The Ottawa River traverses segments of the lithosphere that represent the past 3 billion years of the Earth's history, and a uniquely wide variety of these geological features can be easily accessed along the river.
- The Ottawa River is the only river that crosses four major geological subdivisions in Canada.
- The Ottawa River is the largest tributary of the St. Lawrence, flowing 1271 kilometres from its source.
- The Ottawa River hosts over 300 species of birds, especially waterfowl, and is one of the continent's most important migratory bird refuges.
- The rich ecosystems of the Ottawa River, including its wetlands, floodplain ecosystems and forests, sustain more than 50 species at risk, including the River Redhorse, American Shad, Least Bittern, and the Eastern Spiny Softshell Turtle, one of the most rare turtles in Canada.

## 7.3 Recreational Values Integrity Assessment

- The Ottawa River possesses water of a quality suitable for contact recreational activities, including world-class white water paddling, fishing and swimming.
- The Ottawa River's visual appearance provides river travelers with a natural and cultural experience. Parts of the river, such as the Rocher Fendu section, give paddlers a taste of what the early voyageurs experienced along the Ottawa River. Many rely on the Ottawa River as an opportunity to reconnect with a natural environment. Ontario and Quebec's most popular canoe-camping parks, Algonquin Park and La Réserve Faunique de la Vérendrye, are located along the river. Boating along the river gives people an opportunity to experience a variety of the Ottawa River's cultural and natural values, while following an age-old waterway route.

- The Ottawa River is capable of supporting further sustainable recreational uses. River-based recreation is a significant source of revenue for communities along the river, and represents one of the intrinsic values of the Ottawa River.

## 7.4 Recommendation

The Ottawa River Background Study has documented the significant human heritage, natural heritage and recreation values along the entire length of the Ottawa River. Based upon the weight of evidence, and with the agreement of Parks Canada, Ontario Parks and the Quebec Ministère du développement durable, Environnement et Parcs, it is recommended that the Ottawa River Heritage Designation Committee proceed with the preparation of a formal nomination document, so that the provinces of Quebec and Ontario might then be prepared to recommend to the CHRS Board in May 2006 that the Ottawa River be nominated as a Canadian Heritage River based upon its Human Heritage and Recreational Values.

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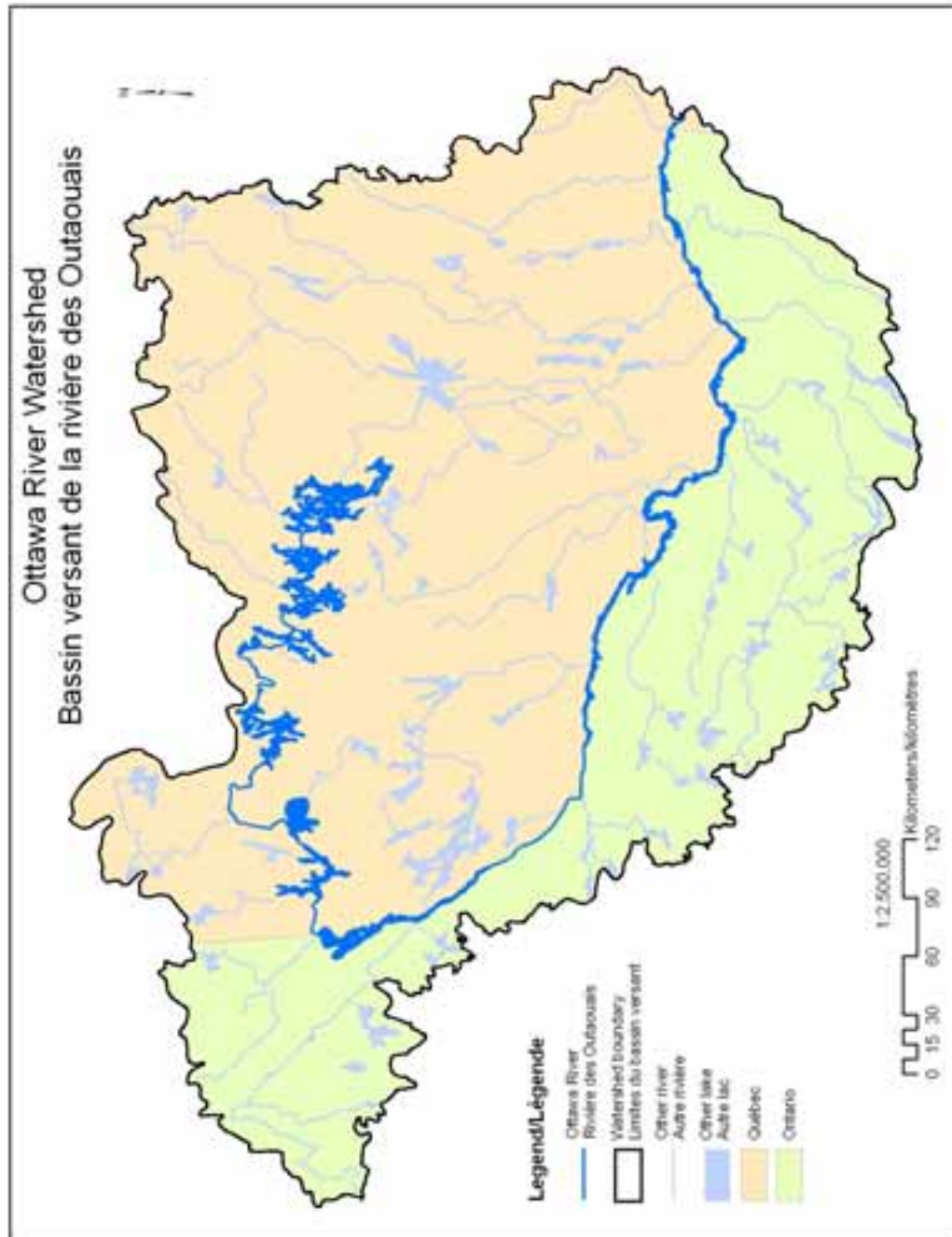
# Background Study

## Appendices



## Appendix A

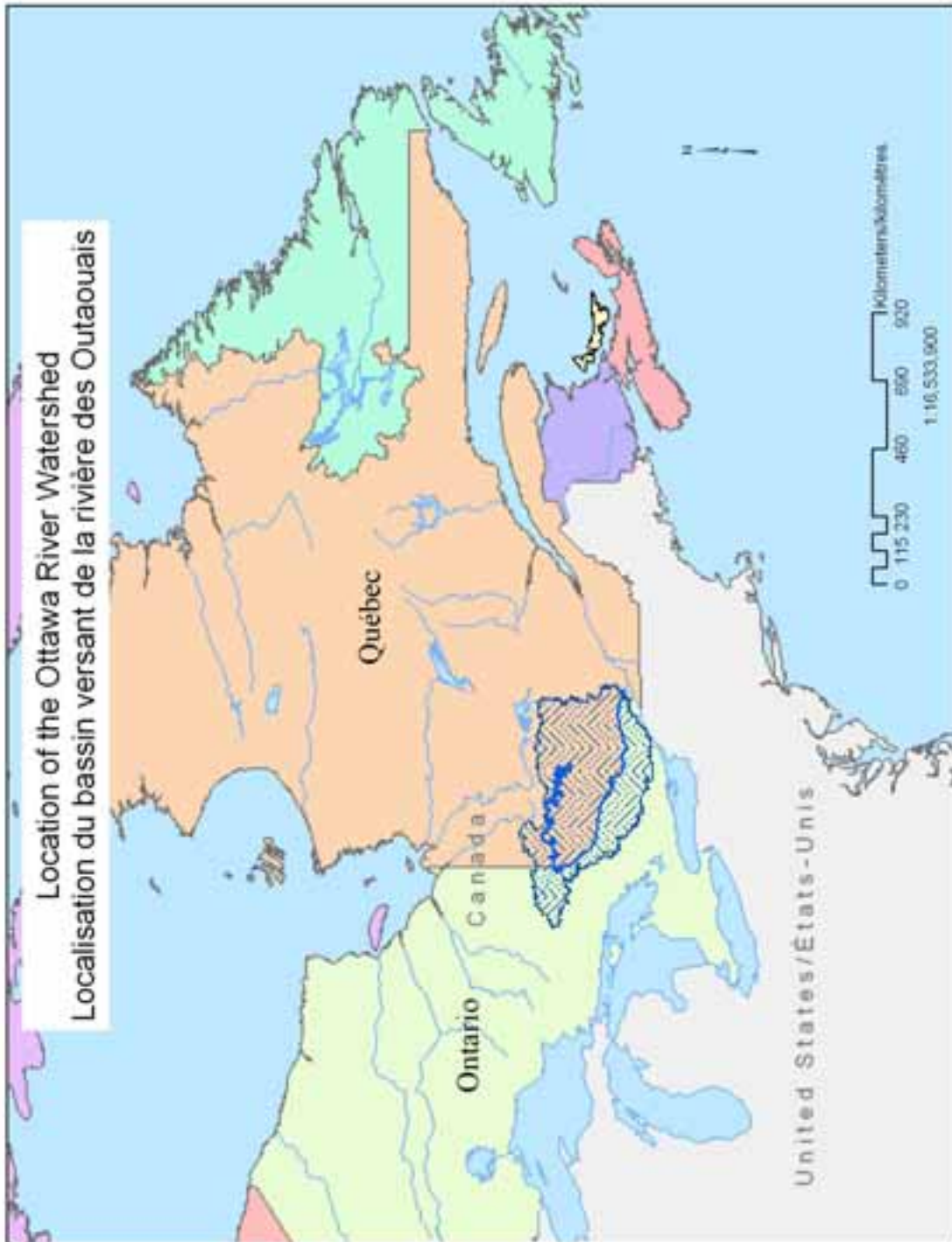
### Map 1: Ottawa River Watershed



Source: Ted Hiscock, Ontario Ministry of Natural Resources

## Appendix A

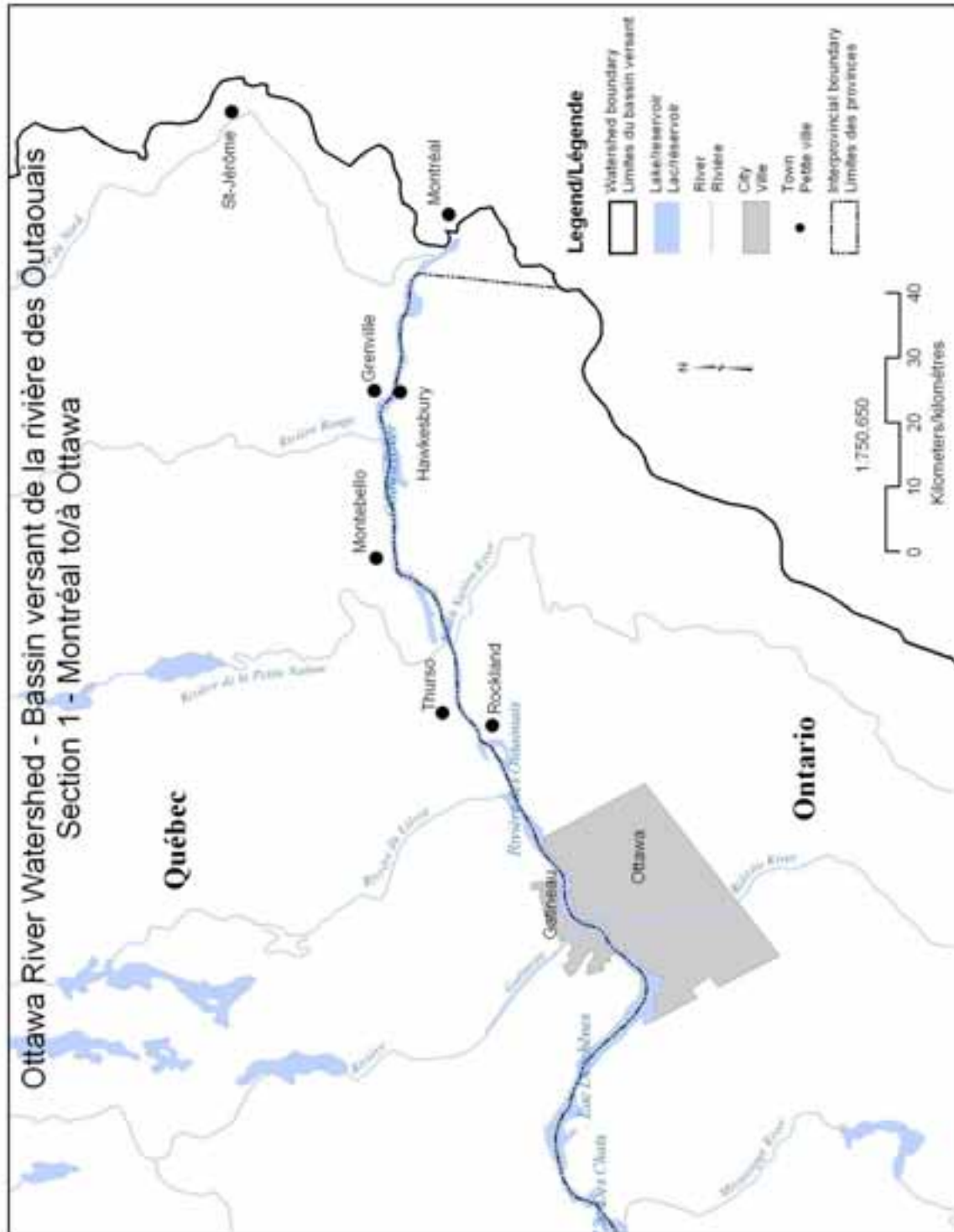
### Map 2: Location of the Ottawa River Watershed



