

STRATEGIC ENVIRONMENTAL ASSESSMENT

GATINEAU PARK MASTER PLAN REVIEW

May 2005

TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
LIST OF TABLES	ii
LIST OF APPENDICES	ii
INTRODUCTION	1
1. METHOD	2
1.1 REFERENCE DATABASES	2
1.2 METHODOLOGY: A SUMMARY	2
2. SCOPE OF THE ASSESSMENT	4
2.1 CONSERVATION ISSUES	4
2.2 FUNDAMENTAL ECOLOGICAL VALUES	6
2.3 GEOGRAPHICAL AND TEMPORAL LIMITS.....	7
3. ANALYSIS OF IMPACTS OF THE PRELIMINARY STRATEGIES	9
3.1 COMPARATIVE ASSESSMENT AND CONSEQUENCES OF THE PRELIMINARY STRATEGIES	9
4. IMPACTS OF THE FINAL DRAFT OF THE PLAN: A DETAILED ANALYSIS.....	11
4.1 GENERAL IMPACTS ANALYSIS	11
4.2 ANALYSIS OF CUMULATIVE IMPACTS	14
5. RESIDUAL IMPACTS AND CONSEQUENCES OF THE PLAN	15
5.1 STRATEGIC MITIGATION/IMPROVEMENT MEASURES.....	15
5.2 RESIDUAL IMPACTS AND THEIR ACCEPTABILITY.....	17
5.3 THE PLAN'S OVERALL IMPACTS	18
6. FALL 2004 CONSULTATIONS	20
7. ENVIRONMENTAL MONITORING AND FEEDBACK MECHANISMS	21
7.1 ENVIRONMENTAL MONITORING	21
7.2 FEEDBACK MECHANISM	21
CONCLUSION.....	23
REFERENCES	24

LIST OF TABLES

TABLE 1 GENERAL APPROACH3

TABLE 2 LIST OF THE PARK’S FUNDAMENTAL ECOLOGICAL VALUES.....7

TABLE 3 EXAMPLE OF AN IMPACT ANALYSIS GRID 12

LIST OF APPENDICES

APPENDIX 1 SUMMARY OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT METHODOLOGY

APPENDIX 2 ENVIRONMENTAL ASSESSMENT OF PROPOSED STRATEGIC SOLUTIONS

APPENDIX 3 CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO THE CUMULATIVE EFFECTS OF THE PRELIMINARY MASTER PLAN

APPENDIX 4 ACCEPTABILITY OF RESIDUAL IMPACTS

APPENDIX 5 IMPROVEMENT AND MITIGATION MEASURES

INTRODUCTION

The Master Plan is a planning tool, approved by the National Capital Commission (NCC), which expands upon the general and strategic orientations set out in the *Plan for Canada's Capital*. The purpose of the Gatineau Park Master Plan review is to clarify the issues and concerns relating to the Park and to propose desirable planning and management orientations and actions. The *Gatineau Park Master Plan* produced in 1990 has been revised to respond to the issues that have arisen in the last 15 years, or that are expected to become important in the future.

The NCC, pursuant to a Cabinet directive issued in 1990, updated in 1999 and then amended in January 2004, carries out strategic environmental assessments (SEA) of all its plans, including its Master Plans. The SEA is a systematic, iterative assessment process built into the planning process. Its purpose is to identify the environmental consequences of plans, enhance their positive impacts and mitigate or eliminate their negative impacts. The SEA is an integral part of sustainable development strategies.

The goal of the SEA is to incorporate environmental considerations¹ into the planning process by:

- Making sure that, overall, the general orientations and proposals contained in the plan are consistent with environmental policies and legislation;
- Defining environmental issues, guiding principles and environmental objectives;
- Analyzing the negative, positive and cumulative² impacts of the concepts;
- Proposing appropriate mitigation measures, improvement measures and monitoring measures;
- Assessing the potential environmental consequences of the various measures and of the plan as a whole.

¹ The term “environment” includes both the natural and the cultural environment. Socio-economic aspects are also considered in the sections of this report dealing with the Park’s standing in the region.

² Cumulative impacts: impacts on the environment that accumulate over time and in space as a result of past, present and future projects and activities in a given area (Canadian Environmental Assessment Act).

1. METHOD

1.1 REFERENCE DATABASES

The Gatineau Park Master Plan Strategic Environmental Assessment is based on NCC and Canadian government legislative and administrative instruments currently in force, including the following:

- Environmental legislation and policies;
- Environmental planning policies and documents prepared by the NCC;
- The various conventions and strategies initiated or adhered to by Canada.

In particular, the SEA was carried out in compliance with the *1999 Cabinet Directive (amended in January 2004) on the Environmental Assessment of Policy, Plan and Program Proposals* (Canadian Environmental Assessment Agency, 1999). It is also based on the *mechanisms proposed by Canadian Heritage to observe the Canadian Environmental Assessment Act* (Canadian Heritage, 1996), *Parks Canada Management Directive 2.4.2 on Impact Studies* (Parks Canada, 1998), and the ecological integrity policies of Canadian Heritage. Its methodology also takes into account the recommendations made by the *Panel on the Ecological Integrity of Canada's National Parks* (Parks Canada, 2000).

The *Plan for Canada's Capital*, 1999 also contains strategic orientations and guidelines to structure the planning of the Capital's natural heritage areas.

1.2 METHODOLOGY: A SUMMARY

Table 1 presents the principal steps of the method³ used to carry out the SEA. They are shown as being linear, but in reality they were iterative, in that their content was updated retroactively throughout the process. Environmental considerations linked to the cumulative impacts of the plan are included in each section.

Appendix 1 sets out the structure of the final SEA document, and also provides a systematic guide to the methodology used during the process. It is important to remind that all consultation process, including the targeted groups and the general public enhanced the methodology and realisation of the SEA.

³ Detailed information on the SEA methodology process is available in the *Cadre en matière d'évaluation environnementale stratégique (ÉES), Processus de mise à jour du plan directeur, Parc de la Gatineau*, NCC, 2002, available at the NCC library.

TABLE 1
GENERAL APPROACH

STEP	OUTCOME
Scope of the SEA	Create a reference framework to assess proposals
↓	
Analysis of the impacts of preliminary strategies	Ensure that the options are consistent with the objectives of each of the Park's strategic priorities
↓	
Detailed analysis of the impacts of the final draft of the Plan	Establish the nature and extent of potential impacts and whether they are likely to have cumulative effects
↓	
Impacts and consequences of the Plan	Assess the Plan's consequences on the condition of the Park
↓	
Mitigation/Improvements	Devise strategies to reduce negative impacts and enhance positive impacts
↓	
Identification of monitoring needs	Identify information to be included in a monitoring program
↓	
Preparation of a feedback mechanism	Outline an approach to the use of monitoring results

2. SCOPE OF THE ASSESSMENT

Scoping sets the limits of the SEA and directs it towards the main environmental concerns, including the stress factors, issues, and fundamental values at stake. It is used to establish an assessment framework tailored to the Plan's potential consequences.

2.1 CONSERVATION ISSUES

The Master Plan clearly identifies the issues that are likely to contribute to environmental degradation in the coming decade. The principal concerns raised are listed below.

CONCERNS DUE TO FACTORS AFFECTING THE PARK

- Prior harvesting in land-based and aquatic ecosystems
- Spread and intensity of recreational activities
- Specific recreational activities (climbing, hang-gliding, mountain biking)
- Fragmentation from urban development (roads, power transmission lines, private properties and developments)
- Number of uncontrolled access roads
- Absence of unbroken natural buffer zones between the Park and the surrounding area
- Introduction of foreign species into the Park's natural ecosystems through stocking or invasion
- Use and alteration of riparian environments
- Addition of nutrients and disposal of wastewater into aquatic ecosystems

CONCERNS DUE TO FACTORS AFFECTING THE PARK AT THE REGIONAL LEVEL AND BEYOND

- Ecological isolation of the Park
- Landscape fragmentation
- Increased pressure to introduce recreational facilities and activities
- Harvesting of renewable resources and use of watersheds outside the Park
- The growth of urban development and transportation corridors
- Air pollutants, acid rain and global warming

As a result, the following conclusions were drawn:

- The Park is becoming an isolated island of nature within an increasingly fragmented regional environment, and natural habitats are gradually becoming disconnected from those outside the Park.
- The Park's land-based ecosystems are becoming fragmented and are being stressed by pressures from recreational uses; they are gradually shrinking and changing.
- The residual land-based and aquatic habitats of the Park's natural populations are gradually shrinking, and this is likely to affect both the distribution and survival of certain species.
- Some sectors of the Park are drifting away from their natural state.
- Wildlife behaviour is likely to change (disturbances, wildlife-human conflicts).
- The Park's original natural components, their processes and their dynamics have been altered.
- The natural balance between communities is changing steadily.
- The Park is likely to lose part of its current biodiversity.

Environmental issues are major concerns for the future of the Park. As it faces growing pressure, the Park must be able to ensure the sustainability of its natural resources and approach the aspects of integrity and conservation in a way that maintains their value and authenticity. The environmental challenges facing the Park are:

- To apply the environmental policies set out in the *Plan for Canada's Capital*, 1999, including the policy of giving priority to ecosystem preservation in natural heritage areas;
- To complete the Park's "State of the Environment" report, with a view to instituting proper and permanent environmental monitoring of its ecosystems;
- To maintain the natural functions of the Park's ecosystems and ecological values despite pressures from recreational use, alteration of surrounding land, and pressures from urban development;
- To establish and maintain a balance between conservation and recreation functions;
- To blend the Park's ecological needs with those of neighbouring areas in order to mitigate the impacts of external pressures on ecosystems, help protect the Park's biodiversity, and ensure its sustainability;
- To incorporate an ecosystem-directed management strategy with current organizational resources and the existing regional context;
- To limit, counter and reduce human stress factors on the natural environment; this applies in particular to recreational pressures on wildlife habitats;
- To maintain populations of all indigenous species that live in the Park; for some species, this will involve halting population decline and protecting natural habitats;
- To prevent fragmentation of wilderness areas.

