



National Parks' Challenges: Issue Backgrounder and Stakeholder Descriptions

Case Study 6: A Large Carnivore in a Small Park. Ensuring the Protection of the Wolf in La Mauricie National Park: What a Challenge!

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1. Issue overview

Protecting a large predator such as the wolf in La Mauricie National Park (LMNP) is a significant challenge because this wide-ranging animal frequently roams outside its protective boundaries. The park's two wolf packs each occupy a territory of about 650 km². When they venture beyond the 536 km² protected by the park, they are vulnerable to hunting, trapping and other human activities. Within the park itself, the Parkway and the large numbers of visitors have dislodged them from some of their critical habitats.



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One of La Mauricie National Park's mandates is to ensure the protection of the Eastern Wolf. It has been designated a subspecies of "special concern" by the Committee on the Status of Endangered Wildlife in Canada.

2. Park overview: La Mauricie National Park

La Mauricie National Park is located north of the St. Lawrence River, approximately 65 km from Trois-Rivières. Its northern boundary is defined by the Matawin River and the Saint-Mauricie Wildlife Reserve; its western boundary by the Mastigouche Wildlife Reserve; and its eastern boundary by the Saint-Maurice River. The municipalities of Saint-Mathieu-du-Parc, Saint-Gérard-des-Laurentides, Saint-Flore and Saint-Jean-des-Piles lie along its southern flank.

The park encompasses the central part of the Great Lakes - St. Lawrence Precambrian Region (Region 19c). Its total area is 536 km².



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The park safeguards a representative sample of the southern Laurentians where hills, forests, lakes and waterways abound. These inviting landscapes host a wide variety of habitats that favour abundant species of wildlife and widely diversified plant life.

The park's territory is accessed by the Parkway, a 63-kilometre stretch of scenic road linking campgrounds, lookouts, trailheads and picnic areas.

Some 300 000 tourists flock to the park each year, mostly during the summer months. Camping, picnicking, hiking, biking, fishing, wildlife observation, canoe-camping

and swimming are some of the main activities that attract visitors between May and October. Activities such as ski touring and snowshoeing bring close to 30 000 devotees in the winter months when most of the Parkway is closed. Only the first six kilometres beyond Saint-Jean-des-Piles remain open to vehicles during this period to allow access to cross-country ski trails departing from the Rivière-à-la-Pêche service centre. The next 11 kilometres are regularly maintained for skiers, and the remaining portion of the road is used as a service trail by park personnel.

The La Mauricie National Park Fact Sheet (located in Printable Versions) will provide you with more information on this park. You can also consult the National Park System Plan; look up Region 19.

3. Detailed issue information

3.1 Researching wolves to protect them better

Is protection of the wolf guaranteed in the park? Does the wolf fulfill its role in the ecosystem? Between 2000 and 2003, an ecological study of the wolf population was undertaken to answer these questions. Like detectives, researchers followed the wolves' trails in the snow, listened to their howls and even collected scat samples! With the help of radio-telemetric devices, they tracked the wolves to learn about their behaviour.



