



Rideau Roundtable voyageurs paddling on the Rideau Canal in downtown Ottawa

## Rideau Paddling Guide 18

### Hogs Back to Ottawa

*(along the Rideau Canal)*

Rideau Canal National Historic Site of Canada and World Heritage Site, Ontario, Canada

by

**Ken W. Watson**

This is an easy paddling canal section of the Rideau Canal that takes you right into downtown Ottawa. The map included in this guide can be enlarged (while viewing the PDF) to any level of detail you desire as an aid for travel planning.



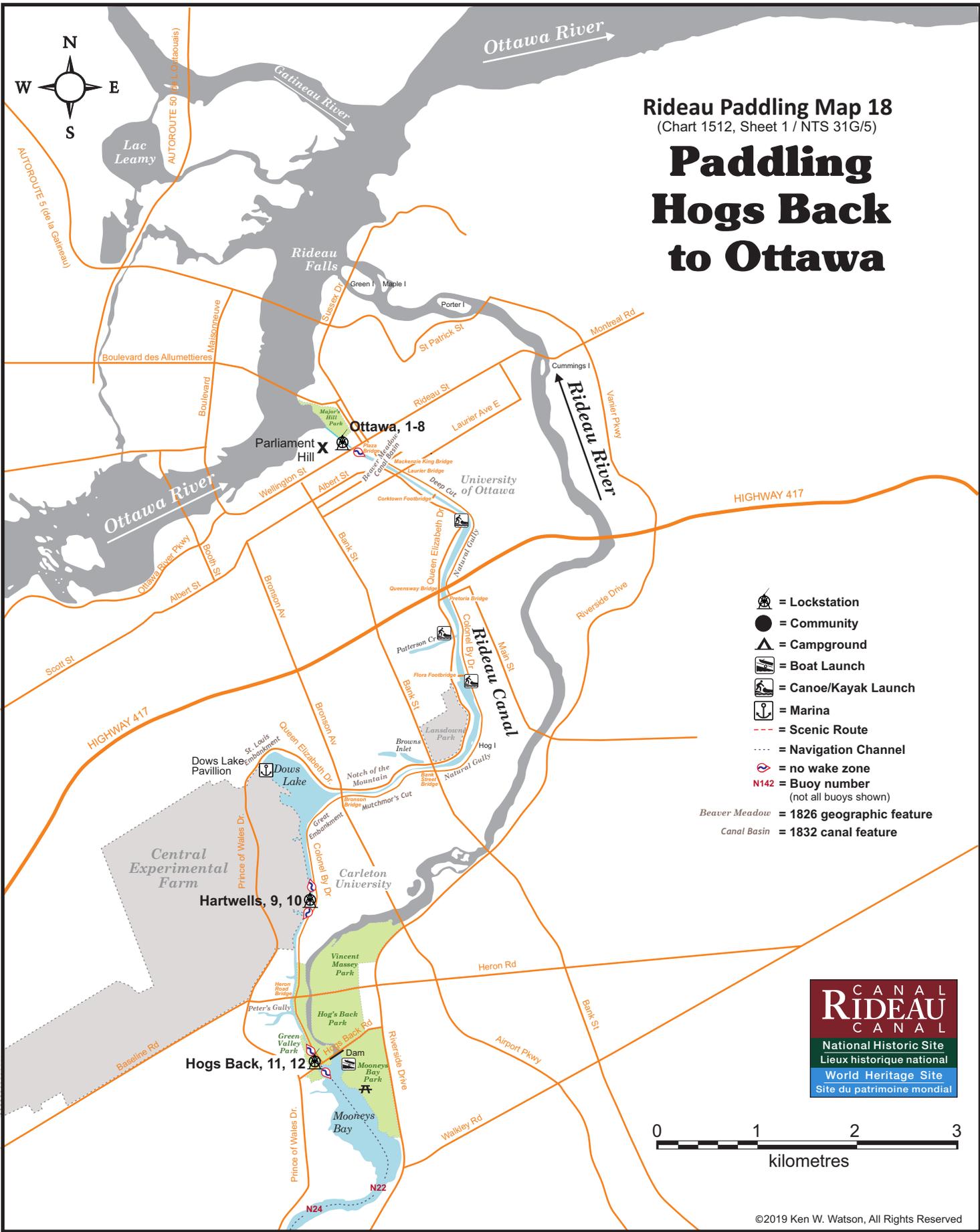
### Water Access

There are several points of water access. At the south end are the locks at **Hogs Back** and at **Hartwells** and the launch ramp in **Mooneys Bay Park** (fees apply). In the middle is the **Dows Lake Pavilion** (45° 23.760'N - 75° 42.360' W) – there are parking and launch fees. There are three paddling access/egress points in the downtown area. One is on the east side of the canal at the **end of Clegg Street** (45° 24.280'N - 75° 40.825' W). The two others are on the west side of the canal, one at the **end of Waverley Street** (45° 25.125'N - 75° 40.860' W) and one on **Patterson Creek** (45° 24.480'N - 75° 40.950' W) – access from the canal is under the small stone arch bridge.

### Facilities

**Lodging:** If you're paddling and camping, the lockstations are a good choice for camp spots (a camping fee applies). Camping is allowed at all lockstations except for Ottawa and Smiths Falls Combined. There are a host of accommodations in Ottawa. For information about local accommodations see: [www.ottawatourism.ca](http://www.ottawatourism.ca) and general lodging sites (i.e. Airbnb, bbcanada, TripAdvisor).

**Supplies:** A local source for supplies is the city of Ottawa (and the many suburbs).



**Rideau Paddling Map 18**  
(Chart 1512, Sheet 1 / NTS 31G/5)

# Paddling Hogs Back to Ottawa

- = Lockstation
- = Community
- = Campground
- = Boat Launch
- = Canoe/Kayak Launch
- = Marina
- = Scenic Route
- = Navigation Channel
- = no wake zone
- = Buoy number (not all buoys shown)
- = 1826 geographic feature
- = 1832 canal feature

**CANAL**  
**RIDEAU**  
**CANAL**

National Historic Site  
Lieux historique national

World Heritage Site  
Site du patrimoine mondial



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## **Big Boats**

You'll be sharing the Rideau with big power boats (cruisers). The Rideau is generally not a crowded waterway and often you'll find the large boats in "packs" - travelling from lock to lock - once they pass by you won't see any for awhile. Some of these boats can generate a large wave. The general rule for a paddler and large waves is to meet them head on, this can actually be fun in a kayak (not as much fun in a canoe).

The main navigation channel is shown on the map as a blue dashed line - this is where the big boats will be travelling. So, if you wish to avoid these, pick a route away from the navigation channel. Many paddlers prefer paddling near shore, it's more interesting (i.e. wildlife, cottages) and it keeps you farther away from the waves produced by big boats.

There are several "no wake" zones on the Rideau - these have been marked on the maps. Boaters within these areas are supposed to be travelling at a slow enough speed (less than 10 kph) that their boat doesn't generate any potentially damaging or dangerous waves. .

