

Gatineau Park

Ecosystem Conservation Plan

Summary

February 2010



GATINEAU PARK ECOSYSTEM CONSERVATION PLAN

SUMMARY

Presented to the
NATIONAL CAPITAL COMMISSION

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TABLE OF CONTENTS

1.	THE NATIONAL CAPITAL COMMISSION: MORE THAN 40 YEARS OF CONSERVATION IN GATINEAU PARK.....	1
2.	GATINEAU PARK: A SOURCE OF NATURAL WEALTH IN THE HEART OF CANADA'S CAPITAL	2
3.	THE PARK'S HEALTH: STABLE BUT FRAGILE.....	5
4.	ISSUES AND CONSERVATION PRIORITIES.....	6
5.	A CONSERVATION VISION FOR 2035.....	7
6.	THE ECOSYSTEM CONSERVATION PLAN: A HOLISTIC APPROACH	8
7.	THE ACTION PLAN.....	9
7.1	CONSERVATION ACTIONS	9
7.2	CONSERVATION AREAS	12
7.3	A RESTORATION STRATEGY	12
7.4	REDUCING STRESS	14
8.	TOOLS TO SUPPORT THE ACTION PLAN.....	15
8.1	ECOSYSTEM MONITORING.....	15
8.2	SCIENTIFIC RESEARCH	15
8.3	COMMUNICATION, AWARENESS AND PARTNERSHIPS.....	15
9.	TIME FRAME FOR THE GATINEAU PARK ECOSYSTEM CONSERVATION PLAN	16
10.	IMPACT OF THE GATINEAU PARK ECOSYSTEM CONSERVATION PLAN ON THE GATINEAU PARK MASTER PLAN	17

LIST OF APPENDICES

APPENDIX 1 Conservation actions and priority levels for their implementation

APPENDIX 2 Monitoring program for Gatineau Park's ecosystems and monitoring time frame

LIST OF MAPS

Gatineau Park Zoning changes

Human impact on Gatineau Park ecosystems

Major potential ecological corridors around Gatineau Park

Gatineau Park ecosystem health

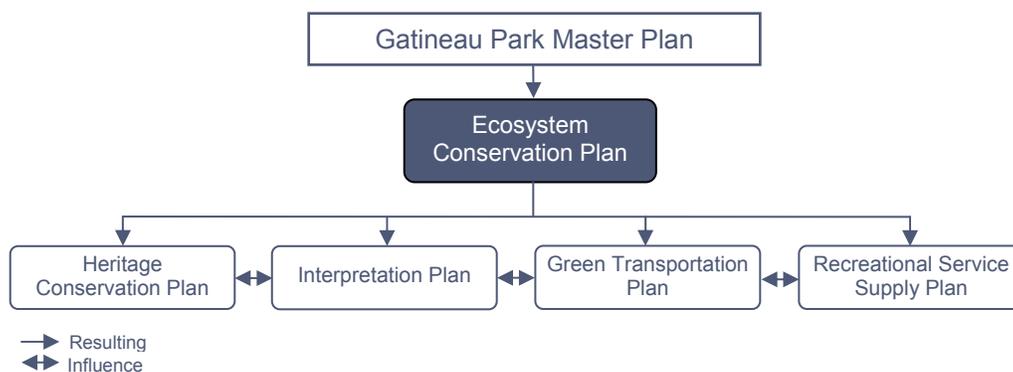
1. THE NATIONAL CAPITAL COMMISSION: MORE THAN 40 YEARS OF CONSERVATION IN GATINEAU PARK

The National Capital Commission (NCC) has a long tradition of conserving and protecting natural environments in Gatineau Park. For more than 40 years, thousands of studies have been conducted by the Park’s professionals, as well as by researchers from scientific and academic institutions. The Park’s current conservation work is structured by many scientific studies and a number of planning and monitoring documents, including the following:

- the Corporate Natural Resource Research Program of Gatineau Park;
- the Gatineau Park Master Plan;
- the Gatineau Park Species at Risk Protection Plan;
- the Gatineau Park Biodiversity Monitoring Program;
- Valued Ecosystems and Habitats in Gatineau Park;
- five management plans and two management strategies;
- digital GIS (geographic information system) databases;
- ecological review;
- regular follow-up reports on various species and habitats.

The Gatineau Park Ecosystem Conservation Plan was developed as a result of recommendations made in the Gatineau Park Master Plan. Four other management documents will follow, which will also form part of the master plan implementation process, and will structure the programs, projects and other detailed proposals. The Park’s management vision for the coming decades focuses on the conservation of natural and cultural environments. Gatineau Park will therefore be a natural protected area managed with a view primarily to conservation, and secondarily for recreational purposes.

FIGURE 1:
POSITION OF THE ECOSYSTEM CONSERVATION PLAN



2. GATINEAU PARK: A SOURCE OF NATURAL WEALTH IN THE HEART OF CANADA'S CAPITAL

Gatineau Park extends over a distance of 50 kilometres between the Ottawa and Gatineau rivers, to the northwest of the greater Ottawa–Gatineau area. It covers a total area of 36,131 hectares and accounts for 7.7 percent of the total area of the National Capital Region. Other significant natural protected areas located within 150 kilometres of the Capital include the Adirondack Park in New York state, Algonquin Park in Ontario, the St. Lawrence Islands National Park and the La Vérendrye and Papineau-Labelle wildlife sanctuaries in Quebec.

At the regional level, the Park's natural wealth is also enhanced by the proximity of natural spaces, including Parc national de Plaisance, Mont O'Brien, natural areas in the Pontiac sector and the Greenbelt south of Ottawa.

Gatineau Park contains a representative sample of the wealth and diversity found in areas where the Lower Laurentians region of the Canadian Shield meets the St. Lawrence Lowlands. It contains a number of rich and diverse ecosystems, found in three principal physiographic zones:

- the Gatineau Hills, which include hardwood forests dominated by sugar maple, beech and oak stands, along with varying percentages of eastern white pine;
- the Eardley Escarpment, with its hot, dry microclimate, conducive to rare southerly plant species (e.g. white oak);
- the Eardley Plateau, a large area with little topographic variation and a cool, damp climate, located in the heart of the Park and sheltering mixed boreal forests, along with a concentration of wetlands, swamps and bogs.

Five valued ecosystems and two habitats have been identified from Gatineau Park's ecosystems and physiographic zones:

- La Pêche Lake (ecosystem);
- Eardley Plateau (ecosystem);
- Eardley Escarpment (ecosystem);
- Pink Lake Plateau (ecosystem);
- Three-Lake Chain (ecosystem);
- Folly Bog (habitat);
- Lac des Fées (habitat).



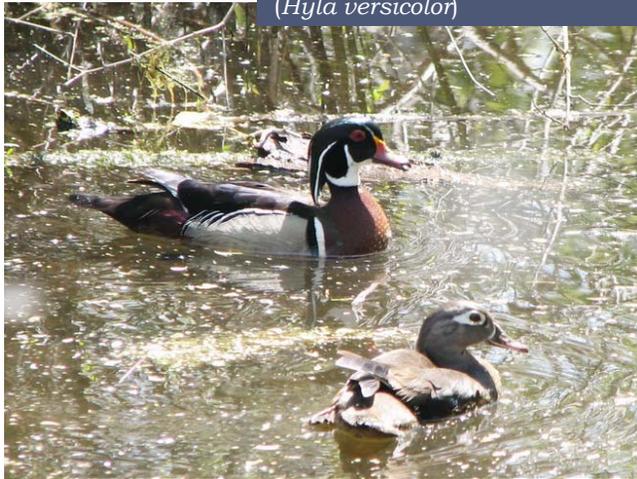
Pink Lake



Wild leek
(*Allium tricoccum*)



Gray tree frog
(*Hyla versicolor*)



Wood duck (*Aix sponsa*)

The Park's profile and the broad variety of ecosystems are also conducive to the presence of many species. Indeed, the concentration of species in the Park, in each of the following categories, is far greater than elsewhere in Québec:

- more than 1,600 plant species;
- more than 50 fish species;
- 54 mammal species, including some with large home ranges, some extensive forest species, some large carnivores and 10 species specific to aquatic environments;

- 232 bird species, representing approximately 80 percent of the species surveyed in the Outaouais Region and 60 percent of those known to be present in Quebec as a whole;
- 17 amphibian species and 11 reptile species, accounting for approximately 78 percent of all the species in this group already identified in the greater Outaouais Region.

Of all the species identified, 133 are classified as being at risk (2008).¹

1. The term "species at risk" used in this report refers to the plant and animal species with special status at the federal level (*Species at Risk Act*) and provincial level (Quebec's Act respecting threatened or vulnerable species, *Loi sur les espèces menacées ou vulnérables*). It also includes the species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and those on the provincial list of species likely to be designated as threatened or vulnerable.

