FRONTENAC NEWS

THE OFFICIAL NEWSLETTER OF THE FRIENDS OF FRONTENAC PARK

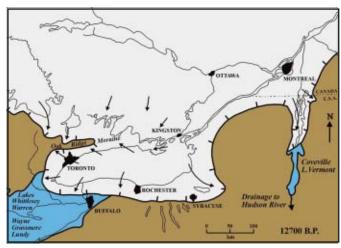
The Frontenac Arch

from the Ice Ages to now and beyond....

by Herb Helmstaedt

f you think the ice on Lake Ontario went out late this and last spring, just imagine if you would have been in the Kingston area about 12,700 years ago (see Fig. 1). Unbelievable though it may seem, you would have been standing on top of an up to 1000 m thick ice sheet that filled the entire Lake Ontario basin and spilled over its margins to the south, east and west. This ice was part of the last Laurentide continental ice sheet of the Pleistocene ice age (Wisconsinan glaciation) that at its maximum extent, some 20,000 years ago, had reached as far south as New York City, where it left glacially polished and striated rock surfaces in Central Park. Although the ice margin was "retreating" northward, it took several 100 years more before the Kingston area was completely free of ice. What is continental glaciation, and what evidence for it can we see in and around Frontenac Park?

The concept of continental glaciations goes back to the early 1800s in Europe, where Swiss and Norwegian geologists recognized from the distribution of glacial moraines, "erratic boulders" and striated rock surfaces (Figs. 2 and 3 on page 5) that modern glaciers of the Swiss Alps and Norway must have once been much thicker and extended farther down their valleys than today. The Swiss geologist Louis Agassiz, one of the main proponents of continental glaciation, had travelled to Scotland to test the new hypothesis by examining the geomorphology of a country where glaciers no longer existed. In 1840, he concluded that "if the analogy of the facts observed in Scotland, Ireland, and the north of England, with those in Switzerland, be correct, then it must be admitted that not only glaciers once existed in the British Islands, but that large sheets of ice covered all the surface". In 1846, Agassiz came to the United States where he accepted the Chair of Natural History at Harvard University in 1848. When he pointed out evidence for former glacial action in New England, he caused a great controversy, because North American scientists still believed that erratic boulders were transported by the biblical flood or by drifting icebergs. However, Agassiz's arguments were very persuasive and new research stimulated by the controversy uncovered additional evidence in favor of his hypothesis. By the



Number 70

1. Extent of last ice sheet of the Wisconsinan glaciation at about 12,700 years before Present. Arrows indicate directions of ice flow. Map after W.A. Gorman, Queen's University.

time of his death, in 1873, the concept that much of northern Europe and North America had once been covered by vast ice sheets was not only widely accepted, but geologists began to recognize evidence for distinguishing several glaciations (glacials), each separated by warmer interglacial periods. Modern records of climate fluctuations for the Pleistocene (encompassing slightly more than the past 2 million years) from deep

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President's Message

The biggest news this spring is the changing of the guard at the Park with Peter Dawson retiring as Superintendent and being replaced by Ben Chabot. Most of us have absorbed the shock by now that was caused by Peter's announcement of his impending retirement in March of this year. I would like to take this opportunity to thank him for his great leadership during the eight years he spent at Frontenac. The Friends greatly enjoyed working with him and appreciated his forward-looking positive attitude and his enormous efforts on behalf of the Park. We will miss him greatly, but the good news (as he put it himself) is that his successor will be Ben who is no stranger to us, as he was acting Superintendent before Peter came. Ben will take up his new duties at the end of March. The photo accompanying my report was taken on March 4th during a lunch arranged

by Bert in honor of Peter at the Park Office. Seeing Bert between Ben and Peter bodes well for a smooth transition, as Bert provides continuity and will be able to impart much of his vast knowledge of the Park to Ben.