Source: Ted Hiscock, Ontario Ministry of Natural Resources

# Appendix A

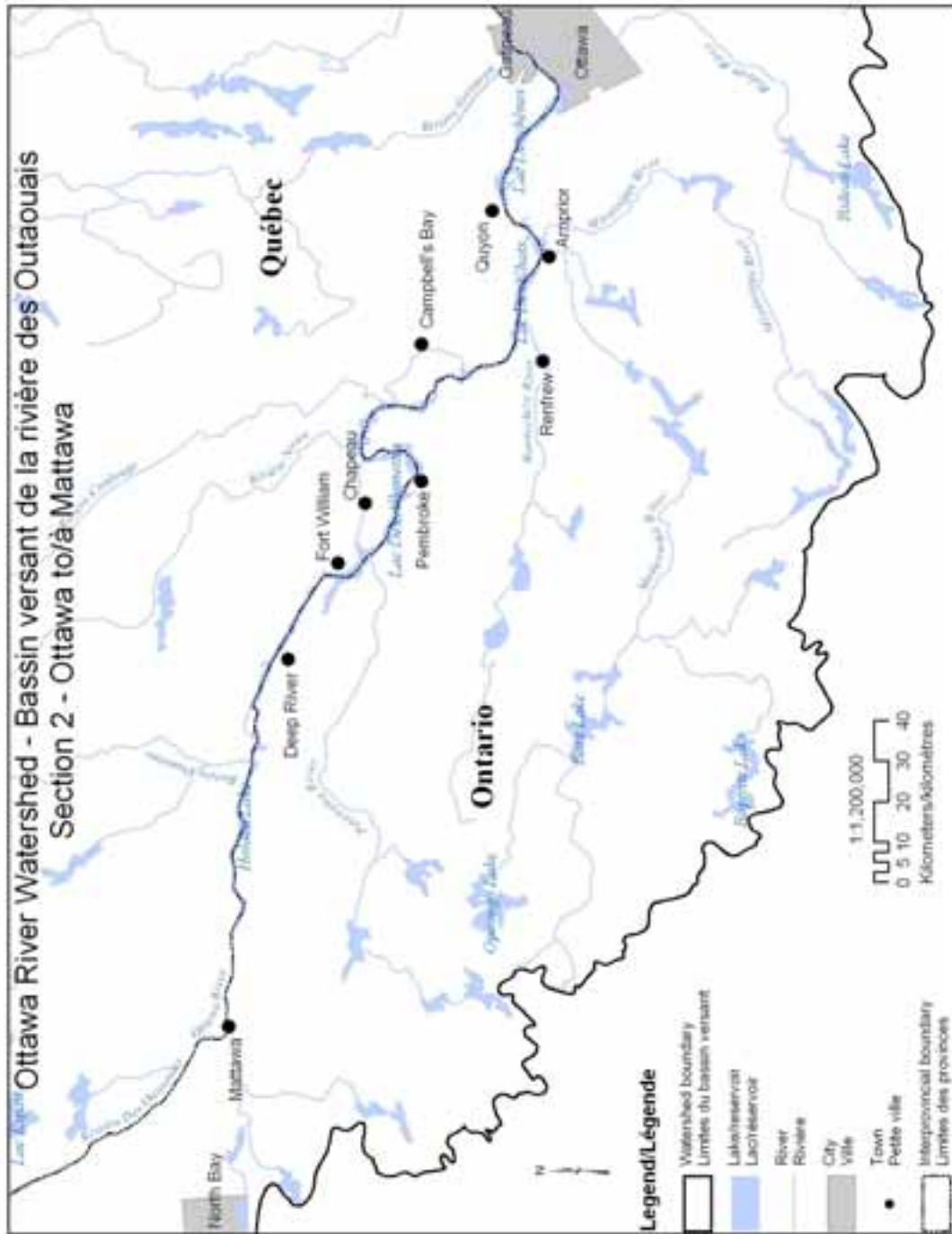
## Map 3: Ottawa River Watershed - Section 1 - Montreal to Ottawa



Source: Ted Hiscock, Ontario Ministry of Natural Resources

# Appendix A

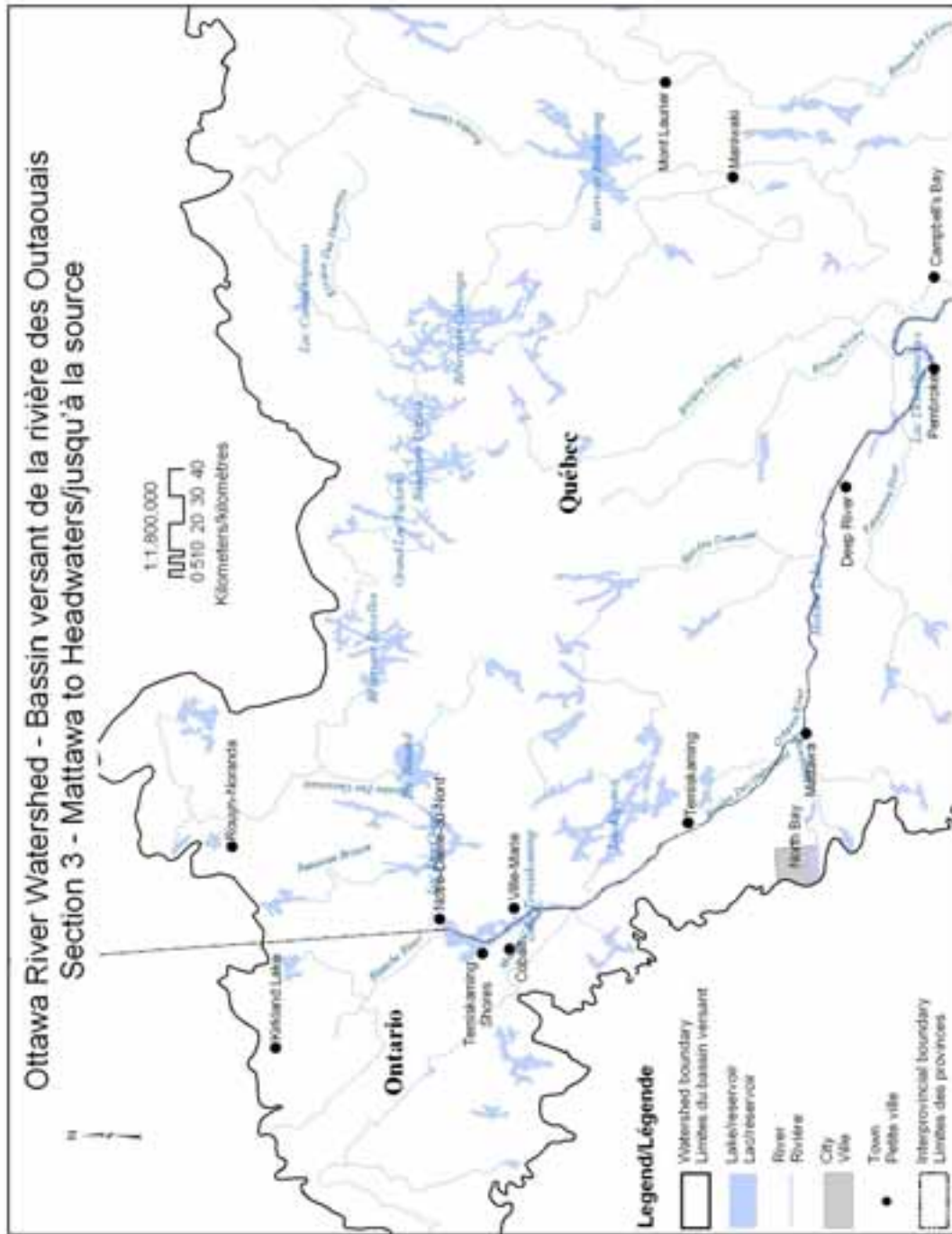
## Map 4: Ottawa River Watershed - Section 2 - Ottawa to Mattawa



Source: Ted Hiscock, Ontario Ministry of Natural Resources

# Appendix A

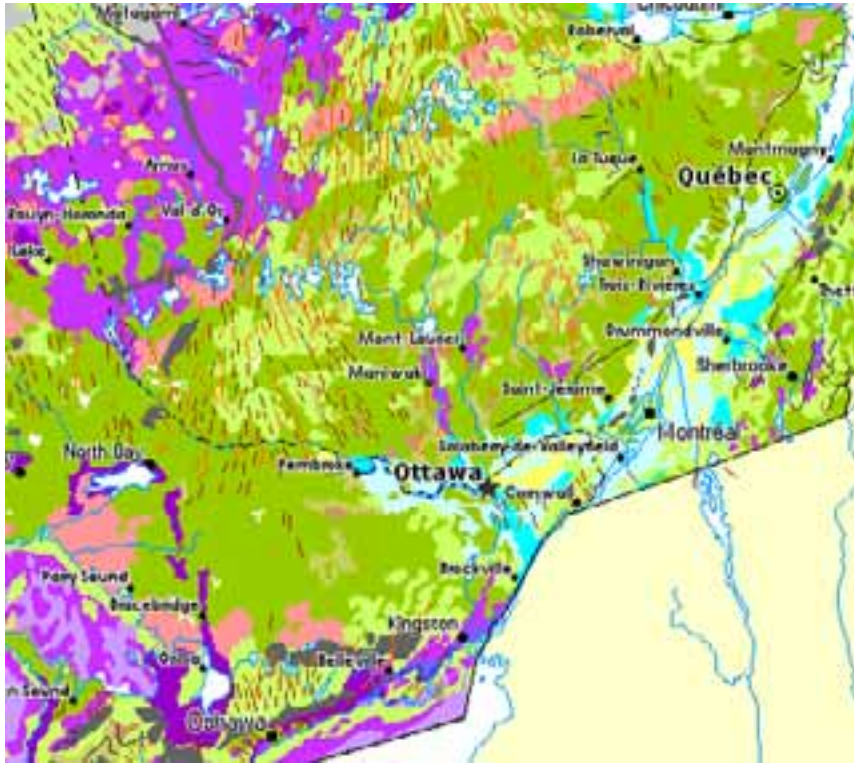
## Map 5: Ottawa River Watershed - Section 3 - Mattawa to Source



Source: Ted Hiscock, Ontario Ministry of Natural Resources

# Appendix A

## Map 6: Ottawa River Watershed – Surficial Materials

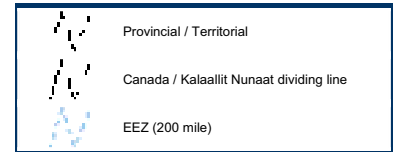


**Abstract:**

Most unconsolidated materials covering the Canadian landmass have glacial origins. Some sediments were entrained by glaciers and deposited at a distance without being sorted. Other sediments were picked up and reworked by glacial melt water, or transported and deposited by river or wind action. Some sediments are organic or volcanic in origin. Sediments are classified according to the manner in which they were transported and deposited.



