

**BUILDING A
GREENER
CAPITAL**



National Capital Commission

Annual Environment Report

2013–2014



NATIONAL CAPITAL COMMISSION

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Ce rapport est aussi offert en français.

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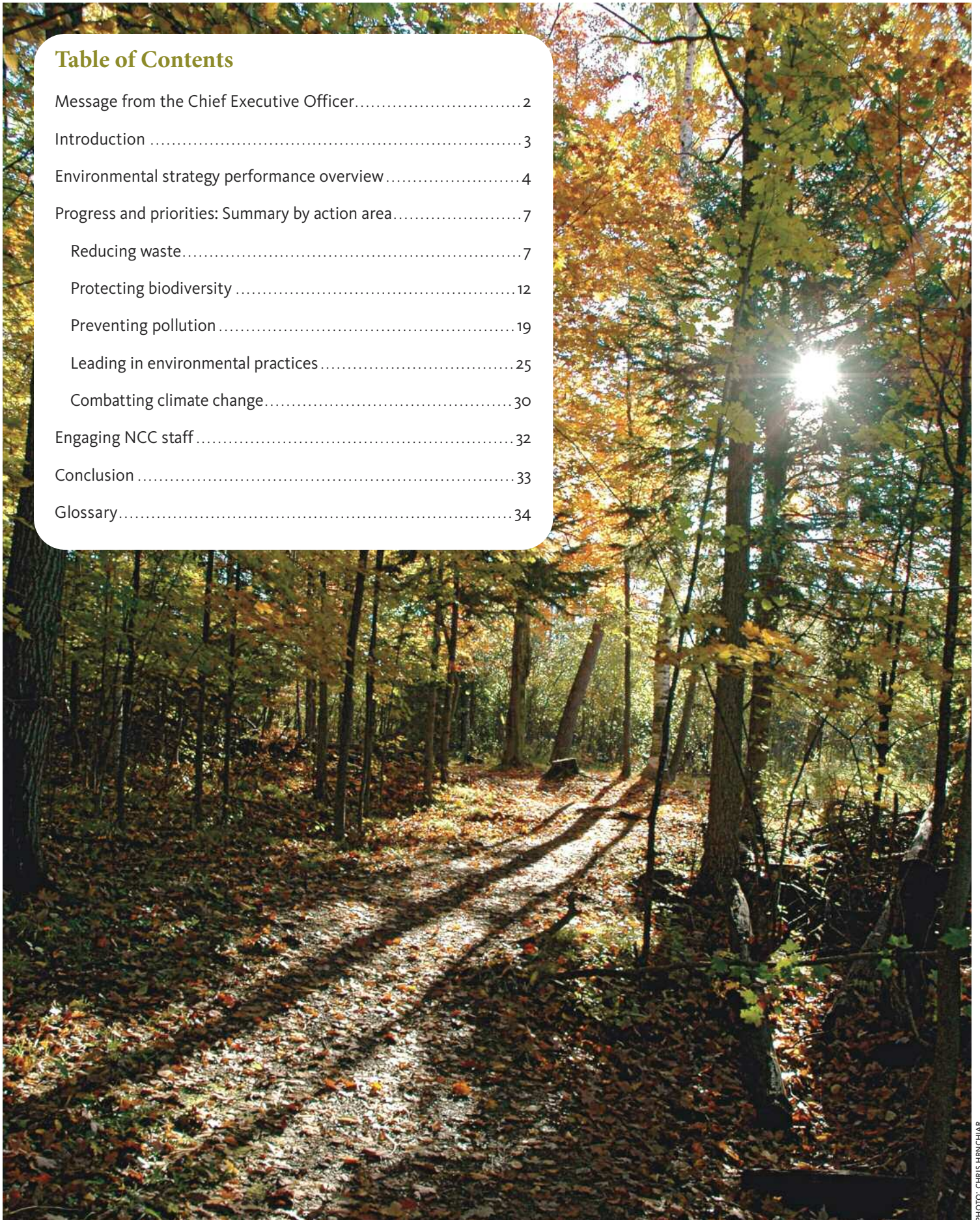


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1. Message from the Chief Executive Officer

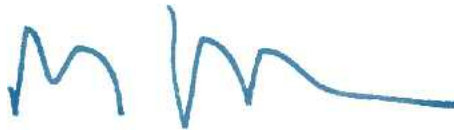
It is with great pleasure that I present the National Capital Commission's (NCC) Environment Report for the 2013–2014 fiscal year.