## **Wind**

A question often asked is which way does the wind blow? The prevailing wind, powered by the jet stream, is from the southwest. That's about the only rule of thumb. If a front is moving in then the wind can come from any direction. I've been on several paddles where I've been paddling into the wind on the way out in the morning and into the wind on the way back in the afternoon because the wind swung around 180 degrees (for some reason it never seems to work the other way around - at your back both ways). So, if you're going to travel the entire Rideau, going from Kingston to Ottawa improves the odds of having the wind at your back - but be prepared for anything.

## **Etiquette**

Your trip planning should include a "leave no trace" approach - carry out what you carry in. Many areas are un-serviced (no garbage cans) - so plan to be self-contained. The lockstations provide waste disposal facilities.

## **Preparation & Safety**

Please read the trip planning information on [www.rideau-info.com/canal/paddling/](http://www.rideau-info.com/canal/paddling/). While these lakes are easy paddling, normal paddling preparations should be made (all required safety gear, maps, food, water, first-aid kit, etc.). Zebra mussels are present in many areas along the Rideau, so a pair of water shoes (to avoid cut feet) is recommended.

Please take all normal safety precautions, including checking the weather forecast before you head out and making sure that someone on shore knows your planned travel route and itinerary

## **Navigation**

While the Rideau is generally easy to navigate, taking along a set of maps is a must (in addition to any GPS you might have). Although the map in this guide is an accurate 1:50,000 representation of the

## ***Rideau Paddling Guide 18: Hogs Back Locks to the Ottawa Locks by Ken W. Watson***

waterway (when printed to 8.5" x 11"), you may also wish to also have the 1:20,000 hydrographic chart for this section (Chart 1512). For power boat navigation, the charts are an absolute must (the map in this guide should not be used for power boat navigation). The charts are also very handy for the paddler, since they show the Rideau in great detail, including depths (which can be helpful when looking for wildlife habitat or just interesting places to paddle).

The charts also show all the navigation buoys. These are all numbered (red buoys have even numbers, green buoys have odd numbers) and so can be used as an aid in locating yourself on the map when you're on open water. A subset of those buoy numbers have been included on the paddling guide maps.

For those wishing to go off the beaten path or want to know more of the topography and geographic features of the surrounding countryside, the 1:50,000 NTS map for this section is 31G/5.

### **The Locks**

Most Rideau lockstations offer facilities such as washrooms, water, recycling cans, waste cans and picnic tables. Most also allow camping for paddlers travelling the Rideau for a modest camping fee. Paddlers can portage the locks for free, but you owe it to yourself to lock through at least one lock in order to get the full experience of paddling the Rideau Canal. See [www.rideau-info.com/canal/](http://www.rideau-info.com/canal/) for the current fee schedule.

### **Distances:**

The navigation channel is shown on the map.

- Hogs Back Locks to the Ottawa Locks = 8.4 km (5.2 mi)
- Hogs Back to Hartwells Locks = 1.7 km (1.0 mi)
- Hartwells Locks to Ottawa Locks = 6.7 km (4.2 mi))
- Dows Lake (ramp) to the Ottawa Locks = 6.0 km (3.7 mi)

## **GENERAL ROUTE DESCRIPTION**

### **The Rideau Canal (in Ottawa)**

This is a fully managed section of the Rideau not subject to natural water fluctuations. The main issue here for the paddler is that it can get choppy from waves generated by passing boats in the restricted channel sections. These waves bounce off the concrete retaining walls, sometimes creating tricky paddling conditions. So, please pay attention.

A paddler reported that during a heavy rainfall, storm water directed into the Rideau Canal can both produce an appreciable current at the outlet area and also fills the canal with street debris (cigarette butts and the like). If you're caught in a rainstorm, make sure you're not near one of these storm water outlets.

## **Hogs Back to Ottawa**

In the pre-canal era, there was no waterway in this section. It was the area of land between Entrance Valley (adjacent to the Ottawa River) and Hogs Back (Three Rock Rapids on the Rideau River) consisting of meadows, forest and a large swamp (Dow's Great Swamp – a relict flood overflow drain from the Rideau River to the Ottawa River).

Today this 8.4 km (5.2 mi) section of canal is usually referred to as being all artificial (excavated), but that's not true, over forty percent (3.5 km /2.2 mi) of this distance was not excavated, it instead took advantage of natural topographic features, a gully that was flooded by a dam and a swamp that was also flooded by dams. These were both aspects of Colonel By's slackwater technique.

To explain the geography and construction of this section of the Rideau Canal, I'll go backwards from our normal routing (south to north) and start at the Ottawa Locks (so go north to south) since this is how this section was built (Ottawa Locks first). I've marked some of the historic geography on the map so that you can visually see the locations.

The Ottawa locks are in a valley which had a bedrock ridge at the top (in fact bedrock on either side of the valley was quarried to get the stones used for the locks and buildings). A few hundred metres south was the Beaver Meadow – this easy digging area was used as a lay-by (the Canal Basin, a docking area) in the early days of the canal. Today this is the area of Confederation Park, the Mackenzie King Bridge and the Ottawa Convention Centre.

The canal then proceeds along The Deep Cut, a man-made canal cut which took the canal to the Natural Gully. The nice bit of topography provided by the Natural Gully was taken advantage of by erecting an embankment where the Deep Cut intersected the gully, in order to impound water. This is why the canal takes a 90 degree turn at that point, you're now in a natural topographic feature. The canal follows this gully for over 3 km (1.9 mi) to the Notch of the Mountain – a low point in a ridge that cut across the route. A cut (locally known as Mutchmor's Cut due to the proximity of a settler by that name) was excavated through the notch to Dow's Great Swamp.

At Dow's Great Swamp, Colonel By used his slackwater technique to achieve navigation, having one embankment built where the canal passed through (the "Great Embankment" at the southeast end) and a smaller embankment (the "St. Louis Embankment") built to the northwest, at a constriction in the swamp. These two embankments created Dows Lake.

The rest of the canal from Dows Lake to Hogs Back was excavated in gravel and clay (bedrock was never encountered in this area until the canal arrived at Hogs Back).

A little bit of historic trivia is that the exact route you will be travelling, plus the dam at Hogs Back, were in fact Colonel By's second choice for the route of the canal in this section. His original plan was to simply run a canal cut from the Ottawa locks straight to the Notch of the Mountain. From there it would follow the present course but intersect the Rideau River at the foot of Three Rock Rapids (at the foot of Peter's Gully – about 270 metres north (downstream) of the present Hogs Back dam). He then planned to run a canal cut around Three Rock Rapids (Hogs Back), put three detached locks into Gloucester Snie (a flood channel that ran around the east side of Three Island Rapids) – bypassing Three Island Rapids (at the head of today's Mooneys Bay) and returning to the Rideau River in the still water above Three Island Rapids (so a few hundred metres south (upstream) of today's Mooneys Bay). The route we travel today is actually his Plan B – which included a dam at Hogs Back and putting locks into the canal cut (he originally planned to have 3 lift locks at Hogs Back but later moved two of those to Hartwells). By early 1827, this second plan (dam and locks) had been adopted. His first plan would have involved much rock

excavation (very hard to do in those days) and his second plan (creating slackwater with the use of a dam) avoided this.