The Park's principal environmental orientations, which subscribe to the principles of sustainability, are derived from these issues and the NCC's environmental management policies. They are:

- Priority to ecosystem preservation
- Ecosystem sustainability
- Protection of biodiversity
- Environmental ethics and a scientific approach
- Integrated management with due consideration for adjacent land
- Ecological rehabilitation of damaged environments.

2.2 FUNDAMENTAL ECOLOGICAL VALUES

In addition to the architectural, cultural and historical heritage, the environment and environmental values are dominant features of the image of the Capital. Situated close to the Capital Core, Gatineau Park, with its rich, diversified and exceptional ecosystems representative of the Canadian Shield natural region, contributes significantly to the Capital's environmental profile.

Some of the Park's natural components are more important than others, because of their ecological and scientific role. Table 2 sets out the Park's principal fundamental natural values.

The cumulative impact assessment focuses on a limited number of fundamental ecosystem values, that are especially pertinent to ecological integrity⁴. We refer to them as "target components"⁵. The target components are tied particularly to the issues of most concern in the Park. They are significant elements of the functional structure of its natural ecosystems, and are also some of the most vulnerable links in the ecosystem chain. They can therefore be used as indicators of the cumulative impacts of the proposals of the Park's ecosystems. The target components are identified by an asterisk (*) in Table 2.



⁴ Ecological integrity is the state of an ecosystem considered to be characteristic of the natural region of which it forms part, in particular due to the composition and abundance of its indigenous species and biological communities, and the rate at which its ecological processes change or are maintained (Panel on the Ecological Integrity of Canada's National Parks).

⁵ Species subject to more serious management concerns about the maintenance of ecological integrity, especially representative species (specialized species, keystone species, umbrella species) and vulnerable species (threatened species, vulnerable species, species sensitive to fragmentation).

TABLE 2
LIST OF THE PARK'S FUNDAMENTAL ECOLOGICAL VALUES

LANDSCAPE UNITS AND SPECIAL HABITATS	BIRD LIFE
<ul style="list-style-type: none"> ▪ Eardley Escarpment ▪ Eardley Plateau ▪ Wooded Gatineau Hills ▪ Wetlands ▪ Lakes and watercourses 	<ul style="list-style-type: none"> ▪ Pileated woodpecker ▪ Red-shouldered hawk* ▪ Common raven ▪ 230 bird species (diversity)
LAND-BASED VEGETATION	AQUATIC AND SEMI-AQUATIC WILDLIFE
<ul style="list-style-type: none"> ▪ Sites, habitats, plant life and plant groups of interest ▪ Groups representative of the maple-linden forest, especially on xeric sites (oak stands and pine forests) and EFEs¹ 	<ul style="list-style-type: none"> ▪ Beaver ▪ Reptiles and amphibians ▪ Common loon* ▪ Temperate stenothermal organisms (e. g. Brook trout, Lake trout)
LAND-BASED WILDLIFE	THREATENED OR VULNERABLE SPECIES
<ul style="list-style-type: none"> ▪ Grey wolf* ▪ Cougar ▪ Bobcat ▪ Canadian lynx ▪ Fisher* ▪ Marten ▪ Black bear* ▪ White-tailed deer ▪ Moose 	<ul style="list-style-type: none"> ▪ Threatened or vulnerable plant and wildlife species* and their habitats

* Target components used to assess cumulative impacts.

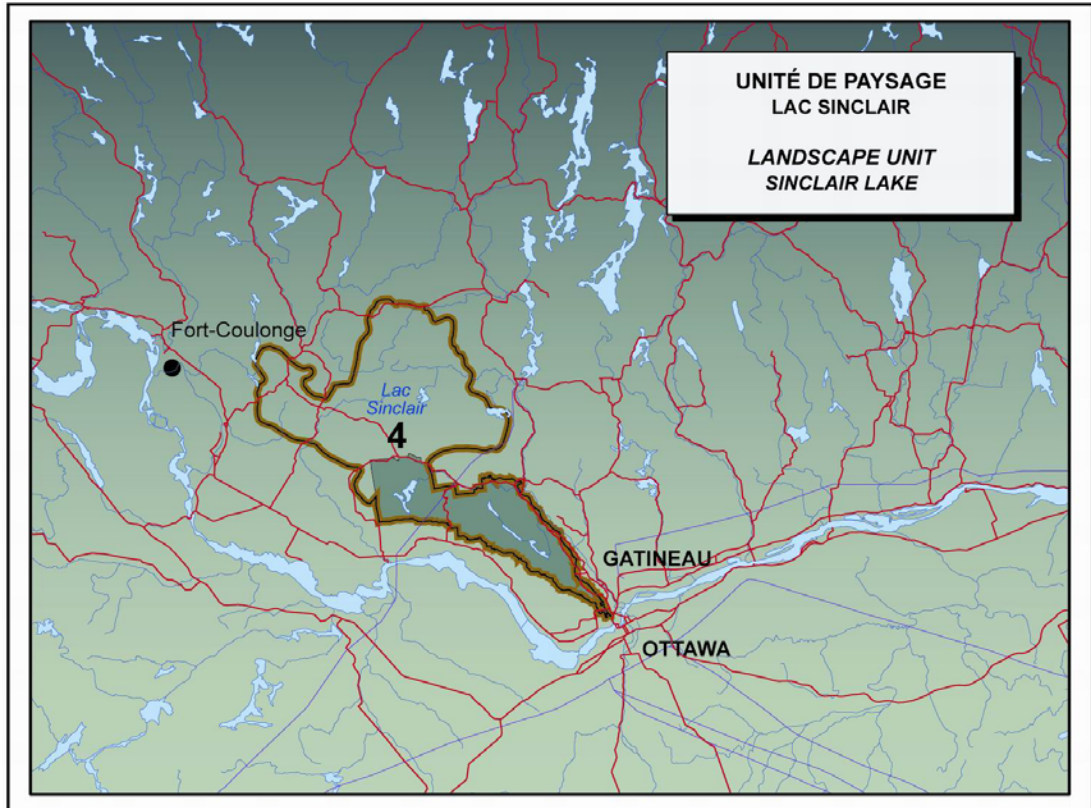
¹ EFE: Exceptional Forest Ecosystem

2.3 GEOGRAPHICAL AND TEMPORAL LIMITS

The SEA covers an area comprising the Park and areas beyond having an ecological influence on the Park. The area in question was established so as to ensure that cumulative impacts and stressors outside the Park would be taken into consideration.

The geographical area selected is the Sinclair Lake landscape unit⁶, located in the Lower Gatineau ecological region and having a total area of 1,120 km². This regional perception of ecosystems includes the home ranges of the large herbivore and predator populations that use the Park, along with a large part of the watersheds and sub-watersheds linked to the Park's aquatic ecosystems.

⁶ The notion of landscape unit (Ministère des Ressources naturelles, de la Faune et des Parcs du Québec) was used to determine the boundaries of the geographical area covered by the assessment.



The earliest time base used for the assessment of cumulative impacts was 1850. The assessment therefore covers a period sufficiently long to include historical activities whose impacts have affected and continue to affect the Park's existing ecosystems. Our analysis of the historical factors influencing the Park's ecosystems suggests that conditions in the Park were close to their natural state in 1850. The upper time limit was set at 2015, to cover the term of the revised Master Plan.

3. ANALYSIS OF IMPACTS OF THE PRELIMINARY STRATEGIES⁷

Preliminary strategies (A, B and C) offering different levels of conservation and recreational activities were presented at a number of workshops with interest groups held in the spring of 2002, and at public consultations held in November of the same year. The “A” strategies offered a maximum level of conservation for the Park, while the “B” strategies offered maximum protection for certain sectors, and the “C” strategies were designed to maintain the current condition of the Park. Each strategy included proposals for five of the Park’s strategic priorities, namely environment, recreation, regional integration, heritage and management.

This stage of the SEA involved an environmental assessment of the preliminary strategies, in order to guide the selection process towards the strategies that were the most viable in terms of sustainability and responded best to the issues facing the Park both now and in the future.

3.1 COMPARATIVE ASSESSMENT AND CONSEQUENCES OF THE PRELIMINARY STRATEGIES

Appendix 2 sets out the results of each strategy for fifteen sensory parameters for the Park’s strategic priorities and shows whether the strategy would potentially improve, be consistent with, make no difference to, or be detrimental to the environment.

Overall, the proposed strategies were consistent with the orientations set out in the *Plan for Canada’s Capital, 1999*. The “A” and “B” strategies mostly involved solutions that were consistent with the strategic objectives set out for the Park (i.e. be consistent with, or improvement of). Their impacts on the Park environment were generally positive, in that they reduced the stress factors and negative consequences of Park use. They were particularly supportive of the Natural Heritage Area management principles set out in the *Plan for Canada’s Capital, 1999*.

The principal consequences of the “A” and “B” strategies were to limit fragmentation of wilderness areas, to restore and maintain natural ecosystem functions, and to limit, mitigate, or reduce human stressors. They were also conducive to enjoyment of and learning about the natural environment and contributed positively to the natural image and national symbolism of the Capital (national natural protected area).

However, the proposed “A” strategies in particular, and to a lesser extent the “B” strategies, involved some significant choices for both the NCC and the region, in terms of recreational use, socio-economic integration of the Park, and natural ecosystem management.

⁷ Details of the strategies can be found in the report “*Master Plan Review, Gatineau Park: Overview, Issues, Trends and Strategic Solutions 2004-2014*”, NCC, 2002, available at the NCC library.

The proposed “C” strategies maintained current levels of accessibility to the Park and to a range of recreational experiences, and were thus more consistent with the Park’s regional dimension. However, they also required more commitment in terms of environmental management, since the impacts of Park use would have to be controlled more stringently. In addition, it would be more difficult, based on the “C” strategies, to preserve the Park’s fundamental ecological values and natural ecosystems.

Following the consultations, a preliminary option for the final draft of the Plan, comprising an amalgamation of solutions from the “B” strategies, was drawn up. The preliminary option contained a series of general proposals, and specific proposals for each Park sector, based on the broad strategic objectives established to guide the Park’s future. The environmental issues and challenges identified in previous phases of the process were taken into account when devising this option.