Through our commitment to the protection and management of treasured natural and built assets in Canada's Capital Region, we have been able to achieve clear and measurable progress. Our primary role, as the Crown corporation dedicated to the planning and stewardship of federal lands in the region, is to ensure that the Capital is a place of natural and historical beauty.

In this, our fifth annual report since we launched the NCC's environmental strategy, we are demonstrating our ongoing leadership in environmental sustainability. Staff throughout the organization have worked hard to make measurable progress toward meeting the objectives of the environmental strategy.

It is the responsibility of the NCC to ensure that the principles of environmental protection are accurately reflected in the plans that we produce, and I am confident that this has been achieved in the Greenbelt Master Plan. In safeguarding and preserving natural and built heritage such as Rideau Hall, we are committed to undertaking projects that promote energy efficiency and sustainability. Similarly, we will continue to work with our contractors to ensure that stewardship operations meet the highest standards of environmental management.

In order to ensure success, we must collaborate. The NCC has been working with a long list of partners and stakeholders who share our vision of implementing effective, rigorous and responsible environmental management in the National Capital Region. In the years to come, we will continue to foster collaboration, protect our natural and built spaces, and build upon our achievements in making a greener Capital Region.



Dr. Mark Kristmanson
Chief Executive Officer

2. Introduction

In June 2009, the National Capital Commission (NCC) launched its first comprehensive environmental strategy, known as *Building a Greener Capital*. This eight-year plan mapped out five key action areas, each with one priority objective and a focused set of secondary targets.

This annual report provides the NCC's Board of Directors and the public with a detailed account of the corporation's environmental performance for the 2013–2014 fiscal year. It builds on previous reports to illustrate the progress achieved by the NCC in meeting its objectives in all of the priority action areas. The report also describes how the NCC has managed important environmental regulatory compliance risks and issues during the year.

MIDPOINT REVIEW OF OBJECTIVES

During the 2013–2014 fiscal year, the environmental strategy was updated, and subsequently approved by the NCC's Board of Directors in November 2013. The revision reflects the NCC's mandate (as of September 2013) and the priorities of the Federal Sustainable Development Strategy (FSDS), the second cycle of which was released in November 2013, covering the period from 2013 to 2016.

On September 30, 2013, the mandate of the NCC's Capital Experience program was transferred to Canadian Heritage. Going forward, the NCC's mandate enables the corporation to focus on its role to preserve, manage and serve as steward of the Capital Region and its green spaces, which comprises of more than 400 square kilometres of forests, farms, parks and pathways. Today, the NCC is guided by the principal objective "to prepare plans for and assist in the development, conservation and improvement of the National Capital Region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance."

The FSDS provides an overall vision for environmental priorities, accompanied by objectives, targets and implementation strategies for federal government departments and agencies that are subject to the *Federal Sustainable Development Act*. The NCC is not technically subject to the FSDS, but nonetheless strives to align its environmental management practices with the Government of Canada's priorities.

The NCC's midpoint review included targeted revisions to the environmental strategy. The corporation will continue to exercise responsible and effective environmental management practices, thus helping ensure that the Capital is a source of pride for all Canadians.

For more information about the NCC's environmental stewardship, including the previous annual reports and the strategy itself, please visit the NCC's website: ncc-ccn.gc.ca/planning/environmental-strategy.






BUILDING A GREENER CAPITAL ACTION AREAS:


- ✓ Reduce waste
- ✓ Protect biodiversity
- ✓ Prevent pollution
- ✓ Lead in environmental practices
- ✓ Combat climate change

3. Environmental strategy performance overview


The following chart summarizes the NCC's progress toward meeting the objectives of its environmental strategy over the past five years. It highlights accomplishments, notes key environmental indicators, and provides information on obstacles or challenges. More detailed information is provided throughout the report. The objectives and areas for action have been changed from previous versions of this report, based on the 2013 revisions to the corporate environmental strategy.