You'll be paddling through an area of high urban development. For much of this section, the canal is bounded by bicycle/walking paths. You'll be able to get out and stretch at a few places along the route such as at Hartwells Locks, Dows Lake and the Ottawa Locks. There are also a couple of spots along the bicycle/walking paths where water access has been added (normally you'll be faced with a concrete wall and fence). However these are few and far between.

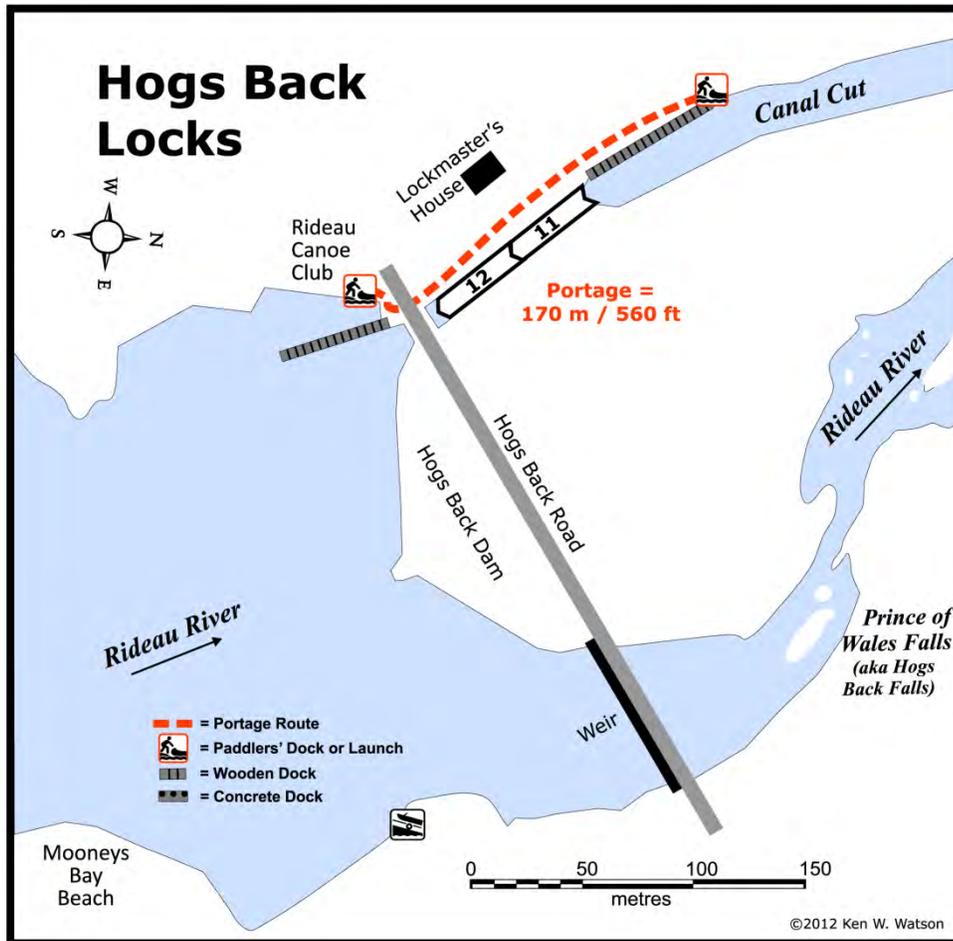
## **POINTS OF INTEREST** (listed south to north – see Map 18 for locations)

**Hogs Back Locks:** This is a set of two locks, a lift lock and a guard lock. The guard lock was built as a flood prevention mechanism and normally only the lift lock (northern lock) is used. It has a lift of 13.8 feet (4.2 m).

This area is the most spectacular example of landscape change brought about by the building of the Rideau Canal. This was the spot chosen to have the canal leave the Rideau River, the location known originally as Three Rock Rapids. These rapids had a drop of 6 feet (1.8 m) over a length of 2,000 feet (600 m). According to John Mactaggart (1829) it is "called the Hog's Back, from the circumstance of raftsmen with their wares [timber] sticking on it in coming down the stream" (the rocks sticking up looked like the bony back of a hog).

Lt. Colonel John By decided to build a large dam here in order to flood the river all the way up to the foot of the lock he planned to build at Black Rapids. This big dam would also put a head of water into the canal cut leading to the Ottawa locks. But he had lots of trouble – the dam fell down (washed away) three times during construction and in the end a new engineering technique had to be employed to create the dam that stands to this day (this story is recounted in *Tales of the Rideau*). The dam raised the water by 41 ft (12.5 m) in this location.

The dam itself is difficult to see, it is the section of land between the locks and the weir. Hogs Back Road runs along the top of it. Although it started off as a stone dam which would have been similar to the large dams seen at places such as Long Island Lockstation and Jones Falls Lockstation, it is the stone dam that fell down three times. In the end, timber cribbing filled with broken stone was used to dam the Rideau River. Earthen material forms the apron (front) of the dam and rubble stone the back. You can see a large amount of that rubble stone backing near the weir.



**Hogs Back Falls:** Take a short walk to view the present day falls (technically the “Prince of Wales Falls” but known locally as the “Hogs Back Falls”), located just downstream from the waste water weir. What you’re seeing is not a natural waterfall, it’s the 12.5 m / 41 ft of dam-raised water going through a man-made (excavated) channel, heading back to the original level of the Rideau River. If you want to get a sense of what the Three Rock Rapids looked like, the lower half of those rapids still exist below the dam and present day falls.

The rapids here were formed by several small faults, tilting and fracturing the rock units. The fault disruption of those rock units can be clearly seen today. The rocks are mostly made up of Ottawa Limestone (a quarry in the limestone on the east side of the river was used to obtain the stones used in the locks). You can also see some darker shaly and sandy rocks, part of the older Rockcliffe Formation.

The original rapids didn’t require a portage – natives, surveyors and voyageurs would line their canoes (pull them) up or down the rapids. It does appear that when civilized folk arrived, a portage was developed to allow them to bypass the rapids. There is a tale told of the Billings family (early settlers) accidentally shooting the rapids (c.1814). The problem with the tale is that it has the Billings going over the falls, which didn’t exist until the dam was built. Nonetheless, if you look at the rapids below the falls, you can imagine the poor Billings family shooting through that in a canoe.