4. IMPACTS OF THE FINAL DRAFT OF THE PLAN: A DETAILED ANALYSIS

This part of the SEA focuses on the likely repercussions, both positive and negative, of the proposals of the final draft of the Plan⁸. The reference level is the current condition of the Park and future environmental trends shaped by the main stressors.

The analysis is divided into two stages:

- Identification of the general impacts of the proposals on the environment, recreation, regional integration, heritage, national symbolism and management.
- A more specific analysis of the cumulative environmental impacts.

4.1 GENERAL IMPACTS ANALYSIS

The 59 general proposals for the Park as a whole, and the 74 sector-based proposals, were examined using an assessment grid⁹ to establish their likely general impacts and their contributions to the increase of the cumulative impacts. An example of the grid is shown in Table 3.

The grid was used to assess the nature, extent and direction of the potential impacts of the proposals, and their contribution to future cumulative environmental impacts. Based on this information, the grid sets out a series of mitigation measures for the negative impacts and improvement measures for the positive impacts of each proposal. The scope of the residual negative impacts is then estimated using a combination of three variables¹⁰, namely intensity, scope, and duration.

The SEA shows that while 84% of the proposals (general and sector-based) may have impacts (positive or negative) on the environment, 76% would have potentially positive or neutral environmental impacts. The potentially negative impacts, most of which would be minor to moderate, are derived from 24% of the proposals. After application of the mitigation measures, the residual impact is generally low. The proposals with no direct consequences on the environment (16%) have some variable positive impacts on the regional integration, recreation, communication, heritage and national symbolism objectives.

⁸ *Gatineau Park Master Plan*, preliminary version 2004, CCN.

⁹ Readers may consult Appendices 5 and 6 of the detailed SEA for information on the full environmental assessment of the proposals.

¹⁰ The process is described in the report entitled *Cadre en matière d'évaluation environnementale stratégique (ÉES), Processus de mise à jour du plan directeur, Parc de la Gatineau*, NCC, 2002, available at the NCC library.

OVERALL IMPACTS OF THE GENERAL PROPOSALS ON THE PARK'S NATURAL ENVIRONMENT

In all, 81% (48/59) of the general proposals were presumed to have positive or neutral environmental impacts. The general proposals with potentially positive environmental impacts generally involve ecosystem consolidation, rationalization and redistribution of recreational use, regional cooperation, and better management practices. The most effective proposals are: production of a conservation plan, preservation of ecological links inside and outside the Park, restoration of the condition and dynamics of ecosystems, preparation of a recreational services plan consistent with the conservation plan, relocation of recreational activities to less sensitive sectors, elimination of off-road motorized activities by 2010, analysis of the Park's environmental issues in conjunction with regional stakeholders, production of a project acceptability matrix, creation of scientific committees, and preparation of an access and monitoring strategy to control visitor numbers more effectively.

TABLE 3
EXAMPLE OF AN IMPACT ANALYSIS GRID

SECTOR-BASED PROPOSALS	POLICY ELEMENTS AFFECTED AND POTENTIAL DIRECTION OF IMPACTS	NATURE OF POTENTIAL IMPACTS (POSITIVE OR NEGATIVE)	EXTENT OF IMPACTS	CONTRIBUTION TO FUTURE CUMULATIVE ENVIRONMENTAL IMPACTS	MITIGATION MEASURES FOR NEGATIVE IMPACTS OR IMPROVEMENTS FROM POSITIVE IMPACTS	SCOPE OF RESIDUAL NEGATIVE IMPACTS
a) GATEWAY SECTOR Strategic proposals Promote uses and actions that support the consolidation of natural ecosystems by limiting habitat fragmentation	N +	<u>Positive Impacts</u> <ul style="list-style-type: none"> ▪ Preservation of ecosystem health ▪ Preservation of biodiversity ▪ Preservation of ecosystems/significant natural environments ▪ Control/reduction of fragmentation 	Major Moderate Major Major	Positive Positive Positive Positive	<ul style="list-style-type: none"> ▪ Refocus the interpretation program to promote enjoyment of the environment ▪ Clarify the supply of services based on the prerogatives set out in the conservation plan 	N/A
	R - I -	<u>Negative Impacts</u> <ul style="list-style-type: none"> ▪ Limited access to natural environments ▪ Less diversification of the recreational experience 	Moderate Moderate	Positive Positive	<ul style="list-style-type: none"> ▪ Raise public awareness of environmental management activities and the need to preserve ecosystems 	Moderate Moderate

KEY

Policy elements affected and potential direction of impacts

- N Potential impacts on natural heritage
- H Potential impacts on historical and cultural heritage
- R Potential impacts on recreation
- I Potential impacts on regional integration
- S Potential impacts on national symbolism and communication
- G Potential impacts on management
- + Impacts enhancing the desired ecological, cultural and socio-economic conditions
- Impacts detrimental to the desired ecological, cultural and socio-economic conditions

Extent of impacts

The extent of the impact is estimated from a combination of three variables, namely intensity, scope, and duration

Contribution to future cumulative environmental impacts on target species

- Positive: Indicates that the impact will help meet or limit cumulative effects or stresses on the target environmental components
- Neutral: Indicates that the impact has no effect on the target environmental components
- Negative: Indicates that the impact is likely to amplify cumulative effects or stresses on the target environmental components

Residual impacts

The residual impact is the impact that remains after application of mitigation measures

The effects on target components that were examined were: net loss/maintenance of habitat, fragmentation of habitats and wildlife populations, conflicts with wildlife and disturbances, maintenance/reduction of populations, maintenance/improvement of biodiversity, alteration/maintenance/improvement of the structure and functions of natural systems.

Positive impacts on ecosystem health usually involve the maintenance of the natural habitats and populations of indigenous species, reduced fragmentation, and the preservation of natural ecosystem dynamics and processes.

Overall, the general proposals for the environment, regional integration, management and national symbolism/communication strategic priorities have only positive impacts on the environment. Six of the proposals for recreation, which involve rationalization of recreational activities and infrastructure, have positive impacts. Six other recreation-related proposals may have negative impacts on the environment. In these cases, the maintenance of access and intensity of use is likely to prolong the degradation of habitats and natural ecosystem functions in the affected areas (e.g. riparian environments). At the same time, the heritage-related proposals are also assessed as having overall negative environmental impacts, mainly due to the planning orientations and concepts, which could hinder natural ecosystem dynamics.

OVERALL IMPACTS OF SECTOR-BASED PROPOSALS

The assessment shows that 72% of the sector-based proposals would have positive or neutral environmental impacts. The potential positive impacts include elements such as the restoration of damaged natural environments, protection of significant ecosystems, and better visibility for Park boundaries and by improving or creating new reception points.

Other proposals specific to one or more sectors were also conducive to environmental improvement. They include initiatives such as harmonization of uses along the Park's boundary, maintenance and improvement of green corridors, implementation of a policy governing privately owned land and acquisition, better management of trail use, and better management practices for pleasure boat navigation (Meech Lake and La Pêche Lake).

Some of the proposals with potentially negative impacts on the environment were the maintenance of the current capacity of recreational facilities in the main activity areas, maintenance of official trails or the creation of new trails, and the enhancement of cultural and heritage landscapes (e.g. Carbide Willson ruins, Meech Creek Valley).



Elements of the planning concept that maintain the current level of services and existing trails in the Meech Lake (Parkway sector), Philippe Lake (Philippe Lake Crescent sector) and La Pêche Lake (La Pêche Lake sector) activity nodes were considered likely to maintain or increase the spread and intensity of uses and thus to have a potential effect on ecological functions and on the quality of the visitor experience.

The enhancement of cultural landscapes was also judged likely to contravene natural ecosystem dynamics.

OVERALL IMPACTS OF THE GENERAL AND SECTOR-BASED PROPOSALS ON THE SOCIAL AND REGIONAL ENVIRONMENT

The potential impact of the proposals on recreation, regional integration, heritage, management, national symbolism and communication was also analyzed. Most of the proposals were judged to have positive impacts on heritage, management, national symbolism and communication objectives. Overall, 22% of the general proposals (13/59) and 19% of the sector-based proposals (14/74) may also have negative impacts on recreation, mainly by restricting access to the natural environment and limiting the range of possible recreational experiences. Most of this latter group may also have impacts on regional integration, mainly by limiting the prospects for regional economic diversification and modifying the recreational habits of certain groups of residents.

4.2 ANALYSIS OF CUMULATIVE IMPACTS

The analysis showed that some of the Plan's proposals would contribute to the cumulative impacts. These impacts were examined using the target components explained in Chapter 2.2.

Appendix 3 shows the current contribution of the various sources of cumulative impacts on target components. Based on this Appendix, a further analysis was performed to establish the additional contribution of the proposals to cumulative impacts.

Appendix 4 sets out the results of this process, and shows that most of the proposals with negative impacts on the natural environment also contribute to cumulative impacts on one or more key components (target components) of the Park's environment. The most significant negative cumulative impacts are generated by the groups of proposals relating to the maintenance of existing compatible activities, the current capacity of recreational facilities in the main activity nodes, the current network of official trails, rural landscapes and other open spaces. There is also a proposal to improve the diversity of winter activities. The impacts of these proposals are due mainly to the fact that they involve spread and intensity of use of natural areas in the Park already fragmented by roads and access points.

5. RESIDUAL IMPACTS AND CONSEQUENCES OF THE PLAN

This chapter considers the extent to which the Plan addresses the principal concerns relating to the Park, and examines the possible consequences of various measures. It is divided into three sections:

- A description of the impact mitigation/improvement strategies
- An assessment of the Plan's residual impacts and their acceptability
- An assessment of the Plan's role with respect to the general condition of the Park

5.1 STRATEGIC MITIGATION/IMPROVEMENT MEASURES

The Plan clearly identifies the existing factors that could have potential impacts on the Park's ability to maintain the sustainability of its ecological functions in the coming decade. The principal concerns relate to the spread and intensity of recreational activities in land-based and aquatic environments, growing use of certain facilities in busy periods, informal recreation, and uncontrolled general access. The main consequences emerging from these concerns include fragmentation or loss of natural habitats, the reduction and impoverishment of populations and biodiversity, and the gradual alteration of natural functions of ecosystems.