SUMMARY OF PERFORMANCE ON ENVIRONMENTAL STRATEGY

OBJECTIVES	HIGHLIGHTS OF ACCOMPLISHMENTS FOR 2013–2014	KEY CHALLENGES	CUMULATIVE STATUS* (on track for 2017)
Reducing waste			
<p>By 2013, the NCC will have achieved and will maintain a 50 percent reduction, in comparison with the 2009–2010 level, in waste sent to landfill sites from activities associated with the Rideau Canal Skateway.</p> <p>The NCC's objective is to send a total of 5 tonnes of waste to landfill sites for Canada Day and 11.1 tonnes for the Rideau Canal Skateway.</p>	<p>A total of 4.5 tonnes and 20.4 tonnes of waste were sent to landfill from Canada Day 2013 and the Rideau Canal Skateway 2013–2014, respectively.</p> <p>However, when measured per skating day, the amount of waste has decreased since 2010, from 0.61 tonnes per skating day to 0.35 tonnes per skating day in 2014.</p>	<p>To achieve this ambitious target for the Rideau Canal Skateway, further developments need to be made to the waste management system, such as improving waste stations and material sorting, and recruiting additional volunteers.</p>	 <i>See page 8</i>
<p>The NCC will achieve 70 percent waste diversion (through reducing, reusing, recycling) from all NCC business areas by 2017.</p> <p>The NCC has identified its four main sources of waste related to its business areas:</p> <ul style="list-style-type: none"> • Staff and office • Events • Public areas • Operations 	<p>In 2013–2014, an office waste audit determined that the NCC is diverting 58 percent of waste generated by staff and services from landfills.</p> <p>A 2013–2014 pilot study identified that there is a potential to divert 71 percent of public waste from five sample parks.</p>	<p>Since 2009, the NCC has prioritized its efforts to focus on two main sources of waste: staff and office and events. Waste derived from operations has been partially addressed.</p> <p>The next step is to implement a program to address waste in public areas. This waste area is challenging to address, due to many unknown factors. The NCC is looking at the potential of introducing a more comprehensive waste management system in NCC parks.</p>	 <i>See page 7</i>
<p>The NCC will challenge partners hosting events on NCC lands to achieve a 50 percent waste diversion target.</p>	<p>The NCC is currently working to meet this challenge by adding new clauses to the event partnership agreements for 2014–2015.</p>		
<p>The NCC will develop green procurement guidelines for implementation in 2010, which will include low waste as an important criterion.</p>	<p>Green procurement guidelines have been finalized, and are accessible to all NCC staff via the intranet.</p>		
<p>The NCC will implement green demolition practices by 2010, which place a strong emphasis on waste diversion and resource conservation.</p>	<p>A total of 18 demolition projects on NCC lands took place over the 2013–2014 fiscal year, and 14 projects used green demolition practices. As a result, 95 percent of material was diverted from landfill.</p>		 <i>See page 10</i>

*  The objective is on track or achieved.

 There is some delay in achieving the objective.

 There are significant delays, and the objective may not be met.

OBJECTIVES	HIGHLIGHTS OF ACCOMPLISHMENTS FOR 2013–2014	KEY CHALLENGES	CUMULATIVE STATUS* (on track for 2017)
Protecting biodiversity			
<p>The NCC will ensure that all 28 high-value ecosystems and habitats found within the Greenbelt and Gatineau Park and on urban lands in the region are designated as conservation lands by 2012.</p> <p>Designations will be in accordance with the International Union for the Conservation of Nature's (IUCN) categories, through the approval of NCC master plans.</p>	<p>The nine high-value ecosystems and habitats found in the Greenbelt were designated in accordance with the IUCN categories with the approval of the Greenbelt Master Plan. In total, 17 out of 28 high-value ecosystems and habitats have been designated using applicable IUCN categories.</p>		 <i>See page 12</i>
<p>The NCC will implement new recovery plans for federally and provincially listed species at risk on NCC lands, within one year of finalization.</p>	<p>In 2013, the management plan for the yellow rail and the recovery plan for the channel darter were approved by Environment Canada. The measures identified in these plans will be integrated into land management practices.</p>		
<p>The NCC will protect all critical habitats identified on NCC lands under federal or provincial law for species at risk, within one year of designation.</p>	<p>All critical habitats for the species at risk identified on NCC lands are taken into consideration during the environmental effects analysis for individual projects and within land management practices.</p>		
<p>The NCC will develop a thorough understanding of biodiversity on NCC lands through the Natural Resources Research Program.</p>	<p>The NCC continues to increase its knowledge of biodiversity on its lands.</p> <p>In 2013–2014, an ecological land classification project was initiated, which will allow the NCC to map the potential habitat of species at risk and provide key ecological information.</p>		
<p>The NCC will reduce the amount of NCC urban land infested by aggressive invasive plant species by 10 percent by 2014.</p> <p>A total of 1,090 hectares out of 2,243 hectares of NCC urban lands are affected by the presence of invasive plant species. This results in a reduction target of 109 hectares.</p>	<p>In line with the Rideau Hall environmental strategy, the objective of reducing the amount of aggressive invasive plant species by 10 percent by 2014 was achieved.</p> <p>The NCC continued to acquire knowledge on the extent of aggressive invasive alien plant species on NCC lands. Specific measures to control invasive species, such as cutting and physical removal, are being undertaken, and an action plan was developed in 2013–2014.</p>	<p>The NCC is prioritizing the management of invasive plant species by addressing areas where there is high interaction between the public and the environment. Aggressive invasive plant species require continuous management. This is a major challenge due to the capacity of these species to invade new areas quickly and to damage native species.</p>	 <i>See page 15</i>
Preventing pollution			
<p>All contaminated sites on NCC lands will be secured by 2017.</p> <p>A contaminated site is considered secure when all necessary study, remediation and other risk management actions have been taken, consistent with the designated use of the site.</p>	<p>Four sites are currently ongoing remediation, and 82 contaminated sites have been secured to date.</p> <p>As of spring 2014, 153 out of 235 sites are known to be contaminated, but not secure. An additional 360 sites require further assessment.</p>	<p>The NCC is securing sites based on risk to the public, the environment at the site and organizational requirements.</p>	 <i>See page 19</i>
<p>The NCC will identify and remove or repair all problem underground storage tanks on NCC property by 2011.</p> <p>There are 10 underground storage tanks on NCC lands.</p>	<p>One of the 10 underground storage tanks on NCC land is not compliant; the tank is expected to be decommissioned in summer 2014.</p>		
<p>The NCC will adopt a policy to eliminate the pesticides used for cosmetic purposes by 2010.</p>	<p>Following approval of the NCC Pesticide Policy in 2012–2013, a reporting mechanism was developed in 2013–2014 to track the use of pesticides on NCC lands.</p>		