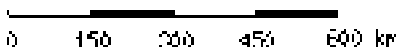
Surficial Materials	
	Glaciers
	Alluvial Deposits
	Marine Mud and Sand
	Lacustrine Mud and Sand
	Eolian Deposits
	Organic Deposits
	Colluvial Blocks and Rubble
	Colluvial Fines and Sand
	Fine Grained Glaciolacustrine
	Coarse Grained Glaciolacustrine
	Fine Grained Glaciomarine
	Coarse Grained Glaciomarine
	Lag Glaciomarine
	Glaciofluvial Plain
	Glaciofluvial Complex
	Till Blanket
	Till Veneer
	Quaternary Volcanic Rock
	Alpine Complexes
	Undivided
	Water area
	Regions outside Canada
Wisconsinian Ice Limit	
	Ice Limit
Moraines	
	Moraine
Eskers	
	Esker
Drumlins	
	Drumlin
Large Moraines	
	Moraine
Populated Places	
	1 - 4999
	5 000 - 49 999
	50 000 - 99 999
	100 000 and greater
	Provincial and Territorial Capital
	National Capital
Boundaries	
	International



Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

# Appendix A

## Map 7: Ottawa River Watershed – Forested Ecozones



**Abstract:**

In Canada, there are 20 ecozones, consisting of 15 terrestrial and 5 marine units. The vegetation varies from one ecozone to another. Forests cover totally or partially nine ecozones: Pacific Maritime, Montane Cordillera, Boreal Cordillera, Taiga Plains, Boreal Plains, Prairie, Boreal Shield, Mixedwood Plains, and Atlantic Maritime.



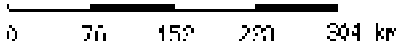
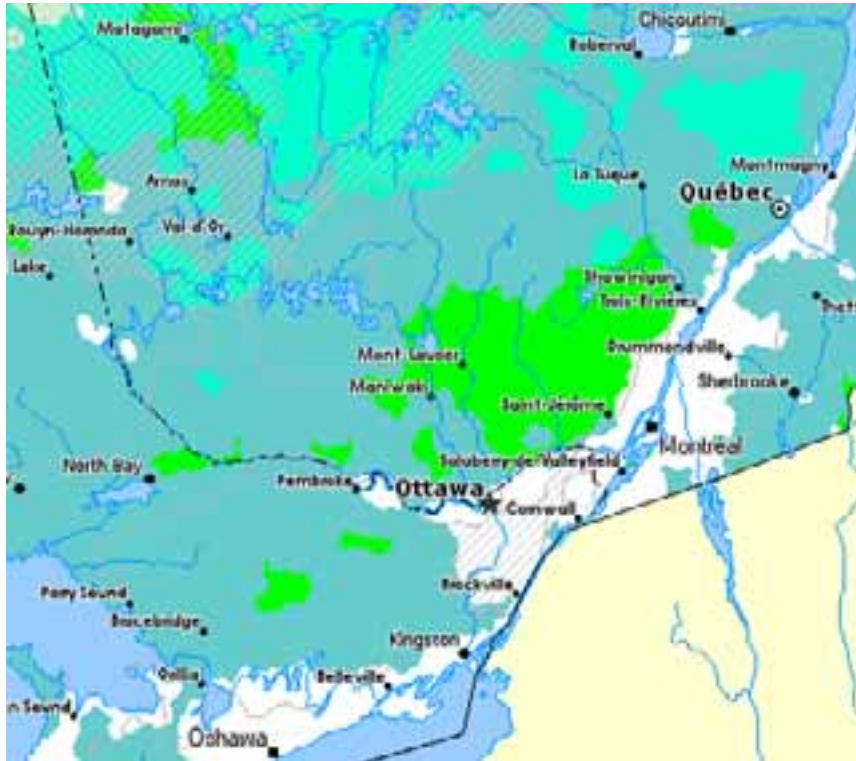
Forested Areas	
	Coniferous Forest
	Broadleaf Forest
	Mixed Forest
	Transitional Forest
Forested Ecozones	
	Taiga Plains
	Boreal Plains
	Boreal Shield
	Boreal Cordillera
	Pacific Maritime
	Montane Cordillera
	Prairies
	Atlantic Maritime
	Mixedwood Plains
Populated Places	
	1 - 4 999
	5 000 - 49 999
	50 000 - 99 999
	100 000 and greater
	Provincial and Territorial Capital
	National Capital
Boundaries	
	International
	Provincial / Territorial
	EEZ (200 mile)
	Canada / Kalaallit Nunaat dividing line
Other Features	
	Water area
	Regions outside Canada

Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.



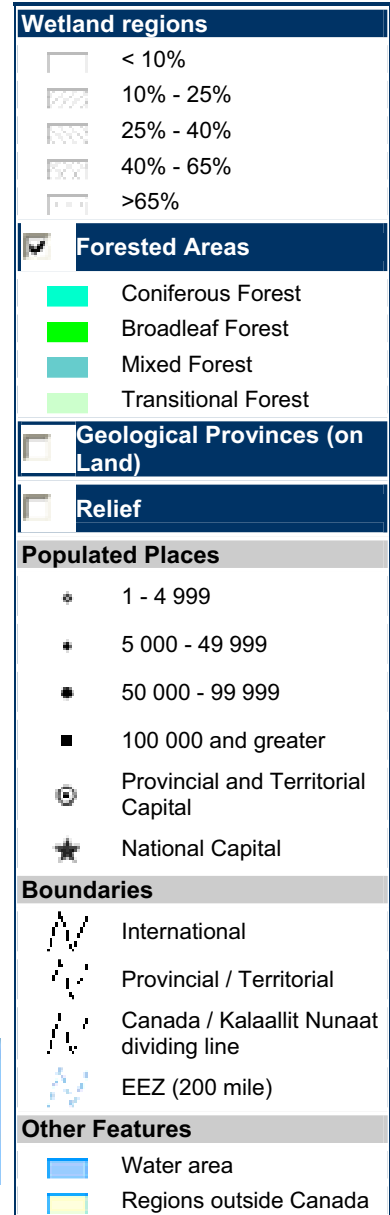
# Appendix A

## Map 8: Ottawa River Watershed – Wetlands and Forests



**Abstract:**

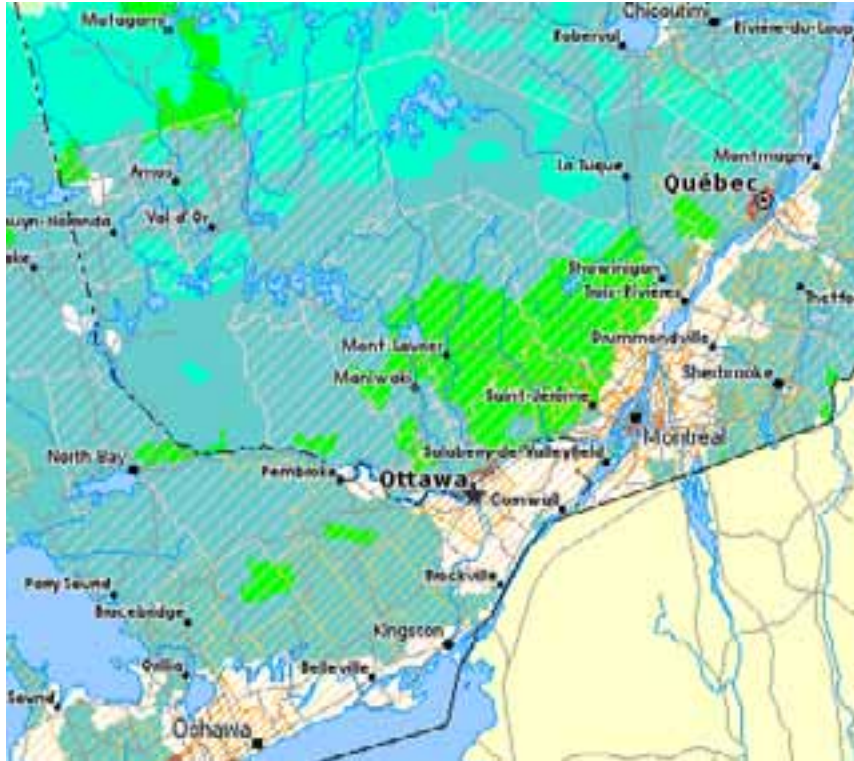
Wetlands are areas characterized by relatively shallow water. These areas play an extremely important role in Canada's ecology. Canada has one of the largest areas in the world with wetlands covering more than 1.2 million square kilometres. They occur across most of the country, and their location usually depends on local factors, which include drainage, topography and surface materials.



Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

# Appendix A

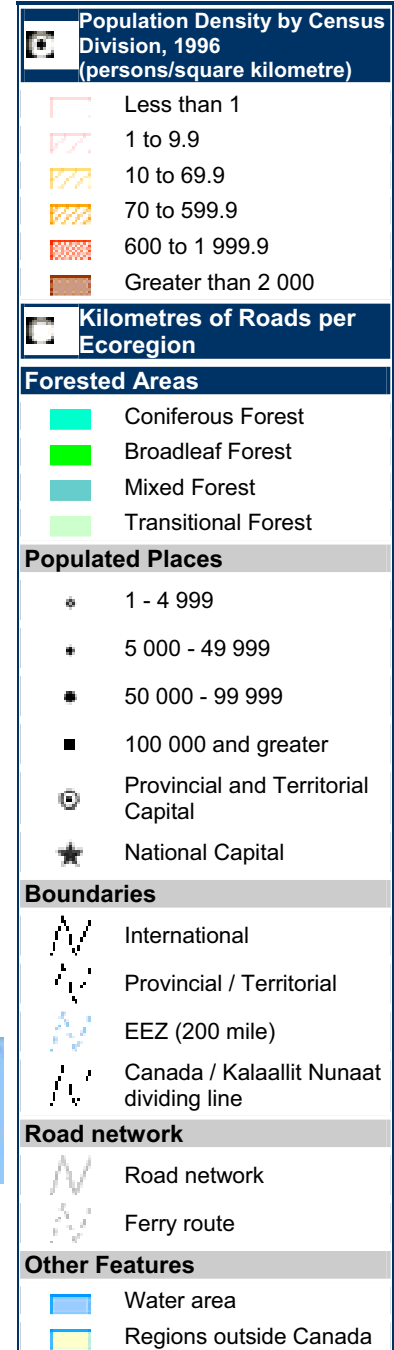
## Map 9: Ottawa River Watershed – Presence of Humans in Forested Areas



0 76 152 228 304 km

**Abstract:**

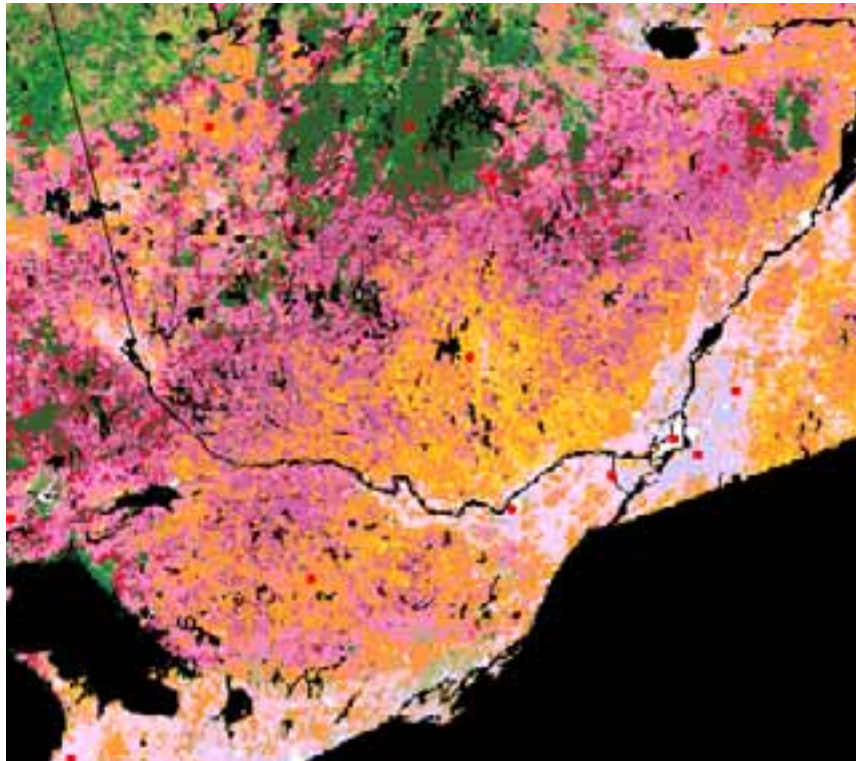
Increases in population, urbanisation and the development of the road network have replaced large forested lands and have created pressures on the remaining forests (or woodlands). Three principal Canadian forested regions have been most affected by these events: the Windsor-Québec corridor, the Prairies and the south-west of British Columbia.



Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

# Appendix A

## Map 10: Ottawa River Watershed – Land Cover

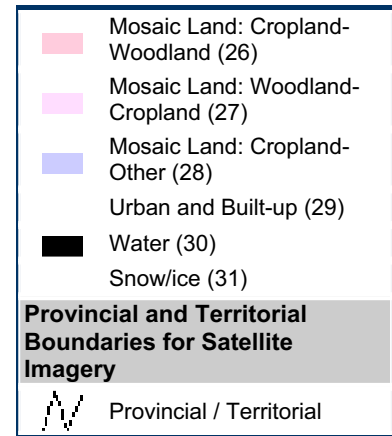


**Abstract:**

This map shows the distribution of land cover types across Canada, based on satellite data obtained in 1995. The land cover map contains 31 classes: 12 forest; 3 shrubland; 7 tundra/grasslands; 7 developed land types including cropland, mosaic and built-up areas; and 2 water cover types.



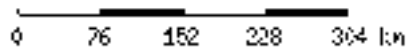
Land Cover Description	
■	Land Cover Type
Land Cover of Canada (image)	
■	Coniferous Forest: High Density (1)
■	Coniferous Forest: Medium Density - Southern (2)
■	Coniferous Forest: Medium Density - Northern (3)
■	Coniferous Forest: Low Density - Southern (4)
■	Coniferous Forest: Low Density - Northern (5)
■	Broadleaf Forest (6)
■	Mixed Coniferous Forest (7)
■	Mixed Uniform Forest (8)
■	Mixed Heterogenous Forest (9)
■	Mixed Broadleaf Forest (10)
■	Burns: Low Green Vegetation Cover (11)
■	Burns: Green Vegetation Cover (12)
■	Transition Treed Shrubland (13)
■	Wetland/Shrubland: High Density (14)
■	Wetland/Shrubland: Medium Density (15)
■	Grassland (16)
■	Tundra: Lichen and Others (17)
■	Tundra: Shrub/Lichen Dominated (18)
■	Tundra: Heather and Herbs (19)
■	Tundra: Low Vegetation Cover (20)
■	Tundra: Very Low Vegetation Cover (21)
■	Tundra: Bare Soil and Rock (22)
■	Cropland: High Biomass (23)
■	Cropland: Medium Biomass (24)
■	Cropland: Low Biomass (25)



Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

# Appendix A

## Map 11: Ottawa River Watershed – Productive Forest Land Use



**Abstract:**

Forty-five percent of the Canadian territory is forested corresponding to 417.6 million hectares. There are 234.5 million hectares of commercial forests and 0.4% is harvested each year.



Percentage of Productive Forest	
	< 1%
	1% - 10%
	10% - 25%
	25% - 50%
	50% - 75%
	75% - 98%

Populated Places	
	1 - 4 999
	5 000 - 49 999
	50 000 - 99 999
	100 000 and greater
	Provincial and Territorial Capital
	National Capital

Boundaries	
	International
	Provincial / Territorial
	EEZ (200 mile)
	Canada / Kalaallit Nunaat dividing line
	Ecoregion Boundaries

Road network	
	Road network
	Ferry route

Other Features	
	Water area
	Regions outside Canada

Source: This map was taken from the Atlas of Canada <http://atlas.gc.ca/> © 2005. Produced under licence from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

## Appendix B

### Ottawa River Timeline

15 000 years ago	Continental glacier begins to melt.
13 000 years ago	Ottawa Valley is covered by an inland sea called the Champlain Sea.
10 000 years ago	Inland sea has receded.
8500 years ago	Earliest evidence of human presence along the Ottawa River watershed. Palaeo-Indian Period named for the people who made distinctive long and slender stone lance points.
6000 years ago	Known as Archaic Period, development of culture referred to as the eastern Laurentian Culture that coincides with first appearance of polished stone and copper tools. Ottawa River gradually drops to traditional level and forests of white pine become mixed forests of hemlock, pine and hardwoods.
2500 years ago	A new period in the Ottawa Valley begins with the appearance of modified tempered clay used to produce durable cooking and storage vessels. Known as the Woodland Period, it lasts until the arrival of Europeans, circa 1600 AD.
1535 AD	Jacques Cartier climbs Mount Royal and sees a great river extending towards the western horizon.
1608	Etienne Brulé is first European to explore Ottawa River.
1613	Samuel de Champlain travels up-river to vicinity of present-day Pembroke. Champlain meets Tessouat, Chief of the “Algooumequins” (Algonquins) on today’s Morrison Island.
1615	Ottawa River is known as “Kit-chi-sippi” or Great River; later called “La Grande Rivière du Nord” by French explorers.
1647	Compagnie des Habitants allows 40 young men to trade privately with Native peoples provided they sell furs back to company.
1652	The Compagnie des Habitants trade policy is ignored; goods are traded where most profitable by men known as “les coureurs de bois”.
1659	Radisson and Des Groseilliers travel up Ottawa River in search of new fur-trading territories.
1670	British establish Hudson’s Bay Company, a rival to French fur-trading operations in the North
1674	Francois de Laval, Bishop of Petra becomes seigneur of 25-league area called La Petite-Nation seigneurie (near present-day Montebello QC).
1674	First seigneurie in what is now Ontario, granted to Francois Provost at Pointe L’Original.
1686	Chevalier de Troyes and party of 100 men heads north from Mattawa into unexplored region of Lake Temiskaming.

- 1694            Sieur de Coulonge spends winter of 1694-95 near mouth of Coulonge River; establishes first European settlement in area.
- 1713            France signed the Treaty d'Utrecht, thus ceding the vast fur-rich territory of Rupert's Land to Britain
- 1720            Fort Temiscaminque constructed by French merchant.
- 1728            Last important military expedition sent up the Ottawa River by Government of New France. (Sent to stop harassment of French fur trading posts in Lake Michigan region).
- 1784            Mattawa House built by Nor'Westers at junction of Mattawa and Ottawa Rivers.
- 1793            Alexander Mackenzie, accompanied by Native guides and French Canadian voyageurs, completes the first recorded crossing of continental America by a European. The route from Old Port of Quebec, Quebec to Bella Coola, British Columbia, includes travel up Ottawa River to Mattawa River.
- 1800            Wrights Town established on north side of River below Chaudière Falls (present-day Gatineau).
- 1803            Joseph Papineau becomes new seigneur of La Petite-Nation seigneurie. Manor House is now part of Chateau Montebello property.
- 1806            Philemon Wright builds square-timber raft; floats it down Ottawa River to Quebec City.
- 1816            Private companies build lock in western section of Vaudreuil canal providing controlled access to Ottawa River.
- 1818            Pointe Fortune Canal built opposite Carillon QC.
- 1821            Hudson Bay Company establishes Fort William at Lac des Allumettes. Nicholas Garry, Deputy Governor of Hudson Bay Company, travels up the Ottawa River on the way to Rupert's Land.
- 1825            Archibald McNab creates settlement near junction of Madawaska and Ottawa Rivers. Kinnell Lodge forms centre of development for present-day Arnprior.
- 1826            Lieutenant-Colonial John By ordered to build navigable waterway between the Ottawa River and Kingston.
- 1832            Rideau Canal complete.
- 1833            Lady Colborne is first steamboat on Upper Ottawa, servicing between Aylmer and Chats Falls.
- 1836            First canal system along Ottawa consists of Grenville Canal, Chute à Blondeau Canal and Carillon Canal featuring 11 locks.
- 1840            Construction of public lock at Sainte-Anne-de-Bellevue allows boats to by-pass natural obstacles and proceeds up into Ottawa River.
- 1847            Trade at Fort Coulonge declined to such an extent that Hudson's Bay Company decided to close the post.
- 1848            University of Ottawa established.

- 1855 Bytown incorporated and becomes City of Ottawa.
- 1857 Queen Victoria chooses Ottawa as capital city of United Province of Canada.
- 1860s Peak of square timber rafting on Ottawa River. Cribs consisting of 20 to 40 square timber pieces are assembled into rafts; each raft contains up to 200 cribs.
- 1860 J.R. Booth commissioned to supply lumber for roof of new Parliament buildings. Acquired timber reserves on Upper Ottawa River and tributaries.
- 1862 A Pembroke industrialist named McAllister used water wheels in his mills to generate electrical current for sale.
- 1863 Timiskaming mission re-located to Ontario shore.
- 1866 Parliament Buildings completed.
- 1867 Canada's Confederation.
- 1882 First steamer, "Mattawan" appears on Lake Temiskaming.
- 1885 to 1905 Sawlog production peaks along Ottawa River.
- 1888 E.B. Eddy constructs first pulp mill in eastern Canada at Gatineau.
- 1896 Notre-Dame du Nord founded with the arrival of first resident missionary.
- 1900 Great fire starts in Hull lumberyards and spreads to Ottawa, burning over 2000 buildings.
- 1904 Petawawa Military reserve established.
- 1916 Fire destroys Centre Block of Parliament Hill; only Library of Parliament remains standing.
- 1922 Fire destroys ninety per cent of the Town of Haileybury.
- 1930 Chats Falls hydroelectric generating station developed.
- 1943 Provinces of Ontario and Quebec sign agreement allocating undeveloped water power sites.
- 1945 First self-contained nuclear reaction in Canada initiated at Chalk River Laboratories.
- 1956 First nuclear power station established near Des Joachims.
- 1965 Mills along Ottawa River produce more than 80 million board feet of lumber.
- 2003 Committee formed to designate Ottawa River as part of the Canadian Heritage Rivers System.



