



## Biodiversity

### Zooplankton in Philippe and La Pêche Lakes

By *Ginette Méthot and Bernadette Pinel-Alloul*  
with *John Chélatat* collaboration

Under the mandate of evaluating and identifying valued natural ecosystems and habitats in Gatineau Park, the National Capital Commission (NCC) has defined many ecosystems in the park as exceptional or of high interest, among them are Lac La Pêche and Lac Philippe (Viens 2008). In order to better understand the limnology of these lakes, our objective was to study the biodiversity of zooplankton.

Zooplankton refers to microscopic animals that are found in the water column. These small invertebrates are unicellular or multicellular organisms and they are all heterotrophs which means they obtain their energy from living organisms or organic matter in contrast to phytoplankton or algae that use the sun's energy through photosynthesis.



Copepods

Zooplankton can be divided in three main taxonomic groups: rotifers, cladocerans and calanoid or cyclopoid copepods.

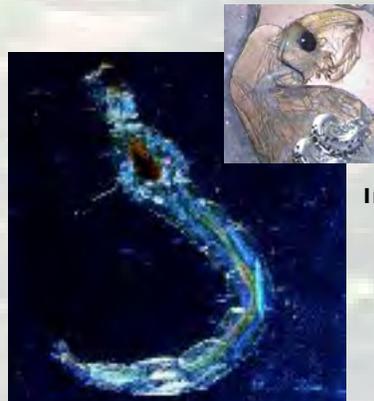
These organisms are an important link in the food chain because they consume algae and are prey to other larger invertebrates like insect larvae (*Chaoborus*) and small fish (minnows or juvenile fish). Zooplankton can be used as indicator organisms to evaluate the state of an ecosystem because they respond to nutrient inputs and changes in the fish community. Zooplankton communities are affected by anthropogenic perturbations such as watershed

deforestation, lake acidification, lake impoundment and global warming.

Our study presents an exhaustive list of zooplankton species in deep water and near-shore habitats of both Lac La Pêche and Lac Philippe. In Lac La Pêche, we found a large discrepancy between zooplankton communities in each of the 2 basins whereas in Lac Philippe, the zooplankton was similar throughout the lake. In Lac La Pêche large areas near shore are covered by plants which create favourable habitat that support higher zooplankton diversity. These two lakes of Gatineau Park have a rich diversified zooplankton fauna compared to other lakes. In Lac Philippe, the dominant species varied over the course of summer and were different from those found in Lac La Pêche. Total zooplankton abundance was lower in Lac Philippe (21-23 organisms per litre) than in Lac La Pêche (26-38 organisms per litre). In Lac Philippe, certain large-bodied zooplankton species were present only in early summer which we suggest may be due to intense predation by planktivorous fish or early warming of the lake water that is unfavourable for cold species. A noteworthy fact, we observed freshwater medusa in Lac La Pêche.

This short study of zooplankton communities in two lakes of the Gatineau Park highlights a large specific diversity between and within these water bodies.

*The authors presented these findings at the 2008 Research Forum.*



Insect Larvae (*Chaoborus*)

*Heritage*  
**Being Involved with History**  
*by Ken Bouchard*

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Fourteen years ago when I got involved with developing a trail network for the Gatineau Park International Hostel and Outdoor Centre at Carman Road, I was interested in the history of the area. As we cleared trail #57 we were told by some of the old timers that this was an old carriage road that was a shortcut from the Meech Creek valley to the Lapeche River Valley, bypassing Wakefield.

The next year we opened up trail #58. Most of this trail was an old bush road and all we had to do was clear out all the dead trees that had fallen on the road over the years. We were quite amazed at the extensive rock work that had been done on this road. Who had done this work?

At the juncture of this bush road and the road that goes down the east side of Brown Lake, we found rhubarb plants and some apple trees. And we found the remnants of an old outhouse. Who had lived here?

There were four or five old foundations we found on the south east shore of Brown Lake. These I was told were cottages that were built in the mid 1900's and only a few short years later were expropriated by the National Capital Commission (NCC) as part of the Park's expansion.

In 2004 we moved to Wakefield and I joined the Gatineau Valley Historical Society (GVHS). I purchased the Society's whole library of *Up the Gatineau* annual booklets. But nowhere in the 30 or more back issues could I find anything substantial on the Browns of Brown Lake.

It was only when I read Dr. Geggie's book *The Extra Mile* that I finally encountered some Browns. Early on in the book he talks about his first "house call" to look after some of these Browns. It was in that chapter that I met a half dozen different members of the Clan. Now I had to figure out where they had actually lived.

On that same trip Dr. Geggie talked about the Eardley Road. It could not be today's Eardley Road. At the monthly GVHS meeting I asked the question.



The answer – THAT Eardley road was the one that went to Brown Lake because that is where the Eardley Township's NE corner was located.

Well I was hooked! I wanted to find out more about this part of the Park and the families that lived near the lake. I was told that I had to talk to Debbie Brown who was putting together a family tree on the family. And also to talk to Irma Nesbitt and Don McGarry, as their grandfather was George Trowsse (who lived on what is now trail #52), a neighbor to half a dozen Browns.