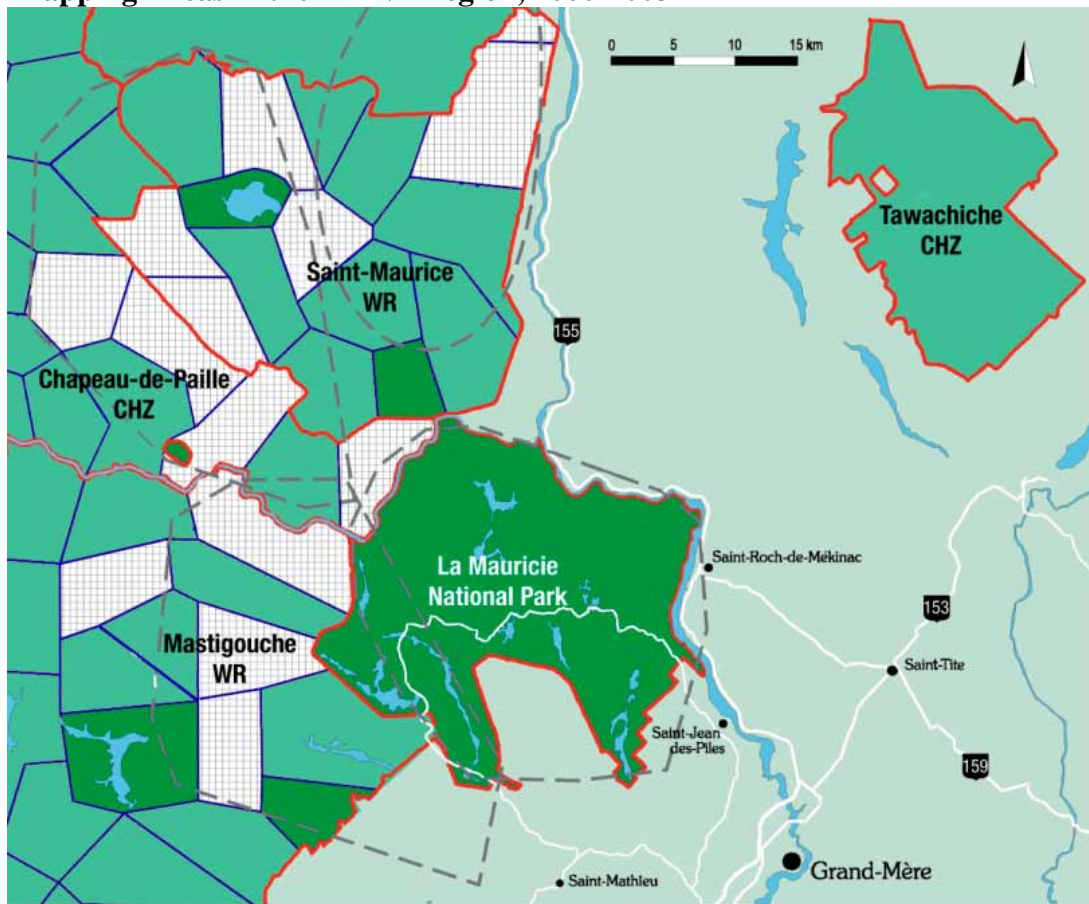
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Sixteen wolves belonging to four different packs were captured and fitted with radio collars to allow scientists to track them with radio-telemetry equipment.

The death rate is much higher than the maximum of 30% that is recommended in

order to prevent population decline. Maintenance of wolf population levels in the park will therefore depend on immigration from regions.

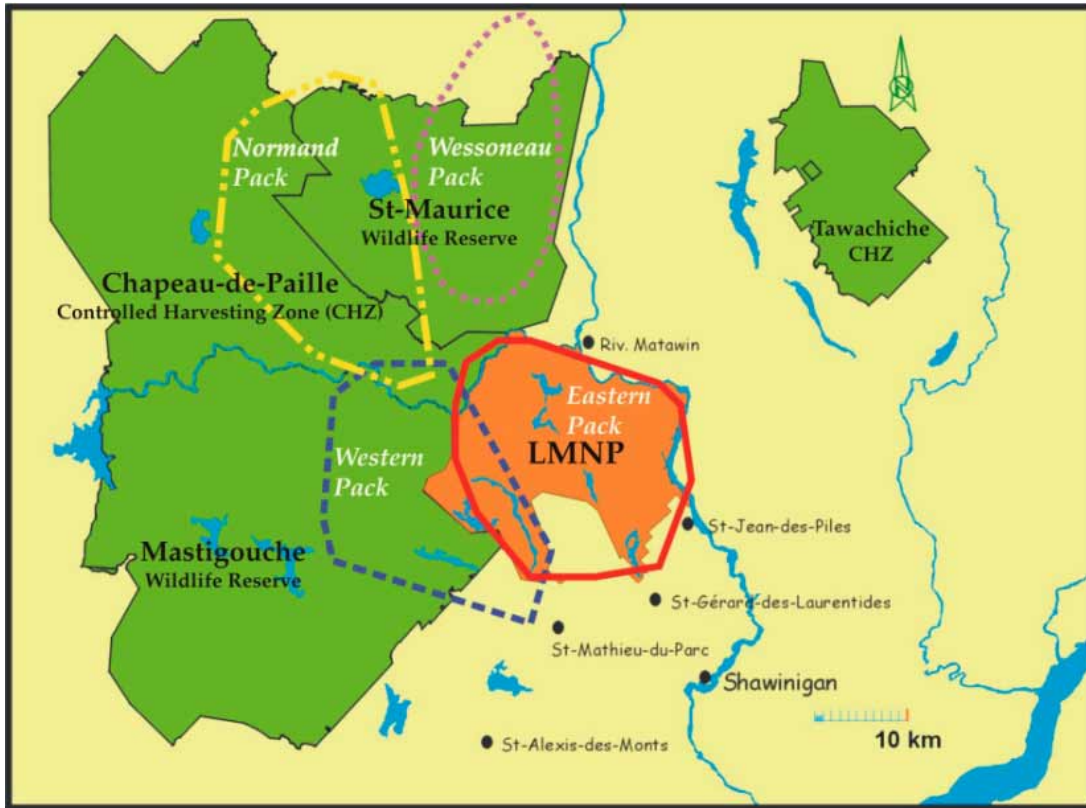
Trapping Areas in the LMNP Region, 2000-2003