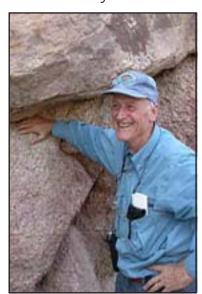
The Friends' AGM was held on February 25th at the Ongwanada Center. All but one member of the Board of Directors stood for re-election. We will miss Martha Whitehead who resigned because of increasing time pressure from her work, but we welcome Carolyn Bonta who will bring much needed naturalist expertise to the new Board.

We had a passionate winter lecture from Chris Barber, co-author of the book "Their Enduring Spirit", telling us about his research for the book and how it got him involved in the personal lives of the many families that

had settled in what is now the Park. Chris has agreed to transfer the rights for his book to the Friends who will be able to use parts of his book for reproduction in trail guides and other publications.

With best wishes for the 2015 hiking and paddling season,

Herb Helmstaedt





Peter Dawson and Ben Chabot with Bert Korporaal at the farewell lunch for Peter

Friends of Frontenac Park

The Friends of Frontenac Park is a non-profit organization whose purpose is to develop programs and materials that enhance the public's awareness, education and appreciation of the natural environment and human history of Frontenac Provincial Park.

2015-2016 Board of Directors

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The views expressed in the Frontenac News are not necessarily those of the Friends of Frontenac Park or the editor. Some articles are published to give the viewpoint of an author and to incite discussions.

We welcome your articles, notes, stories and photographs for the newsletter. Your ideas, suggestions, and constructive criticisms are always encouraged. Material accepted is subject to editing and revision.

2015 deadlines for submission of newsletter material are March 16, August 3 and December 7

Copy should be mailed to: Friends of Frontenac Park, c/o Newsletter Editor, P.O. Box 2237, Kingston ON K7L 5J9 or sent by e-mail to: frontenacpark@gmail.com.

Visit us online at www.frontenacpark.ca. Follow us on Facebook / frontenacparkfriends and Twitter@frontenacpark

OUTSIDE

New programs and events may be added to the Official Schedule – please check the website at www.frontenacpark.ca for the most up to date information and details on specific programs. To register for any of the programs below, please telephone 613-376-3489. Programs presented by the Friends of Frontenac Park are identified with the Friends logo .

Date	Program	Start	Finish
April 18	Spring Trail Sweep	08:30	16:00
April 22	Friends Board Meeting - Ongwanada Resource Centre, room 427	19:00	21:00
April 25	Historical Walk along the Salmon Lake Road	10:30	16:00
April 26	Spring Work Day	09:00	16:00
May 09	♠ Introduction to Backcountry Camping	09:00	16:00
May 10	Spring Bird Walk with Kathy Felkar and Mike Burge	08:00	16:00
May 17	Nature Walk with Maureen Sly	10:30	15:00
May 23 - 24	ORCKA Basic Canoe Certification Level 1, 2, 3 and Level 4	08:00	17:00
May 24 to May 29	ORCKA Canoe Tripping – Level 1 & 2 and Level 3		
May 27	Friends Board Meeting - Ongwanada Resource Centre, room 427	19:00	21:00
May 30	♦ Wilderness Navigation Using Map and Compass - Level I	09:00	16:00
May 31	ORCKA Canoe Instructors Recertification Clinic	09:00	17:00
June 05 - 07	Red Cross Wilderness First Aid		
June 06 June 27	Canoe Clinic	10:00	15:30
June 07	Single Burner Gourmet Cooking	10:00	13:00
June 07	The Amazing Tarp - Tarping Made Easy	13:00	15:00
June 13	♦ Wilderness Navigation Using Map and Compass - Level II	09:00	16:00
June 19 - 21	& Erhard Frenzl Memorial Paddle		
June 24	Friends Board Meeting - Ongwanada Resource Centre, room 427	19:00	21:00
June 26	National Canoe Day – Come paddling in the Park!		
July 11 - 12	ORCKA Basic Canoe Certification Level 1, 2, 3 and Level 4	08:00	17:00
July 18	Paddle Canada - Introduction to Flatwater Sea Kayaking	08:30	16:00
July 19	Fly Casting for Beginners	10:00	16:00
July 26	Kayak Basics - "Getting Started" Kayak Course	13:00	16:00
August 03	Comparison Deadline for Autumn Newsletter		
Aug. 29 to Sep. 01	Sring a Friend to the Park Weekend		
Sep. 01 to Oct. 31	The Frontenac Challenge, Frontenac Trek, and Junior Challenge		
All Year	All Season Camping Challenge		