From the Nesbitts I got some old stories about the Trowsse's

and I was able to borrow a 1951 Geological Survey map of that area. In comparing that map with the most current map of this area, I found that many of the old buildings and roads were no longer there. Two reasons; the NCC had purchased most of the land in that area in the 1950's and had demolished most of the old buildings. And with the help of beavers, the size of Brown Lake had increased by 50% wiping out many of the old roads and lanes.

So where exactly had the old buildings been?

Well it wasn't until The Friends of Gatineau Park Heritage Committee did that initial walk in May 2009, and that Don McGarry joined us, that many facts were "adjusted" and/or "sorted out". It was an eye opener. So after a further meeting with Don McGarry over the summer, a very much more exact picture of the Browns and Trowsse's of Brown Lake during the 1920 to 1950 period, evolved. And it is this very much more accurate picture that we have presented on our walk of October 3, 2009 as part of the Gatineau Park's Fall Rhapsody Festival. Thanks for having joined us. Hopefully, this event will be repeated every year.

*Biodiversity*  
**Wetland Sanctuaries  
for Dabbling Ducks**

*by André Lapointe, FloraQuebeca*

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While clouds reign between sky and land, water holds sway between land and sea featuring a hierarchy of flow types. Wetlands fit between two extremes, being neither wholly aquatic nor totally terrestrial. While the flow of water seems to come to a halt in vast lakes and rivers, it is only slowed by rolling terrain. Gatineau Park is no exception. When streaming down the slopes of the Park's many hills, water smashes into the slightest obstacle and wends its escape through the vegetation.

In 2008, a few botanists from FloraQuebeca did some groundwork to profile the Park's main wetlands. They found that it is impossible to establish a single, typical profile because very few plant species are characteristically found in all of them. It appears that no one species can be found in all twelve of the wetlands surveyed. The wetland plant inventories also show more variability than the dryland inventories, owing to varying water quality and to the water budgets unique to each type of wetland.

As the area evolved into the Park it now is, the water flow in most of its wetlands has been governed by beavers intent on building reservoirs along the rivers and streams. These beavers have expropriated land most noticeably in the Lac aux Foins watershed. They are aided and abetted by muskrats that also take advantage of the communities of aquatic plant and the shoreline vegetation that then becomes established. The plant communities downstream of Lake Kidder are criss-crossed in many places by beaver runs and canals.

Park wetlands also provide a highly suitable reproduction habitat for frogs, tree frogs, salamanders and a few turtle species. Many bird species find them a safe haven: dabbling and sometimes diving ducks, red-winged blackbirds, sparrows and bitterns. But the great blue heron often stands out as one of the wetlands' ultimate predators.

More so than the drylands, the wetlands conceal many species from our view. It is difficult to imagine, let alone peek at, all the wetlands' secrets.



Some 210 vascular species were noted in the dozen wetlands. Two species can be found in most of them, namely the red maple and the cinnamon fern, but only 29 species are common to half of them. Trees are best represented by the red maple, balsam fir and tamarack, while the most common shrubs are the speckled alder and the leatherleaf.

The Park's main types of wetlands are marshes, swamps and peat bogs. Swamps are distinguished from marshes mainly by the presence of woody species, i.e., shrubs or trees. Marshes tend to feature submerged and floating aquatic plants.

All this wealth of aquatic vegetation can form vast plant communities that provide habitat for a highly diverse fauna, not to mention a sanctuary for dabbling ducks!



Oh, if only we better knew how to dabble beneath their surface!

*Mr. Lapointe presented his findings at the 2008 Research Forum.*



### THE DUSK SERIES

#### **Owl Prowl**

March 19 (*in English*)

#### **Frog Chorus**

April 16 (*in English*)

#### **Beaver Pond**

June 11 (*in English*)

#### **What to Do if You're Lost in the Woods**

September 24 (*bilingual*)

#### **Wolves at the Lake**

October 22 (*bilingual*)

#### **What Animals Do at Night**

November 5 (*bilingual*)

Meet at 7 pm at the NCC Visitor Centre (33 Scott Road, Chelsea). Rates are Adults \$15 (members \$12), Seniors / Students \$12 (members \$10) and Children \$5. Information and Registration: (819) 827-2020.

### OTHER UPCOMING EVENTS

#### **Annual general meeting and volunteer recognition**

October 23 (*bilingual*)

#### **Research Forum**

November 6 (*bilingual*)

Les Amis du Parc de la Gatineau / Friends of Gatineau Park, a registered charity publishes in *Amis/Friends* articles on a selection of ecology and heritage research undertaken in the Gatineau Park, particularly that funded by us as well as related to our other educational programs. Published twice a year, the *Bulletin* is archived at [friendsofgatineaupark.ca](http://friendsofgatineaupark.ca) and deposited with the National Library - ISSN 1913-7648. Comments, suggestions, stories: send via [www.friendsofgatineaupark.ca](http://www.friendsofgatineaupark.ca) or 33 Scott Road, Suite 227, Chelsea QC J9B 1R5, Tel. 819-827-3113. Publisher: Jo Ann Gagnon; Editor and Layout: Jean-Philippe Rheault; Translation: Marie Pelletier; Printing: Imprimerie Vincent. Printed on recycled paper.