-  Limits of trapping units in controlled harvesting zones (CHZ) and wildlife reserves (WR)
-  Limit of wolf pack territories
-  Trappers specifically targetting wolves
-  Trappers not specifically targetting wolves
-  Areas where trapping is less regulated
-  Areas where trapping and hunting are forbidden

In this study area, an average of twelve trappers were found to be operating within a single pack's territory, five of them specifically targeting wolves. Trapping methods are not entirely selective, however, and wolves can be caught unintentionally by trappers. This was the case for two tagged wolves captured in fox traps.

3.2 Wolf pack territories



Wolf Pack Territories in the LMNP Region, 2000-2003

Seventy-four percent of the eastern pack's territory lies within the park's boundaries. The western pack uses the park mostly in winter, with only eighteen percent of its territory falling within park boundaries. The average wolf pack territory is about 650 km².

3.3 Causes of mortality among wolves

The sharp decline in the number of wolves in the study packs during winter is cause for serious concern.

- The average pack size, estimated at 7.7 wolves in October, decreased by 53.2% over the course of the winter, reaching an average of 3.6 in March. Ideally, a wolf pack should have about 10 individuals.
- Of the 16 wolves fitted with radio collars (tagged), nine were caught in traps and one died of an unknown cause. Trapping accounts for 32.8% of deaths each year.
- All nine human-induced deaths occurred outside the limits of the park, the majority between October and November, and affected mostly cubs, which are less aware of the dangers.

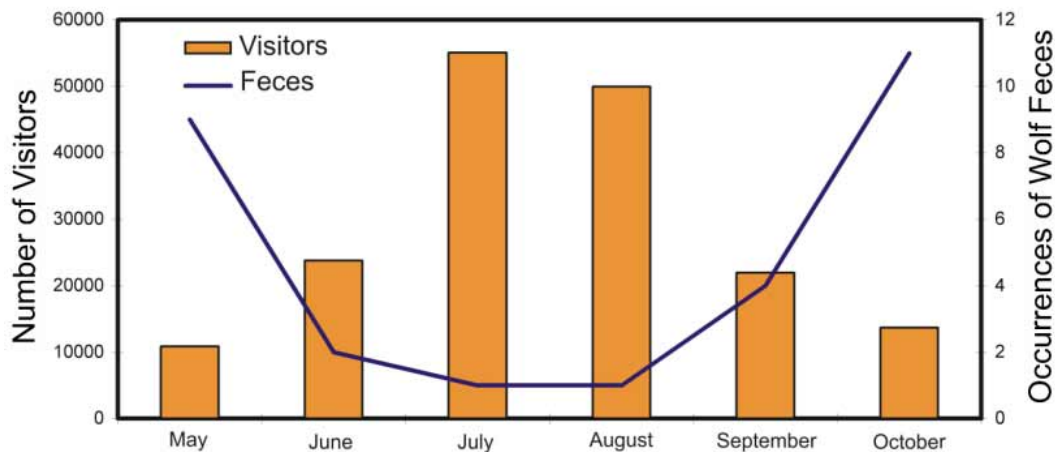
According to trappers' accounts, many wolves without radio collars were also caught in traps. Annual deaths from trapping among tagged and untagged wolves reach over 40% in the national park region. Mortality affects the wolves living in the park to the same degree as those living in the unprotected areas of the park's periphery.

3.4 What disturbs the wolves?

Wolves appear to be disturbed by the growing number of visitors to the park. In summer they avoid busy areas such as campgrounds, picnic areas and the Parkway, but these disturbances do not affect their survival.