## Appendix C

### Selected National Historic Plaques Along the Ottawa River

(Historic Sites and Monuments Board of Canada)

Name	Location	Inscription
Battle of the Lake of Two Mountains. <i>Site of defeat of Iroquois by French 1689</i>	Montreal, Quebec 1298 Highway 37 / 1972 North of Senneville Rd.	Following the Lachine massacre in 1689, the Iroquois continued to terrorize the Montreal area. In October, Governor Denonville sent out a scouting party of 28 under the Sieurs Dulhut and d'Ailleboust de Manthet which came upon a party of 22 Iroquois in the Lac des Deux Montagnes. In the Melée that followed this surprise encounter, 18 Iroquois were killed, three taken prisoner, while one swam to safety. This victory did much to restore the shaken confidence of the inhabitants.
Canada's Capital Chosen by Queen Victoria in 1857; became capital in 1867	Ottawa, Ontario Main entrance to Parliament Hill, Wellington Street	After the union of the two Canadas in 1841, Kingston, Montreal, Toronto, and Quebec were in succession the seat of government. During the 1850's these cities contended for designation as the permanent capital of Canada. When called upon in 1857, Queen Victoria resolved the issue by choosing Ottawa. In 1867, the Fathers of Confederation reaffirmed the choice and Ottawa became the capital of the new Dominion of Canada.
Carillon Barracks <i>Early 19<sup>th</sup>-century stone military building</i>	Carillon, Quebec 50 Principale Street	Construction of this building was begun about 1836 for former Deputy Commissary General C. J. Forbes, who had retired, here, in Carillon. It was still unfinished when leased by the Army to house troops during the civil disorders of 1837. As perhaps originally intended, the building served as a hotel for a number of years, following the withdrawal of the soldiers in 1840. Since 1938 the "Carillon Barracks," as it has continued to be known, has housed the Carillon Museum.
Carillon Canal <i>Operational canal; site of two earlier canals, 1826-33</i>	Carillon, Quebec 210 du Barrage Street	Designed and constructed by the Royal Engineers. Commenced in 1926, completed in 1833, enlarged from 1871 to 1882. One of the canals which, by way of the St. Lawrence and the Ottawa, Rideau, and Cataraqui rivers, connect Montreal with Ottawa and Kingston.
Champlain, Samuel de (1567-1635) <i>Noted explorer, founded Quebec, considered father of New France</i>	Ottawa, Ontario Nepean Point, on the statue of Champlain.	Born in Brouage, France, Champlain first visited North America in 1603 and in 1605-07 was involved in an attempt to establish a settlement in Acadia at Port Royal. In 1608 he founded Quebec and thereafter, as virtual political leader in New France, promoted it as the centre of a new colony. He was a great explorer, mapping much of New France and venturing as far west as the Great Lakes and South to Lake Champlain. His many exploits earned him a reputation as "founder of Canada" and his "Voyages de la Nouvelle-France" is a classic of Canadian travel literature.
Chaudiere Portages <i>Part of the main canoe route to western Canada</i>	Hull, Quebec Eddy park / Voyageurs Park.	(Plaque removed)

<p>Eddy, Ezra Butler (1827-1906) <i>Manufacturer of matches, wood products and pulp and paper.</i></p>	<p>Hull, Quebec Exterior of EB Eddy Building Taché and Montcalm Streets</p>	<p>Born in Vermont, E.B. Eddy came to the Chaudiere Falls in 1851 and began a small hand-operated match factory. From this modest beginning, he diversified his activities within the next two decades to become a lumber magnate and manufacturer of wooden products. By the 1880s he had become the largest producer of matches in Canada and was also making wood pulp. In 1890 he started a paper mill incorporating the latest technological innovations. By the end of the 19<sup>th</sup> century the Chaudiere Falls area was a major industrial centre.</p>
<p>Fight at the Long-Sault <i>Last stand of Dollard des Ormeaux against the Iroquois 1660</i></p>	<p>Carillon, Quebec</p>	<p>Near here, in an improvised fort at the Long Sault of the Ottawa River, on 2 May 1660, Adam Dollard des Ormeaux, with 16 Frenchmen and about 40 Hurons, waylaid 200 Onondaga hunters. In the ensuing fight, which lasted a week, the Onondaga were joined by about 500 Mohawks and Oneidas who had been gathering on the St. Lawrence. Dollard's party was wiped out, while the Iroquois lost 19 men. That spring, the Iroquois did not harass the St. Lawrence settlements, and in June the first furs in several years reached Montreal from the Pays d'en Haut. Dollard's contemporaries regarded him as the saviour of the colony.</p>
<p>Forest Industry in the Ottawa River Valley <i>White pine for British Navy in Napoleonic Wars, square timber, pulp.</i></p>	<p>No plaque in place; recommended Ottawa, Ontario</p>	
<p>Fort Témiscamingue Remains of French fur trading post</p>	<p>Ville-Marie, Quebec 824 Old Fort Road</p>	<p>The first fort on this lake was built by the government of New France about 1685 to compete with the English on Hudson Bay. Closed in the 1690s, Fort Témiscamingue was re-established in 1720 and leased to merchants until the fall of New France. After the Conquest various free traders settled on the lake, but the North West Company had a virtual monopoly by the 1790s, thanks to the astute management of Aeneas Cameron. Control of the fort remained with the Cameron family for many years after the union of the Hudson's Bay and North West Companies in 1821.</p>
<p>Fur Trade <i>Important industry during most of Canada's History</i></p>	<p>Lachine, Quebec</p>	
<p>Gillies Grove and House <i>Old-growth white pine forest and country house</i></p>	<p>Arnprior, Ontario</p>	
<p>Grenville Canal <i>Constructed 1819-33, enlarged 1871-82, to connect Montreal and Ottawa</i></p>	<p>Grenville, Quebec Canal North Road</p>	<p>Designed and constructed by the Royal Engineers. Commenced in 1819, completed in 1833, enlarged from 1871 to 1882. One of the canals which, by way of the St. Lawrence and the Ottawa, Rideau, and Catarqui rivers, connect Montreal with Ottawa and Kingston.</p>
<p>Hull Timber Slide <i>Major technological innovation</i></p>	<p>Ottawa, Ontario Victoria island</p>	

John R. Booth Residence. <i>Outstanding Queen Anne Revival style residence, 1909</i>	Ottawa, Ontario 252 Metcalfe Street	
Macdonell House Stone Palladian residence of prominent fur trader 1817-19	Pointe-Fortune, Quebec Highway 17	Constructed in 1817-19 by Montreal craftsmen for John Macdonell and his Métis wife, Magdeleine Poitras, this house was one of the finest of several built in the area by retired North West company fur trading partners. An elegant local adaptation of the Palladian style, it was situated in an extensive working estate with easy access to the river and Macdonell's forwarding business. The family called it Poplar Villa. Its impressive stone exterior and exquisitely detailed interior proclaimed Macdonell's position as a major business and political figure along the Ottawa River.
Manoir Papineau <i>19<sup>th</sup>-century manor, home of patriot leader Louis-Joseph Papineau</i>	Montebello, Quebec 500 Notre-Dame Street.	
Maplelawn & Gardens <i>Neoclassical residence with walled garden, Thomson-Cole-Rochester House 1831-34</i>	Ottawa, Ontario	This elegant residence and its walled garden are a rare and well-preserved example of a country estate in early 19 <sup>th</sup> -century Canada. Built from 1831-1834 for William Thomson, a prosperous farmer, its centrepiece is this finely crafted home in the British classical tradition. The oval entrance drive and the walled garden of nearly an acre reflect the original pattern of the grounds. The sheltered environment for growing household vegetables, tender fruit and flowers recalls the walled gardens common in Britain.
Mattawa Route <i>Key link in main voyageur canoe route to West of Canada</i>	Mattawa, Ontario Near Main Street in Memorial Park, Water Street	When west-bound voyageurs left the Ottawa here at Mattawa, "the forks," they faced 11 portages in the next 40 miles. The Mattawa, or Petite Rivière, was a key link in the historic canoe route between Montreal and the Upper Great Lakes and the Northwest, for its headwaters are separated from Lake Nipissing and the Lake Huron drainage only by the La Vase portages. This route had already been used for millennia by Indians before it was first seen by Europeans in the early 17 <sup>th</sup> century. For more than 200 years thereafter, it was one of Canada's main highways of exploration and commerce.
McGee, Thomas D'Arcy (1825-1868) <i>Journalist, poet, Irish patriot, Father of Confederation</i>	Ottawa, Ontario Beside Speaker's Corner Sparks Street Mall, between O'Connor and Metcalfe	
Missionary Oblates of Mary Immaculate <i>Arrived in Canada in 1841, missionaries in remote settlements.</i>	Ottawa Ontario St. Joseph's Roman Catholic Church Corner of Wilbrod and Cumberland Streets	
Struggle for Hudson Bay. <i>Battle for fur trading forts and routes on Hudson Bay 1686-1713</i>	Ville-Marie, Quebec Intersection of Notre-Dame-de-Louises and Saint-Gabriel	In 1686, a French force under Chevalier de Troyes assisted by the Canadians under d'Iberville, journeying overland by way of Lake Temiscamingue, captured the three Hudson's Bay Company forts on James Bay. The French retained possession until the Treaty of Utrecht, 1713.

<p>Tessouat and le Borgne <i>Algonquin headmen of the Upper Ottawa (Kichesipirini) on Allumette Island; flourished 1600-1650</i></p>	<p>Ile-aux-Allumettes, Quebec</p>	
<p>The Fur Trade at Lachine <i>Stone warehouse used as a depot, 1803.</i></p>	<p>Lachine, Quebec Commerce-de-la-Fourrure-à-Lachine, père Marquette Drive 1225 Saint Joseph Boulevard and 12ième.</p>	<p>In 1803 Alexander Gordon, a former North West Company clerk had this stone warehouse built for the storage and trans-shipment of furs and trade goods. Taken over in 1833 by the Hudson's Bay Company, it continued as a fur trade depot until 1859. The Sisters of Sainte Anne then transformed it into a residence for their employees. Parks Canada acquired the building in 1977 to commemorate the history of the fur trade at Montreal and Lachine in the 19<sup>th</sup> century.</p>
<p>Wright, Philemon (1760-1839) <i>Early Lumber merchant; established the first farming settlement in the Ottawa Valley; 1880</i></p>	<p>Hull, Quebec 1 Promenade du Portage</p>	<p>In 1800, American entrepreneur and colonizer Philemon Wright founded an agricultural settlement which later became Hull. Soon compelled to turn to the region's rich forest resources as a source of income for his settlement, Wright pioneered the timber trade in the Ottawa Valley, floating his first raft of square timber downstream to Quebec in 1806. He later developed the first timber slides in Canada in order to bypass the Chaudiere Falls. Wright's business and financial leadership ensured the dominance of the Ottawa Valley in Canadian timber exports during the second quarter of the 19<sup>th</sup> century.</p>

Source: Historic Sites and Monuments Board of Canada. "National Historic Designations - Ottawa River"; "National Historic Designations - Ottawa"

## Appendix D

### Selected Ontario Provincial Historic Plaques along the Ottawa River

(Ontario Heritage Foundation)

Name	Location	Inscription
Founding of New Liskeard	Temiskaming Shores, Ontario In Riverside Place, at the mouth of the Wabi River, in New Liskeard	The Algonquin First Nations originally inhabited the Little Clay Belt, the rich agricultural belt extending north from New Liskeard. The abundance of good, inexpensive farmland attracted people from southern to "new" Ontario and the town quickly grew.
The Great Fire of 1922	In a roadside park, Highway 11, about 3 km south of the Earlton Overpass, Thornloe	In early October 1922, scattered bush fires burning north of Haileybury were united by high winds into a mammoth forest fire that swept 18 townships. Several communities were destroyed leaving more than 5,000 people homeless. Snow and rain finally brought the blaze under control.
Cobalt Mining Camp	Cobalt, Ontario 26 Silver Street	The first discovery of silver deposits in this area was made in 1903 by lumbermen searching for timber for railroad ties, and led to one of the most intensive mining rushes in Ontario history. In the 1930s, the demand for cobalt assured the economic stability of the mining camp despite a sharp reduction in the price of silver
William Henry Drummond 1854-1907	In Drummond Park, Silver Street and Prospect Avenue, Cobalt	Characterized by humour and pathos, the habitant verses of Dr. William Drummond appealed to readers of many cultures and earned their author international recognition. In 1905, Drummond joined his brothers in a silver-mining venture at Kerr Lake on the outskirts of Cobalt where, two years later, he died.
The Timiskaming Mission	Cobalt, Ontario Mission Point, at the foot of Old Mission Road, east off Highway 567 about 20 kilometres south of North Cobalt	The Roman Catholic mission originally established at Fort Timiskaming on the eastern shore of Lake Timiskaming in present-day Quebec was relocated to the Ontario shore of the lake in 1863. Here the mission comprised a presbytery for the Oblate fathers, a small hospital operated by two Grey Sisters of the Cross, and eventually a frame church.
The Brent Crater	At a lookout tower on the eastern rim of the crater, Brent Road, approximately 6 km northeast of the village of Brent - near the northern edge of Algonquin Park, about 32 km south of Highway 17	First noted in aerial photographs in 1951, the Brent Crater is a circular depression approximately three kilometres in diameter that is thought to have been formed as the result of the high-speed impact of a giant meteorite some 450 million years ago.
Canoe Route to the West	Mattawa, Ontario Legion Memorial Park, Main and Mattawa Streets, Mattawa	The Mattawa River formed an important link in the historic canoe route from Montreal to the upper Great Lakes. For more than 200 years, explorers, fur traders, missionaries and coureurs de bois travelled the route including: Samuel de Champlain, Jean de Brébeuf, Sir Alexander Mackenzie, Simon Fraser and David Thompson.