Tio Wulf Ramble

March 2015: Tio Wulf here, saying hello from Cape Breton, Nova Scotia, where at the moment, it's pounding down snow which is expected to turn into yet another full-blown dangerous blizzard. There are some bad days up here. But no surprise to us, as we have had a spell of doozy blizzards each and every March we have lived here. I've said a few times that I wish I'd gone to school in Cape Breton. Oh, the joy of all those cancelled school days! There are plenty of event cancellations today, but it's only Sunday. However, I'm sure there is still hope for tomorrow in the hearts of many young students who don't find being stuffed into classrooms for hours to be a good time.

There is a saying in Ontario, "March comes in like a lion and leaves like a lamb". In Cape Breton it's, "March comes in like a lion and leaves behind a six-foot pile of white, cold doo-doo."

In Ontario, we lived in a cabin on Big Clear Lake. Both of us miss the place and Frontenac Park, but circumstances became such that we decided to move. We figured that if we had to move, why not choose one of the most beautiful natural areas of Canada?

When we lived in the cabin on Clear Lake Road, we were only about 2.3 Km from the Frontenac Provincial Park gate. I learned to love that gate - both sides of it. The round metal bar, which after I broke my foot, I was so happy to be able to finally walk to. I was joyful enough to give the cold metal gate a juicy smacker; kissed it like it was the wall of Jerusalem.

I fondly remember the solid wooden stile, which I hardly ever used because it was easier to climb over the gate than walk up the wooden steps. But still, it added character and it looked rustic.

I think of all the animal and human tracks I'd spot in the snow around the gate. I can even fondly remember the cancerous growth of warning sign tumours nailed to anything that would take a nail. But hey, those signs made Frontenac Park feel even more inviting and friendly - almost huggable. And yes, I have hugged the park's trees. I'm always willing to try most things once and having not found hugging a tree wanting in effect, I have done it on various occasions. There are, in the park, some wonderfully friendly oak trees which sport massive leaves. I have hugged those trees and even whispered a few words to them. They are located on the trail to campsite 13.

Where we live now is about 3.1 Km from the Middle River Wilderness area. Nova Scotia Environment's clinical description of the Middle River Wilderness Area, which is 5,620 hectares in size, goes like this: "The Middle River Wilderness Area protects typical regional features which are characterized by steep talus-covered slopes, well-developed deciduous forests, deep faults, undulating valleys, canyon complexes and river systems."

The "undulating valley" part sounds so soft and somewhat manageable. But when you're my age, hiking an undulating anything involves a lot of energetic perspiration. I think, if you translate this rather academic description of the wilderness area, it's saying the wilderness area is as rugged as hell. Which it is.

One of the things I have noticed that are different around here is that most people go hiking to find high places and waterfalls. I assume this is because there are so many waterfalls and high places. When I hiked regularly in Frontenac Park, I looked for the high places for sure, like Moulton Gorge, but more often I was looking for a spot along a lake. Don't get me wrong, it's not that I'm totally detached from the Park. I still visit Ontario at least twice a year and when I'm in Ontario I am sure to be in the Park at least once during the visit. Last time, when I was down in the fall, I hiked the Park

The Park, to me, is a friendly but wild confidant, maybe even a special compatriot. I have shared so many experiences with the Park. It has given me focus and has offered me solace from the busy, "as we move forward" entitlement that sees everything as a resource for ego development and self-fulfillment.