Although breeding sites for wolf pups (dens and rendezvous sites) represent only a small fraction of the territory, they are critical to the wolves' survival. There is only one known den in LMNP. In the course of the three-year study, it was used by the eastern pack. This den is situated far enough away from maintained areas to avoid all disturbances caused by visitors. On the other hand, many rendezvous sites, where wolves gather to sleep, play and eat, are found in sectors that could be accessible to visitors.

To move around in winter, wolves use the park personnel service trail and often the Parkway itself. Their use of the road diminishes as tourist season arrives and traffic volume increases. Since the opening of the road in 1981, there has been no recorded occurrence of a wolf being struck by a vehicle. Vehicle prohibition in winter, less traffic at night and reduced speed have certainly contributed to the animals' safety.



Occurrences of Wolf Feces Found on the Parkway Relative to the Number of NMLP Visitors, 2002

When traffic is denser, it becomes a stress factor for wolves, which seem to stop marking the road with feces. At this point, the wolves cross over quickly instead of travelling along the road.

4. Get to know the wolf

4.1 A key species in the forest ecosystem



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Wolf in the balance! As a predator at the top of the food chain, the wolf keeps the population of herbivores on which it preys at an acceptable level.

In the absence of wolves, abnormally high counts of white-tailed deer, moose and beavers occur. This impacts not only these herbivores themselves, but also the vegetation they eat and other animals in the ecosystem. Too many deer, moose and beavers exhaust the food supplies and eliminate less robustly competitive animals. Wolf predation contributes to a healthy diversity of animal and plant species.

4.2 A shy creature

The wolf is quite timid by nature. It fears humans and avoids areas of bustling human activity.

- Ecotourism activities such as wolf-calling can disturb wolves. Two wolf packs from the Jacques-Cartier Lake Massif that were targeted by howling simulations reduced their hunt for food, possibly to increase their watch over the cubs in and around rendezvous sites.
- Wolves learn to avoid roads and towns, associating them with human predatory practices. This learned behaviour is passed on from one generation to the next.
- Road accidents constitute a major cause of mortality among wolves. One study conducted in the Jacques-Cartier Lake Massif in Quebec found that vehicle collisions caused 17% of the deaths of radio-collared wolves. In Alberta's Banff National Park, vehicles were responsible for 68% of known deaths between 1986 and 1998.

4.3 A situation of special concern

The wolf in the park region is a subspecies called the Eastern Wolf (*Canis lupus lycaon*). In May 2001, the Committee on the Status of Endangered Wildlife in Canada listed the Eastern Wolf as a subspecies of “special concern”, indicating that human activities such as hunting, trapping, and urban and rural development posed a threat to its survival. There are approximately 585 Eastern Wolves in Quebec out of a total population of about 7 000.