FIGURE 2
GEOGRAPHICAL CONTEXT OF GATINEAU PARK

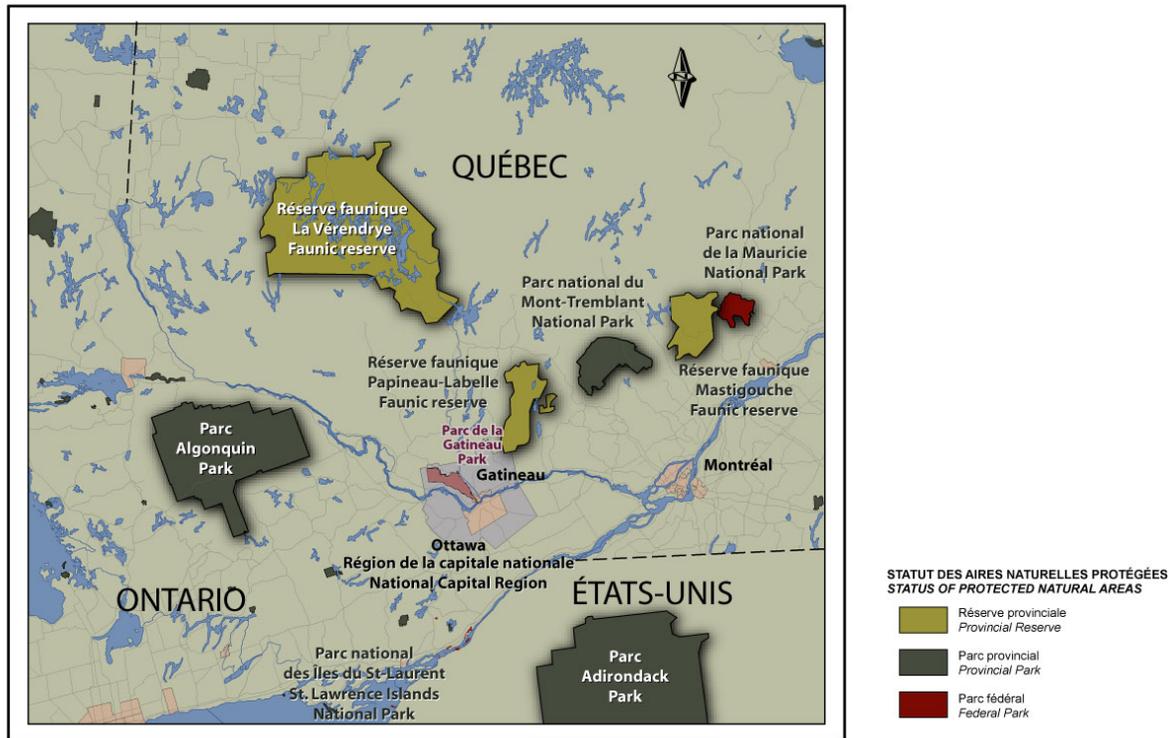
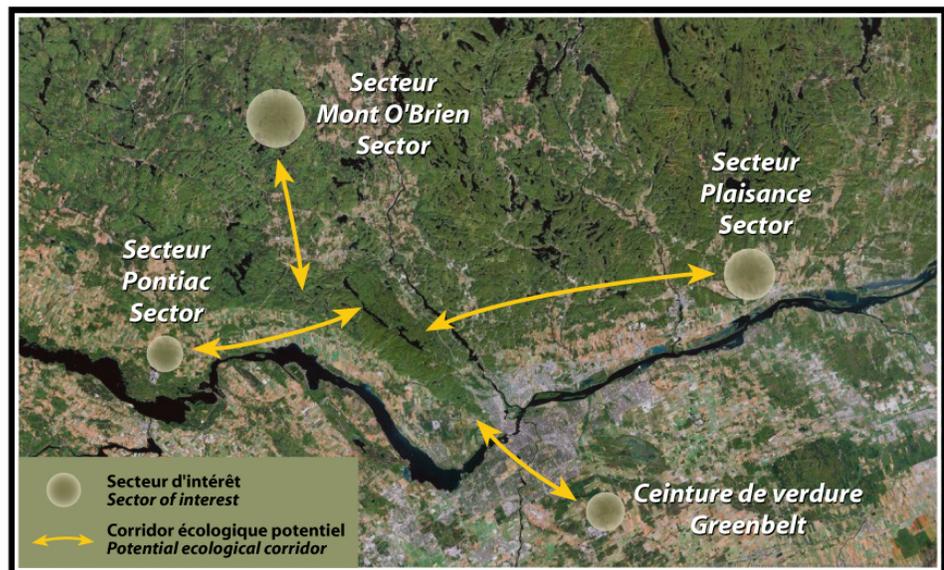


FIGURE 3
LOCATION OF THE GATINEAU PARK REGIONAL ECOSYSTEM



3. THE PARK'S HEALTH: STABLE BUT FRAGILE



Park boundaries

The health of Gatineau Park ecosystems was studied in 2006. Ten indicators were assessed using 30 biotic and abiotic measurement elements that were sufficiently documented in both the Park and the surrounding region. This initial evaluation of ecological health was based primarily on existing studies, using available resources. The results for some indicators can therefore be regarded as standards, whereas in other cases they require qualitative evaluation. The results of monitoring programs that have recently been or will be introduced will gradually provide a more informed view of the impacts of stressors on ecosystem sustainability in the Park, along with a better view of the Park's health over time.

The general state of Gatineau Park is acceptable, and its current balance is stable, but fragile (*see the map of the Gatineau Park ecosystem health*). Generally speaking, the indicators show that ecological conditions are acceptable or good. For half of the indicators, the trend is toward stability, whereas the remainder are expected to deteriorate; hence the fragile nature of the Park. Based on future development trends around the Park and anticipated climate change in the next 50 years, the relative stability of ecosystem health will certainly be threatened. Accordingly, if no steps are taken to reverse the impacts of certain stressors, the state of the Park's health will quickly begin to deteriorate.

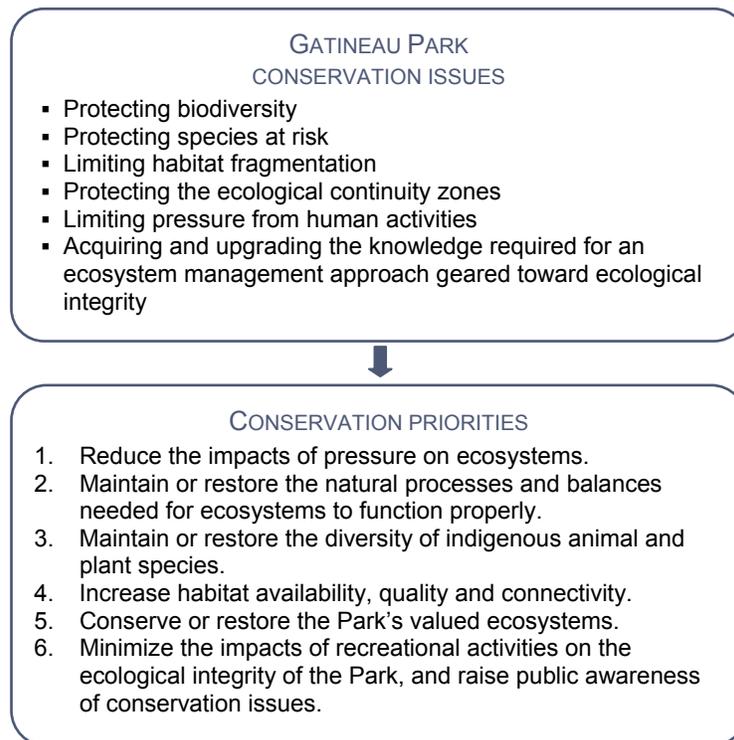


Egg of great blue heron
(*Ardea herodias*)

4. ISSUES AND CONSERVATION PRIORITIES

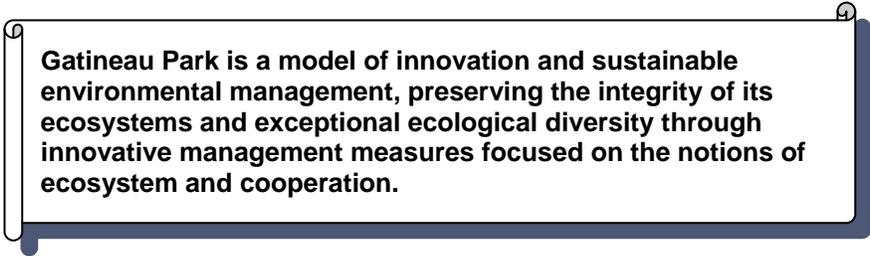
The Plan for Canada's Capital defines the Park as primarily a conservation area. However, the Park also contributes to the quality of life of local residents, and plays a cultural and political role that sometimes leads to choices that are difficult to reconcile and compromises that are risky from an environmental standpoint. Consequently, Park management is faced with broad conservation issues which translate into a series of priorities designed to ensure the protection of ecosystems.

FIGURE 4:
GATINEAU PARK CONSERVATION PRIORITIES



5. A CONSERVATION VISION FOR 2035

The conservation vision is a statement of a desired future for Park ecosystem health and conservation priorities. It expresses the fundamental elements of the conservation approach for Gatineau Park, and is inspired by an understanding of the values held by citizens. Opinion polls and government research have revealed a number of values that are of importance to Canadians, including preservation of the natural environment. These are the values that are represented in the vision statement, the basic elements of which are summarized below.



Gatineau Park is a model of innovation and sustainable environmental management, preserving the integrity of its ecosystems and exceptional ecological diversity through innovative management measures focused on the notions of ecosystem and cooperation.

Seven principles have emerged from this vision. They constitute the values and beliefs that serve as a basis for ecosystem management.

Principle 1: A management approach focused on ecosystems and directed primarily at achieving ecological integrity in order to sustain and improve the overall health of the Park and of the broader ecosystem in which it is situated.

Principle 2: Adaptive management and a scientific approach aimed at understanding and planning ecosystem management and working toward ecological integrity.

Principle 3: A decision-making process and management methods based on the precautionary principle, to ensure that ecological integrity takes priority.

Principle 4: Ecosystem management that allows ecological processes to follow their natural course, in order to support natural dynamics.

Principle 5: Active ecosystem management when ecological integrity is compromised.