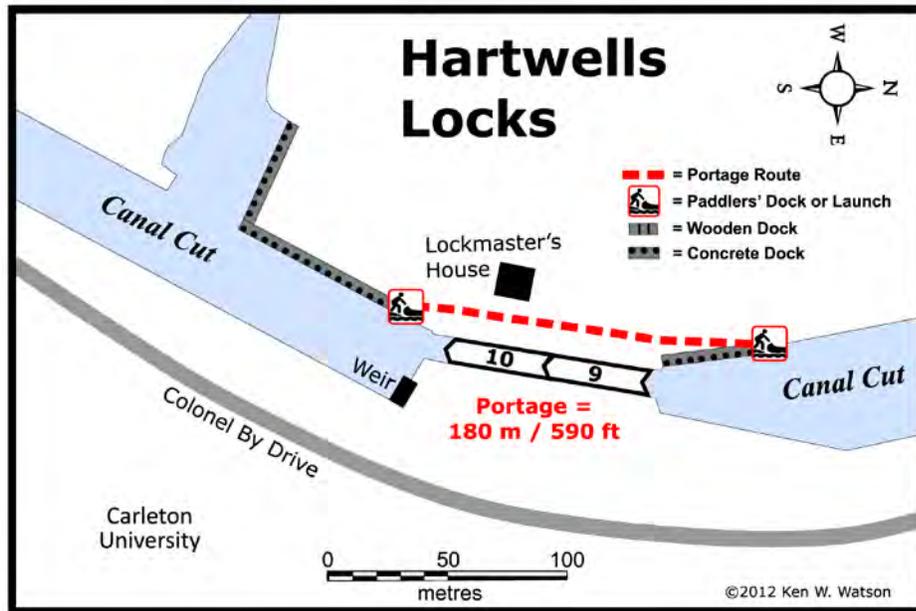
**City of Ottawa:** There are too many points of interest in Ottawa to list in this guide – the Parliament Buildings, Byward Market, Rideau Hall, a host of museums (Bytown Museum, Billings Estate Museum,

Canadian Museum of Nature, Canadian War Museum) and much more. Visit the many websites dedicated to Ottawa to get details on all that Ottawa has to offer.

**Heron Road Bridge:** This is a fixed high level (8.5 m / 27.6 ft) bridge. It was built in 1966.

**Hartwells Locks:** This is set of two locks with a lift of 21.8 feet (6.6 m). No locks were originally planned for this area, three lift locks were planned to be at Hogs Back. But Colonel By moved two of those locks to this lock location in order to take advantage of topography (to lessen the amount of canal cut excavation).

Carleton University sits adjacent to these locks and bicycle paths run on both sides of the canal at this point, so there tends to be a fair bit of pedestrian (and cyclist) traffic.



**Central Experimental Farm:** Founded in 1886 as the central research station for the federal Department of Agriculture, this 400 hectare area is a National Historic Site of Canada. It remains an active research centre and is home to Agriculture and Agri-Food Canada headquarters. The farm is open to the public and features many displays (including the Canada Agriculture Museum) and walking trails.

**Railway Tunnel:** You can't see this, but as you paddle the canal, immediately south of Dows Lake, you'll be paddling over a railway tunnel. This tunnel was built in 1963 to carry both CPR and CNR trains under the canal. A railway swing bridge was originally built in this location by the St. Lawrence and Ottawa Railway Company in 1871. CPR replaced that bridge with another swing bridge in 1916. That bridge was removed in 1968.

**Dows Lake:** A manmade lake created by building embankments in Dow's Great Swamp (see below), it has a maximum depth of 19 ft / 5.8 m. It is home to the Dows Lake Pavilion (restaurant and marina). If you have a copy of the hydrographic chart, you can see the trace of the old Dow's Lake Causeway, now under water, running diagonally across the lake. It was built in 1900-1904 to carry a road (the Driveway) across Dow's Lake. It was removed sometime prior to 1929.

**Embankments:** Not really visible today, but the lake was formed by the construction of two embankments, the Great Embankment at the south end (built by Philemon Wright and Sons) and the St. Louis Embankment (named after the contractor who built it, Jean-Baptiste St. Louis). The original plan was to carry the canal through the swamp using an aqueduct created by embanking. However, detailed surveys revealed that the second embankment could be made smaller (less costly) if it was moved north, to a constriction in the swamp (the "Ridge of the Swamp") – this is the St. Louis Embankment. Together they flooded the area, creating Dows Lake. As one of the Royal Engineers, Lt. Frome, succinctly put it: *"Dow's Great Swamp, which, by means of two massive earthen embankments, is converted into a pool 20 feet deep."*

**Bronson Bridge:** This is a fixed high level (6.7 m / 22.0 ft) bridge. It carries Bronson Avenue over the Rideau Canal. The current bridge dates to 1960. The first bridge in this location was a swing bridge, built in 1904 and upgraded in 1938.

**Notch of the Mountain/Mutchmor's Cut:** A low ridge crossed the intended path of the canal. The Notch of the Mountain represents a low point in this ridge and the excavation through the notch is known as Mutchmor's Cut, named after an early settler in the area.

**Bank St. Bridge:** This is a fixed high level (8.8 m / 28.5 ft) bridge. The present bridge was built in 1913-14. The first bridge in this location was a timber swing bridge, built in 1866. That was replaced by a similar bridge in 1882 and then by a steel through truss swing bridge in 1898. One reason for the present day bridge was the need to carry trolley cars in addition to vehicle traffic. When first built, the high level bridge had two lines of trolley car tracks.

**Lansdowne Park:** A landmark for many years, the use of this area as an exhibition ground dates to about 1875 when an agricultural and arts exhibition was held on the site. Its use became more formalized when the City of Ottawa acquired it in 1898. The historic exhibition hall, the Aberdeen Pavilion, was built in 1898. The stadium (former Frank Clair Stadium – now TD Place) got its start as a grandstand in 1909 with additions made in the 1960s. The entire site, including the stadium, was re-developed between 2008 and 2015.

**Natural Gully:** In the area of Lansdowne Park, the canal enters the Natural Gully, a pre-canal gully that contained a creek that flowed to the Rideau River. This is why the canal follows a bit of a meandering course and is wider than the man-made canal cuts. Most of the work to make this area navigable was to clear the gully of vegetation. The gully originally continued northeast to the Rideau River, the location where it left the present day canal is the sharp northwest turn of the canal (into the Deep Cut) to the Ottawa Locks. An embankment (4.6 m / 15 ft. high by 96 m / 315 ft long) was erected at this spot to block the gully and provide a navigation depth of water all the way to Hartwells. In an 1831 progress report, Colonel By wrote: *From the Beaver Meadow to the Natural Gully a distance of 1053 yards, the Excavation was through clay and from its great depth is termed the Deep Cut; at the North Entrance of Natural Gully, a Mound of Earth or Dam of 15 feet in height and 315 feet in length was to be constructed to prevent the water escaping down a Ravine; the Gully in question is 3300 yards in length, an average breadth 83 yards, from its south [north] entrance to the Notch of the Mountain."*

**Hog Island (aka Pig Island):** This little island represents a section of high land in the Natural Gully that stayed above water when the gully was flooded. The story (not verified) of the name is that hogs were stranded on this island during the building of the canal. This could have occurred if hogs had been left to forage in the gully and then sought high ground when the gully was flooded (likely in early 1831).

**Patterson Creek:** This creek flows into the canal from the west. It is named for George Patterson, an early settler in the region. Originally a small creek that flowed into the Natural Gully, it expanded into an

inlet when the Natural Gully was flooded for the Rideau Canal. Urban development has obscured its original form. Today you'll find a paddling dock and restrooms just past the Queen Elizabeth Drive bridge over the creek (access from the canal is to paddle under this small stone/concrete arch bridge).