The Park and I have dealt with some very sad memories. I remember the crushing time when I'd just begun the painful adjustment to a divorce. Now that can rip the legs out from under you and of course, what did I do but take a drive out to the park. I parked the truck and hiked to the gate. Ignored the finger-shaking signs and let the natural Park world begin her healing.

I remember sitting on the top of Moulton Gorge. I was thinking the crazy things like, "If I jumped who'd care? Why not? My kids don't need me." Lots of emotional, divorce trauma thoughts that show up when you are experiencing a major life crusher.

However, I hung in there and ate my lunch. As you can see, I still had my appetite. So basically, I did what I usually did. I meditated and listened to the sky, ground, sounds, plants, animals, birds, whatever, for messages and encouragements.

While I was stewing in my uncertainty and grief, the black clouds congregated in the sky over Little Salmon. They looked dark, ominous and determined. The thunder rumbled somewhere behind the forest and hills and sounded like a distant battle.

The fat, threatening clouds stalked in closer and closer until I figured it was time for this little grievously hurting bug to scurry away. So, I vacated my resting spot and hiked my way back to the car via the Park gate. The storm is getting closer, the winds accelerating, the temperature dropping and the rain beginning to spit on me. I remember, as I ran towards the gate, feeling like

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The Frontenac Arch - from page 1

sea sediments and ice cores from Greenland and Antarctica reveal a history of many, relatively long glacial periods (plus/minus 90,000 years) alternating with shorter interglacials (plus/minus 20,000 years). In the Kingston area, we are presently about 12,000 years into



2. No stranger to ice. Glacial "erratic" boulder of Precambrian granitic gneiss lying on Ordovician limestone on the shore of Lake Ontario Park. Such boulders seem definitely out of place, when lying on a limestone surface, south of the boundary of the Canadian Shield. They are not as easily identified as "erratic" in the Park, where they are surrounded by similar Precambrian rocks.

the most recent interglacial period, the Holocene, and if the current global warming trend does not permanently upset the apple cart, another continental ice sheet should advance towards Kingston in a few

thousand years hence (remember that polar vortex in the movie "The Day After Tomorrow"). To be sure,

interglacials are not uniformly "warm" periods, as is well

known from the highly variable Holocene temperature record in the northern hemisphere, showing that past temperatures were both higher than today (during the "Holocene climatic optimum", about 6000 years ago) and lower (during the "Little Ice Age", from about 1350 to about 1850 C.E.). During the so-called "Medieval Warm Period", lasting

from the 9th to the



3. Glacial striae on a granitic rock near the southwest end of Big Salmon Lake. Yellow arrow indicates the direction of ice movement (SW).

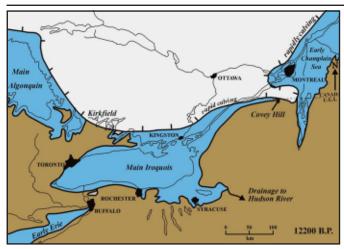
13th century, summers in Greenland may also have been slightly warmer than today, as the Vikings settling there were able to sustain dairy farming until the onset of the "Little Ice Age".

While alternating glacial and interglacial periods are well documented in the glacial-marine sedimentary record, such as in the bottom sediments of the Labrador Sea,