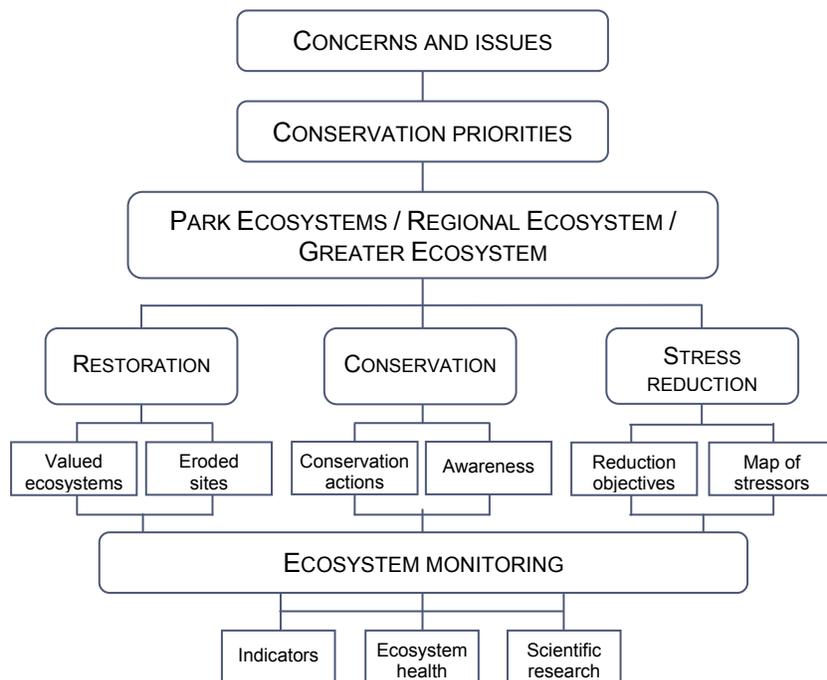
Principle 6: Management that seeks ongoing support from the general public for the rehabilitation and maintenance of ecosystem health and integrity.

Principle 7: Management based on collaboration with regional stakeholders, an ecosystem approach and responsible urban development to support the ecological integrity of the Park and the sustainable development of the region.

6. THE ECOSYSTEM CONSERVATION PLAN: A HOLISTIC APPROACH

The Gatineau Park Ecosystem Conservation Plan is the end result of discussions and analysis of conservation issues over a period of several years. It includes a plan of action that reflects conservation issues and priorities, a vision for the Park and the Park's current state of health, supported by a restoration program and a stress reduction strategy. Overall, the Gatineau Park Ecosystem Conservation Plan offers a cohesive approach to conservation based on concrete actions.

FIGURE 5
SUMMARY OF PRINCIPAL STEPS IN THE ECOSYSTEM CONSERVATION PLAN



7. THE ACTION PLAN

7.1 CONSERVATION ACTIONS

The conservation priorities, as well as the principles and directions, set out in the vision for 2035 helped to identify several conservation issues (e.g. climate change). Based on current available knowledge, each issue was examined in terms of the following headings.

- 1) **CONTEXT AND CURRENT SITUATION** states the specific issue.
- 2) **CONSERVATION APPROACH** states the conservation direction for the situation in the Park.
- 3) **KEY CONSERVATION ACTIONS** are based on the chosen approach, and require a sufficient level of knowledge in order to be implemented. The development of key conservation actions was based on current knowledge and the scope of the issue.

In all, approximately 50 conservation actions are proposed, under eight issue headings. Given the large number of actions, and the range of areas covered, each action has been ranked according to its urgency. This was done by means of a quantitative assessment based on 12 criteria, divided into the following three priority groups:

- the importance of achieving ecological integrity objectives;
- the state of the resource;
- the characteristics of the conservation action itself (cost, effectiveness).

The final point totals were used to rank the actions into three classes or performance time frames (short term for Priority I actions, medium term for Priority II actions and long term for Priority III actions). Appendix 1 presents the final rankings for each action, and the table below presents Priority I actions.

TABLE 1
PRIORITY I CONSERVATION ACTIONS

KEY ACTIONS
GREATER ECOSYSTEM
CLIMATE CHANGE AND AIR POLLUTION
Develop a green transportation plan in accordance with the recommendations made in the Gatineau Park Master Plan, in order to limit and control motor vehicle traffic and travel in central portions of the Park that are dedicated to conservation.
Continue partnerships with Québec's Ministère des Ressources naturelles et de la Faune and Environment Canada regarding monitoring programs for acid rain and atmospheric pollution.
REGIONAL ECOSYSTEM
ECOLOGICAL CORRIDORS
Complete the information on the 14 ecological corridors identified by qualitative analysis, through studies and inventories that include surveys and monitoring of biodiversity in each corridor, as well as assessment of the stress factors affecting terrestrial and aquatic environments (<i>see the map of the major potential ecological corridors around Gatineau Park</i>).
Develop a plan for the preservation of ecological corridors identified in partnership with the municipalities, associations and appropriate agencies (also applies to natural habitat mosaics).

TABLE 1 (CONT.)
PRIORITY I CONSERVATION ACTIONS

KEY ACTIONS
REGIONAL ECOSYSTEM
TERRESTRIAL ECOSYSTEMS
Wherever possible, minimize the impacts of aggressive invasive species (plants and wildlife) that affect terrestrial ecosystems and indigenous species.
Continue to take steps toward banning the use of snowmobiles in the Park.
AQUATIC AND RIPARIAN ECOSYSTEMS AND WETLANDS
Identify the sites and causes of shoreline degradation around the recreational lakes in Gatineau Park, and develop measures to reduce stress.
Identify and assess the impact of formal and informal lakeside trails, and develop measures to reduce stress.
Wherever possible, minimize the impacts of aggressive invasive species (wildlife and plants) that affect aquatic and riparian ecosystems, wetlands and indigenous species.
Monitor water quality in headwater lakes and streams, and characterize those for which insufficient information is available.
Continue discussions with municipalities and associations on the watersheds around the Park to promote watershed-based water management.
Continue to take steps toward banning the use of motorboats in the Park's lakes.
Promote collaboration and partnerships with private landowners in the immediate vicinity of significant aquatic environments and wetlands in the Park, so as to encourage riparian protection.
PARK ECOSYSTEMS
NATURAL ECOSYSTEM PROCESSES AND BALANCE
Insect epidemics
Where applicable, let attacks run their course, but continue to monitor insect population levels and infestations, except where they affect ecological integrity, species at risk or public safety, or where there is a legal requirement to address them.
Continue and take part in the monitoring of actual or potential infestations by pest insects (e.g. emerald ash borer, gypsy moth), with the appropriate agencies.
Natural habitat mosaics
Continue to develop ecological corridors.
BIODIVERSITY AND SPECIES VIABILITY
Species at risk
Locate and characterize potential habitats for species at risk in order to sustain viable populations.
Continue or begin work with the federal and provincial species at risk committees and with the programs of government departments working on species at risk (e.g. Environment Canada's Interdepartmental Recovery Fund).
Invasive species
Develop and implement a management strategy in order to minimize, where possible, the impacts of aggressive invasive species with repercussions for ecosystems and indigenous species, and to minimize the possibility of new invasions (also applies to terrestrial ecosystems, aquatic ecosystems, Eardley Escarpment, Eardley Plateau, the three-lake chain, La Pêche Lake and Pink Lake Plateau).
Become involved with the committees and programs of associations and government departments working on the issue of invasive species (e.g. Environment Canada's Invasive Alien Species Partnership Program).
Implement the key conservation actions identified for insect infestations.
VALUED ECOSYSTEMS
Eardley Escarpment
Confine rock climbing to the two or three most damaged rock walls, where rehabilitation work will not be effective.
Close the hang-gliding site on the escarpment (parking lot and access trail).
Continue to gather knowledge on ecosystem components in order to target specific intervention sectors.

TABLE 1 (CONT.)
PRIORITY I CONSERVATION ACTIONS

KEY ACTIONS
PARK ECOSYSTEMS (CONT.)
VALUED ECOSYSTEMS
Eardley Escarpment (cont.)
Prepare a program to restore damaged areas (also applies to the three-lake chain and La Pêche Lake).
Use the proposed approach to manage invasive species.
Improve monitoring of the Eardley Escarpment's exceptional ecosystem (presence of conservation officers).
Eardley Plateau
Use the proposed approach to manage invasive species.
In partnership with the equestrian association, move the last 5.5-kilometre stretch of equestrian trail located in the western portion of the Park to a site outside the integral conservation zone.
Three-lake chain
Use the proposed approach to manage invasive species.
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.
Prepare a program to restore damaged areas (also applies to Eardley Escarpment and La Pêche Lake).
La Pêche Lake
Use the proposed approach to manage invasive species.
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.
Prepare a program to restore damaged areas (also applies to Eardley Escarpment and the three-lake chain).
Pink Lake Plateau
Use the proposed approach to manage invasive species.
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.
RECREATIONAL ACTIVITIES
Mountain biking
Identify and implement the necessary restoration measures.
Rock climbing
Identify two or three walls on which rock climbing could take place, based on their impact on the Eardley Escarpment ecosystem, their current level of damage and their popularity (also applies to Eardley Escarpment).
Change the boundaries of the integral conservation zone, as set out in the Gatineau Park Master Plan, to accommodate these walls.
Restore the environment of former climbing sites that are not selected, including any access trails.
Hang-gliding
Close the trail and parking lot (also applies to Eardley Escarpment).
Restore the trail and parking lot after closure.
Horse riding
In partnership with the equestrian association, move the last 5.5-kilometre stretch of equestrian trail located in the western portion of the Park to a site outside the integral conservation zone (also applies to Eardley Plateau).
Restore the closed section of the trail located in the integral conservation zone.

7.2 CONSERVATION AREAS

Gatineau Park was divided into different conservation areas as a means of guiding and targeting ecosystem management. These areas were identified from a GIS analysis using various components of interest within the Park's ecosystems (e.g. location of special status species and their habitats, and so on). Each component received a score, and the total score for all the components became the final score for the ecosystem in question. The precautionary principle was applied to this task, to help account for the level of uncertainty and lack of accuracy inherent in the approach, as well as for the fact that, in many cases, more information was required for a full assessment. Based on the final scores, ecosystems were then classified into one of the following four conservation area types.

Type I Conservation Areas: Pressure from human activities and natural sources in these areas could possibly lead to the disappearance of their components. The damage caused by pressure could be irreversible for these ecosystems, especially in terms of nesting or the survival of certain special interest plant species.

Type II Conservation Areas: These ecosystems are less fragile than Type I ecosystems but, if their wealth and diversity were to be weakened by any kind of pressure, this could be harmful for the rest of the territory.