Factors such as growth in the number of privately owned properties and developments in residential enclaves, demand for public urban use, and increasing urban and farm developments outside the Park's boundary increase these risks by isolating or altering the Park in ecological terms. Together, these factors threaten the integrity of the Park's ecosystems and the quality of the recreational experience.

The Plan contains an orientation statement, a planning concept, and proposals designed to help Park managers address these issues. The table in Appendix 5 presents the mitigation and improvement initiatives most likely to support the plan and have an impact at this level. Environmental concerns were considered at every step of the Plan preparation process, and most of the general and sector-specific proposals will have a positive impact – often a major one – on environmental issues. Most of the general proposals are in fact improvement measures for the environment.

The impact mitigation strategy is based first and foremost on the general proposals, which are designed to ensure a form of ecosystem-based management (conservation plan, legal tools, etc.) and to make the Park less environmentally vulnerable. Measures such as the addition of a **conservation plan** to the list of strategic planning mechanisms, preparation of a recreational services plan consistent with the conservation plan, systemic management that takes into account the regional ecosystems, including research, public awareness of resource management activities, and an evaluation, in the short term, of the legal tools available to ensure the Park's mission, will all have a significant positive impact on the environmental issues of concern to the Park. Management based on the principles set out in the Plan will also ensure that the Park is less ecologically vulnerable.

Measures such as the setting of indicators for environmental objectives (e.g., target species population levels), better knowledge of ecosystems, and a periodic environmental review, are the principal ways of improving the positive impacts of the proposals.

The strategy is also based on a set of proposals designed to limit or reduce the environmental impact of recreational activities and facilities on the Park environment. The majority of the proposals relating to recreation therefore have a positive environmental impact. They can be divided into two main groups, namely better protection for sensitive environments and significant ecosystems, and reduction of environmental pressures caused by overuse, visitor spread and incompatible activities. Some of the most significant measures include limiting recreational activities in fragile and significant ecosystems, relocating certain activities, developing a project acceptability matrix, gradually eliminating all off-road motorized activities, and adopting an access and control strategy.

The strategy also includes an important set of proposals designed to integrate the Park's ecological needs with those of its region, in order to uphold its conservation mandate despite its reduced size, the absence of buffer zones, internal and external pressures from urban development, and the harvesting of renewable resources outside the Park's boundaries. Some of the most significant measures include rationalization of the road network, introduction of policies governing privately owned properties, identification and preservation of internal and external ecological links that are identified as priorities, identification and preservation of buffer zones with the Park's habitats, and coordination with surrounding municipalities for compatible uses of the land within and outside the Park. The analysis and implementation of strategies designed to protect regional biodiversity and watersheds are positive measures that should also help the successful implementation of the proposals.

Lastly, the mitigation strategy contains proposals to restore the structure and functions of damaged by human activities. These proposals apply to both land-based and aquatic habitats. However, a number of preliminary studies will be required, including characterization of the natural disturbance regimes and an analysis of the impact of former Park uses.

Even so, a small number of recreational and heritage enhancement proposals are likely to have a negative impact on natural ecosystem functions, depending on the type and level of development permitted and subsequent intensity of use. The most significant cumulative negative impacts are derived from two groups of proposals, namely those relating to maintenance of the capacity of recreational facilities and of the official trail network, and those relating to the enhancement of the Park's historical and cultural heritage.



In the former case, the principal concerns are related to increased use of the trails, degradation of riparian environments and activity areas, and more intense use during peak periods. This may result in fragmentation of natural habitats and populations. In the second case, concerns are related to net loss of natural habitats and disturbance of ecosystem dynamics (interruption of processes, alteration of species behaviour, population imbalance), in the context of a confined territory, already affected by the spread of human activities.

As far as mitigation is concerned, the negative impacts of most of the proposals relating to the maintenance of current capacity of recreational activities can probably be mitigated by management measures. These include the calculation of critical intensity of use thresholds based on the biophysical capacity of sites, introduction of an appropriate zoning system that is respectful of ecosystem integrity and capacity, introduction and monitoring of ecosystem health indicators, and application of the Conservation Plan's priorities to the recreational services supply. Combined with other proposals whose impacts are positive, these measures will help mitigate the anticipated negative impacts.

Similarly, the negative impacts of proposals relating to heritage enhancement will probably be mitigated at least in part by environmental assessment studies of the affected sites. However, the loss of natural ecological functions due to the maintenance of rural landscapes should be documented.

5.2 RESIDUAL IMPACTS AND THEIR ACCEPTABILITY

The SEA revealed that most of the Plan's proposals help diminish or eliminate the negative and cumulative impacts. This is the case, in particular, for the proposals relating to environment, recreation and management, which are able to address the cumulative impacts of recreational use and general factors in the Park (absence of buffer zones, spread and intensity of activities, etc.). In addition, some proposals made little or no contribution to the cumulative impacts, due either to their content or to their level of intervention.

On the other hand, some other proposals do contribute to cumulative impacts. Most of those with negative impacts on the natural environment also contribute to cumulative impacts on one or more key components of the Park's environment. The most significant cumulative negative impacts are the results of proposals relating to maintenance of the current capacity of recreational facilities in the main activity nodes. The spread and intensity of use, along with motor vehicle traffic corridors, are also likely to cause fragmentation of natural habitats and have a negative impact on population structures.



However, most of the negative cumulative impacts can be kept at low level by the application of appropriate mitigation measures, as set out in Appendix 5. These measures include calculation of intensity of use threshold levels based on the biophysical capacity of sites, introduction of an appropriate zoning system that is respectful of ecosystem integrity, identification and monitoring of ecosystem health indicators, and application of the conservation plan's priorities to the supply of recreational services. These measures, combined with other proposals whose

impacts are positive, will help mitigate the number and extent of the anticipated negative impacts.

Even so, the residual impacts of proposals that are likely to maintain or increase habitat fragmentation or hinder natural ecosystem dynamics would remain at a moderate level. The proposals relating to heritage enhancement and the maintenance of intensive recreation near stretches of water will have this type of impact. The application of the proposed mitigation measures should, however, help keep the residual impact within tolerable levels.

On the other hand, some of the proposals, although favourable to the environment, are expected to alter the range of acceptable recreational experiences in the Park and limit access to certain sectors. These residual effects on strategic priorities other than the environment will probably have varying impacts at a regional level, among other things on user habits. The proposals will also redirect the Park's influence on the regional economy by ensuring that conservation initiatives are shared with institutional actors while promoting the implications for regional development (e.g. Meech Creek Valley, secondary reception points). Public awareness and partnerships with community organizations should help reduce the scope of this impact and foster new cooperative initiatives and perspectives.

5.3 THE PLAN'S OVERALL IMPACTS

The revised Plan consolidates and adds to the gains made by the 1990 Master Plan, by proposing a significant step in the direction of ecosystem-oriented management while maintaining the quality of the recreational experience. It is also likely to protect and enhance the ecological health of the Park, since most of its proposals are effective at addressing the issues arising from concerns relating to the environment and ensuring ecosystem preservation.

More specifically, the Plan's proposals should help limit the fragmentation of wilderness areas, slow down the loss of habitats and species, restore and maintain natural ecosystem functions, and limit, mitigate, or reduce pressures from human use. They should also foster enjoyment of and learning about the natural environment. Accordingly, and in view of the anticipated mitigation measures, the impacts of the proposed Master Plan, including its cumulative environmental impacts, will be generally positive.

Only the enhancement of heritage landscapes and authorized intensive recreation are likely to have a potentially negative impact on natural ecosystem functions, depending on the type and level of improvement allowed and the authorized intensity of use.



The proposals contained in the Plan improve upon the policies for the management of the Capital's natural protected areas set out in the *Plan for Canada's Capital, 1999*. Most either support or improve upon the strategic objectives enunciated for the Park.

6. FALL 2004 CONSULTATIONS

The proposed final draft of the Master Plan, along with the SEA results, were presented to the general public at consultations held in October 2004. The consultations gave the general public an opportunity to find out about the proposed Plan and SEA results, and to make comments.

Although the interest groups were openly opposed to a few proposals that would result in different ways to control certain activities in the Park (e.g. climbing and snowmobiling), most of the strategic orientations and proposals were not questioned. Generally speaking, to take into account the comments made by members of the public, the NCC adopted a special position for specific activities, without altering the explicit content of the plan. Consequently, even with the changes made to some of the proposals, the SEA results for the Plan are completely relevant in terms of the general, cumulative and residual impacts. The mitigation strategy contained in the SEA is equally effective, given the fact that the proposals and the general direction of the Plan have remained virtually unchanged. Accordingly, the Plan's general impacts remain positive by maintaining an ecosystem-oriented management approach and fostering a high quality, non-motorized, recreational experience focused on discovering and learning about the natural environment.

Of the changes that were made to the Plan following the consultations, the NCC's positions with regard to certain recreational activities will have a slight influence on the SEA results, by confirming some of the Plan's negative impacts on the natural ecosystems affected in the conservation zones (e.g. the Eardley Escarpment).

The proposed ban on rock climbing until implementation of the Conservation Plan appeared to be difficult to operationalize. The NCC's position will therefore be to significantly reduce the number of climbing walls until the Conservation Plan comes into force.

Lastly, with regard to the legal status of the Park, the NCC, in the year following approval of the Plan, will identify all possible options for improving its authority and ensuring the mission of Gatineau Park.

No comments were received following submission of the final SEA for consultation purposes in February 2005.

7. ENVIRONMENTAL MONITORING AND FEEDBACK MECHANISMS

The SEA identifies the need for environmental monitoring and proposes a feedback mechanism. The mechanism is built into the environmental monitoring process, and is used mainly to ensure that steps are always taken to address impacts that may be considered unacceptable.

7.1 ENVIRONMENTAL MONITORING

The anticipated impacts of some of the proposals are by no means certain, due to lack of information on the target components concerned. The residual impacts and their level of acceptability are thus more difficult to assess. These proposals thus have a higher risk factor for the environment. Most are related to the maintenance of recreational facility capacity at its present level in the Park's three main activity areas and at the Mackenzie King Estate, maintenance of the network of trails, including cycle trails, the creation of new trails, diversification of winter activities, and the enhancement of cultural landscapes and artefacts. The cumulative impacts of these proposals may be widespread, subtle and difficult to measure, and specific mitigation measures are set out in the detailed version of the SEA.