the history of glacial advances on land is less well known, as successive ice sheets tend to erode the sedimentary record left after the melting of previous ice sheets. In the Frontenac Arch area, the ice sheets overrode and modified a relatively low-relief Precambrian erosion surface (referred to as Cashel peneplain by the renowned American geologist Marshall Kay) that had been covered by Paleozoic limestone and was subsequently exhumed by post-Paleozoic erosion. The ice removed previously weathered bedrock and soil, polished the Precambrian rocks and locally re-sculpted them into whale-shaped asymmetric forms, known as "roche moutonnée" (Fig. 4). Some of the polished rock surfaces still show scratches ("glacial striae") caused by the scraping of rocks frozen into the base of the moving ice (Fig. 3). Bedrock fluting and channelling at various scales as well the pothole at the eastern Park boundary, north of Big Clear Lake, are interpreted by R. Gilbert, of Queen's University, to have resulted from erosion by fast-flowing subglacial melt water. The directions of glacial striations and the asymmetry of the "roches moutonnée" indicate that the ice sheet advanced from northeast to southwest. Glacial deposits within Frontenac Park consist of a thin and discontinuous cover of sandy till with many boulders (ground moraine) that except in local depressions in the lee of bedrock highs is rarely more than one metre thick. This till as well as scattered erratic boulders are thought to have been left behind by the melting ice of the last glacial advance in the area. Terminal moraine deposits have not been identified in the Park but can be seen to the west of Highway #41, at Marlbank, where the Dummer Moraine forms an irregular hummocky ridge along the southern boundary of the Canadian Shield. The nearest major glacial outwash deposits, providing sources for sand and gravel, are in a kame deposit in the Knowlton Valley, near Sydenham, and in a north-south esker system east of Highway #15, from the Sand Hill Road north to Lower Beverly Lake.



4. "Roche moutonnée" near old Birch Lake mine site on the northern part of Arkon Lake loop. Yellow arrow indicates direction of ice movement. Note the smooth and gentle up-ice slope and the steep down-ice slope caused by the plucking action of the ice.



5. Approximate position of ice margin north of Kingston at about 12,200 years ago. Glacial Lake Iroquois is dammed against the retreating ice front while the ice is blocking the St. Lawrence River valley west of Montreal. Map after W.A. Gorman, Queen's University.

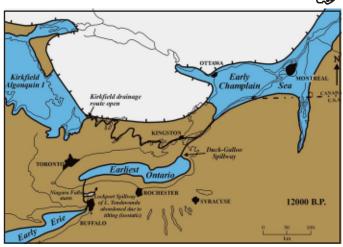
Long and skinny, north-easterly trending lakes, such as Big Salmon Lake and the two bays of Buck Lake, are approximately parallel to the movement of the glacial ice and were formerly thought to have been scooped out by the ice, similar to the formation of fjords. However, R. Gilbert and J. Shaw of Queen's University, who published a detailed study of the bathymetry of Sydenham, Loughborough and Collins Lakes (Canadian Journal of Earth Sciences, vol. 31, 1994, p. 1630-1637) have made a convincing case that bed rock channels under these lakes were eroded by periodic large flows of melt water beneath the Laurentide ice sheet. They suggested that many of the lakes of the southern Frontenac Arch occupy a network of former sub-glacial melt water channels.

Talking about melting glaciers, the southern part of the Frontenac Arch was not more hospitable after the ice left. Melt water flooded the Lake Ontario basin and the isostatically depressed land in front of the retreating ice sheet, forming a large pro-glacial lake, known as glacial Lake Iroquois (Fig. 5). Near Kingston, the water level of this lake may have been up to 150 m higher than that of present Lake Ontario, suggesting that much of the southern part of the Frontenac Arch, including Frontenac Park, was under water. Banded clays and silts (also known as "varved" clays), deposited within the lake, can be seen at many localities around Kingston and may be found in pockets within the Arch. They have been identified by R. Gilbert at the bottom of Devil Lake, suggesting they may also be present at depth in Big Salmon Lake and Big Clear Lake.