Grey Owl 1888-1938	At Finlayson Point Provincial Park, off Highway 11, about 1.5 km south of Temagami	Archibald Belaney came to Canada from England in 1906 and lived as a trapper and guide in the Temagami and Biscotasing areas. After joining an Ojibwa band he adopted the name Grey Owl. Alarmed at the rapid despoliation of the wilderness, the trapper turned conservationist and spent the last 10 years of his life writing and lecturing on wildlife preservation.
Jean Nicolet	North Bay, Ontario Lee Park, Memorial Drive, North Bay	Born in France, Nicolet (c.1598-1642) came to Canada in 1618. He lived for a number of years with the Nipissing First Nations, adopting their lifestyle and thereby helping to strengthen their alliance with the French. An intrepid explorer, Nicolet is generally credited with the discovery of Lake Michigan, which he partially explored in 1634.
La Vase Portages	On Highway 17, near the pond where the former portages began, about 4 km east of North Bay	The three La Vase (Mud) portages, connecting Trout Lake with the La Vase River and Lake Nipissing, formed part of the historic canoe route to the west described by one despondent traveller as "an abominable marsh ... knee-deep in mud and tree-roots."
Mattawa House 1837	Mattawa, Ontario Explorers' Point, Highway 533	Situated at the junction of major canoe routes, Mattawa House was established by the Hudson's Bay Company primarily to discourage lumbermen from encroaching on the company's fur-trading monopoly. The post profited more from the transshipment of supplies than from furs, however, and actually owed its continued existence to business with the lumber companies.
Reverend Charles Alfred Marie Paradis 1848-1926, The	West Nipissing, Ontario St. John the Baptist Roman Catholic Church, 38 Main Street, Verner	An Oblate missionary from Quebec, Paradis was posted to Lake Temiskaming in 1881. During his years in the region, he did much to encourage agricultural settlement, particularly in the area around Verner, and took up farming himself. Paradis was an enterprising man of many talents: he prospected for gold, wrote meditative works, and painted in watercolour.
Temagami Post 1834	Temagami, Ontario Bear Island, Lake Temagami	Established to safeguard the Hudson's Bay Company's fur-trading territory from competitors, the small post on Lake Timagami (now Temagami) was an outpost of the company's major depot on Lake Temiskaming.
Canada's First Polish Settlement	Madawaska Valley, Ontario. Shrine Hill Park, near Our Lady Queen of Poland Roman Catholic Church, Highway 60, Wilno	Leaving behind the adverse social and political conditions of their partitioned homeland, some 300 Polish immigrants came to Renfrew County in 1864 and rapidly established a thriving agricultural community. Wilno was augmented by a second wave of Polish immigration in the early 1900s and still retains much of its distinctive cultural heritage.
Champlain's Journey of 1613	Whitewater Region, Ontario. Municipal Park, Highway 17, Cobden	On his first journey up the Ottawa River in search of the northern sea (Hudson Bay), Champlain stayed briefly at an Algonkian village near present-day Cobden. After learning that he had been misled as to the proximity of the illusive sea, Champlain proceeded down the Ottawa River from Lower Allumette Lake and returned to Quebec.
Daniel McLachlin 1810-1872	Arnprior, Ontario Robert Simpson Park, at the foot of John Street	An astute lumberman, McLachlin recognized the timber potential of the Madawaska watershed and in 1851 purchased a large tract of land at the site of Arnprior. Shortly thereafter, he laid out a town plot and constructed large sawmills at the mouth of the river.

Founder of Pembroke	Pembroke, Ontario Champlain Trail Museum, 1032 Pembroke Street East	After serving in the naval forces during the War of 1812, Scottish-born Peter White settled permanently in Upper Canada and entered the lumber trade. He made his headquarters at the wilderness site of present-day Pembroke and soon became a prominent businessman and public figure in the community that grew around his enterprises.
Founding of Renfrew	Renfrew, Ontario Low's Square, Plant Street and Railway Avenue	Attracted by the lumber activity in the upper Ottawa valley, settlers began moving into the area of present-day Renfrew in the 1830s. The opening of the Opeongo Road in 1854 ensured Renfrew's continued growth.
Gillies Bros. Lumbering Firm	Arnprior, Ontario Gillies Brothers and Company Mill, River Road	By the mid 1880s the four Gillies brothers had established their firm as one of the major lumber producers in the Ottawa valley, a position the company sustained well into the 20th century.
Lieutenant Christopher James Bell R.N. 1795-1936	On County Road 3 at the Bonnechère River in the vicinity of his former sawmill and timber slide, about 2 km southeast of Castleford	One of the first lumbermen in the Ottawa valley, Bell came to Upper Canada about 1817 after receiving a grant of some 800 acres of land. The sawmill and timber slide he built at the first chute on the Bonnechère River became the centre of a small milling community.
McNab Settlement	Arnprior, Ontario Robert Simpson Park, at the foot of John Street	In 1824, some 80 Scottish Highlanders under the patriarchal rule of Archibald McNab established the first organized settlement along the Ottawa River in what later became McNab Township.
Nuclear Power Demonstration Reactor	Laurentian Hills, Ontario Highway 17 at the pull-off overlooking the Des Joachims dam at Rolphton	In 1962, the NPD Reactor supplied the Ontario power grid with the first nuclear-generated electricity in Canada. The reactor was the proving ground for research and development that led to commercial application of the CANDU system.
Opeongo Road	On the grounds of the post office in the vicinity of the former colonization route, Highway 60, Barry's Bay	Part of a network of colonization roads constructed by the government to open the hinterland for settlement, the Opeongo Road was completed as a winter road from Farrells Landing (Castleford) to Opeongo Lake by 1854. The offer of free, 100-acre lots along the road attracted many settlers to Renfrew County.
The Pembroke Mattawan Road	At the tourist information booth in Riverside Park in the vicinity of the former route, Highway 17, Pembroke	Constructed as a supply route to lumber camps in the upper Ottawa valley, the Pembroke and Mattawan Road was begun in 1853 and completed to its full length over the next 20 years. Some sections have since been incorporated into Highway 17, but the original route can still be travelled between CFB Petawawa and Deep River.
The Rapids of the Upper Ottawa	At the lookout point on Highway 17, about 3 km west of Deux Rivières	For over two centuries, the canoe was the only means of transportation between the St. Lawrence settlements and the vast hinterland to the west and north. Four sets of dangerous rapids on the Ottawa River were the first of many obstacles faced by the intrepid explorers and adventurers in Canada's early years.
Steamboating on the Upper Ottawa	On the grounds of the School House Museum, Highway 17, 4 km north of Point Alexander, Meilleures Bay	Steam navigation began on the upper sections of the Ottawa River in 1833 and was instrumental in the early development of the region's lumber industry. Sightseeing excursions also became popular. By the 1880s, however, most water traffic had been replaced by faster, more efficient rail service.

Timber Rafting on the Ottawa	In Robert Simpson Park, at the foot of John Street, Arnprior	The rafting of large cribs of square timber down the Ottawa River and then on to Quebec City was a highly lucrative trade throughout most of the 19th century, and was a significant factor in the economic development of the Ottawa valley.
The Zeep Reactor	In front of the public information centre at Chalk River Nuclear Laboratories, off Highway 17, about 8 km northwest of Chalk River	The first nuclear chain reaction in Canada was initiated on September 5, 1945 when the ZEEP reactor went into operation at Chalk River. The small, experimental reactor was named Zero Energy Experimental Pile because it was developed to produce only one watt of heat.
Brigadier-General Ernest Alexander Cruikshank 1853-1939	On the grounds of the Canadian War Museum, 330 Sussex Drive, Ottawa	A noted authority on the history of Ontario, Cruikshank became the first director of the Historical Section of the Adjutant-General's Branch of the General Staff in 1918. From 1919 until his death, he served as the first chairman of the Historic Sites and Monuments Board of Canada.
Commissariat Building 1827	Ottawa, Ontario In the lobby of the museum, beside the third lock of the headlocks of the canal, between Parliament Hill and the Chateau Laurier, off Elgin Street	Distinguished by skilful masonry and solid construction, the Commissariat building provides an excellent example of the workmanship of the Scottish stonemasons employed by Colonel By to work on the Rideau Canal. Used as a storehouse during the canal's construction, the building now houses the collections of the Bytown Museum.
Honourable Hamnet Kirks Pinhey 1784-1857	Ottawa, Ontario Regional Road 21 north of Road 49, near South March	On land granted to him for service in the Napoleonic Wars, Pinhey built a substantial estate comprising several log and stone structures. Later, he became prominent in local affairs and held a number of public offices.
The Nile Voyageurs 1884-1885	At Kitchissippi Lookout, Island Park Drive, just west of the Champlain Bridge, Ottawa	In 1884, the British government sent a military expedition up the Nile River to rescue Major-General Charles Gordon who was under siege at Khartoum. On the recommendation of Lord Wolseley a number of Canadian voyageurs, many from the Ottawa valley, were recruited to navigate the expedition through the river's long and treacherous cataracts.
Thomas McKay 1792-1855	In the park at the corner of Sussex Drive and John Street near the site of his former New Edinburgh industrial complex, Ottawa	Master mason, entrepreneur, and founder of the community of New Edinburgh, McKay was responsible for the construction of a number of locks along the Rideau Canal. The McKay family home, Rideau Hall, was purchased by the government in 1868 to serve as the official residence of the Canada's governors-general.
The University of Ottawa	Beside Tabaret Hall, 550 Cumberland Street, University of Ottawa, Ottawa	Established in 1848 and placed under the direction of the Oblate fathers, this bilingual institution received university status in 1866 and in 1889 was decreed a pontifical university by Pope Leo XIII.
District Court House and Goal 1825	At the site of the former complex, Rye and Cottage Streets, Niagara-on-the-Lake	When the court house and jail complex for the Niagara District was erected at Newark in 1817 it was considered to be the finest public building in the province. The scene of Robert Gourlay's imprisonment in 1819 and a slave riot in 1837, the old structure ended its days as an orphanage.



Founding of L'Original	Champlain, Ontario St-Jean Baptiste School, 35 Longueuil Street	Named after the moose that were so plentiful in the area, L'Original was developed primarily by Nathaniel Treadwell, a land speculator from New York State who acquired the Pointe à l'Original seigneurie in 1796.
Hawkesbury Mills	Hawkesbury, Ontario Confederation Park, John Street	By 1850, the sawmilling operations begun early in the century by Thomas Mears and David Patee at present-day Hawkesbury had become, reportedly, the largest sawmilling establishment in Canada West and the most productive exporter of softwood planks to Britain.
Seigneurie of L'Original	Champlain, Ontario Centennial Park, 772 Front Street	A parcel of land along the Ottawa River granted to François Prévost in 1674 was the first seigneurie in what is now Ontario. Perhaps because of its remoteness, the area was not developed for settlement until the end of the 18th century. By 1825, however, a thriving village was in evidence on the Pointe à l'Original seigneurie.
St. Andrew's Church 1832	Champlain, Ontario 1008 King Street	The Presbyterian congregation at L'Original had been in existence since 1822 but did not begin construction of its church until 10 years later when Charles Treadwell, the current seigneur of Pointe à l'Original, donated land for the structure. In 1925, the congregation voted to join The United Church of Canada.
William Cameron Edwards 1844-1921	Rockland, Ontario Parc du Moulin, Edwards Street, North of Highway 17	A leading lumber producer in the Ottawa valley, Edwards owned many mills in Rockland and Ottawa. As the member of parliament for Russell from 1887 to 1903, he vigorously promoted the interests of lumberers in provincial forestry policies.