Type III Conservation Areas: This type of conservation area is generally larger, with several elements of special interest. These areas are important due to the quantity and quality of biotopes for several species. They also contain landscape elements that are representative of the natural region, and some rare species. These ecosystems are generally not fragile, because of their spatial extension or their ecological integrity.

Type IV Conservation Areas: These ecosystems are located within the Park boundaries, but are not valued ecosystems. Nevertheless, those that are found to be of special interest or deserve special attention should be classified in one of the other conservation types, depending on their degree of fragility.

The analysis and mapping of conservation areas clearly revealed the importance and sensitivity of the valued ecosystems. As a result, Eardley Escarpment and Pink Lake Plateau were classified as Type I conservation areas, Eardley Plateau and La Pêche Lake as Type II conservation areas, and the three-lake chain as a Type III conservation area.²

7.3 A RESTORATION STRATEGY

When biodiversity and ecosystem health have been altered, an active management approach is recommended, which may include restoration processes. This is particularly the case for certain valued ecosystems.

During the review of ecosystem health in Gatineau Park, three ecosystems were found to be in poor condition and deteriorating: the terrestrial ecosystems in Eardley Escarpment, the aquatic and riparian environments in the La Pêche Lake ecosystem, and the three-lake chain. These findings were supported by the description of their conservation issues.

A preliminary restoration study was therefore carried out in the Park for the purposes of the Gatineau Park Ecosystem Conservation Plan. It identified four main causes of damage to the Park, namely recreation, invasive species, human-made infrastructure and deer grazing. Each of these elements is present to varying degrees, and has a variable impact on the Park's ecosystems.

2. The three-lake chain ecosystem as a whole is identified as a Type III conservation area, but each of the three lakes within it (Philippe, Mousseau and Meech) are classified as a Type I conservation area.

A number of restoration measures can therefore be directly applied to valued ecosystems currently in a precarious state of health, and in relation to certain recreational activities as well. These measures are based on current knowledge, and are the result of recent observations, monitoring and studies conducted in the Park. They may therefore precede or be included in future restoration programs to be applied in the Park.

Eardley Escarpment: Restoration should target revegetation of the areas that are the most severely affected (from erosion and grazing). This involves the following:

- identifying the areas of the escarpment that have been severely eroded;
- examining an appropriate revegetation method (exclosure, plantations) using adaptive management;
- implementing appropriate methods;
- developing a program to monitor the success of the revegetation process.

Three-lake chain and La Pêche Lake: Pressures from human activities have fragmented the environment and altered the riparian ecotones. Site connectivity and riparian ecotone functions must therefore be restored. This involves the following:

- identifying and locating the most damaged riparian ecotones (erosion, inappropriate public use, grassy areas and so on);
- assessing appropriate restoration methods (e.g. buffer zones along roadsides, plantations, wildlife bridges);
- assessing appropriate revegetation methods (e.g. planting, layering, seeding);
- supporting restoration by protecting restored areas and controlling human development;
- supporting restoration by raising user awareness and protecting restored areas;
- introducing a program to monitor the success of the revegetation process.

Recreational activities: Activities such as sport fishing, mountain biking, rock climbing, hang-gliding and horse riding lead to the erosion of trails and the creation of unofficial trails, increase the potential for the introduction of invasive species, and contribute to the fragility of sensitive habitats and species at risk.

Based on current knowledge about the contributors to environmental degradation and degraded areas, mitigation involves restoration work targeting the following:

- unofficial trails;
- former snowmobile trails, after their closure in 2010;
- disused climbing sites and access trails,
- the stretch of the equestrian trail located in the integral conservation zone;
- the hang-gliding parking lot and trail.

In these cases, the restoration strategy will follow that proposed in the Gatineau Park restoration process.

7.4 REDUCING STRESS

Most of the conservation issues are caused by or closely related to stress factors. Consequently, reducing the impact of stressors on the Park's ecosystems is a key element in the conservation process. This approach is consistent with the principles and orientations set out in the Park's vision. The following five major goals for the reduction of impacts on ecosystems have been defined.



Purple loosestrife
(*Lythrum salicaria*)

- To minimize the propagation of invasive species and prevent new invasions.
- To mitigate the impacts of overgrazing by white-tailed deer.
- To monitor and control visits to and use of the area.
- To limit or prohibit recreational activities that are harmful to ecosystem integrity.
- To reduce the impact of human development.



White-tailed deer (*Odocoileus virginianus*)

Digital analysis has been used to support the stress reduction objectives. The database contains information about the location of areas experiencing various stress factors. Each factor is ranked according to impact intensity and the ecological value of the components.

The results were divided into four categories, from low impact to very high impact. For example, an area where the impact is classified as very high would be an area with high ecological value that is under pressure from a variety of stressors.

The map indicating human impact on Gatineau Park ecosystems highlights the significant impact of stress on aquatic environments (lakes and riparian areas). Most of these sectors are located in valued ecosystems.

It is also important to note that the analysis is limited by the accessibility and scope of the information obtained. However, the results are sufficient to serve as a basis for a realistic stress reduction strategy.

Stress impact levels are clearly shown, and the general strategy should therefore aim to reduce them gradually over time. In each new period, the impact level for a given sector should be reduced to the category below and so on. For example, "very high" impact levels in a given sector should be reduced to "high" in the next period, and so on, until they can be classified as "low" or even "non-existent" in some cases.

8. TOOLS TO SUPPORT THE ACTION PLAN

8.1 ECOSYSTEM MONITORING

An ecosystem monitoring plan was prepared in order to monitor and evaluate the success of the management measures implemented. A number of environmental indicators were selected and used to survey the pressures identified in the stress reduction strategy, as well as the Park's current health and the conservation efforts being made (*see Appendix 2*).

In all, 30 indicators were identified. More than half were identified in current NCC studies (e.g. biodiversity monitoring, natural resource and environmental management, ecosystem health). They are being used by the NCC as guidelines for the development of a detailed monitoring program. Some indicators may be altered, combined or reduced.

8.2 SCIENTIFIC RESEARCH

Since the 1960s, the NCC has generated more than 1,200 scientific research projects, conducted in-house by the Park's own professionals, or externally by scientific institutions, academics and consulting firms. The findings are used to support management decisions and provide elements for new approaches and theme-based methods.

The main topics on which research is required can also be identified and defined from the issues addressed in the Gatineau Park Ecosystem Conservation Plan. For example, the plan of action should aim to enhance and confirm knowledge of the following:

- ecological integrity;
- biodiversity;
- ecological connectivity;
- management methods;
- global warming and climate change;
- human use.

8.3 COMMUNICATION, AWARENESS AND PARTNERSHIPS

Communications and public awareness are essential to support the Gatineau Park Ecosystem Conservation Plan, and ensure its effectiveness and success with the public (users, residents, NCC staff, visitors and so on). Various actions are therefore needed to reinforce discussions with the scientific community and encourage its participation in ecosystem conservation. These actions may include the preparation of a publication providing information about the Park's ongoing scientific activities, the creation of committees composed of experts from the scientific community and so on.

In addition, the NCC has always welcomed the involvement of the general public in Canada's Capital Region. A number of collaborative agreements and partnerships have been established with the cities of Chelsea and Gatineau, as well as with various associations and organizations, including Friends of Gatineau Park, the Canadian Parks and Wilderness Society (CPAWS), the Nature Conservancy of Canada and the Conseil régional de l'environnement et du développement durable de l'Outaouais (CREDDO). In addition, new partnerships could also be established with associations dedicated to wilderness protection, Canadian universities, scientific interest groups, research centres, other provincial and national parks, regional county municipalities, and tourism businesses in the Outaouais Region. The NCC may also take part in the consultation process for local and regional organizations involved in natural resource management and conservation, working with them to manage and develop the regional ecosystem and protect its biodiversity. In addition, access to information could be improved by regular communications about Park management and the creation of a shared database. In addition, the NCC could communicate with residents of the Park and neighbouring municipalities to help raise awareness of good environmental management practices.

9. TIME FRAME FOR THE GATINEAU PARK ECOSYSTEM CONSERVATION PLAN

The Gatineau Park Ecosystem Conservation Plan will be implemented over a period of 15 years, after which it will be reviewed in order to make any necessary adjustments. The plan is based on a cyclical process composed of actions based on feedback. In other words, if a goal is not achieved, then the preceding step is repeated. The first 15 years of implementation will serve to evaluate the effectiveness of the various methods and the results achieved in the field. The plan can then be adjusted, based on these considerations, as well as on new knowledge acquired in the interim.

TABLEAU 2
TIME FRAME FOR THE GATINEAU PARK ECOSYSTEM CONSERVATION PLAN

ACHIEVEMENTS	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Conservation actions																	
Preparation and implementation of Priority I actions	█																
Preparation and implementation of Priority II actions						█											
Preparation and implementation of Priority III actions											█						
Restoration of significant ecosystems																	
Preparation of restoration plans	█																
Restoration work	█																
Evaluation of the restoration work														█			
Review of restoration plan																█	
Ecosystem monitoring plan																	
Profile of ecosystem health					█					█						█	
Review of stressor impact levels					█					█						█	
Review of monitoring plan														█			

Ecosystem Conservation Plan Review

10. IMPACT OF THE GATINEAU PARK ECOSYSTEM CONSERVATION PLAN ON THE GATINEAU PARK MASTER PLAN

The various proposals outlined in the Gatineau Park Ecosystem Conservation Plan led to verification in terms of consistency of the zoning proposed in the Gatineau Park Master Plan. Consequently, the studies as well as the work leading up to the proposals for implementation of the ecosystem conservation plan have generated a number of proposed improvements to the master plan. These suggestions will be confirmed when the master plan is reviewed.

In the end, there were few variances in the current zoning limits. However, to ensure consistency with the ecosystem conservation plan, we recommend that the status should be examined in the case of six specific sites where minor discrepancies were noted (*see the map of the Gatineau Park zoning changes*).