Environmental monitoring of the potential negative impacts of the proposals in question will help overcome the uncertainty of the assessment by providing regular information on changes to the ecosystems at risk. Two types of actions are required. The first of these is monitoring of the appropriate biological indicators, including those relating to the target components, in order to estimate or measure the changes caused by certain specific actions. The indicators may reflect ecosystem health, provided they are chosen carefully and have a scientific basis. Second, some of the environmental issues at stake will have to be documented. The studies required are described in the detailed version of the SEA.



Over time, research on these specific environmental issues, combined with monitoring measures, will enable Park managers to identify and develop the indicators, management criteria and critical thresholds required to determine acceptable use.

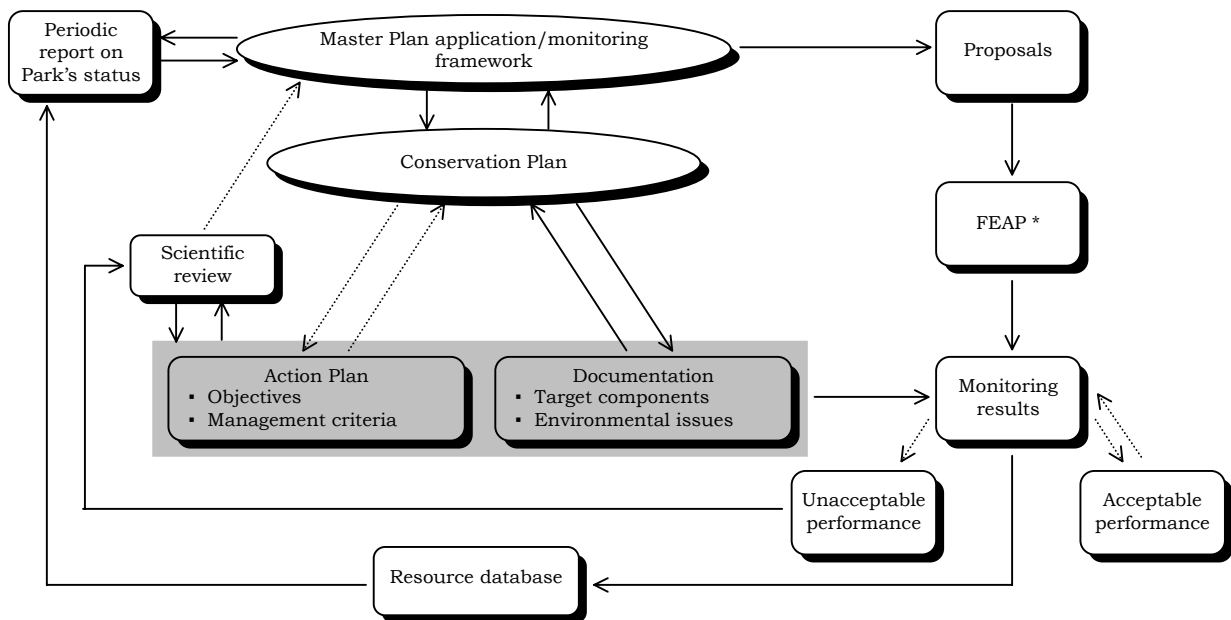
7.2 FEEDBACK MECHANISM

The decision-making process associated with ecosystem protection in Gatineau Park will be based mainly on the Master Plan and the Conservation Plan to be produced in the short term. The NCC's existing land use approval process, along with the project acceptability matrix to be developed, will be used to support the decision process. The Master Plan contains a set of proposals and a zoning plan that will

govern recreational use and ecosystem preservation of the Park, while the Conservation Plan will set out strategies to protect the Park’s ecological integrity and propose a series of objectives whose achievement will be measured over time. The strategies and objectives will use the behaviour of target components as a general filter to monitor the consequences of Park improvements, in particular for the proposals with potentially negative impacts. The Conservation Plan will contain management criteria for the target components.

To maintain the Park’s memory and references, all this information will be incorporated into the Park database. Similarly, monitoring information on changes to key environmental component trends, causal links, and critical thresholds will also be built retroactively into the ecosystem management plan and any other relevant plans. Monitoring results, especially where performance is judged to be unacceptable, would then be examined in priority by the Park’s authorities, and consigned periodically in a report on ecosystem health, which would present monitoring results and the information collected on priority problems. Where unacceptable situations are identified, corrections measures should be put in place, in particular in the Master Plan. A permanent application/monitoring framework for the Master Plan will ensure that assessments are taken into account and remedial measures are applied promptly. The framework would be built into the Park’s management policies. Figure 1 shows the proposed feedback mechanism in diagram form.

FIGURE 1
FEEDBACK MECHANISM



* Federal Environmental Assessment Process

LEGEND:
 ○ Management planning
 ▭ Management and analysis tools
 ⇄ Influence or prerequisite link

CONCLUSION

The Gatineau Park Master Plan adopted in 1990 established a mission for the Park centred on the green image and functions of the Capital and the range of experiences available to visitors. It also maintained a healthy balance between conservation and recreation. The Master Plan proposed for the period 2005-2015 consolidates and adds to the gains made by taking a significant step towards ecosystem-oriented management and ecological integrity. It suggests a form of prudent, adaptable, and proactive management that takes into account the growth of Park use and accessibility and recognises the pressures caused by use and urban development.

In particular, the new Master Plan contains orientation statements and a planning concept based on a clear vision of the major environmental issues and ecological integrity of the Park. Accordingly, a majority of the general and sector-specific proposals have positive consequences for the natural environment, in that they reduce the pressures and negative impacts generated by Park use. Indeed, the proposals are expected to generate some significant positive impacts on the Park's environment.

Even so, those responsible for implementing the proposed Master Plan will face some significant challenges. The need to coordinate the Park's mandate with the planning processes of adjacent municipalities, the need to increase research on the environment and the Park's ecosystems and apply leading-edge management methods, the need to restore natural dynamics, the need to prepare a monitoring program in order to assess the health of the Park's ecosystems, and the need to inform and raise public awareness are just some of the major challenges facing the NCC. At the same time, a Conservation Plan will set out the ecological integrity objectives and management criteria for the Park. The effort made to meet these challenges will have a considerable impact on the ultimate success of the proposed planning framework.

Bruno Del Degan, F.Eng, M.Sc.
Project Manager

Hervé Pelletier, M.Sc.
Ecology, Management of
Natural Spaces

REFERENCES

- CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY, 1995. *Canadian Environmental Assessment Act : Responsible Authority's Guide*, Ottawa-Hull, 237 p.
- CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY, 1999. *Strategic Environmental Assessment, the 1999 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals – Guidelines for Implementing*, En21-190/1999, 20 p.
- NATIONAL CAPITAL COMMISSION, 1995. *Politique administrative et marches à suivre – Évaluation environnementale*, 6 p.
- NATIONAL CAPITAL COMMISSION, 1995A. *Politique administrative et marches à suivre – Administration de la philosophie d'entreprise sur l'environnement*, 4 p.
- NATIONAL CAPITAL COMMISSION, 1998. *Cartes des priorités environnementales*, Direction de l'aménagement de la capitale et de la gestion de l'immobilier, Ottawa.
- NATIONAL CAPITAL COMMISSION, 1998A. *Bâtir une capitale – Réflexion sur le passé et perspectives d'avenir*, Direction de l'aménagement de la capitale et de la gestion de l'immobilier, Ottawa, 141 p.
- NATIONAL CAPITAL COMMISSION, 1999. *Plan for Canada's Capital, National Capital Commission*. Planning Division, Ottawa, 91 p.
- NATIONAL CAPITAL COMMISSION, 2002. *Cadre en matière d'évaluation environnementale stratégique, Processus de mise à jour du plan directeur, Parc de la Gatineau*, Direction de l'aménagement de la capitale et de la gestion de l'immobilier, Ottawa, 25 p. et 6 annexes.
- CANADIAN HERITAGE, 1996. *Procedures of the Department of Canadian Heritage for Complying with the Canadian Environmental Assessment Act*, 37 p.
- SERVICE CANADIEN DES PARCS, 1990. *Directive de gestion 2.4.6 – Le processus de gestion des ressources naturelles*, 11 p.
- PARCS CANADA, 1998. *Directive de gestion 2.4.2. Évaluation des impacts*, approuvée le 28 mai 1998, 15 p. et annexes.
- PARKS CANADA, 2000. *Unimpaired for Future Generations? Ecological Integrity of Canada's National Parks. Vol 1. A Call to Action*. Report of the Panel on the Ecological Integrity of Canada's National Parks. Ottawa (Ontario).
- SAUCIER, J. P. ET A. ROBITAILLE, 1995. *Les unités et les aires écopysiographiques du Québec méridional*, ministère des Ressources naturelles du Québec, Service des inventaires forestiers, Québec, 520 p.