**Pretoria Bridge:** This bridge, with its distinctive stone faced towers, is a vertical lift bridge (3 m / 10 ft when closed, 7 m / 22.7 ft when raised). It is a Strauss direct lift bridge, built in 1915-17, the only one of its kind in Canada. It was reconstructed in the late 1970s. It replaced an earlier bridge (a steel truss swing bridge), built in 1889-90, located about 180 m / 600 ft to the north of the present bridge.

**Queensway Bridge:** This is a fixed high level (7.1 m / 23 ft) bridge that carries Highway 417 over the Rideau Canal. It was built in about 1966.

**Deep Cut:** This is the excavated canal cut from the Ottawa Locks to the Natural Gully. In an 1831 progress report Colonel By stated: "*From the Beaver Meadow to the Natural Gully a distance of 1053 yards, the Excavation was through clay and from its great depth is termed the Deep Cut ...*"

**Corktown Footbridge:** This is a fixed high level (8.2 m / 26.6 ft) footbridge. It was built in 2006.

**Laurier Bridge:** This is a fixed high level (8.2 m / 26.6 ft) bridge. The first bridge on the site of the present Laurier Avenue bridge was a high level timber truss bridge built in 1872. That bridge was completely reconstructed in 1891. The present day bridge had its start in 1900-01 with the construction of a steel girder span bridge supported on steel trestle bents. The bridge has seen many modifications over the years, including reconstruction and widening in 2001. Today, the most obvious feature left from the original 1900 bridge is the riveted arch span over the Rideau Canal.

**Mackenzie King Bridge:** This is a fixed high level (8.2 m / 26.6 ft) bridge. It was built in 1951 and reconstructed in 1996-1998.

**Beaver Meadow/Canal Basin:** This was a meadow in the pre-canal era that lay above the bedrock ridge of the ravine (Entrance Valley) that now hosts the locks. It was an easy digging area and when the canal was first built, a lay-by (the Canal Basin, a docking area) was created here. It included a small wooden lock at the outlet into Lowertown. Starting in the 1870s, the east side of the basin was filled in to make a foundation for railway tracks. In the 1920s, the west end was being filled in and by 1927, the basin was gone. Today the area of the former basin is marked by Confederation Park, the Mackenzie King Bridge and the Ottawa Convention Centre.

In the pre-canal era a stream ran around the base of today's Parliament Hill, through this spot and on to the Rideau River. Beavers dammed that stream creating a pond and meadow in this area. Thomas Burrowes, writing in 1826 about the proposal to use this area for a canal basin stated: "*The Swamp, generally called the Beaver Meadow, at the head of the Entrance Valley, afforded much facility for forming the proposed works, and was selected as a proper site for a Basin, or Reservoir, at the head of the projected Eight Locks*"

**Plaza Bridge:** This high fixed high level (7.9 m / 25.6 ft) bridge was built in 1912. It replaced two previous bridges, the Sappers Bridge, built in 1828 (by the Royal Sappers and Miners) and the Dufferin Bridge, built in 1872. The Sappers Bridge was a magnificent stone structure consisting of a single arch span. The Dufferin bridge, built adjacent to the Sappers Bridge on the downstream (locks) side had three arched spans made of wrought iron and stone. Both these bridges were demolished to create the single Plaza Bridge. The Plaza Bridge was widened in about 1938.

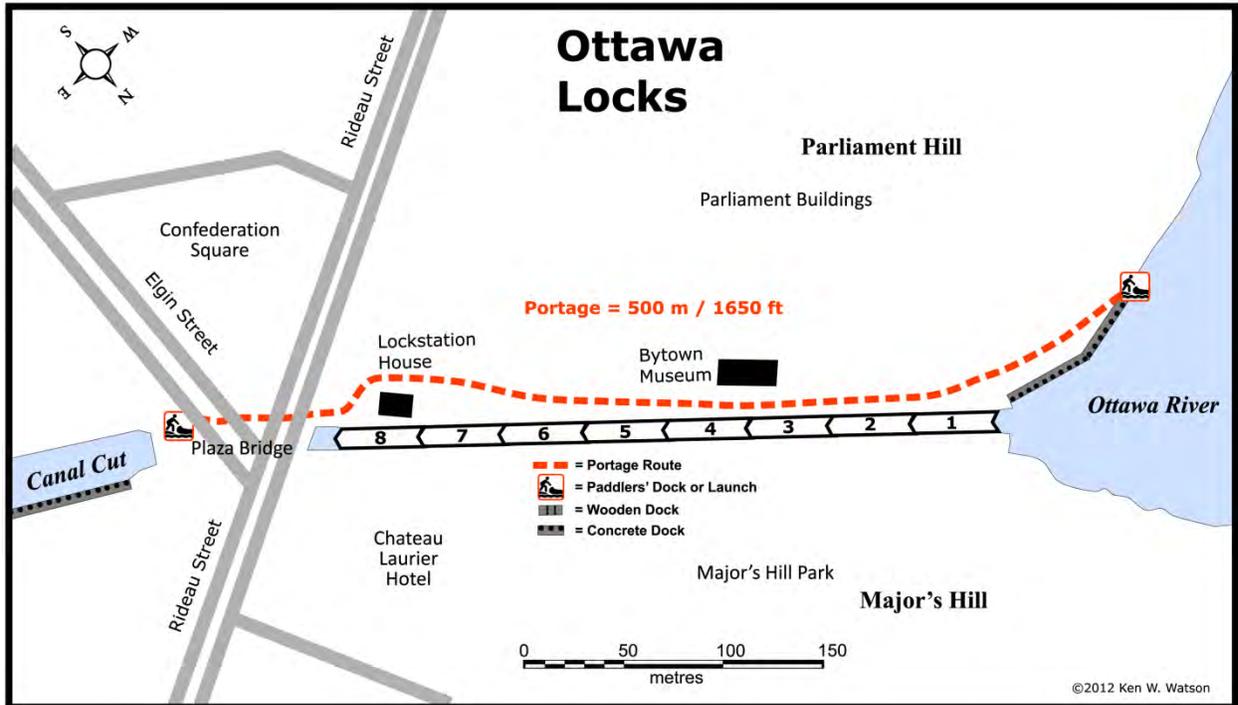
**Chateau Laurier Hotel:** this impressive looking building, commissioned by the Grand Trunk Railway, opened in 1912. The French Gothic Revival Château style of the building was designed to

complement the adjacent Parliament buildings. In 1923, it became a Canadian National Railway hotel after they took over the Grand Trunk Railroad. It was designated a National Historic Site of Canada in 1981. In 1988 it became a Canadian Pacific Railway hotel after they bought out CN's hotels. In 1999 it became known as the Fairmont Château Laurier, after CP Hotels bought out Fairmont and changed their name to Fairmont Hotels and Resorts. In 2013 ownership changed to Capital Hotel Limited Partnership. In 2016 a proposed, heritage inappropriate addition, created controversy, its later iterations becoming known as the "boxcar" expansion (for the look of the design). It would/will have a highly negative impact of the visual character of the Ottawa Lockstations, something that is very troubling to those who care about Canadian heritage as well as UNESCO. That "battle" is on-going (stopped in September 2019, but presumably the parent company, Larko Investments, will try again – hopefully with a design that is more heritage appropriate).