Eardley Escarpment

FOR MORE INFORMATION

This document is a summary of the Gatineau Park Ecosystem Conservation Plan, the full title of which is as follows:

DEL DEGAN, MASSÉ ET ASSOCIÉS, 2009. *Gatineau Park Ecosystem Conservation Plan*, prepared by Del Degan, Massé et Associés for the National Capital Commission, February 2010, 127 pp. and Appendices 1–4.

Photo credit: Del Degan, Massé et Associés, 2009

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APPENDIX 1

CONSERVATION ACTIONS AND PRIORITY LEVELS
FOR THEIR IMPLEMENTATION

PRIORITIZATION OF CONSERVATION ACTIONS

KEY ACTION	PRIORITY
GREATER ECOSYSTEM	
CLIMATE CHANGE AND ATMOSPHERIC POLLUTION	
Assess and implement the adaptation strategies presented in the report on climate change, based on changing ecosystem contexts and the activities that take place in the Park.	III
Develop a green transportation plan in accordance with the recommendations made in the Gatineau Park Master Plan, in order to limit and control motor vehicle traffic and travel in central portions of the Park that are dedicated to conservation.	I
Continue partnerships with Quebec's Ministère des Ressources naturelles et de la Faune and Environment Canada regarding monitoring programs for acid rain and atmospheric pollution.	I
REGIONAL ECOSYSTEM	
ECOLOGICAL CORRIDORS	
Complete the information on the 14 ecological corridors identified by qualitative analysis, through studies and inventories that include surveys and monitoring of biodiversity in each corridor, as well as assessment of the stress factors affecting terrestrial and aquatic environments.	I
Develop a plan for the preservation of ecological corridors identified in partnership with the municipalities, associations and appropriate agencies (also applies to natural habitat mosaics).	I
Support the creation of partnerships at the regional, national and international levels in order to gather the information and tools needed to develop a network of ecological corridors at different scales.	II
TERRESTRIAL ECOSYSTEMS	
Carry out or continue environmental monitoring of recreational activities in conservation areas (Type I to Type IV, in that order), so as to identify environmental problems and allow for the design and implementation of adapted management measures.	Ongoing monitoring
Continue to implement the measures established under the Gatineau Park Species at Risk Protection Plan.	Ongoing monitoring
Continue to monitor the indicators for terrestrial environments in the Park under the biodiversity monitoring program: vascular plant species, avian wildlife, micromammals, species at risk, plant species at risk and invasive plants [garlic mustard (<i>Alliaria officinalis</i>) and glossy buckthorn (<i>Rhamnus frangula</i>)], habitat mosaic, environmental fragmentation and plant and wildlife potential (see also <i>Habitat Mosaic, Species at Risk and Invasive Species</i>).	Ongoing monitoring
Wherever possible, minimize the impacts of aggressive invasive species (plants and wildlife) that affect terrestrial ecosystems and indigenous species.	I
Continue to take steps toward banning the use of snowmobiles in the Park.	I
AQUATIC AND RIPARIAN ECOSYSTEMS AND WETLANDS	
Identify the sites and causes of shoreline degradation around the recreational lakes in Gatineau Park, and develop measures to reduce stress.	I
Identify and assess the impact of formal and informal lakeside trails, and develop measures to reduce stress.	I
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan.	Ongoing monitoring
Continue to monitor the indicators for aquatic, riparian and wetland environments in the Park under the biodiversity monitoring program: freshwater mussels, anurans, species at risk, invasive plants (Eurasian water milfoil and purple loosestrife) and the common loon.	Ongoing monitoring
Wherever possible, minimize the impacts of aggressive invasive species (wildlife and plants) that affect aquatic and riparian ecosystems, wetlands and indigenous species.	I
Monitor water quality in headwater lakes and streams, and characterize those for which insufficient information is available.	I

KEY ACTION	PRIORITY
REGIONAL ECOSYSTEM (CONT.)	
AQUATIC AND RIPARIAN ECOSYSTEMS AND WETLANDS (CONT.)	
Continue discussions with municipalities and associations on the watersheds around the Park to promote watershed-based water management.	I
Continue to take steps toward banning the use of motorboats in the Park's lakes.	I
Promote collaboration and partnerships with private landowners in the immediate vicinity of significant aquatic environments and wetlands in the Park, so as to encourage riparian protection.	I
Update and implement the sport fishing management plan.	II
Incorporate the notion of free passage for fish into the planning of future projects affecting the aquatic environment (e.g. installation of and repairs to culverts).	Ongoing monitoring
PARK ECOSYSTEMS	
NATURAL ECOSYSTEM PROCESSES AND BALANCE	
Wind and ice storms	
Monitor the progress of affected environments to check that the storms do not generate major impacts or risks (e.g. continue to work with Carleton University on the study of the impacts of the 1998 ice storm).	Ongoing monitoring
Flooding and high water	
As far as possible, dismantle non-necessary artificial water retention works to let natural processes run their natural course, and allow for free passage of fish.	III
Comply with the instructions set out in the Fisheries and Oceans Canada (2007) document on the design and installation of permanent culverts of less than 25 metres when installing or repairing culverts, in order to ensure that fish are able to move freely through the Park's culverts.	Ongoing monitoring
Fire	
Determine the role and ecological importance of fire in plant dynamics in the Park's forest ecosystems. This evaluation will take place when the Park's vegetation management plan is revised.	II
Insect epidemics	
Where applicable, let attacks run their course, but continue to monitor insect population levels and infestations, except where they affect ecological integrity, species at risk or public safety, or where there is a legal requirement to address them.	I
Apply decisions made by competent authorities (e.g. Canadian Food Inspection Agency, Agriculture Canada), where appropriate.	Ongoing monitoring
Continue and take part in the monitoring of actual or potential infestations by pest insects (e.g. emerald ash borer, gypsy moth), with the appropriate agencies.	I
Predator-prey relationships	
Identify the impacts of overabundant wildlife species on ecosystem health.	III
Continue to implement programs and strategies to manage and monitor the white-tailed deer population (also applies to Eardley Escarpment) and the beaver population.	Ongoing monitoring
Monitor the use of corridors by predators, and suggest measures to improve their role in maintaining predator population levels in general, and wolf populations in particular.	II
Encourage the hunting of deer in areas peripheral to the Park where the deer population is too large, in partnership with Québec's Ministère des Ressources naturelles et de la Faune.	II
Natural habitat mosaics	
Continue to develop ecological corridors.	I
Continue to protect habitats in valued ecosystems.	Ongoing monitoring
Continue to monitor indicators associated with the Park's habitat mosaic as part of the biodiversity monitoring program: habitat mosaic, environmental fragmentation, and plant and wildlife potential.	Ongoing monitoring

KEY ACTION	PRIORITY
PARK ECOSYSTEMS (CONT.)	
BIODIVERSITY AND SPECIES VIABILITY	
Species at risk	
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan (also applies to terrestrial ecosystems, aquatic ecosystems, Eardley Escarpment, Eardley Plateau, the three-lake chain, La Pêche Lake and Pink Lake Plateau).	Ongoing monitoring
Locate and characterize potential habitats for species at risk in order to sustain viable populations.	I
Identify flows of wildlife species at risk and the spread of plant species at risk within the Park's ecosystems, as well as in the regional and greater ecosystems.	II
Continue to monitor the indicators associated with species at risk under the biodiversity monitoring program: plants and wildlife at risk (also applies to terrestrial ecosystems and aquatic ecosystems).	Ongoing monitoring
Continue or begin work with the federal and provincial species at risk committees and with the programs of government departments working on species at risk (e.g. Environment Canada's Interdepartmental Recovery Fund).	I
Invasive species	
Develop and implement a management strategy in order to minimize, where possible, the impacts of aggressive invasive species with repercussions for ecosystems and indigenous species, and to minimize the possibility of new invasions (also applies to terrestrial ecosystems, aquatic ecosystems, Eardley Escarpment, Eardley Plateau, the three-lake chain, La Pêche Lake and Pink Lake Plateau).	I
Continue to monitor the indicators associated with invasive plant species under the biodiversity monitoring program: invasive species.	Ongoing monitoring
Become involved with the committees and programs of associations and government departments working on the issue of invasive species (e.g. Environment Canada's Invasive Alien Species Partnership Program).	I
Implement the key conservation actions identified for insect infestations.	I
VALUED ECOSYSTEMS	
Eardley Escarpment	
Confine rock climbing to the two or three most damaged rock walls, where rehabilitation work will not be effective.	I
Close the hang-gliding site on the escarpment (parking lot and access trail).	I
Continue to gather knowledge on ecosystem components in order to target specific intervention sectors.	I
Continue to implement the white-tailed deer management program.	Ongoing monitoring
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan, namely to identify species at risk in the ecosystem and implement appropriate conservation measures (e.g. deer enclosure).	Ongoing monitoring
Prepare a program to restore damaged areas (also applies to the three-lake chain and La Pêche Lake).	I
Use the proposed approach to manage invasive species.	I
Improve monitoring of the Eardley Escarpment's exceptional ecosystem (presence of conservation officers).	I