Source: Ontario Heritage Foundation: On-line Plaque Guide

## Appendix E

### Selected Designated Historic Sites in Quebec

(Culture et Communications Québec)

Note: The Province of Quebec does not have a formal system of provincial plaques. This list of relevant historic sites has been provided instead.

Nom	Région	Municipalité	Status
Poste de relais pour le flottage du bois d'Opémican	Abitibi-Témiscamingue	Témiscaming	Site Historique
Maison du Frère Moffet	Abitibi-Témiscamingue	Ville-Marie	Monument Historique
Auberge Charles-Symmes	Outaouais	Gatineau	Monument Historique
Cimetière Eddy	Outaouais	Gatineau	Monument Historique
Édifices E.-B.- Eddy	Outaouais	Gatineau	Monument Historique
Site du Patrimoine D'Aylmer	Outaouais	Gatineau	Site du Patrimoine
Site du Patrimoine du Portage	Outaouais	Gatineau	Site du Patrimoine
Maison George Bryson	Outaouais	Mansfield-et-Pontefract	Monument Historique
Manoir Louis-Joseph-Papineau	Outaouais	Montebello	Monument Historique
Poste de Traite du Lac-aux-Allumettes	Outaouais	Sheen-Esher-Aberdeen-et-Malakoff	Site Historique

Source: CCQ: Répertoire des biens culturels.

## Appendix F

### First Nations Communities in the Ottawa River Watershed

There are 9 communities of the Algonquin Nation in Quebec in the Ottawa River watershed. Proceeding from northwest to southeast, these are the Abitibiwinni, Timiskaming, Eagle Village (Kebaouek), Wolf Lake, Long Point (Winneway), Kitcisakik (Grand Lac), Lac Simon, Mitcikinabik Inik (Algonquins of Barriere Lake) and Kitigan Zibi (River Desert) First Nations. In Ontario, members of the Pikwakanagan (at Golden Lake) First Nation make up the only recognized Algonquin community.

#### Abitibiwinni (Picogan)

The 90,500 hectare reserve is located three kilometres from Amos, Quebec on the shores of the Harricana River. There are just over 400 people living on the reserve.

The main languages spoken at Pikogan are Algonquin and French.

Like the other Algonquin bands, the people of Abitibiwinni were traditionally nomadic but constraints on traditional land use has meant that the people were settled on one spot rather than spread out through their traditional hunting territories.

The band council consists of a chief and four councillors elected in accordance with local custom.

Source: <http://www.algonquinnation.ca/ancom/pikogan.html#>

#### Timiskaming

The reserve is adjacent to the Municipality of Notre-Dame-du-Nord.

There are 1,511 members of this Band, 536 live within the territory and 975 outside the territory.

The reserve of Timiskaming was established under the Act of 1851. In 1853, the Algonquins received an area of 15,552 hectares near Lake Timiskaming. Some 40 lots of this territory were ceded to companies and individuals, reducing the area of the reserve to a little more than 2,400 hectares. The band council consists of a chief and six councillors elected in accordance with the procedures set out in the Indian Act.

Source: <http://www.algonquinnation.ca/ancom/timiskaming.html>

#### Eagle Village (Kebaouek)

The territory of this Algonquin community goes by the name of Eagle Village First Nation-Kipawa. Also known by the name of Kebaowek, the community is located near the shores of Kipawa Lake, about 10 kilometres from Temiskaming, Quebec. The surface area of the reserve is 21 hectares. It is estimated that 580 people live in Eagle Village-Kipawa.

The name Kipawa comes from the Cree word "kipakowé" and the Algonquin word "kébaouek", which both mean "enclosed" or "locked up", and refers to the name of a lake.

Source: <http://www.algonquinnation.ca/ancom/eagle.html>

### **Wolf Lake**

The Algonquins of Wolf Lake are the smallest of the Algonquin communities. They have been working towards obtaining a reserve for most of this century. The community is derived from the Algonquins of Hunter's Point, Quebec. The site is located 37 kilometres northeast of Temiscamingue, Quebec, on Hunter's Point Lake.

The community is made up of 217 people, most of whom live in the region of Temiscamingue, Quebec. The principle languages spoken are English and Algonquin.

Economically the community is involved in the pulp and paper business and the Band operates a tourism/crafts store.

The band council consists of a chief and two councillors elected in accordance with local custom.

Source: <http://www.algonquinnation.ca/ancom/wolf.html>

### **Long Point (Winneway)**

The name "Long Point" was used in the late 19<sup>th</sup> century by the Hudson Bay Company when they had a trading post under the french form "Longue Pointe" and by the Fathers Oblats who had a mission there. The name Winneway could mean "running water" but some believe that it is a malformation of the Algonquin word "winnewash" which means "the bay of troubled waters". The inhabitants of Long Point First Nation called themselves "Winnewayinini" in Algonquin. The church that preceded the actual establishment of the territory was near the trading post. When the three small villages were joined in the 1950's, the church (mission) was relocated under the name Winneway. The primary languages used by the community members are Algonquin and English. The communities' local administration is operated by the Long Point First Nation Council of Winneway, and is currently under Chief Steve Mathias' leadership.

The Community of Long Point First Nation carries the name of Winneway. It is situated on the south shore of the Winneway River, 114 kilometres east from Ville-Marie, a small town in the region of Témiscamingue. The coverage of the territory is approximately 38 hectares.

The community offers certain services to its members including a elementary school, a secondary school, a youth centre, an elder centre, a community centre and both a fire and a police department.

Source: [http://www.anishinabeneration.ca/eng/comm\\_longpoint\\_en.htm](http://www.anishinabeneration.ca/eng/comm_longpoint_en.htm)

### **Kitcisakik (Grand Lac)**

There are just over 330 Algonquins living in the area where the Ottawa River flows into Grand Lac Victoria. The area is roughly 66 kilometres south of Val-d'Or, Quebec. The Algonquins of Kitcisakik are the only Algonquin band to still live a nomadic existence. The families spend much of the season out on

their hunting territories. The only permanent buildings at the site at Kitcisakik are a health centre and the church. It is the oldest church in the region of Abitibi-Témiscamingue.

The Algonquins of Kitcisakik do not have the legal status of a reserve.

The band council consists of a chief and three councillors elected in accordance with local custom.

Source: <http://www.algonquinnation.ca/ancom/grandlac.html>

### **Lac Simon**

The reserve of Lac Simon is located on west bank of Lac Simon, 32 kilometres southwest of Val D'Or, in Abitibi.

The population is 1223, with 984 resident and 239 non-resident.

The reserve was established in 1962 under the Lands and Forests Act. It is a site where the families of hunters traditionally made camp to pursue their seasonal activities.

The principle languages spoken are French and Algonquin.

The Conseil de la Nation Anishnabe du Lac Simon consists of a chief, a deputy chief and three councillors elected in accordance with local custom.

Source: <http://www.algonquinnation.ca/ancom/lacsimon.html>

### **Mitikinabik Inik (Algonquins of Barriere Lake)**

The Algonquins of Barriere Lake live on the shores of Rapid Lake, Quebec, 134 kilometres north of Maniwaki, on the bank of the Cabonga Reservoir.

The community has over 500 members living on the 28-hectare reserve.

The reserve of Rapid Lake was formed in 1961 under the Lands and Forests Act. The band was already settled on the site of Barriere Lake. Until very recently, the band lived in separate family encampments, each led by a patriarch, and carried on seasonal activities.

The principal languages are Algonquin and English.

The band council consists of a chief and four councillors elected in accordance with local custom.

Source: <http://www.algonquinnation.ca/ancom/barriere.html>

### **Kitigan Zibi Anishinabeg (River Desert)**

Kitigan Zibi is located 130 kilometres north of Hull. The reserve was founded in 1851 and many of the families that settled here were Algonquins displaced by European encroachments along the Ottawa River.

Kitigan Zibi is the largest Algonquin community, both in terms of land mass (18,465 hectares) and in terms of population (2,350 people). Of this population, 1,400 live on the reserve. The community is located near the town of Maniwaki, Quebec. The main languages on the reserve are English and Algonquin.

The band council consists of a chief and four councillors elected in accordance with the procedures set out in the Indian Act.

Source: <http://www.algonquinnation.ca/ancom/kitigan.html>

### **Pikwakanagan (at Golden Lake)**

Pikwàkanagàn is situated on the beautiful shores of the Bonnechere River and Golden Lake. Located off Highway 60, the community is 1 ½ hours west of Ottawa and 1 ½ hours south of Algonquin Park, nestled in cottage country in the Ottawa Valley.

Pikwàkanagàn means "beautiful hilly country covered in evergreens." The community is full of history, including the origin of the world's largest birch bark canoe, the first Algonquin woman chief in all of Canada, and Algonquin actor Paul Benoit. Numerous accomplishments and interesting people have had their beginnings in Pikwàkanagàn.

The community infrastructure includes the Administration Office, Council House, Health Centre, Day Care Centre, Tennisco Manor, Museum, Community Hall, Harvest Department, Fire Hall, church, ball field, park, cemetery and a number of private businesses.

Source: <http://www.algonquinsofpikwakanagan.com/>

## Appendix G

### Principal Reservoirs in the Ottawa River Basin

River	Reservoir	Capacity (millions of cubic metres)
<b>Ottawa</b>	1) Dozois	1,863
	2) Rapid VII	371
	3) Quinze	1,308
	4) Timiskaming	1,217
	5) Des Joachims	229
<b>Montreal</b>	6) Lady Evelyn	308
<b>Kipawa</b>	7) Kipawa	673
<b>Madawaska</b>	8) Bark Lake	374
<b>Gatineau</b>	9) Cabonga	1,565
	10) Baskatong	2,649
<b>Lievre</b>	11) Mitchinamecus	554
	12) Kiamika	379
	13) Poisson Blanc	625

Source: ORRPB: "Managing the Waters of the Ottawa River"

## Appendix H

### Species At Risk in the Ottawa River Watershed

Note: Species with provincial status in Ontario or Quebec are only listed here when they add to the list of federally-designated species.