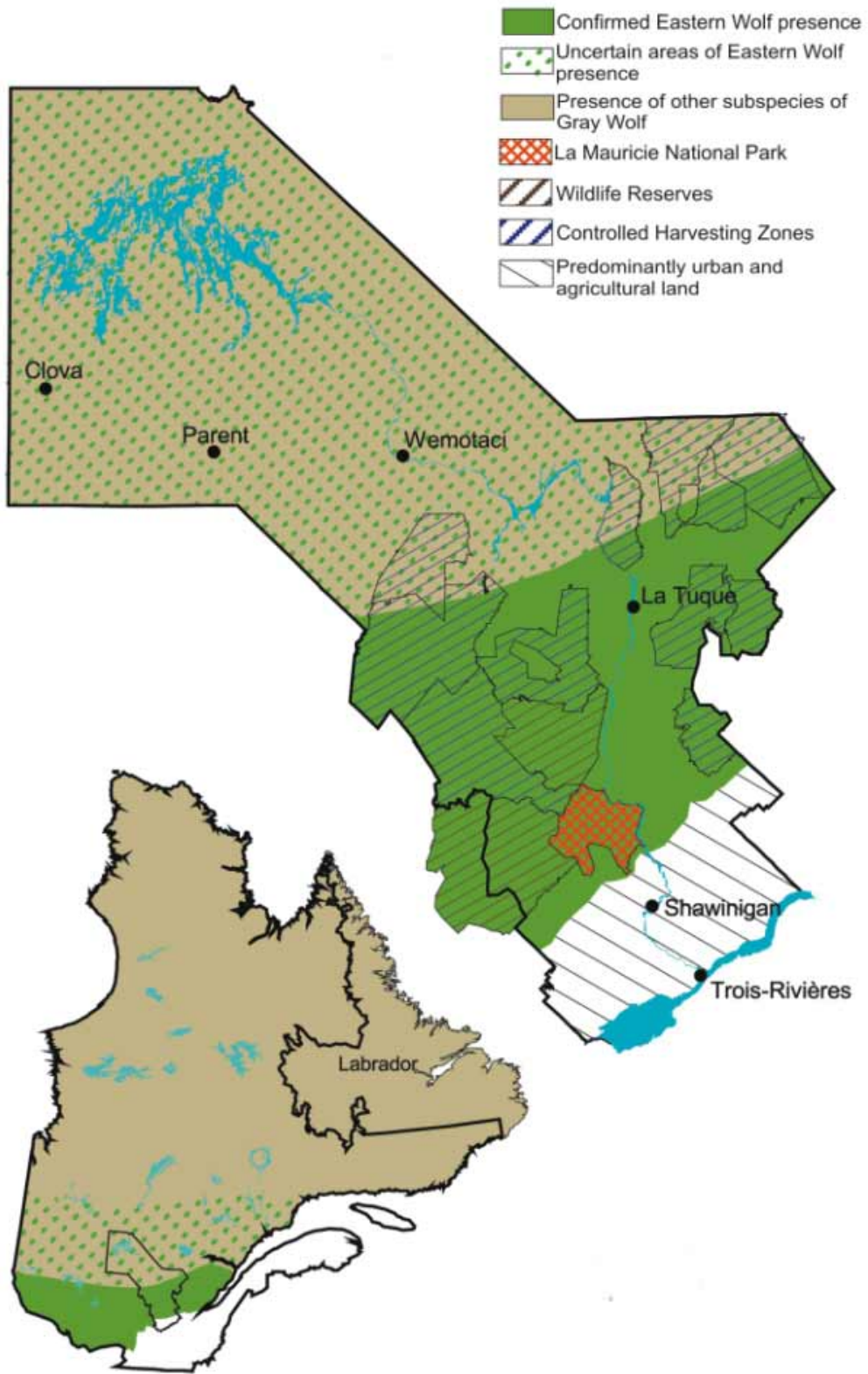


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The Eastern Wolf is differentiated from other wolves inhabiting regions of northern Quebec by its smaller size, its fawn-coloured coat, a sprinkling of long black hair on its back and sides and the reddish highlights behind its ears. In the Mauricie region, females weigh 20 to 30 kg and males, 40 to 50 kg.