KEY ACTION	PRIORITY
PARK ECOSYSTEMS (CONT.)	
VALUED ECOSYSTEMS (CONT.)	
Eardley Plateau	
Use the proposed approach to manage invasive species.	I
Update and implement the Gatineau Park sport fishing management plan.	II
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan, namely to identify the species at risk present in the ecosystem and implement the appropriate conservation measures.	Ongoing monitoring
In partnership with the equestrian association, move the last 5.5-kilometre stretch of equestrian trail located in the western portion of the Park to a site outside the integral conservation zone.	I
Three-lake chain	
Use the proposed approach to manage invasive species.	I
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.	I
Prepare a program to restore damaged areas (also applies to Eardley Escarpment and La Pêche Lake).	I
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan, namely to identify the species at risk in the ecosystem and implement the appropriate conservation measures.	Ongoing monitoring
La Pêche Lake	
Use the proposed approach to manage invasive species.	I
Update and implement the Gatineau Park sport fishing management plan.	II
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.	I
Prepare a program to restore damaged areas (also applies to Eardley Escarpment and the three-lake chain).	I
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan, namely to identify the species at risk in the ecosystem and implement the appropriate conservation measures.	Ongoing monitoring
Create water management partnerships with municipalities adjacent to the watershed.	II
Pink Lake Plateau	
Use the proposed approach to manage invasive species.	I
Implement the key conservation actions for aquatic ecosystems, particularly with respect to water quality.	I
Continue to implement the various measures proposed in the Gatineau Park Species at Risk Protection Plan, namely to identify species at risk in the ecosystem and implement the appropriate conservation measures.	Ongoing monitoring
RECREATIONAL ACTIVITIES	
Sport fishing	
Update and implement the Gatineau Park sport fishing management plan (also applies to aquatic ecosystems, Eardley Plateau and La Pêche Lake).	II
Identify measures that are likely to maximize the breeding of fish species at risk.	III
Work with Québec's Ministère des Ressources naturelles et de la Faune to identify specific regulations for sport fishing in the Park.	II

KEY ACTION	PRIORITY
PARK ECOSYSTEMS (CONT.)	
RECREATIONAL ACTIVITIES (CONT.)	
Mountain biking	
Continue environmental monitoring of official mountain bike trails in order to assess deterioration over time.	Ongoing monitoring
Continue and reinforce monitoring of unofficial mountain bike trails in order to assess the level of damage.	Ongoing monitoring
Identify and implement the necessary restoration measures.	I
Rock climbing	
Identify two or three walls on which rock climbing could take place, based on their impact on the Eardley Escarpment ecosystem, their current level of damage and their popularity (also applies to Eardley Escarpment).	I
Change the boundaries of the integral conservation zone, as set out in the Gatineau Park Master Plan, to accommodate these walls.	I
Restore the environment of former climbing sites that are not selected, including any access trails.	I
Continue to monitor the activity's environmental impacts on the selected walls.	Ongoing monitoring
Hang-gliding	
Close the trail and parking lot (also applies to Eardley Escarpment).	I
Restore the trail and parking lot after closure.	I
Horse riding	
In partnership with the equestrian association, move the last 5.5-kilometre stretch of equestrian trail located in the western portion of the Park to a site outside the integral conservation zone (also applies to Eardley Plateau).	I
Restore the closed section of the trail located in the integral conservation zone.	I
Continue to monitor the environmental impact of the activity on the remainder of the official trail.	Ongoing monitoring

APPENDIX 2

MONITORING PROGRAM FOR GATINEAU PARK'S ECOSYSTEMS AND
MONITORING TIME FRAME

MONITORING PROGRAM FOR GATINEAU PARK'S ECOSYSTEMS³

OBJECTIVES / CONSERVATION PRIORITIES	INDICATORS	COLLECTION METHOD	FREQUENCY	VALUED ECOSYSTEMS					
				Park Ecosystems	Eardley Escarpment	Eardley Plateau	Three-Lake Chain	La Pêche Lake	Pink Lake Plateau
Reduction of ecosystem stress factors (pressure)									
1. Minimize propagation of invasive species and prevent new invasions Conservation priorities: 1, 2, 3 and 4	<ul style="list-style-type: none"> ▪ Diversity of freshwater mussels ▪ Interventions to control populations of invasive species ▪ Recovery rate of invasive species 	<ul style="list-style-type: none"> ▪ Inventories ▪ Statistics ▪ Sampling 	<ul style="list-style-type: none"> ▪ Every 5 years ▪ Every 3 years ▪ Every 3 years 	✓	✓	✓	✓	✓	✓
2. Mitigate the impacts of over-grazing by white-tailed deer Conservation priorities: 1, 2, 3 and 4	<ul style="list-style-type: none"> ▪ White-tailed deer grazing rates in the most severely affected areas ▪ Number and size of deer yards in the Park 	<ul style="list-style-type: none"> ▪ Inventories ▪ Inventories 	<ul style="list-style-type: none"> ▪ Every 10 years ▪ Every 5 years 		✓				
3. Supervise and control visitor numbers and use (in the most severely damaged areas) Conservation priorities: 1, 5 and 6	<ul style="list-style-type: none"> ▪ Number of informal trails ▪ Physical and chemical quality of the water in control lakes 	<ul style="list-style-type: none"> ▪ Mapping ▪ Sampling 	<ul style="list-style-type: none"> ▪ Every 5 years ▪ Every 2 years 	✓	✓	✓	✓	✓	✓
4. Limit or prohibit recreational activities that are harmful to ecosystem integrity Conservation priorities: 1, 5 and 6	<ul style="list-style-type: none"> ▪ Number of activities governed by management policies and plans ▪ Number of users per activity 	<ul style="list-style-type: none"> ▪ Statistics ▪ Statistics 	<ul style="list-style-type: none"> ▪ Every 5 years ▪ Every 4 years 	✓	✓	✓	✓	✓	
5. Reduce the impact of human development Conservation priorities: 1, 4 and 5	<ul style="list-style-type: none"> ▪ Area occupied by human-made structures ▪ Extent of environmental fragmentation 	<ul style="list-style-type: none"> ▪ Statistics ▪ Mapping by photo-interpretation 	<ul style="list-style-type: none"> ▪ Every 5 years ▪ Every 8 years 	✓			✓		✓

3. The indicators and monitoring program described here will serve as guidelines for the NCC in the development of a detailed monitoring plan, management decisions and so on.

OBJECTIVES / CONSERVATION PRIORITIES	INDICATORS	COLLECTION METHOD	FREQUENCY	VALUED ECOSYSTEMS					
				Park Ecosystems	Eardley Escarpment	Eardley Plateau	Three-Lake Chain	La Pêche Lake	Pink Lake Plateau
Monitoring of ecosystem health (health)									
1. Maintain or restore the natural processes and balances needed for ecosystems to function Conservation priority: 2	<ul style="list-style-type: none"> Recovery rate of plant cover following disturbances (% of seedings on control plots) Recurrence of natural episodes (number of fires, infestations, floods, etc. identified) Diversity of the habitat mosaic Air quality (Ottawa station) 	<ul style="list-style-type: none"> Sampling, reports Statistics Mapping by photo-interpretation Data collection 	<ul style="list-style-type: none"> Every 10 years Every 10 years Every 8 years Every 5 years 	✓	✓	✓	✓	✓	✓
2. Maintain or restore diversity of indigenous animal and plant species Conservation priority: 3	<ul style="list-style-type: none"> Occurrence of species at risk Condition of indigenous biodiversity Plant and wildlife potential of the ecosystems 	<ul style="list-style-type: none"> Data collection Data collection Mapping by photo-interpretation 	<ul style="list-style-type: none"> Every 5 years Every 5 years Every 8 years 	✓	✓	✓	✓	✓	✓
3. Increase habitat availability, quality and connectivity Conservation priority: 4	<ul style="list-style-type: none"> Condition of terrestrial environments Condition of riparian environments Condition of wetland environments Condition of aquatic environments 	<ul style="list-style-type: none"> Sampling Data collection Statistics Sampling 	<ul style="list-style-type: none"> Every 5 years Every 5 years Every 5 years Every 5 years 	✓	✓	✓	✓	✓	✓
4. Conserve or restore the Park's valued ecosystems Conservation priority: 5	<ul style="list-style-type: none"> Size of restored areas Number of management plans implemented 	<ul style="list-style-type: none"> Data collection Statistics 	<ul style="list-style-type: none"> Every 5 years Every 3 years 		✓	✓	✓	✓	✓
Effort and success of management measures (response)									
1. Minimize the impacts of recreational activities on the ecological integrity of the Park Conservation priority: 6	<ul style="list-style-type: none"> State of environmental stewardship Number of research projects implemented Budget allocated to conservation Size of ecosystem areas set aside for conservation 	<ul style="list-style-type: none"> Statistics Statistics Statistics Statistics 	<ul style="list-style-type: none"> Every 3 years Yearly Yearly Every 5 years 	✓	✓	✓	✓	✓	✓
2. Raise public awareness of conservation issues Conservation priority: 6	<ul style="list-style-type: none"> Number of partnerships created for the purpose of conservation actions Rate of public participation in education and awareness activities 	<ul style="list-style-type: none"> Statistics Surveys 	<ul style="list-style-type: none"> Yearly Every 4 years 	✓	✓	✓	✓	✓	✓

TIME FRAME FOR THE MONITORING PROGRAM

INDICATORS	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Pressure															
Diversity of freshwater mussels	X					X					X				
Intervention effort to control populations of invasive species			X			X			X			X			X
Recovery rate of invasive species		X			X			X			X			X	
White-tailed deer grazing rates in the most severely affected areas				X										X	
Number and size of deer yards in the Park				X					X					X	
Number of informal trails				X					X					X	
Physical and chemical quality of the water in control lakes	X		X		X		X		X		X		X		X
Number of activities governed by management policies and plans				X					X					X	
Number of users per activity	X				X				X				X		
Area occupied by human-made structures					X					X					X
Extent of environmental fragmentation			X								X				
Health															
Recovery rate of plant cover following disturbances										X					
Recurrence of natural episodes										X					
Diversity of the habitat mosaic			X								X				
Air quality				X					X					X	
Occurrence of species at risk					X					X					X
Condition of indigenous biodiversity				X					X					X	
Plant and wildlife potential of the ecosystems			X								X				
Condition of terrestrial environments				X					X					X	
Condition of riparian habitats				X					X					X	
Condition of wetlands				X					X					X	
Condition of aquatic environments				X					X					X	
Size of restored areas				X					X					X	
Number of management plans implemented		X			X			X			X			X	
Response															
State of environmental stewardship			X			X			X			X			X
Number of research projects implemented	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Budget allocated to conservation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Size of ecosystem areas set aside for conservation					X					X					X
Number of partnerships created for conservation actions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rate of public participation in education and awareness activities	X				X				X				X		