As long as the ice was blocking the St. Lawrence valley, Lake Iroquois drained southeast-wards via the Mohawk and Hudson river valleys (Fig. 5), but sometime after 12,200 years ago, the ice dam gave away, and most of

Lake Iroquois drained via the St Lawrence valley, leaving only a small precursor Lake Ontario, west of the Frontenac Arch. The still isostatically depressed land east of the Frontenac Arch was inundated by the sea, referred to as the Champlain Sea, which covered much of the Ottawa area and came up on the Frontenac Arch to at least as far as Brockville, and possibly farther west. Early Lake Ontario was filled in various stages, first by the Trent River which at ca. 12,000 years ago drained glacial Lake Algonquin and flowed past Kingston (Fig. 6). After Lake Algonquin had drained via Lake Nipissing and the Mattawa and Ottawa rivers, Lake Ontario's main water supply was via the Niagara River. As the Frontenac Arch gradually uplifted by post-glacial isostatic rebound, the Champlain Sea receded towards the northeast, and the Arch provided a bedrock sill against which Lake Ontario would pond from the west. The lake reached its present size sometime between 8000 and 5000 years ago, after which the rate of isostatic uplift slowed significantly. Post-glacial climatic fluctuations in the Frontenac Arch can be deduced from studies of pollen and microfossils in sediment cores from local lakes, but that is another story.

Considering the time scale of alternating glacials and interglacials in the past, what is in store for the future? I mentioned above that unless the present global warming trend disrupts the periodicity of major temperature fluctuations established over the last 2 million years, we are due for another ice age in a few thousand years. If the predicted ice age comes, future scientists may view the present warming trend as just another blip within the



6. The ice margin 200 years later (at about 12,000 years ago), after St. Lawrence ice dam broke and Lake Iroquois had drained northeast-wards leaving only a relatively small lake in the Lake Ontario basin. The Champlain Sea has flooded the low-lying area northeast of the Frontenac axis. Glacial Lake Algonquin, occupying the future Georgian Bay and much of Lake Huron to the west, is drained at this stage via the Trent River system (beginning near Kirkfield, east of the future Lake Simcoe) which flowed past Kingston.

normal temperature variations of what we call the Holocene interglacial. However, what if the blip becomes a trend and warming continues even if only for the next few generations? As this may well be long enough for the world's remaining alpine glaciers and the ice caps of Greenland and Antarctica to melt, the resulting rise in sea level would have caused untold flood damage to populated low-lying islands and coastal regions, before we might have an answer to the question of what caused the global warming. Even so, unless humankind becomes somewhat more humble and understanding, the argument about the possible human contributions to global warming would probably continue, as it does now. One can look at this argument from a geological perspective that is receiving more and more attention in the recent literature. It begins with the observation that with an increase in the world's human population from about 1 billion, at the beginning of the industrial revolution in the early 1800's, to more than 7 billion in 2014, human activity has transformed the surface of the Earth to such a degree that, for the first time in Earth history, humanity must be considered as a powerful agent of geological change, on par with other geological processes, such as erosion, earthquakes, etc. Many geologists and ecologists feel therefore that humankind has passed from the Holocene into the Anthropocene, a new geological epoch in which humans are having a major impact on the Earth. Some are less kind and have begun to look at much of human activity as a major geological hazard that threatens the equilibrium of the surface of the Earth. Although their causes are still debated, we learned enough about the ice ages to realize that multiple factors are at play. They involve not only terrestrial factors, such as changes in the configuration and elevation of the continents (plate movements), changes in the hydrosphere (e.g., ocean currents, composition of sea water), changes in the atmosphere (e.g., concentrations of greenhouse gases, weather patterns), but also astronomical variables, such as variations in Earth's orbit around the sun, in the angle of Earth's tilt axis and wobbles of its spin axis. Humans of course have no influence on the astronomical variables which interact to cause periodic changes in heat received by our planet (Milankovitch cycles). But we can certainly throw a wrench into the complex interaction between geosphere, hydrosphere, atmosphere and stratosphere. Meteorologists are talking about the butterfly effect, meaning that small changes in initial conditions at one place can have a large effect on evolving weather patterns. If a butterfly flapping its wings is said to have an influence on the weather, how can we deny that the many thousands of jet planes daily criss-crossing the skies in all corners of the world will have a profound influence on climate patterns? Considering all the other types of human-caused long-term pollution, humankind appears to be doing its best to avoid another glacial advance onto the Frontenac Arch.