**Major's Hill Park:** Overlooking the Ottawa locks to the east is this park. It is the former location of the house that Lt. Colonel John By, Superintending Engineer for the Rideau Canal and his family lived in during the construction of the canal. The house burned down in October 1848, today you can see the excavated foundations and interpretive panels. You'll also find a magnificent statue of Colonel By, created by Joseph-Émile Brunet, overlooking the locks. This hill, originally known as Colonel's Hill, became known as Major's Hill after the Major Daniel Bolton. He (as Captain Bolton, promoted Major in 1838) took over as Superintending Engineer of the Rideau Canal after Lt. Colonel By returned to England in 1832. He lived on the hill in the same house that Colonel By used during the building of the canal. This area was formally established as a park in 1875.

**Parliament Hill:** Originally known as Barrack Hill, this was the location Lt. Colonel By chose to house the men and officers of the two companies of Sappers and Miners during the building of the Rideau Canal. With the decision in 1857 to make Ottawa Canada's capital, this dominant landscape was chosen as the site for the new Canadian parliament. The original Parliament Buildings were constructed between 1859 and 1866. The Centre Block burned down in 1916 and was rebuilt. The various buildings that make up Parliament were designated as a National Historic Site of Canada in 1987. Major renovations to the buildings were started in 2007 and are on-going.

**Ottawa Locks:** The end (or beginning) of your journey on the Rideau is the magnificent flight of 8 locks which connects the Rideau Canal with the Ottawa River. These locks have a combined lift of 76.2 feet (23.2 m) – this of course varies somewhat with the water level fluctuations of the Ottawa River. The locks are flanked by Canada's Parliament Buildings to the west and the Chateau Laurier Hotel to the east. At the locks you'll find the lockstation house (with washrooms) which was built here in 1884 (the original lockmaster's house was located where the Chateau Laurier is today). Halfway down the locks you'll find the oldest surviving building in Ottawa, the Bytown Museum, the former Commissariat (supplies and services) building (see separate write-up below). Across the locks from this building you'll see the foundations for the Royal Engineers building which was of similar design to the Commissariat building (a rail line, built in 1901, actually went through part of this building and train vibrations shook the building to pieces – the remains were torn down in 1911-12).



If you want a good photo of the locks, take a hike up the path on the east side from Lock 1 (lowest lock) towards the Alexandra Bridge (the big bridge crossing the Ottawa River). As you come onto the bridge, you'll find a couple of viewing platforms – these provide a view back to get some photos of both the Parliament Buildings and the locks.

**Bytown Museum:** Be sure to visit the Bytown Museum, located on the west side of the Ottawa Locks. It is in the oldest surviving building in Ottawa, the Commissariat (built in 1826), and now houses a museum that showcases the Rideau Canal. It is open to the public during the summer, for information see [www.bytownmuseum.com](http://www.bytownmuseum.com)

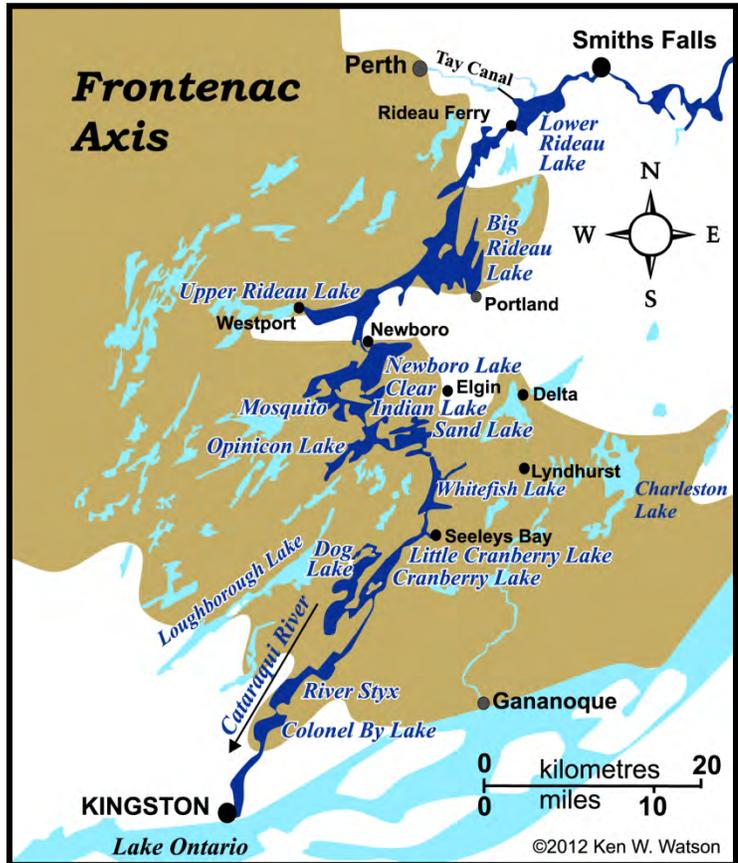
## ROUTE SUGGESTIONS

none

## Geology of the Rideau Canal

As you paddle the Rideau Canal, the route you follow is defined by its geology. The area is underlain by part of an old mountain range, the Grenville Mountains, eroded down over many millions of years. Much of this eroded mountain range has been covered by younger sedimentary rocks, but portions of the old mountains are exposed, partly a result of their original topography and partially due to the eroding away of younger overlying rocks. This area is known as the Frontenac Axis. In essence, if you paddle from Kingston to Smiths Falls, you'll be paddling over a (very old) mountain range.

The Frontenac Axis can be thought of as a ridge connecting the extensive area of the Canadian Shield to the north and the Adirondack mountains to the south. On the Rideau, the southern irregular boundary of the Frontenac Axis is near Kingston Mills and the northern irregular boundary is on the northern reaches of Big Rideau Lake. The Frontenac Axis is made up of rocks formed 1.35 to 1.06 billion years ago (Precambrian: middle to late Proterozoic age) and then deformed and metamorphosed 900 million years ago. The rock types that you'll be able to see as you travel through the Frontenac Axis include granite, syenite, monzonite, migmatite, gabbro, quartzite, marble, gneiss and pegmatite. Many of the lakes are underlain by marble (crystalline limestone) which provides some buffering against acid rain.



To the north and south of the Frontenac Axis are younger, 520 to 460 million year old (Paleozoic: Cambrian to Lower Ordovician age) rocks including limestone, sandstone, dolomite, shale and conglomerate. Most of these rocks were laid down in a shallow sea that covered this area, which was near the equator at that time (part of Laurentia which eventually became part of North America due to continental drift). The rocks near Kingston are dominated by limestone which provided much of the building material for the early town (hence the nickname, Limestone City). In the centre part of the Rideau, on the margin of the Frontenac Axis, the younger sedimentary rocks tend to be dominated by sandstone. Beyond that, from Smiths Falls to Ottawa the rocks are mostly dolomite, limestone and shale.