Profile of ecosystem health

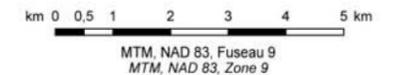
Profile of ecosystem health

Profile of ecosystem health

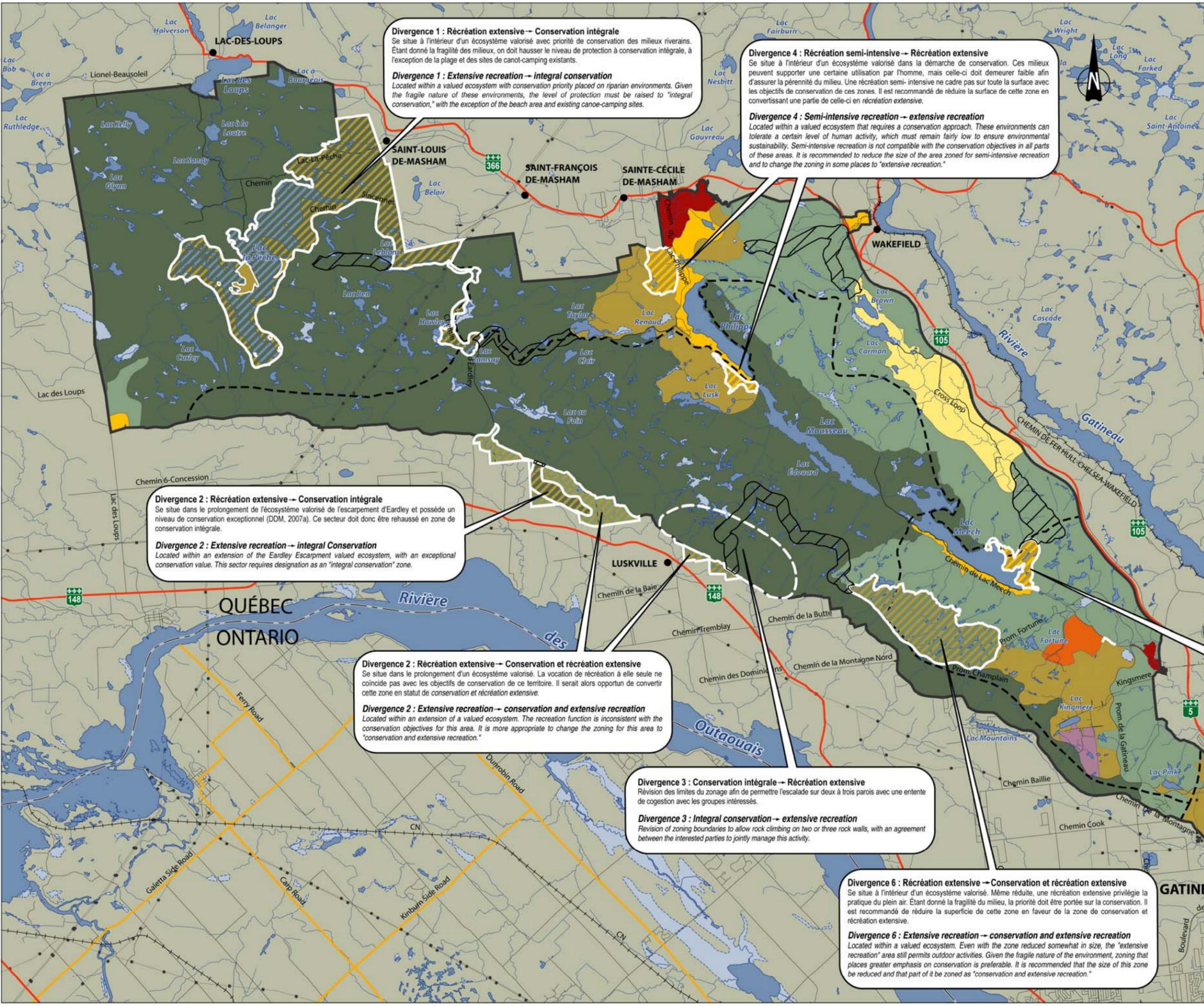
**MODIFICATIONS AU ZONAGE DU PARC DE LA GATINEAU
GATINEAU PARK ZONING CHANGES**

	Lien récréatif extensif Extensive recreational link		Limite de secteur Sector limit
ZONAGE ACTUEL / ACTUAL ZONING			
CONSERVATION / CONSERVATION		ACCUEIL / RECEPTION	
	C1 Conservation intégrale Integral conservation		AVR1 Accueil principal Main visitor reception area
	C2 Conservation et récréation extensive Conservation and extensive recreation	AGROTOUTISME ET CONSERVATION / AGROTOUTISME AND CONSERVATION	
RÉCRÉATION / RECREATION		PATRIMOINE / HERITAGE	
	R1 Récréation extensive Extensive recreation		AC1 Agrotourisme et conservation Agrotourism and conservation
	R2 Récréation semi-intensive Semi-intensive recreation		PH1 Patrimoine Heritage
	R3 Récréation intensive Intensive recreation	INSTITUTION / INSTITUTION	
			I1 Institution Institution
MODIFICATION AU ZONAGE / ZONING CHANGE			
CONSERVATION / CONSERVATION		RÉCRÉATION / RECREATION	
	C1 Conservation intégrale Integral conservation		R1 Récréation extensive Extensive recreation
	C2 Conservation et récréation extensive Conservation and extensive recreation		

Source
Information géographique de référence provenant des bases de données de la Commission de la capitale nationale.
Geographical information provided by National Capital Commission databases.



Février 2010
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Divergence 1 : Récréation extensive → Conservation intégrale
Se situe à l'intérieur d'un écosystème valorisé avec priorité de conservation des milieux riverains. Étant donné la fragilité des milieux, on doit hausser le niveau de protection à conservation intégrale, à l'exception de la plage et des sites de canot-camping existants.
Divergence 1 : Extensive recreation → integral conservation
Located within a valued ecosystem with conservation priority placed on riparian environments. Given the fragile nature of these environments, the level of protection must be raised to "integral conservation," with the exception of the beach area and existing canoe-camping sites.

Divergence 4 : Récréation semi-intensive → Récréation extensive
Se situe à l'intérieur d'un écosystème valorisé dans la démarche de conservation. Ces milieux peuvent supporter une certaine utilisation par l'homme, mais celle-ci doit demeurer faible afin d'assurer la pérennité du milieu. Une récréation semi-intensive ne cadre pas sur toute la surface avec les objectifs de conservation de ces zones. Il est recommandé de réduire la surface de cette zone en convertissant une partie de celle-ci en récréation extensive.
Divergence 4 : Semi-intensive recreation → extensive recreation
Located within a valued ecosystem that requires a conservation approach. These environments can tolerate a certain level of human activity, which must remain fairly low to ensure environmental sustainability. Semi-intensive recreation is not compatible with the conservation objectives in all parts of these areas. It is recommended to reduce the size of the area zoned for semi-intensive recreation and to change the zoning in some places to "extensive recreation."

Divergence 2 : Récréation extensive → Conservation intégrale
Se situe dans le prolongement de l'écosystème valorisé de l'escarpement d'Eardley et possède un niveau de conservation exceptionnel (DDM, 2007a). Ce secteur doit donc être rehaussé en zone de conservation intégrale.
Divergence 2 : Extensive recreation → integral conservation
Located within an extension of the Eardley Escarpment valued ecosystem, with an exceptional conservation value. This sector requires designation as an "integral conservation" zone.

Divergence 2 : Récréation extensive → Conservation et récréation extensive
Se situe dans le prolongement d'un écosystème valorisé. La vocation de récréation à elle seule ne coïncide pas avec les objectifs de conservation de ce territoire. Il serait alors opportun de convertir cette zone en statut de conservation et récréation extensive.
Divergence 2 : Extensive recreation → conservation and extensive recreation
Located within an extension of a valued ecosystem. The recreation function is inconsistent with the conservation objectives for this area. It is more appropriate to change the zoning for this area to "conservation and extensive recreation."

Divergence 3 : Conservation intégrale → Récréation extensive
Révision des limites du zonage afin de permettre l'escalade sur deux à trois parois avec une entente de cogestion avec les groupes intéressés.
Divergence 3 : Integral conservation → extensive recreation
Revision of zoning boundaries to allow rock climbing on two or three rock walls, with an agreement between the interested parties to jointly manage this activity.

Divergence 6 : Récréation extensive → Conservation et récréation extensive
Se situe à l'intérieur d'un écosystème valorisé. Même réduite, une récréation extensive privilégie la pratique du plein air. Étant donné la fragilité du milieu, la priorité doit être portée sur la conservation. Il est recommandé de réduire la superficie de cette zone en faveur de la zone de conservation et récréation extensive.
Divergence 6 : Extensive recreation → conservation and extensive recreation
Located within a valued ecosystem. Even with the zone reduced somewhat in size, the "extensive recreation" area still permits outdoor activities. Given the fragile nature of the environment, zoning that places greater emphasis on conservation is preferable. It is recommended that the size of this zone be reduced and that part of it be zoned as "conservation and extensive recreation."

Divergence 5 : Récréation semi-intensive → Récréation extensive
Se situe à l'intérieur d'un écosystème valorisé dans la démarche de conservation. Ces milieux peuvent supporter une certaine utilisation par l'homme, mais celle-ci doit demeurer faible afin d'assurer la pérennité du milieu. Une récréation semi-intensive ne cadre donc pas partout avec les objectifs de conservation de ces zones. Une réduction des superficies de récréation semi-intensive dans la mesure du possible est recommandée.
Divergence 5 : Semi-intensive recreation → extensive recreation
Located within a valued ecosystem that requires a conservation approach. This environment can tolerate a certain level of human activity, which must remain fairly low to ensure environmental sustainability. Semi-intensive recreation is not compatible with the conservation objectives in all parts of these areas. It is recommended to reduce as much as possible the size of the area zoned for semi-intensive recreation.