Tax. Group	Common Name	Scientific Name	Status
<b>CANADA (COSEWIC)</b>			
Mammal	Eastern Grey Wolf	<i>Canis lupus lycaon</i>	Special Concern
Mammal	Southern Flying Squirrel	<i>Glaucomys volans</i>	Special Concern
Bird	Cerulean Warbler	<i>Dendroica cerulea</i>	Special Concern
Bird	Least Bittern	<i>Ixobrychus exilis</i>	Threatened
Bird	Loggerhead Shrike subspecies	<i>Lanius ludovicianus migrans</i>	Endangered
Bird	Peregrine Falcon subspecies	<i>Falco peregrinus anatum</i>	Threatened
Bird	Red-Shouldered Hawk	<i>Buteo lineatus</i>	Special Concern
Bird	Red-Headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Special Concern
Bird	Yellow Rail	<i>Coturnicops noveboracensis</i>	Special Concern
Reptile	Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened
Reptile	Eastern Milksnake	<i>Lampropeltis triangulum</i>	Special Concern
Reptile	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	Special Concern
Reptile	Five-Lined Skink	<i>Eumeces fasciatus</i>	Special Concern
Reptile	Northern Map Turtle	<i>Graptemys geographica</i>	Special Concern
Reptile	Spiny Softshell Turtle	<i>Apalone spinifera</i>	Threatened
Reptile	Spotted Turtle	<i>Clemmys guttata</i>	Endangered
Reptile	Stinkpot	<i>Sternotherus odoratus</i>	Threatened
Reptile	Wood Turtle	<i>Glyptemys insculpta</i>	Special Concern
Fish	Bridle Shiner	<i>Notropis bifrenatus</i>	Special Concern
Fish	Channel Darter	<i>Percina copelandi</i>	Threatened
Fish	Lake Sturgeon	<i>Acipenser fulvescens</i>	Special Concern
Fish	Lake Utopia Dwarf Smelt	<i>Osmerus spectrum</i>	Threatened
Fish	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	Special Concern
Fish	River Redhorse	<i>Moxostoma carinatum</i>	Special Concern
Arthropod	Monarch	<i>Danaus plexippus</i>	Special Concern
Vascular Plant	American Ginseng	<i>Panax quinquefolius</i>	Endangered
Vascular Plant	Blunt-lobed Woodsia	<i>Woodsia obtusa</i>	Endangered
Vascular Plant	Dense Blazing Star	<i>Liatris spicata</i>	Threatened
Vascular Plant	False Hop Hedge	<i>Carex lupuliformis</i>	Endangered
Vascular Plant	Butternut	<i>Juglans cinerea</i>	Endangered
<b>ONTARIO (ONMR)</b>			
Bird	Golden Eagle	<i>Aquila chrysaetos</i>	Endangered
Bird	Peregrine Falcon subspecies	<i>Falco peregrinus anatum</i>	Endangered
<b>QUEBEC (MRNFP, DDEPQ)</b>			
Amphibian	Western Chorus Frog	<i>Pseudacris triseriata</i>	Vulnérable
Vascular Plant	Cork Elm	<i>Ulmus thomasii</i>	Ménacé
Vascular Plant	Slender Muhly	<i>Muhlenbergia tenuiflora</i>	Ménacé
Vascular Plant	Pinedrops	<i>Pterospora andromedea</i>	Ménacé
Vascular Plant	Butterfly Milkweed	<i>Asclepias tuberosa</i>	Ménacé
Vascular Plant	Blunt-Lobed Cliff Fern	<i>Woodsia obtusa</i> subsp	Ménacé
Vascular Plant	Canadian or Common Maidenhair	<i>Adiantum pedatum</i>	Vulnérable



Vascular Plant	Ostrich Fern (Fiddle-Head)	<i>Matteuccia struthiopteris</i>	Vulnérable
Vascular Plant	Wild Leek	<i>Allium tricoccum</i>	Vulnérable
Vascular Plant	Douglas' Knotweed	<i>Polygonum douglasii</i>	Vulnérable
Vascular Plant	Canada Wild Ginger	<i>Asarum canadense</i>	Vulnérable
Vascular Plant	Bloodroot or Red Puccoon	<i>Sanguinaria canadensis</i>	Vulnérable
Vascular Plant	Fragrant Sumac	<i>Rhus aromatica</i>	Vulnérable
Vascular Plant	Two-leaved Toothwort	<i>Cardamine diphylla</i>	Vulnérable
Vascular Plant	White Trillium	<i>Trillium grandiflorum</i>	Vulnérable
Vascular Plant	Strawflower	<i>Uvularia grandiflora</i>	Vulnérable
Vascular Plant	Large Toothwort	<i>Cardamine maxima</i>	Vulnérable
Vascular Plant	Ram's-Head Lady's-slipper	<i>Cypripedium arietinum</i>	Vulnérable
Vascular Plant	Divaricate Sunflower	<i>Helianthus divaricatus</i>	Vulnérable
Vascular Plant	Wild Yellow Lily	<i>Lilium canadense</i>	Vulnérable

## Sources:

Canadian Wildlife Service: "Species at Risk"

COSEWIC: "Species Search", "Species Assessments"

OMNR: "Species at Risk in Ontario"

Ministre des Ressources Naturelles et Faune de Québec: "Espèces fauniques menacées ou vulnérables au Québec"

Développement durable, environnement et parcs Québec: "Plantes menacées ou vulnérables au Québec."



## Appendix I Fish Species in the Various Reaches of the Ottawa River - Continued

Common name	Scientific name	Dollard des Ormeaux	Lac Deschênes	Lac des Chats	Lac du Rocher Fendu	Alumette Lake	Lower Alumette Lake	Lac Coulonge	Holden Lake	Lac la Cave
Freshwater drum	<i>Aplodinotus grunniens</i>	X			X	X				X
Golden shiner	<i>Notemigonus crysoleucas</i>	X	X	X		X	X	X		X
Goldeye	<i>Hiodon alosoides</i>			X					X	
Greater redhorse	<i>Moxostoma valenciennesi</i>	X		X						
Iowa darter	<i>Etheostoma exile</i>	X	X	X		X			X	
Johnny darter	<i>Etheostoma nigrum</i>	X	X	X	X	X	X	X	X	X
Lake chub	<i>Couesius plumbeus</i>								X	X
Lake herring	<i>Coregonus artedii</i>	X	X			X		X	X	
Lake sturgeon	<i>Acipenser fulvescens</i>	X	X	X		X	X	X		
Lake trout	<i>Salvelinus namaycush</i>					X				
Lake whitefish	<i>Coregonus clupeaformis</i>		X	X	X	X	X	X	X	X
Largemouth bass	<i>Micropterus salmoides</i>	X	X	X		X	X	X	X	X
Logperch	<i>Percina caprodes</i>	X	X	X		X	X	X	X	X
Longear sunfish	<i>Lepomis magalotis</i>	X								
Longnose dace	<i>Rhinichthys cataractae</i>	X	X			X			X	
Longnose gar	<i>Lepisosteus osseus</i>	X	X	X	X	X	X	X		X
Longnose sucker	<i>Catostomus catostomus</i>	X	X	X		X			X	X
Margined madtom	<i>Noturus insignis</i>	X								
Mimic shiner	<i>Notropis volucellus</i>	X	X			X			X	
Mooneye	<i>Hiodon tergisus</i>	X	X	X	X	X	X	X		X
Mottled sculpin	<i>Cottus bairdi</i>	X	X			X				
Muskellunge	<i>Esox masquinongy</i>	X	X	X		X				
Ninespice stickleback	<i>Pungitius pungitius</i>	X	X			X				
Northern brook lamprey	<i>Ichthyomyzon fossor</i>	X								
Northern pike	<i>Esox lucius</i>	X	X	X	X	X	X	X	X	X
Northern redbelly dace	<i>Phoxinus eos</i>	X				X			X	X
Pearl dace	<i>Semotilus margarita</i>	X		X	X	X		X	X	X
Pumpkinseed	<i>Lepomis gibbosus</i>	X	X	X		X	X	X	X	X
Quillback	<i>Carpoides cyprinus</i>									
Rainbow smelt	<i>Osmerus mordax</i>	X				X				
Rainbow trout	<i>Salmo gairdneri</i>	X				X				

## Appendix I Fish Species in the Various Reaches of the Ottawa River - Continued

Common name	Scientific name	Dollard des Ormeaux	Lac Deschenes	Lac des Chats	Lac du Rocher Fendu	Alumette Lake	Lower Alumette Lake	Lac Coulonge	Holden Lake	Lac la Cave
River redhorse	<i>Moxostoma carinatum</i>	X	X	X		X	X	X		
Rock bass	<i>Ambloplites rupestris</i>	X	X	X	X	X	X	X	X	X
Rosyface shiner	<i>Notropis rubellus</i>	X	X	X	X	X	X	X	X	
Sand shiner	<i>Notropis stramineus</i>	X				X				X
Sauger	<i>Stizostedion canadense</i>	X	X	X	X	X	X	X	X	
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>	X	X	X	X	X	X	X	X	
Silver lamprey	<i>Ichthyomyzon unicuspis</i>	X				X				
Silver redhorse	<i>Moxostoma anisurum</i>	X	X	X	X	X	X	X	X	
Slimy sculpin	<i>Cottus cognatus</i>	X		X		X		X		X
Smallmouth bass	<i>Micropterus dolomieu</i>	X	X	X	X	X	X	X	X	X
Spotfin shiner	<i>Notropis spilopterus</i>									
Spottail shiner	<i>Notropis hudsonius</i>	X	X		X	X	X		X	X
Stonecat	<i>Noturus flavus</i>									
Tadpole madtom	<i>Noturus gyrinus</i>									
Tessellated darter	<i>Etheostoma olmstedii</i>	X				X				
Threespine stickleback	<i>Gasterosteus aculeatus</i>	X				X				
Trout-perch	<i>Percopsis omiscomaycus</i>									
Walleye	<i>Stizostedion vitreum</i>	X	X	X	X	X	X	X	X	X
White crappie	<i>Pomoxis annularis</i>									
White sucker	<i>Catostomus commersoni</i>	X	X	X	X	X	X	X	X	X
Yellow bullhead	<i>Ictalurus natalis</i>	X	X	X		X	X	X		
Yellow perch	<i>Perca flavescens</i>	X	X	X	X	X	X	X	X	X

Source: Haxton and Chubbuck 13

## Appendix J Breeding Bird Species by River Reach

\*Includes confirmed or probable breeding of raptors and bird species which depend on the river and its wetlands

Bird Species	Lac Dollard des Ormeaux	Lac Deschênes	Lac des Chats	Lac du Rocher Fendu	Allumette Lake and Lac Coulonge	Holden Lake	Lac la Cave
Common Loon		X			X	X	
Pied-billed Grebe	X	X	X	X	X		
Double-crested Cormorant		X					
American Bittern		X	X		X		
Least Bittern		X					
Great Blue Heron	X		X	X	X		
Green-backed Heron	X	X	X		X		
Canada Goose	X	X	X		X	X	
Wood Duck	X	X	X		X	X	
Green-winged Teal	X	X	X				
American Black Duck	X	X	X		X	X	
Mallard	X	X	X	X	X	X	
Northern Pintail	X	X	X				
Blue-winged Teal	X	X	X	X	X	X	
Northern Shoveler	X	X			X		
Gadwall	X	X					
American Wigeon	X	X			X		
Ring-necked Duck		X			X		
Lesser Scaup		X					
Hooded Merganser	X	X			X	X	
Red-breasted Merganser					X		
Osprey	X	X	X	X	X	X	
Bald Eagle		X			X	X	
Northern Harrier	X	X	X		X		
Sharp-shinned Hawk	X	X	X				X
Cooper's Hawk			X	X	X		
Broad-winged Hawk	X	X			X	X	X
Red-tailed Hawk	X	X	X	X	X		X
American Kestrel	X	X	X	X	X	X	
Merlin		X	X		X		
Peregrine Falcon			X		X		

## Appendix J Breeding Bird Species by River Reach – Continued

Bird Species	Lac Dollard des Ormeaux	Lac Deschênes	Lac des Chats	Lac du Rocher Fendu	Allumette Lake and Lac Coulonge	Holden Lake	Lac la Cave
Virginia Rail		X	X	X	X		
Sora	X	X	X	X	X		
Moorhen	X	X	X		X		
Spotted Sandpiper	X	X	X	X	X	X	
Upland Sandpiper	X	X			X		
Common Snipe	X	X	X	X	X		
American Woodcock	X	X	X		X	X	
Wilson's Phalarope		X					
Ring-billed Gull		X					
Herring Gull			X		X		
Great Black-backed Gull						X	
Common Tern	X	X	X	X	X		
Black Tern	X						
Belted Kingfisher	X	X	X	X	X	X	
Purple Martin		X	X	X	X		
Tree Swallow	X	X	X	X	X	X	X
Bank Swallow	X	X	X	X	X	X	X
Cliff Swallow	X	X	X	X	X	X	X
Marsh Wren		X	X		X		
Sedge Wren					X		

Source: Haxton and Chubbuck 15-16