More recently, three events have impacted on the landscape - the ice last age, glacial Lake Iroquois and the Champlain Sea. During the last ice age, which peaked about 20,000 years ago, the Rideau area was covered by ice up to 1.5 kilometres (1.0 mi) thick. The ice polished and moved rocks, excavated some of the landscape and left large deposits of sand and gravel. The weight of the ice depressed the landscape by about 175 m (575 ft) below where it is today.

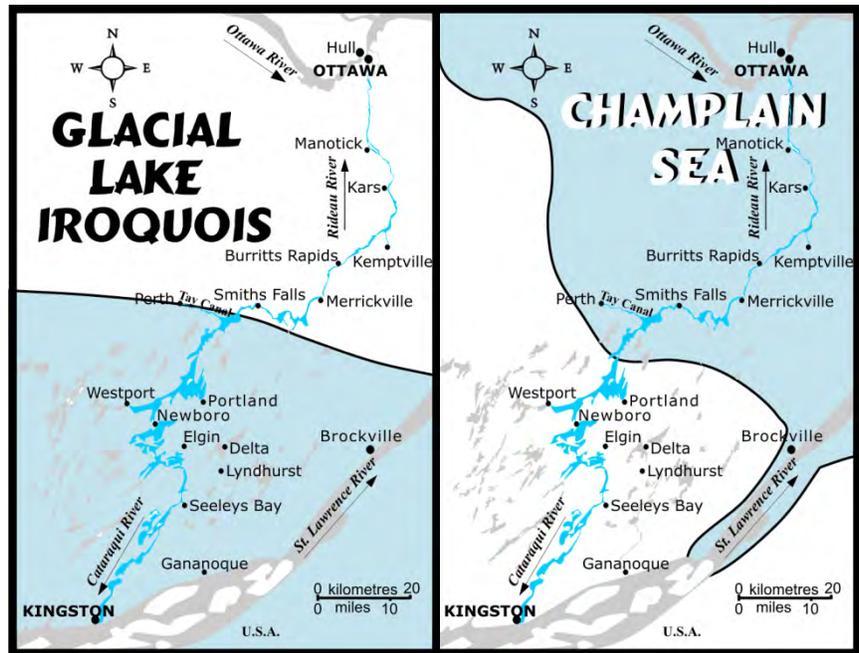
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By 14,000 years ago, the climate began to warm up, melting the glaciers and forcing them to retreat. In the area of Lake Ontario, today's exit of the lake down the St. Lawrence River was blocked by ice and a large lake, about 30 m (100 ft) higher than today's Lake Ontario, formed. That lake, known as Lake Iroquois, extended as far north as Perth and Smiths Falls.

Evidence of that lake exist today in form of glaciolacustrine (a big word for glacial lake) deposits. These include near shore sediments such as gravel and gravelly sand, and deeper water deposits such as silt and clay. These deposits are found all over the southern Rideau, including on heights of land, such as near the top of Rock Dunder. This is because the overall landscape was depressed, and features such as Rock Dunder formed part of the bottom of this large lake.

By about 13,350 years ago a channel opened up in the ice dam (near Rome, NY), rapidly draining much of the lake. At the same time the land was rising as the weight of the ice was removed (this rising is called "isostatic rebound").

As Lake Iroquois and subsequent glacial lakes were getting smaller, the glaciers were continuing their retreat from the St. Lawrence lowlands. About 13,000 years ago this allowed waters from the Atlantic Ocean to mix with glacial melt-waters and river drainage to create a brackish sea known as the Champlain Sea which extended past (west and south) of Ottawa.



**Very generalized representations of glacial Lake Iroquois and the Champlain Sea in the Rideau region.**

The southern limit of this sea on the Rideau Canal was near Nobles Bay of Big Rideau Lake. If you were paddling the sea back then, you would have been enjoying it in the company of whales. The bones of a humpback whale were found near Smiths Falls and beluga (white) whale bones have also been found in Champlain Sea deposits. This sea retreated as the glaciers moved north and the land continued to undergo isostatic rebound. By about 11,100 years ago, the central Rideau had risen above sea level and the land that we see today was being revealed. Rivers and streams continued to modify the landscape up until the building of the Rideau Canal.

There are a some interesting geological features in the Ottawa area. The northern part of the Rideau River is the youngest part of the waterway (outside of canal altered sections) since, in the immediate post-glacial period, the Ottawa River had a channel to the south of where it is today, across much of urban Ottawa to the Mer Bleue area (where the trace of the old Ottawa River channel can be clearly seen). It eventually shifted north (due to isostatic rebound) to its present location and cut a deep channel. The faster excavation by the Ottawa River, through the underlying limestone rocks, compared to the Rideau River, formed Rideau Falls.

Another geological feature at Ottawa is that much of the area is underlain by a thick clay layer, a type of “quick clay” known locally as Leda clay (named after a type of small clam found in the clay deposits). Quick clay is a clay that is not well bonded and is subject to liquefaction, that is, when vibration is induced, it can turn into a liquid and flow. When undisturbed, it looks and acts like a normal solid form of clay. It was formed by glacial silt settling out on the bottom of the Champlain Sea. There it formed a stable type of marine clay, “glued” with salt. When the sea retreated due to the rising land, this clay was exposed to rainfall that removed much of that salt bonding, creating the unstable clay that is present in much of the region today. Earthquakes can cause this clay to liquefy, leading to landslides. Ottawa is a seismically active region (earthquake prone) and, in the future, an earthquake is going to play havoc with the city (if I lived in Ottawa, I’d check to see if my house is sitting on bedrock or on clay).

## **Mining in the Rideau Region**

The rocks of the Frontenac Axis are host to some small mineral deposits, several of which were mined in the mid-late 1800s and in the early 1900s. In the Rideau Canal region, minerals such as apatite (for phosphate), mica, feldspar, graphite and iron were mined. A few of these old mining areas have been noted in the guides.

Some of the earliest mining in the region was for rocks to be used for the dams and locks of the Rideau Canal. Rocks of the Frontenac Axis were not suitable for this purpose (too hard and often fractured) and so quarries to mine rocks for the canal were established in the younger sedimentary rocks, mining sandstone or limestone. You can see the local sedimentary geology reflected in the type of rocks used for the building of the locks and dams along the Rideau; limestone in the southern area, sandstone (Potsdam sandstone) in the central Rideau and dolomitic limestone and limestone in the northern part.

The first mine on/near the Rideau Canal (excluding the small scale iron mining near Lower Beverley Lake in the early 1800s) was the iron mine on Iron Island near Newboro opened by the Chaffey brothers, John, Benjamin and Elswood, in about 1850. Phosphate mining (for fertilizer, most was shipped to England) started in the Rideau area in about 1867 and continued to the early 1890s. By the late 1880s, mica mining was also underway. Apatite (phosphate) and mica form in the same geological environment, so several mines which started off mining phosphate were later mined for mica. Mica mining ended in the 1920s as the value of the mineral fell to uneconomic levels.

Today, mining in the region is mostly surface quarrying for sand, gravel, and stone.