**IMPACT DES PRESSIONS ANTHROPIQUES
SUR LES ÉCOSYSTÈMES DU PARC DE LA GATINEAU**
HUMAN IMPACT ON GATINEAU PARK ECOSYSTEMS

Degré d'impact / Impact

- Faible
Low
- Modéré
Moderate
- Élevé
High
- Très élevé
Very high

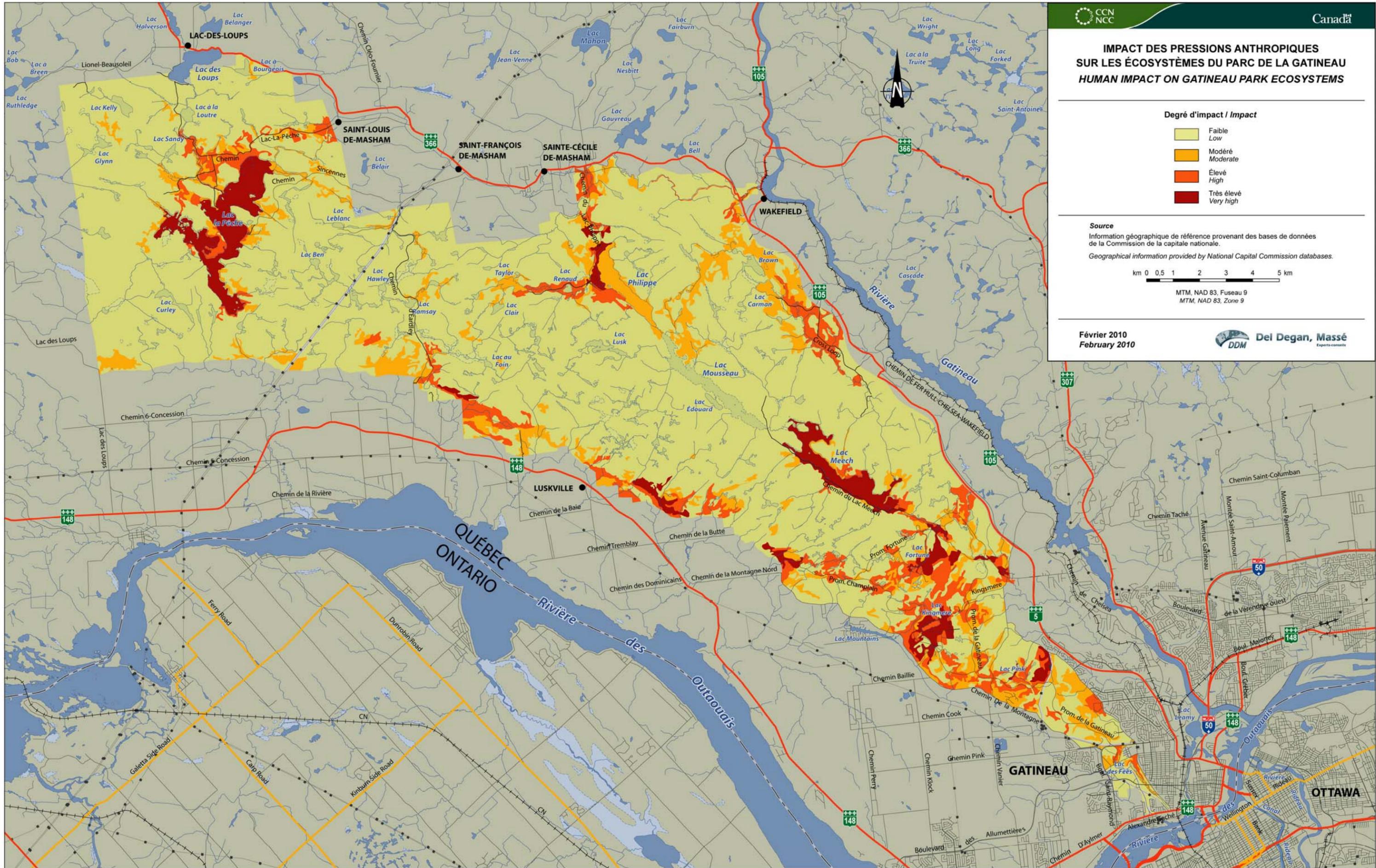
Source
Information géographique de référence provenant des bases de données de la Commission de la capitale nationale.
Geographical information provided by National Capital Commission databases.

km 0 0.5 1 2 3 4 5

MTM, NAD 83, Fuseau 9
MTM, NAD 83, Zone 9

Février 2010
February 2010

Del Degan, Massé
Experts-conseils



GATINEAU PARK / PARC DE LA GATINEAU

Key Ecosystem Drivers / Processus écosystémiques essentiels

SYNTHÈSE DE L'ÉTAT DE SANTÉ DES ÉCOSYSTÈMES DU PARC DE LA GATINEAU

GATINEAU PARK ECOSYSTEM HEALTH

Février 2010
February 2010

STRESSORS

Climate changes, development outside the park, air pollution, increasing visitor numbers, park isolation, acid rains, fragmentation

FACTEURS DE STRESS

Changements climatiques, développement hors Parc, pollution de l'air, accroissement de l'achalandage, isolation du Parc, pluies acides, fragmentation

CONDITION OF GATINEAU PARK ECOSYSTEMS

ÉTAT DES ÉCOSYSTÈMES DU PARC DE LA GATINEAU

TERRESTRIAL ENVIRONMENTS

Old-growth hardwood, softwood
and mixed forests

MILIEUX TERRESTRES

Forêts anciennes résineuses,
mêlées et feuillues

STRESSORS

Recreational activities Farming activities
Non-native or invasive species Fragmentation

FACTEURS DE STRESS

Activités récréatives Activités agricoles
Espèces introduites ou envahissantes Fragmentation



RIPARIAN HABITATS

Diversity of plants and wildlife

HABITATS RIVERAINS

Diversité de la faune et de la flore

STRESSORS

Recreational activities Farming activities
Private properties Invasive species

FACTEURS DE STRESS

Activités récréatives Activités agricoles
Propriétés privées Espèces envahissantes



AQUATIC ENVIRONMENTS

Various lake types
Diversity of species and processes

MILIEUX AQUATIQUES

Variété de types de lacs
Diversités d'espèces et de processus

STRESSORS

Fishing Farming activities
Non-native or invasive species Waste waters / Pollution
Water-related activities

FACTEURS DE STRESS

Pêche sportive Activités agricoles
Espèces introduites ou envahissantes Eaux usées et pollution
Activités nautiques



WETLANDS

Diversity of plants and wildlife
Sensitive sites

MILIEUX HUMIDES

Diversité de la faune et de la flore
Sites sensibles

STRESSORS

Invasive species
Waste water / Pollution

FACTEURS DE STRESS

Espèces envahissantes
Eaux usées et pollution



ADDITIONAL INDICATORS

INDICATEURS SUPPLÉMENTAIRES

Surface water quality /
État de l'eau de surface



Air quality /
État de l'air



Soil condition in term of pollutants /
État des sols par rapport aux polluants



Human pressure and footprint /
Pression et empreinte humaine



Condition of native biodiversity /
État de la biodiversité indigène



State of environmental stewardship /
État de l'intendance



Elevation /
Altitude
(Metres / Mètres)

320

ECOSYSTEM CONDITION / ÉTAT DE L'ÉCOSYSTÈME

Poor / Faible
Acceptable / Acceptable
Good / Bonne

TREND / TENDANCE

Declining / Détérioration
Stable / Stable
Improving / Amélioration

Ottawa River /
Rivière des Outaouais

EARDLEY ESCARPMENT

Unique habitat
Rare species
Microclimate

ESCARPEMENT D'EARDLEY

Habitat unique
Espèces rares
Microclimat

STRESSORS

Farming activities
Recreational activities
Deer population
Insect epidemic
Invasive species

FACTEURS DE STRESS

Activités agricoles
Activités récréatives
Population de cerfs
Épidémie d'insectes
Espèces envahissantes



EARDLEY PLATEAU

Wetlands
Old-growth hardwood forests
Rare species

PLATEAU D'EARDLEY

Terres humides
Forêt feuillue ancienne
Espèces rares

STRESSORS

Recreational activities
Road traffic
Fishing
Invasive species

FACTEURS DE STRESS

Activités récréatives
Circulation routière
Pêche sportive
Espèces envahissantes



LA PÊCHE LAKE AND SURROUNDING AREA

Mix of forests, wetlands and aquatic environments
Rare species

LAC LA PÊCHE ET SON VOISINAGE

Mélange de forêts, de milieux humides et aquatique
Espèces rares

STRESSORS

Recreational activities
Fishing
Waste waters / Pollution
Invasive species

FACTEURS DE STRESS

Activités récréatives
Pêche sportive
Eaux usées et pollution
Espèces envahissantes



THREE-LAKE CHAIN

Entire watershed
Rare species
Hardwood forest

CHAÎNE DES TROIS LACS

Bassin de drainage entier
Espèces rares
Forêt feuillue

STRESSORS

Recreational activities
Waste waters / Pollution
Invasive species
Private properties
Urban development

FACTEURS DE STRESS

Activités récréatives
Eaux usées et pollution
Espèces envahissantes
Propriétés privées
Développement urbain



PINK LAKE PLATEAU

Meromictic lake
Rare species

PLATEAU DU LAC PINK

Lac méromictique
Espèces rares

STRESSORS

Recreational activities
Road traffic

FACTEURS DE STRESS

Activités récréatives
Circulation routière



GENERAL CONDITION ÉTAT GÉNÉRAL



VALUED ECOSYSTEMS / ÉCOSYSTÈMES VALORISÉS¹

Lac des Fées

1. Del Degan, Massé inc., 2005, Évaluation et identification des écosystèmes et des habitats naturels valorisés