APPENDIX 1

SUMMARY OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT
METHODOLOGY

PREREQUISITE

1. COMPLIANCE OF THE PLAN WITH FRAMEWORK ENVIRONMENTAL POLICIES
2. THE PARK'S ENVIRONMENTAL MISSION

ENVIRONMENTAL ASSESSMENT

3. SCOPE
 - 3.1 Exploration of the strategic issues and conservation challenges
 - 3.2 Identification of impact sources and their effects
 - 3.3 Identification of fundamental ecological values and key components
 - 3.4 Setting of spatial and temporal limits for the cumulative impact assessment
4. ANALYSIS OF THE IMPACTS OF PRELIMINARY STRATEGIES
 - 4.1 Consideration of how well the strategies support the principles identified as priorities for the Park (environment, recreation, regional integration, heritage, national symbolism, management)
 - 4.2 Projection over time of the impacts of the proposals on the priority principles
 - 4.3 Public involvement
5. DETAILED ANALYSIS OF THE SELECTED OPTION
 - 5.1 Analysis of the extent and importance of the general impacts of individual proposals on the natural, cultural and socio-economic environment
 - 5.2 Selection of target species
 - 5.3 Analysis of the nature and importance of the cumulative impacts of individual proposals on the natural environment
 - 5.4 Public involvement
6. CONSEQUENCES OF THE PLAN
 - 6.1 Identification of mitigation measures/strategic improvements for each proposal
 - 6.2 Assessment of the residual impacts after application of the mitigation measures
 - 6.3 Estimate of the acceptability of the residual impacts
 - 6.4 Assessment of the Plan's general impact on the Park's issues, the stress factors and the residual impacts, including the cumulative impacts
7. MONITORING MEASURES AND FEEDBACK MECHANISMS
 - 7.1 Identification of supervision and control needs
 - 7.2 Identification of feedback needs

APPENDIX 2

ENVIRONMENTAL ASSESSMENT OF PROPOSED PRELIMINARY
SOLUTIONS

ENVIRONMENTAL ASSESSMENT OF PROPOSED PRELIMINARY SOLUTIONS

STRATEGIC PRIORITIES AND SENSORS	STRATEGIC SOLUTIONS														
	Natural Environment			Recreation			Regional Integration			Heritage			Management		
	Strategies			Strategies			Strategies			Strategies			Strategies		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
NATURAL ENVIRONMENT															
Contribution to the maintenance of functional ecological systems	A+	A+	Cp	A+	A	N	A+	A	Cp	N	N	N	A+	A	Cp
Contribution to the maintenance of indigenous species and their natural habitats	A+	A+	N	N	A	N	A+	A	Cp	N	N	N	A+	Cp	N
Contribution to the preservation of representative ecological values	A+	A+	Cp	N	A	N	A+	A	Cp	N	N	N	A+	A	N
PERFORMANCE (%)	100	87	37	61	72	51	93	80	33	46	50	60	97	80	43
RECREATION															
Contribution to enjoyment of and learning about the natural environment	A+	A	A	A+	A	A	A+	N	N	A+	A+	N	N	N	N
Contribution to fair and equitable access	Cp	Cp	N	Cm	N	N	Cp	N	A	N	N	A	Cm	A	A
Contribution to a range of leisure experiences in nature	Cm	Cp	A	Cm	N	N	Cp	N	A	N	A	A	Cp	N	N
PERFORMANCE (%)	48	61	71	36	57	64	50	60	68	69	80	70	33	67	68
REGIONAL INTEGRATION															
Contribution to the quality and sustainability of the region's ecosystems	A+	A	Cp	A+	A	N	A+	N	Cp	N	N	N	A+	A	Cm
Park's contribution to the regional economy and recreation and tourist development	N	Cp	N	N	N	A	Cm	N	A	A	A	A	Cp	N	A
Contribution to the quality of life of the region's residents	Cp	Cp	A	Cp	Cp	N	Cm	N	A+	N	A	A	Cm	Cp	A
PERFORMANCE (%)	60	51	56	57	58	60	46	58	68	55	69	67	45	55	58
HERITAGE AND CULTURAL LANDSCAPES															
Contribution to the preservation of values related to culture and history	N	N	N	N	A	A	N	A	Cp	A+	A	Cp	A	A	N
Contribution to the maintenance and enhancement of historical landscapes	Cp	Cp	N	N	A	N	N	A	A	A+	A	Cp	A	A	N
PERFORMANCE (%)	41	40	52	65	74	65	55	65	46	90	82	38	75	73	43
COMMUNICATION															
Contribution to public support for conservation objectives	A+	A	Cp	A+	A+	N	A+	A	Cp	A+	A	N	A+	A	Cp
Contribution to knowledge of the Capital's natural and historical heritage	A+	A+	N	A	A	N	A	A	N	A	A	N	N	N	N
PERFORMANCE (%)	100	83	48	88	84	56	89	76	48	87	80	60	71	65	40
NATIONAL SYMBOLISM															
Contribution to the identity and national pride of Canadians	N	A	N	A	N	N	A	N	N	A+	A	N	N	N	N
Contribution to Canada's brand image for conservation	A+	A	Cp	A+	A	N	A+	A	Cp	A+	A	N	A+	A	Cp
PERFORMANCE (%)	79	75	40	84	73	49	88	73	41	96	84	57	80	65	38
OVERALL PERFORMANCE (%)	71	64	51	62	68	58	69	68	52	70	73	60	65	67	50

- A+ 86 – 100 % Indicates that most of the strategic solutions would result in an improvement for the Park's mandates.
- A 66 – 85 % Indicates that most of the strategic solutions are consistent with or would result in an improvement for the Park's mandates. Some of the objectives would have a neutral effect.
- N 41 – 65 % Indicates that most of the strategic solutions are incompatible with, neutral towards or consistent with the mandates. Mitigation measures are required for potential inconsistencies.
- Cp 26 – 40 % Indicates that most of the strategic solutions are incompatible with or neutral towards the Park's mandates. Some of the objectives are incompatible.
- Cm 0 – 25 % Indicates that most of the strategic solutions are incompatible with the Park's mandate. Significant mitigation measures are required.

APPENDIX 3

CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO
THE CUMULATIVE EFFECTS OF THE MASTER PLAN

**CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO THE CUMULATIVE EFFECTS
OF THE MASTER PLAN**

SOURCE OF IMPACTS	PERIOD COVERED	IMPORTANCE ¹ OF THE ANTICIPATED IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CURRENT OVERALL CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS/ POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
RECREATION AND OTHER USES (ACTIVITIES AND INFRASTRUCTURES INSIDE THE PARK)								
Specific recreational activities (climbing, hang gliding)	pr-c-f	+++	++	++	+++	-	++	High
Domestic animals	pr-c-f	-	-	++	+	-	+	Low
Water-based activities (swimming, diving, etc.)	pr-c-f	+	+	++	+	-	+	Low
Camping/Picnicking	pr-c-f	+	+	++	-	-	-	Low
Canoeing	pr-c-f	-	-	+	-	-	-	Low
Pleasure cycling/Rollerblading	pr-c-f	-	-	++	+	-	-	Low
Mountain biking	pr-c-f	+	+	++	+	-	-	Low
Picking	p-c-f	-	+	+	+	-	-	Low
Hunting/Poaching	p-c-f	-	+++	+++	+++	-	++	High
Ecotourism/Observation/Photography/ Cultural tourism	pr-c-f	-	++	++	-	-	-	Low
Horse riding	pr-c-f	-	+	+	-	-	-	Low
Reception facility	pr-c-f	++	++	+	-	-	-	Moderate
Snowmobiling	pr-c-f	-	++	+++	-	-	+	Moderate
Managed sport fishing	p-c-f	-	-	+	++	-	++	Moderate
Hiking/Cross-country skiing/Snowshoeing	pr-c-f	-	+	++	+	-	-	Low
All terrain vehicles (ATVs)	pr-c-f	+	+	+++	+	-	+	Moderate

**CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO THE CUMULATIVE EFFECTS
OF THE MASTER PLAN (Cont.)**

SOURCE OF IMPACTS	PERIOD COVERED	IMPORTANCE ¹ OF THE ANTICIPATED IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CURRENT OVERALL CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS/ POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
RECREATION AND OTHER USES (ACTIVITIES AND FACILITIES INSIDE THE PARK) (suite)								
Motor vehicle traffic (automobile)	p-c-f	-	++	+++	++	-	++	High
Private properties and developments/Housing/Commercial ski centres/Outdoor base	p-c-f	++	++	+++	+	++	++	High
Hydro transmission lines/Transmission towers	pr-c-f	++	++	+	+	+	+	Moderate
Shoreline occupation (wharves, boathouses, beaches, etc.)	pr-c-f	+	+	++	+	-	++	Moderate
PARK MANAGEMENT ACTIVITIES								
Motor vehicle traffic corridors and roads (presence and maintenance)	pr-c-f	+++	+++	+++	++	++	++	High
Drinking water (supply)	pr-c-f	-	+	-	+	-	+	Low
Wastewater (disposal)	pr-c-f	+	+	+	++	-	++	Moderate
Landscape maintenance	pr-c-f	-	+	-	+	-	+	Low
Wildlife management	pr-c-f	-	-	+	-	-	+	Low
Environmental management (environmental assessments and others)	pr-c-f	-	-	+	-	-	-	Low
Waste management	pr-c-f	-	-	+	-	-	+	Low
Paths and trails (presence and maintenance)	pr-c-f	+	++	++	+	-	+	Low
Restoration work on recreational facility and historic buildings	pr-c-f	-	-	+	-	-	-	Low
Restoration work/Maintenance of rural landscapes and other open spaces	pr-c-f	++	++	+++	+	-	+++	High
GENERAL FACTORS IN THE PARK								
Absence of a buffer zone adjacent to the Park	pr-c-f	++	++	+++	++	+++	++	High
Spread and intensity of recreational activities	pr-c-f	++	+++	+++	++	+	++	High
Numerous access	pr-c-f	+++	+++	++	++	++	++	High

CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO THE CUMULATIVE EFFECTS OF THE MASTER PLAN (Cont.)