## **Wildlife of the Rideau Canal**

The Rideau spans a wide variety of ecosystems, due in part to the underlying geology and man’s activity in the last 200 years. The Frontenac Axis, a section of the Canadian Shield (Precambrian rocks - very old) underlies the Rideau from Kingston Mills to Lower Rideau Lake. These hard rocks form rugged topography (hills, ravines), including the basins for the lakes on the system. Most of the lakes are underlain by crystalline limestone which acts as a buffer against acid rain (hence the lakes are very productive for fish and other aquatic life). Outside of the Frontenac Axis, younger (Palaeozoic) flat lying sedimentary rocks form the underlying bedrock (it is from these rocks that the stones for the dams and locks were quarried).

The area has been actively logged since before the canal was built, the entire area cut over several times. Most of the region (including many of the islands in the lakes) was farmed or used for cattle pasture at

one time. By the early 20th century, small farms on poor Frontenac Axis lands were being abandoned in favour of better (more productive) pastures.

So today, along the Rideau you'll find forested areas (some now 100 years mature), active farmland, scrubland and abandoned farmland, low density cottage/summer home developed (rural) land and urban land. The forests are generally mixed, deciduous trees (oak, maple, ash, basswood, birch, elm) and conifer trees (most commonly white pine, white spruce and cedar). On flat lying topography you'll find cedar swamps, hardwood (black ash & silver maple) swamps, and bogs. Along the margins of the Rideau Canal you'll find cattail marshes. All these areas support a varied and healthy wildlife population.

The following is a list of the most common wildlife that you might spot on your Rideau journey. Note that photos of many of these birds and animals can be found on my Rideau website at:

[www.rideau-info.com/canal/ecology/fauna.html](http://www.rideau-info.com/canal/ecology/fauna.html)

## **Water Birds**

**Common Loon** - on all the lakes, this bird is distinctive for its haunting call. It's a diving bird, swimming underwater to catch fish

**Great Blue Heron** - along the entire Rideau, a large bird usually seen wading near shore.

**Green Heron** - most commonly in the shallow water sections (Colonel By Lake, River Styx, Rideau River) this is a small heron. Usually seen perched in a tree.

**Canada Goose**- yes, we have these (more each year)

**Ducks** - most commonly the Mallard duck (quacks when flushed), Common Merganser duck (a pointed red bill) and Wood duck (squeaks when flushed).

**Pied-billed Grebe** - In some areas you'll also spot the reclusive Pied-billed Grebe (a small diving bird).

**Ospreys** - now common along the Rideau - often spotted in their large nest made of sticks perched high in a pine tree or a power line stanchion. It dives to catch fish (quite spectacular to see)

**Ring-billed Gull** - a gull with mark on bill

**Terns** - the Common Tern, a large white tern with dark bill and the Black Tern, small tern with black body (adult)

**Trumpeter Swans** - An extirpated native species in this region, they were re-introduced in the 1990s. Favourite haunts include Opinicon Lake and Big Rideau Lake (near Narrows and Portland).

## **Other Birds**

There are many other types of birds that you might spot in the near-water environment; red-tailed hawks, red-winged blackbirds, turkey vultures, turkeys, ruffed grouse and many more (bring along your bird book).

## Reptiles and Amphibians

**Turtles:** we've got lots of turtles - most common are the Common Map Turtle (a peaked shell and yellow-orange lines on the skin and shell); Midland Painted Turtle (a flat smooth shell with bright red splotches along the edge) and the Common Snapping Turtle (can get very large, a prehistoric looking turtle). You'll often find Map and Painted turtles sunning themselves on logs and rocks. The Snapping turtle almost always stays in the water, you'll find it floating or slowly swimming near marshy areas. There are also three other less commonly seen turtles, the Stinkpot Turtle (aka Musk Turtle) a small turtle found in areas with aquatic plant growth; Blanding's Turtle with a "war helmet" type shell and bright yellow chin and throat, usually found in wetlands and the Spotted Turtle, a small turtle with bright yellow spots on its shell, usually found in areas with aquatic plants and a silt bottom.

**Frogs:** we have lots of frogs that will provide you with a nightly serenade. The two biggest are the bullfrog and the green frog. Also the leopard frog, spring peeper and many others.

**Snakes:** we do not have any poisonous snakes. The two largest snakes are the Northern Water Snake and the Black Rat Snake - both generally found near water. The common garter snake can also be found throughout the region.

## Mammals

In the near shore environment you'll likely spot muskrats and beavers. You may even spot the somewhat reclusive river otter (found in the lakes here as well as rivers). And there are the usual Eastern Ontario mammals to be sometimes found near the water: raccoons, black, grey and red squirrels, chipmunks, foxes, coyotes, white-tailed deer and skunks. Black bears, although quite rare in the region, are present.

## Fish

The Rideau is home to healthy populations of many fish species. The lakes and most of the rivers are home to species such as Large Mouth Bass, Small Mouth Bass, Northern Pike and Crappie. Lake Trout are present in some lakes that have depths in excess of 80 ft / 24 m (i.e. Big Rideau Lake). There are Walleye in some areas (i.e. Upper Rideau Lake and the Rideau River) and Muskellunge (Musky/Maskinonge) in some sections of the Rideau River.

## Aquatic Plants:

The Rideau hosts quite a variety of aquatic plants.

**Submerged Plants:** Waterweed (like aquarium plants); Pondweed; Smartweed (holds flower above surface of water); Tape-grass (like underwater grass, flower on coiled stem); Coontail (like a thick furry coon's tail); Water-milfoil (one species an invasive plant).

**Aquatic Plants ( floating):** White Water-lily (white fragrant flower); Bullhead Water-lily (round yellow flower); Frogbit (invasive alien, small floating leaf like water lily); Duckweed (food for ducks, tiny plant)

**Aquatic Plants (emergent):** Cattail (big brown seed heads); Pickerelweed (blue flowers on stalk); Flowering Rush (invasive alien); Arrowhead (arrowhead-pointed leaves, white flowers); Purple Loosestrife (invasive alien, now controlled by beetles in some areas).

Oh - and those amorphous green blobs floating under the water in near-shore areas. There are benign (not due to pollution), they are a type of filamentous green algae. Their abundance is due to zebra

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mussels which don't eat this type of algae, but do eat their competition (single-celled algae) - and so, by removing the competition, have allowed these blobs to expand in numbers and length of season.

*My thanks to Simon Lunn and the Rideau Roundtable ([www.ridearoundtable.ca](http://www.ridearoundtable.ca)) for assistance with the wildlife and aquatic plants information.*

Those interested in some tips for taking good photos of wildlife should view "The Nature of Wildlife Photography" on my website at: [www.rideau-info.com/canal/ecology/nature-photography.html](http://www.rideau-info.com/canal/ecology/nature-photography.html)

One photography hint, a very simple one, is to choose a paddling route that puts the sun to your back for most of the day. Try to choose a route that has you on a west shore in the morning, a north shore at mid-day and an east shore in the afternoon. For those doing the entire Rideau, this means going from Kingston to Ottawa rather than the other way around. This will put the wildlife that you see on your paddle in the best light.

### ***Errors***

If you find any errors or omissions in this guide, please let me know ([rideauken@gmail.com](mailto:rideauken@gmail.com)) and I'll get them fixed.

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