5. The Mauricie wolf

5.1 What is the range of the Mauricie wolf?

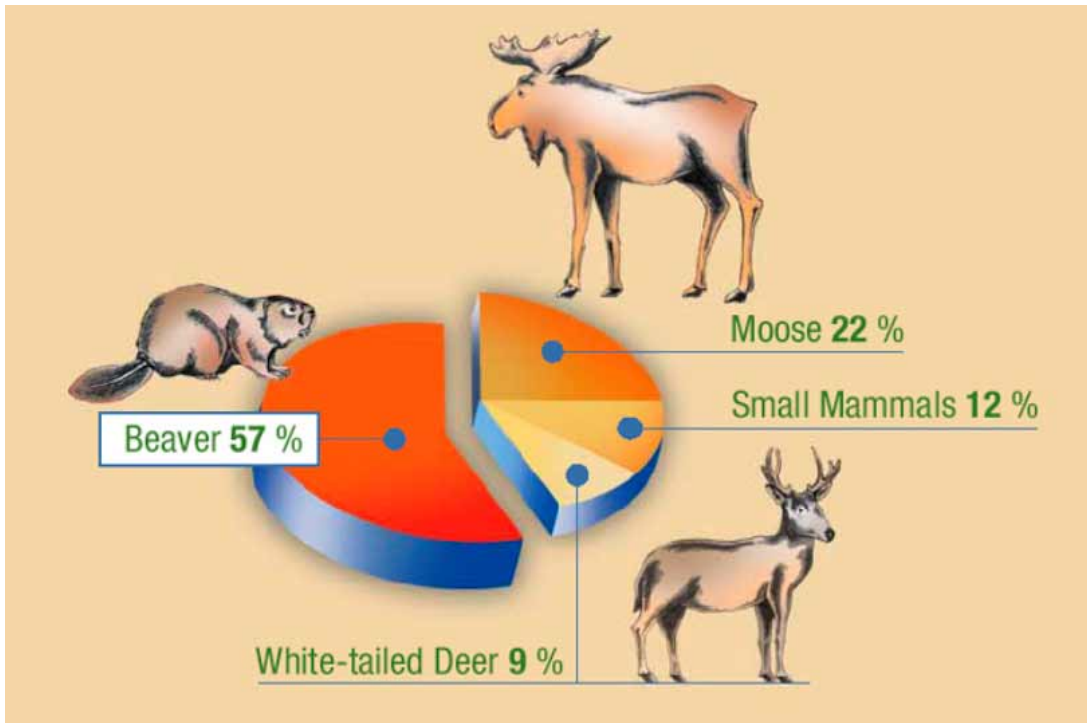


Distribution of the Eastern Wolf in the Mauricie Region and Quebec

© Société de la faune et des parcs du Québec

The national park is the southern limit of the wolf range in the Mauricie region. Urban and agricultural development and the absence of large forests south of LMNP do not favour wolf survival. While their numbers are greater in northern regions, both logging activity and tourist development are modifying their habitat. Trapping in controlled harvesting zones, through outfitting operations, and in wildlife reserves are depriving them of large areas free from exploitation.

5.2 What do Mauricie wolves eat?



The Eastern Wolf's Diet in LMNP, 2000-2003

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The wolf's main food source in summer is beaver. In winter, it preys on members of the deer family in their wintering yards. Moose and white-tailed deer travel more slowly in deep snow and are easier prey. The wolf's preferred meal is moose.

According to population counts by park wardens, the number of moose is estimated at 268 individuals, which represents 5 moose per 10 km². Since hunting is prohibited in the park, moose numbers are much higher than in peripheral areas. The deer population is estimated to number about 30. There are 165 active beaver colonies, with an average of 3.6 beavers each for a total of 594 individuals.

6. Wildlife harvesting in Quebec

6.1 Trapping, a tradition

Trapping is part of Quebec's culture, tradition and economy. In the 2001-2002 trapping season, nearly 8 300 trappers collected 263 700 fur pelts, for an estimated

retail value of \$6.7 million. Annual exports of Canadian furs amount to some \$330 million. Quebec’s share of exported pelts and fur coats is about \$160 million.

6.2 Wolf and beaver trapping

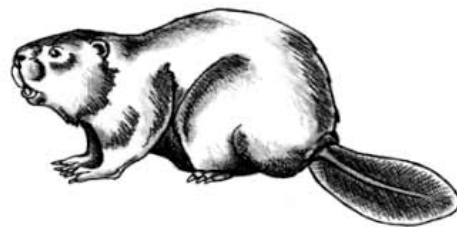


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The wolf represents little more than 0.1% of trapping activities. In 2001-2002, 357 wolf pelts were declared, for a value of \$30,723. Since there is no legal obligation to declare a wolf capture to authorities, only approximations are possible. In addition, there are no bag limits set on wolves.

Studies conducted in Quebec, including the one in LMNP, have shown that mortality linked to trapping could reach 25 to 50% annually depending on the region. Wolves maintain a presence in the territory due to their resilience and their general dispersion, but trapping has caused population levels to drop below normal relative to the amount of prey available.

Beaver trapping in Quebec is a widespread activity. This animal represents 26.2% of all species trapped. During the 2001-2002 trapping season, 69 201 beaver pelts were declared for a value of \$1,697,501—a very lucrative sum.



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6.3 Big game hunting

Moose in Quebec are estimated to number about 100 000 and white-tailed deer, 285 000. Moose hunting attracts 122 500 enthusiasts, who spend about \$121.5 million annually on this activity. Services provided to moose hunters create or maintain 1 300 full-time jobs. Each year, white-tailed deer attract 140 000 hunters, who spend \$78.2 million and sustain 844 full-time jobs.