Reserve Your Campsites Online!

Did you know you can now book interior campsites for Algonquin and Killarney? Yes, in March 2015, both Algonquin and Killarney Provincial Parks joined Frontenac Park in permitting visitors to book backcountry campsites on the Web.

Check out these links:

For Frontenac: https://reservations.ontarioparks.com/ Frontenac

Algonquin: https://reservations.ontarioparks.com/ AlgonquinInterior/AlgonquinCanoeing?Map

Killarney: https://reservations.ontarioparks.com/Killarney/Canoeing?Map



Tio Wulf Ramble - from page 4

the thunderstorm was breathing down my back before the rumble turned to crashing and the drizzle to a full-blown downpour. It felt like I was being pushed out of the park. I was being escorted out by a powerful park bouncer. Helping me to not doubt that there are powers in this life, more robust and awesome than any personal event or circumstance which might happen to me. The thunder bouncer was saying, "So, Tio, move your ass. Get back to your life, but be sure to come back here, because you're always welcome to visit with our powerful band of merry wild personalities. There's a lot more power and mystery left for you to explore in the park."

Maybe that's why, on one of my trips, my Native friend made a little doll out of grass twigs. She felt the power and she felt the threats to the wild power. So, she hung the tiny heart-felt creation from a tree alongside a beaver pond. She told me it was to protect the park from mean people who would try to physically and spiritually ruin the park for those who love it.

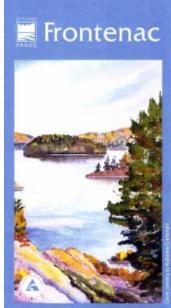
Up here in Cape Breton I'm trying to develop a similar kind of organic connection with her beautiful areas. It will take time, because Frontenac Park is chock full of memories and most of them are rich and deep.

Enjoy your hikes in the park. Maybe I'll meet some of you hikers when I'm down that way.

www.larryagibbons/blog

Frontenac Provincial Park Map

The new 5th edition of the Friends' Frontenac Park Map is available at the following locations:



Kingston

Trailhead, Tourism Kingston Visitor Information Centre

Sydenham Area

Frontenac Park Park Office, Snug Harbour Resort

Elsewhere

Adventure Attic (Dundas), Adventure Guides (Waterloo), Mountain Equipment Co-op (Toronto and Ottawa), Outdoors Oriented (St. Catharines), Wild Rock Outfitters (Peterborough), World of Maps (Ottawa)

To order your copy by mail, send \$12.00 cdn for paper map or \$25.00 cnd for Polyart and add \$2 for mailing to: Friends of Frontenac Park, P.O. Box 2237, Kingston, ON, K7L 5]9.

Your membership with The Friends entitles you to a 15% discount at Novel Idea, a Kingston owned bookstore, located at 156 Princess Street.

Join The Friends of Frontenac Park Now In these days of government cutbacks and encroaching development, a semi-wilderness park needs all the friends it can get. Your membership in The Friends of Frontenac Park will put you in touch with other outdoor enthusiasts who have discovered one of Ontario's great natural secrets. Join today or sign a friend up. Everyone is welcome.				
NameAddress				
Membership Category (Membership year April 1 to March 31) Family \$ 25.00 Individual \$ 20.00 Donation (tax receipts will be issued for amounts exceeding \$10 \$ Total Amount Submitted \$ Cheques payable to: The Friends of Frontenac Park P.O.Box 2237 Kingston ON K7L 5J9	Getting to Know You Are you interested in participating in Friend's activities, as an organizer, Board member, workshop leader, project coordinator, writer/editor, naturalist or general volunteer? Please indicate your interest below and we will contact you. I'm interested in: Helping with trail maintenance and work bees Leading nature walks Hosting at the Park Office Being an ambassador in the Park Serving on the Board of Directors Other (please specify)			