SOURCE OF IMPACTS	PERIOD COVERED	IMPORTANCE ¹ OF THE ANTICIPATED IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CURRENT OVERALL CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS/ POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
HISTORIC ACTIVITIES IN THE PARK								
Forestry activities	pp	+	++	-	++	-	++	Moderate
Planting	pp	++	+	+	++	-	++	Moderate
Seeding/Introduction of species	p	+	+	+	-	-	+	Low
Wildlife harvesting	pp	-	+	+	+++	-	+++	High
Infrastructure (urban, vacation, industrial, political, transportation, etc.)	pp	+	++	+	+	-	+	Low
Mining activities	p	+	+	+	+	-	+	Low
ACTIVITIES OUTSIDE THE PARK WITHIN PREDETERMINED GEOGRAPHICAL LIMITS (ECOLOGICAL IMPACT ZONE)								
Agriculture	p-c-f	+++	+++	+++	++	+++	+++	High
Logging	p-c-f	++	+++	+++	++	++	+++	High
Waste management	p-c-f	+	+	++	+	-	+	Low
Wildlife management	p-c-f	-	+	++	++	-	++	Moderate
Water management	pp-c-f	++	+	++	++	-	++	Moderate
Infrastructure and maintenance (including roads)	p-c-f	++	+++	+++	++	++	+++	High
Tourism/Vacationing	p-c-f	++	+	++	+	+	++	Moderate
Use of aquatic habitats	p-c-f	++	+	+++	+	+	++	Moderate
Urban areas	p-c-f	+++	+++	+++	+++	+++	+++	High
Industrial activities and extraction	p-c-f	+++	+++	+++	++	++	++	High

**CURRENT SOURCES OF IMPACTS AND THEIR CONTRIBUTION TO THE CUMULATIVE EFFECTS
OF THE MASTER PLAN (Cont.)**

SOURCE OF IMPACTS	PERIOD COVERED	IMPORTANCE ¹ OF THE ANTICIPATED IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CURRENT OVERALL CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS/ POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
GENERAL FACTORS IN THE REGION AND BEYOND								
Socio-economic context of the Park	a-f	++	++	+++	++	++	+++	High
Political context of the Park	a-f	-	+	-	-	+	+	Low
Regional integration	pr-c-f	++	++	+++	++	++	+++	High
Isolation of the Park	pr-c-f	++	++	+++	++	+++	+++	High
Landscape fragmentation	pr-c-f	++	++	++	++	+++	+++	High
Air pollutants	pr-c-f	++	+	-	++	-	+++	Moderate
Acid rain	pr-c-f	++	-	-	++	-	+++	Moderate
Global warming	pr-c-f	++	-	-	++	-	+++	Moderate

KEY**Importance of impacts**

The impact's importance is assessed using a combination of three variables, namely intensity, scope and duration.

+++ : impacts of major importance on one, some or all of the components

++ : impacts of moderate importance on one, some or all of the components

+ : impacts of minor importance on one, some or all of the components

- : the activity has no negative impact on the component in question, based on this analysis criterion

Period covered

pp : past before Park was created

p : past before and after Park was created

c : current

pr : recent past (since 1980)

f : future

¹ Data on the importance of the impacts reflects the highest assessment result for each individual component.

² Please consult the document entitled *Cadre en matière d'évaluation environnementale stratégique (ÉES), Processus de mise à jour du plan directeur, Parc de la Gatineau*, NCC, 2002, for the combination of criteria used to assess the importance of the impacts, along with the list and descriptions of environmental components.

APPENDIX 4

ACCEPTABILITY OF RESIDUAL IMPACTS

ACCEPTABILITY OF RESIDUAL IMPACTS

GROUPS OF PROPOSALS WITH NEGATIVE IMPACTS	CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS	IMPORTANCE OF THE ANTICIPATED RESIDUAL IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CONTRIBUTION TO RESIDUAL CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS / POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION OF THE PARK OR CERTAIN CONSERVATION ZONES	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
Maintenance of existing compatible activities	Negative	+	++	++	+	+	++	Neutral
Maintenance of the current capacity of recreational facilities in the three main activity zones	Negative	+	++	++	+	+	++	Negative
Maintenance of the quality of existing tourist attractions	Negative	+	+	++	+	+	+	Neutral
Maintenance of the official trail network	Negative	+	++	+	+	+	++	Negative
Improvement of the supply of winter activities	Negative	+	++	++	++	+	++	Negative
Enhancement, restoration and maintenance of the Park's cultural and political heritage and its symbols	Negative	-	-	+	+	-	+	Negative
Enhancement of views	Negative	-	+	+	-	-	+	Negative
Maintenance of rural landscapes and other open spaces (agro-tourist enhancement)	Negative	++	++	++	+	-	++	Negative
Maintenance of official residences	Negative	-	-	+	+	-	+	Neutral
Creation of new trails (hiking trails, trails for the disabled, observation trails)	Negative	+	++	+	+	+	+	Negative
Enhancement of wetland ecosystems in the Mud Lake sector (Heart of the Park)	Negative	-	+	+	-	+	-	Neutral

ACCEPTABILITY OF RESIDUAL IMPACTS (Cont.)

GROUPS OF PROPOSALS WITH NEGATIVE IMPACTS	CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS	IMPORTANCE OF THE ANTICIPATED RESIDUAL IMPACTS BY CATEGORY OF CUMULATIVE EFFECT ON TARGET COMPONENTS IN THE ECOLOGICAL IMPACT ZONE						CONTRIBUTION TO RESIDUAL CUMULATIVE ENVIRONMENTAL IMPACTS
		DIRECT LOSS OF LAND-BASED OR AQUATIC HABITATS OR HOME RANGE	ALTERATION OR FRAGMENTATION OF HABITATS / POPULATIONS	ALTERATION OF SPECIES BEHAVIOUR DUE TO DISTURBANCE	PROBABLE IMPOVERISHMENT OF INDIGENOUS SPECIES POPULATIONS OR BIODIVERSITY	ECOLOGICAL ISOLATION OF THE PARK OR CERTAIN CONSERVATION ZONES	ALTERATION OF THE STRUCTURE (POPULATION IMBALANCE, ETC.) AND FUNCTIONS (PROCESSES, DYNAMICS) OF ECOSYSTEMS	
Enhancement of the industrial heritage	Negative	-	-	+	+	-	+	Neutral
Development of secondary reception points	Negative	-	-	+	+	-	+	Neutral

KEY

Contribution to cumulative environmental impacts¹ on target species²

- Positive: Indicates that the strategic proposals meets or limits the impacts of cumulative pressures on the target components
- Neutral: Indicates that the strategic proposals does not have additional negative impacts on the target components, but nor does it mitigate the pressures
- Negative: Indicates that the strategic proposals impact will probably enhance the cumulative effects or pressures on the target components

Importance of impacts

- The importance of the impact is assessed using a combination of three variables, namely intensity, scope and duration.
- +++ : impacts of major importance on one, some or all of the target components
 - ++ : impacts of moderate importance on one, some or all of the target components
 - + : impacts of minor importance on one, some or all of the target components
 - : the activity has no negative impact on the component in question, based on this analysis criterion

APPENDIX 5

IMPROVEMENT AND MITIGATION MEASURES

IMPROVEMENT AND MITIGATION MEASURES FOR THE PROPOSALS

PRINCIPAL GROUPS OF ENVIRONMENTAL STRESS FACTORS (PRINCIPAL ENVIRONMENTAL CONCERNS)	PRINCIPAL PROPOSED GENERAL AND SPECIFIC SOLUTIONS TO THE ENVIRONMENTAL CONCERNS	CONTRIBUTION TO THE CUMULATIVE ENV. IMPACTS	PRINCIPAL PROPOSED IMPROVEMENT/MITIGATION MEASURES	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS
(A) PROPOSALS APPLICABLE TO ALL ENVIRONMENTAL CONCERNS				
	<p><u>Proposals with positive environmental impacts</u></p> <ul style="list-style-type: none"> ▪ Production of a conservation plan and preparation of a recreational service supply plan consistent with the conservation plan ▪ Promotion of the conservation of ecosystems and ecological links, and practice of compatible recreational activities ▪ Apply a multidisciplinary scientific approach to manage resource and nature-based recreation ▪ Foster public participation in Park management ▪ Develop a Master Plan application and monitoring framework (commissioning plan) ▪ Within the year following the approval of the Master Plan, identify the potential options to enhance NCC authority to ensure the Park's mission 	Positive	<p><u>Improvement measures</u></p> <ul style="list-style-type: none"> ▪ Set guidelines for environmental objectives ▪ Produce a periodic environmental review ▪ Extend knowledge of the Park's ecosystems ▪ Develop an application/monitoring framework for the conservation plan ▪ Make sure the conservation plan contains a description of the current condition of the Park's ecosystems and a reference to their functions and the disturbance factors that affect them ▪ Refocus the interpretation and information programs to give emphasis to appreciation of the environment ▪ Raise public awareness of environmental management activities and the need to preserve ecosystems ▪ Prepare a public information and education strategy on ecosystem health and management ▪ Take part in media interventions on conservation and outdoor recreation in the region 	Positive
(B) PROPOSALS APPLICABLE TO SPECIFIC CONCERNS				
Spread and intensity of recreational activities in land-based and aquatic environments/overuse	<p><u>Proposals with positive environmental impacts</u></p> <ul style="list-style-type: none"> ▪ Restriction of recreational development in the next three years ▪ Participation in regional development as a complement and promotion of partnerships with parties outside the Park for the provision of services ▪ Restriction of new facility development, including reception points, and rationalize existing facilities ▪ Relocation of recreational activities to less sensitive areas ▪ Restriction of human presence in significant ecosystems ▪ Avoidance of the developments of new facilities for competitive sporting activities ▪ Gradual elimination of all off-road motorized activities by 2010 ▪ Preparation of a project acceptability matrix for recreational use ▪ Adoption of an access and control strategy to improve control over visitor numbers 	Positive	<p><u>Improvement measures</u></p> <ul style="list-style-type: none"> ▪ Extend monitoring of recreational impacts to the aquatic ecosystems at Meech Lake and Philippe Lake ▪ Introduce the notion of density as a management standard for traffic corridors, roads and trails ▪ In the conservation plan, adopt a management strategy that provides appropriate protection for riparian areas and aquatic habitats, since recreational activities tend to take place in shoreline zones ▪ Apply specific rules to conservation areas and sensitive environments (visitor quotas, guided visits only, no visitors at certain critical times, etc.) ▪ Extend ecological knowledge of certain critical sectors ▪ Obtain more quantitative data on the loss of ecological functions arising from the spread of activities and overuse of certain sites ▪ Review conservation priorities ▪ Identify and provide integral protection for specific land-based and aquatic systems as sanctuaries 	Positive

IMPROVEMENT AND MITIGATION MEASURES FOR THE PROPOSALS (Cont.)

