3.2 Assessment of Natural Heritage Values

The Ottawa River is not being nominated to the CHRS for its natural heritage values. Although the river meets CHRS's *Selection Guidelines* for *Natural Heritage Values*, as required for the Nomination of Canadian Heritage Rivers, the Ottawa is unable to satisfy certain *Natural Integrity Values* required for nomination. Given these limitations, this document, as well as the Ottawa River Background Study, confirm that the Ottawa River possesses significant natural heritage values that are not currently represented by the CHRS.

The following assessment applies *Selection Guidelines* for *Natural Heritage Values* and *Natural Value Integrity Guidelines* to the Ottawa River. It also clearly indicates which Natural Integrity Values the Ottawa River does not possess, illustrating why it cannot be nominated to the CHRS on the basis of its natural heritage values.

3.2.1 Selection Guidelines: Natural Heritage Values

Outstanding Canadian natural heritage value will be recognized when a river and its immediate environment:

***Guideline*: is an outstanding example of river environments as they are affected by the major stages and processes in the Earth's evolutionary history that are represented in Canada; or**

The Ottawa River traverses easily accessible, visible segments of the lithosphere that represent the past 3 billion years of the Earth's history. In addition, the Ottawa River is the only Canadian river that crosses four major geological subdivisions. Stromatolites, the oldest known record of life on Earth, can be easily viewed along the Ottawa River between Pembroke and Ottawa. Evidence of the post-glacial Champlain Sea environment can be found along the river, including whale bones, fossils and landscape formation.

***Guideline*: contains outstanding representations of significant ongoing fluvial, geomorphological or biological processes; or**

The Ottawa River continues to experience significant seasonal flooding, despite its highly regulated flow. Bank erosion occurs in parts of the river.

***Guideline*: contains along its course unique, rare or outstanding examples of biotic and abiotic natural phenomena, formations or features; or**

The Ottawa River's underwater caves near Westmeath, stretching over a network of 4 kilometres of twisting passages, represent a unique abiotic formation.

The mixed wood forest of the Outaouais region along the Ottawa River is considered to be the richest forest in Quebec in terms of biodiversity. White Pines at Gillies' Grove, Arnprior, are among Ontario's tallest. They are rare remnants of the famous logging forests of the Ottawa River.

***Guideline**: contains along its course habitats of rare or endangered species of plants and animals, including outstanding concentrations of plants and animals of Canadian interest and significance.*

The rich ecosystems of the Ottawa River sustain more than 80 species at risk, including the River Redhorse, American Shad, Least Bittern, and Eastern Spiny Softshell Turtle. In addition, the Ottawa River provides habitat for over 300 species of birds, and is one of the continent's most important flyways for waterfowl. Rare prairie and alvar vegetation grows along Ottawa River shorelines, supported by the unique conditions of spring flooding.

3.2.2 Integrity Guidelines: Natural Integrity Values

In addition to meeting one or more of the above natural heritage value guidelines, a river must meet all of the following natural integrity guidelines to be judged to have outstanding Canadian natural heritage value:

***Guideline**: The nominated section is of sufficient size to include significant representations of all of the natural processes, features, or other phenomena which give the river its outstanding natural value;*

The Ottawa River from the head of Lake Timiskaming to its confluence with the St. Lawrence River is included in this nomination and includes all of the significant representations of the natural processes, features or other phenomena that give the Ottawa River its outstanding natural value in the context of the CHRS.

***Guideline**: The nominated section includes those ecosystem components that contribute significantly to the provision of habitat for species in need of protection;*

The nominated section includes all necessary ecosystem components that contribute significantly to the provision of habitat for species in need of protection, including wetlands, forests along the river and the river's waters. Indeed, this section includes the most biodiversity along the river.

***Guideline**: There are no human-made impoundments within the nominated section;*

There are various impoundments within the nominated section, for both the generation of hydroelectricity and flood control.

***Guideline**: All key elements and ecosystem components are unaffected by impoundments located outside the nominated section;*

The Ottawa River catchment is highly regulated by impoundments, even outside the nominated section, resulting in fluctuating water levels that may impact on its natural habitats. However, many wetlands along the river still maintain a high level of natural ecological integrity.

***Guideline**: The water in the nominated section is uncontaminated to the extent that its natural aquatic ecosystem is intact; and*

Water quality of the Ottawa River has been affected by urban, industrial and agricultural land uses adjacent to the river and within the watershed. However, in recent decades, significant improvements to

the water quality of the Ottawa River have been made, allowing the Ottawa River to retain a relatively natural aquatic ecosystem.

<u>Guideline</u>: The natural aesthetic character of the nominated section is free of, or not adversely affected by, human developments.

The natural aesthetic character of the nominated section of the Ottawa includes sections that have not been influenced or modified by human land use and development, including wetlands, parklands, and whitewater environments. Other sections, however, have been affected by shoreline vegetation clearing and urban development.

Ottawa River — Natural Heritage Values

Title: Source Waters
Credit: Library and Archives of Canada

Hydrology

- Drainage Basin
- ★A Seasonal Variation
  Photo Credit: Library and Archives Canada
- Water Content
- River Size

Title: Spirit Rock
Credit: ORLLN

Physiography

- Physiographic Region
- Geological Process
- ★B Hydrogeology
  Photo Credit: Dr. Allan Donaldson
- Topography

Title: Deep Waters
Credit: Christian Voilemont

Morphology

- Valley Types
- ★C Channel Patterns
  Photo Credit: Alexandre Baker
- Channel Profile
- Fluvial Landforms

Title: Alfred Bog
Credit: ORLLN

Biotic Environments

- Aquatic Ecosystems
- ★D Terrestrial Ecosystems
  Photo Credit: ORLLN

Title: Gillies Grove
Credit: Adrienne Blattel

Vegetation

- ★E Significant Plant Communities
  Photo Credit: OMNR/Lauren Trute
- Rare Plant Species

Title: Spotted Turtle
Credit: Petawawa Civic Centre

Fauna

- Significant Animal Populations
- ★F Rare Animal Species
  Photo Credit: ORLLN

New Liskeard
Haileybury
Lady Evelyn-Smoothwater
Finlayson Point
Réserve Faunique La Vérendrye
Martin River
Mattawa
Mattawa River
Samuel de Champlain
Driftwood
Deep River
Petawawa
Pembroke
Algonquin
Bonnechere
Westmeath
Arnprior
Fitzroy
Westboro Beach – Ottawa
Parc de la Gatineau
Réserve Faunique Papineau-Labelle
Parc National de Plaisance
Hawkesbury
Voyageur
Atocas Bay – Lefaivre
Parc National du Mont Tremblant
Parc National d'Oka
Blanche River
Montreal River
Dumoine River
Rivière Noire
Rivière Coulonge
Petawawa River
Mattawa River
Bonnechere River
Madawaska River
Mississippi River
Rivière Gatineau
Rivière du Lievre
Rivière de la Petite Nation
Rivière Rouge
Rivière du Nord
Rideau River
South Nation River

N

1:1,300,000
0 10 20
Kilometres

Legend

- Grenville Province
- Southern Province
- St. Lawrence Platform
- Superior Province
- Ottawa River
- Legacy Landmark Network
- Sub-Theme Feature Image
- Ontario Parks