Main causes of mortality for moose and white-tailed deer in Quebec, 2000

Causes of mortality	Number of moose	Number of white-tailed deer
Sport hunting	11 447	57 316

Road accidents	215	2 277
Poaching	107	149
Disease, starvation, predation and other natural causes	141	371

Source: Gros gibier au Québec en 2001 : Exploitation par la chasse et mortalité par des causes diverses. Ministère des Ressources naturelles et Faune, Direction du développement de la faune, January 2004.

According to a biologist from the Direction du développement de la faune, hunters claim nearly 20% of the total number of moose every year in the Mauricie region. Another 5% of the total population dies from sickness, starvation, road accidents and wolf predation.

7. Stakeholder descriptions

Biologist, Parks Canada

You have a Bachelor's degree in Biology and a Master's degree in Animal Ecology. You have been working in La Mauricie National Park for 15 years. You believe it is essential for the park's two wolf packs to be totally protected from hunters and trappers and to be free from human disturbance. You are aware of the needs of park visitors, but you think that the development of activities and facilities must also respect wolves. For you, the ecological integrity of the whole forest ecosystem takes top priority.

Biologist, Ministère des Ressources naturelles et Faune

You have a Bachelor's degree in Biology and a Master's degree in Animal Ecology. You hold a position in the Direction du développement de la faune, whose mission is to present, within the context of sustainable development, the animal species in Quebec (with the exception of federal park territories such as La Mauricie National Park). You therefore have a dual role: you must uphold wildlife harvesting while ensuring that hunting and trapping activities do not reach levels that threaten population numbers. You must also take into account the different points of view with regard to wolves, and hope to satisfy as many different people and their concerns as possible. You don't think there is really a wolf overharvesting problem in Quebec, but you recognize that park wolves are not protected and measures should be taken to remedy the situation.

Big game hunter and nature lover

The forest is of immeasurable value to you. For generations, you and your family have taken advantage of its natural wealth to hunt, cut firewood or simply enjoy the outdoors. Like many hunters, you consider the wolf to be a nuisance predator. You think wolves indiscriminately kill moose and white-tailed deer that would otherwise be available to big game hunters. Your view is that wolf trapping should continue and that in fact, the number of kills should increase in order to keep the number of wolves in our forests at a minimum.

Member of a local association of trappers

Trapping is your livelihood as well as a good opportunity for you to enjoy the outdoors. You trap mostly beavers and martens, but you set snares to capture wolves

as well. You consider the latter more of a pastime than a source of income, however. In fact, trapping wolves is not very profitable. For you and most other trappers, the wolf presents a welcome challenge because of its wily nature. You would like to see wolf harvesting controlled so you can continue to enjoy this challenge, but you believe that it is still better to keep their numbers down in the forests so that beaver harvesting is optimized.

Member of a local nature protection society

In your view, human actions should respect ecological balance so as not to threaten vegetation, wildlife, and indirectly, humans. It is clear to you that if the wolf is not protected, it can not fulfill its role in the ecosystem. In addition, the fact that the Eastern Wolf is on the list of endangered species means that it must be protected, not only in the park but throughout the province of Quebec. In addition to protecting park wolves from hunters and trappers, you think that every effort should be made to provide peaceful areas for wolves in the park.

Park camper and nature lover

You are passionate about the national park. You come camping here every year and visit the many areas of the park. This is where you hike, canoe, bike and participate in nature interpretation activities. The magical sound of the wolf howl makes you feel you are really in the wilderness. You believe that protecting the wolves and doing nothing to disturb them is a good thing, but you also want to be able to enjoy the facilities and activities that make your stay a more enjoyable experience. You would also like the park to offer wolf-calling activities.

8. Supplementary information and references

Parks Canada hosts a Web site featuring a lot of information about the Eastern Wolf.

http://www.pc.gc.ca/nature/eep-sar/itm5-/eep-sar5f_e.asp

http://www.pc.gc.ca/pn-np/qc/mauricie/natcul/natcul1cv_e.asp

Visit the photo gallery at Parks Canada to see photos of scientific studies of LMNP's Eastern Wolf.

http://www.pc.gc.ca/apps/dmm/index_e.asp

Visit the Web site of the Committee on the Status of Endangered Wildlife in Canada to learn more about the Eastern Wolf's role in the ecosystem and about endangered species in Canada.

<http://www.cosewic.gc.ca>

Visit the Web site of the Ministère des Ressources naturelles et Faune to learn about wildlife presentation in Quebec.

<http://www.fapaq.gouv.qc.ca/en/index1.htm>

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