PRINCIPAL GROUPS OF ENVIRONMENTAL STRESS FACTORS (PRINCIPAL ENVIRONMENTAL CONCERNS)	PRINCIPAL PROPOSED GENERAL AND SPECIFIC SOLUTIONS TO THE ENVIRONMENTAL CONCERNS	CONTRIBUTION TO THE CUMULATIVE ENV. IMPACTS	PRINCIPAL PROPOSED IMPROVEMENT/MITIGATION MEASURES	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS
(B) PROPOSALS APPLICABLE TO SPECIFIC CONCERNS (cont.)				
Spread and intensity of recreational activities in land-based and aquatic environments/overuse (cont.)	<p><u>Proposals with positive environmental impacts</u> (cont.)</p> <ul style="list-style-type: none"> ▪ Restoration of significant ecosystems ▪ Reduce significantly the number of climbing walls until the conservation plan will be effective ▪ Relocation of mountain bike activities outside conservation areas ▪ Monitoring of the impacts of camping activities on riparian ecosystems (La Pêche Lake) ▪ Elimination of incompatible activities in the Meech Creek Valley. ▪ Promotion, in conjunction with partners, of recreation sites outside the Park 	Positive		
	<p><u>Proposals with negative environmental impacts</u></p> <ul style="list-style-type: none"> ▪ Maintenance of existing compatible activities ▪ Maintenance of the current capacity of recreational facilities in the three main activity centres ▪ Maintenance of the quality of recreational activities ▪ Maintenance of the official trail network ▪ Diversification of the supply of winter activities (Philippe Lake) ▪ Development, restoration and maintenance of the Park's cultural and political heritage and its symbols ▪ Enhancement of views ▪ Maintenance of rural landscapes and other open spaces (agro-tourist development) ▪ Maintenance of official residences ▪ Creation of new trails (hiking trails, trails for the disabled, observation trails) ▪ Enhancement of wetland ecosystems in the Mud Lake sector (Heart of the Park) ▪ Enhancement of the industrial heritage ▪ Development of secondary reception points 	Negative	<p><u>Mitigation measures</u></p> <ul style="list-style-type: none"> ▪ Subject the recreational service supply to the priorities set out in the conservation plan ▪ Establish and monitor indicators of ecosystem health ▪ Acquire more complete data on the health and distribution of identified target species ▪ Try to maintain potential habitats for target species ▪ Study the capacity of significant ecosystems and sensitive sites ▪ Establish performance criteria for recreational facilities by developing capacity indicators ▪ Establish a monitoring protocol to assess the impacts of using land-based and riparian environments in the activity nodes ▪ Establish use intensity thresholds for conservation zones and sensitive environments ▪ Periodically review the Master Plan by incorporating data on capacities and zoning so as to enhance the Park's ability to protect the integrity of its ecosystems ▪ Monitor the impacts on target species ▪ Adopt a strategy to close down and renaturalize unofficial trails ▪ Apply the Canadian Environmental Assessment Act ▪ Base the assessment of new development needs on an examination of the cumulative impacts generated by visitor numbers, overuse and the spread of activities 	Neutral

IMPROVEMENT AND MITIGATION MEASURES FOR THE PROPOSALS (Cont.)

PRINCIPAL GROUPS OF ENVIRONMENTAL STRESS FACTORS (PRINCIPAL ENVIRONMENTAL CONCERNS)	PRINCIPAL PROPOSED GENERAL AND SPECIFIC SOLUTIONS TO THE ENVIRONMENTAL CONCERNS	CONTRIBUTION TO THE CUMULATIVE ENV. IMPACTS	PRINCIPAL PROPOSED IMPROVEMENT/MITIGATION MEASURES	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS
(B) PROPOSALS APPLICABLE TO SPECIFIC CONCERNS (cont.)				
Spread and intensity of recreational activities in land-based and aquatic environments (cont.)			<u>Mitigation measures</u> (cont.) <ul style="list-style-type: none"> ▪ Control access to conservation zones ▪ Monitor the real impact of diversifying winter activities on wolf populations and establish acceptable use thresholds ▪ Gather more quantitative data on the loss of ecological functions arising from the maintenance of cultural landscapes and overuse of certain activity sites ▪ Institute quotas for specific uses during peak periods ▪ Subject agro-tourist enhancement of the Meech Creek Valley to certain guidelines (based on environmental assessments) to protect watersheds and biodiversity Note: A number of the Master Plan's proposals work together with these measures and also help mitigate impacts	Neutral
Internal pressure from urban development (road corridors, energy transmission lines, private property and developments)	<u>Proposals with positive environmental impacts</u> <ul style="list-style-type: none"> ▪ Control of access to certain roads ▪ Preparation of a green transportation plan offering alternative forms of access (other than cars) ▪ Avoid further fragmentation of the Park by new local and regional roads and rationalize the current road network in the Park ▪ Continuation of a private land acquisition policy taking into account the value of natural ecosystems ▪ Defragmentation of the Park through restoration and compensatory work 	Positive	<u>Improvement measures</u> <ul style="list-style-type: none"> ▪ Introduce and apply a strategy for gradual elimination of private land ownership in the Park ▪ Ensure that specific rules and guidelines are applied to private development use ▪ Create a committee of Park residents 	Positive
Reduced size of the Park/ absence of a natural buffer zone along the Park's boundary/ reduced self-sufficiency in terms of resources and processes	<u>Proposals with positive environmental impacts</u> <ul style="list-style-type: none"> ▪ Identification and preservation of priority internal and external ecological links and buffer zones with habitats and natural environments in the Park ▪ Planning of peripheral federal land to ensure the protection of green corridors 	Positive	<u>Improvement measures</u> <ul style="list-style-type: none"> ▪ Clearly identify the areas requiring protection due to the connections between habitats and populations ▪ Establish protected zones (buffer zones) that are respectful of ecological corridors, and establish management rules 	Positive

IMPROVEMENT AND MITIGATION MEASURES FOR THE PROPOSALS (Cont.)

PRINCIPAL GROUPS OF ENVIRONMENTAL STRESS FACTORS (PRINCIPAL ENVIRONMENTAL CONCERNS)	PRINCIPAL PROPOSED GENERAL AND SPECIFIC SOLUTIONS TO THE ENVIRONMENTAL CONCERNS	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS	PRINCIPAL PROPOSED IMPROVEMENT/MITIGATION MEASURES	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS
(B) PROPOSALS APPLICABLE TO SPECIFIC CONCERNS (cont.)				
Urban development immediately around the Park, uncontrolled access roads, regional transportation corridors through the Park, increased demand for facilities and activities	<u>Proposals with positive environmental impacts</u> <ul style="list-style-type: none"> ▪ Eliminate of informal access to all sectors, so as to control their use and reduce their impacts ▪ Highlighting of the Park's boundaries and entrance points ▪ Contribution that complement to regional development ▪ Positioning of the Park as a complementary facility by participating in regional recreation planning tables and by fostering partnerships ▪ Municipal and community recreational sites limited to the institutional zone only ▪ Avoid facility developments for competitive sporting activities 	Positive	<u>Improvement measures</u> <ul style="list-style-type: none"> ▪ Enter Gatineau Park in the network of regional parks in order to distribute tourist and recreational pressures ▪ Join local and regional consultation organizations ▪ Create or foster the creation of a regional recreational development table ▪ Raise public awareness of the need for environmental management activities and ecosystem conservation ▪ Assess and identify alternatives, in conjunction with regional partners ▪ Plan participation in media interventions 	Positive
Harvesting of renewable resources around the Park or in shared watersheds	<u>Proposals with positive environmental impacts</u> <ul style="list-style-type: none"> ▪ Preservation of external ecological links ▪ Harmonization of land uses around the Park, in conjunction with the City of Gatineau ▪ Planning of peripheral federal land to ensure protection of green corridors ▪ Preparation of a strategy to protect water quality in La Pêche Lake, in partnership with the municipalities 	Positive	<u>Improvement measures</u> <ul style="list-style-type: none"> ▪ Produce an analysis and model of the cumulative impacts of human activities at regional level ▪ Be fully aware of the Park's ecological role in the regional ecosystem and promote that role among regional communities, interest groups and users ▪ Prepare a strategy to ensure the quality of ecosystems in shared watersheds ▪ Analyze regional landscape fragmentation in order to understand the impacts on natural ecosystems ▪ Join local and regional consultation organizations ▪ Create or foster the creation of a regional recreational development table ▪ Raise public awareness of the need for environmental management activities and ecosystem conservation ▪ Promote the Park as a laboratory and ultimately as an example of its natural region ▪ Promote the creation of a long-term monitoring station for air pollutants ▪ Produce an analysis and strategy for the protection of regional biodiversity 	Positive

IMPROVEMENT AND MITIGATION MEASURES FOR THE PROPOSALS (Cont.)

PRINCIPAL GROUPS OF ENVIRONMENTAL STRESS FACTORS (PRINCIPAL ENVIRONMENTAL CONCERNS)	PRINCIPAL PROPOSED GENERAL AND SPECIFIC SOLUTIONS TO THE ENVIRONMENTAL CONCERNS	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS	PRINCIPAL PROPOSED IMPROVEMENT/MITIGATION MEASURES	CONTRIBUTION TO THE RESIDUAL CUMULATIVE ENV. IMPACTS
(B) PROPOSALS APPLICABLE TO SPECIFIC CONCERNS (cont.)				
Historical ecosystem use/ interruption or alteration of natural processes/ introduction of foreign species	<p><u>Proposals with positive environmental impacts</u></p> <ul style="list-style-type: none"> ▪ Restoration of significant ecosystems, critical habitats and habitats that are shifting away from their natural state <p>Note: Production of a Conservation Plan in the next three years will clarify and improve all the proposals</p>	Positive	<p><u>Improvement measures</u></p> <ul style="list-style-type: none"> ▪ Produce an analysis of the history and impacts of old logging operations and fires ▪ Produce a restoration plan that takes into account the restoration of habitats and species at regional level ▪ Study the long-term impacts of fire suppression ▪ Characterize the regional natural disturbance systems ▪ Set measurable goals and objectives for the health and restoration of natural resources and ecosystems 	Positive

CONTRIBUTION TO CUMULATIVE ENVIRONMENTAL IMPACTS ON TARGET COMPONENTS

Positive: Indicates that the proposed solution meets or limits the cumulative impacts or pressures on the target components

Neutral: Indicates that the proposed solution does not cause additional negative impacts for the target components, but nor does it mitigate the pressures

Negative: Indicates that the proposed solution will probably enhance the cumulative impacts or pressures on the target components

The impacts on target components are net loss/maintenance of habitats, fragmentation of habitats and populations, conflicts with wildlife and disturbances, maintenance/reduction of populations, maintenance/impooverishment of biodiversity, and alteration/maintenance/improvement of the structure and functions of natural systems