OBJECTIVES

HIGHLIGHTS OF ACCOMPLISHMENTS FOR 2013–2014

KEY CHALLENGES




CUMULATIVE STATUS*


(on track for 2017)


Leading in environmental practices


<p>All new building construction on NCC lands, for buildings over 250 square metres, will be certified LEED® (Leadership in Energy and Environmental Design) Gold by 2013 and all major building renovations will meet LEED® certification standards.</p>	<p>The NCC did not construct any new buildings over 250 square metres, nor did it undertake any major building renovations. The NCC continues to improve the energy efficiency of its infrastructure.</p>	<p> See page 25</p>
<p>The NCC will use green building practices for the construction of all buildings under 250 square metres.</p>	<p>Green building practices are incorporated into NCC projects. Environmental criteria are used to prioritize projects. In the summer of 2013, the septic system at the Philippe Lake lagoon was upgraded to ensure that wastewater was being disposed of in an environmentally appropriate manner.</p>	<p></p>
<p>The NCC will integrate environmental education into all NCC activities, where appropriate.</p>	<p>In celebrating the 75th anniversary of Gatineau Park, visitors were invited to participate in a number of activities, including birds of prey demonstrations and nature interpretation walks.</p> <p>The Greenbelt portfolio, along with its partners, continues to engage students in learning about valued habitats, including Pinhey Forest.</p>	<p></p>
<p>The NCC will strengthen environmentally sensitive practices in all maintenance contracts.</p>	<p>The Environmental Maintenance Guidelines were updated in order to provide operational guidance to contractors. For example, maps showing archaeological potential will be provided to contractors.</p>	<p> See page 29</p>
<p>The NCC will provide and promote environmentally sustainable transportation alternatives.</p>	<p>In 2013–2014, the NCC completed a pathway link along the Rockcliffe Parkway, as well as one between the Gatineau Parkway and Rue des Fées.</p>	<p></p>
<p>The NCC will implement best practices for water quality management in projects and activities taking place on NCC land, and will encourage its partners and stakeholders to do the same.</p>	<p>The NCC has undertaken studies on the health of several its aquatic ecosystems in the Greenbelt. The findings of these studies are incorporated into the management of sensitive habitats.</p>	<p></p>
<p>In carrying out its planning mandate, the NCC will place priority on sustainable development approaches.</p>	<p>In developing its plans, the NCC intends to protect and enhance green spaces in the region.</p>	<p></p>

Combatting climate change

<p>The NCC will reduce its overall carbon footprint by 30 percent by 2017, based on a 2011–2012 baseline.</p> <p>The reduction target is 838 tonnes of CO₂ equivalent for total emissions of 1,957 tonnes of CO₂ equivalent.</p> <p><i>Note:</i> Internal changes to the NCC may require that the baseline year be recalculated.</p>	<p>The calculation of the NCC's greenhouse gas inventory for the 2011–2012 fiscal year was completed in 2013–2014. The total greenhouse gas emissions related to NCC operations for the 2011–2012 fiscal year was 2,795 tonnes of CO₂ equivalent.</p>	<p>As the development of a reduction plan has been delayed, analysis is required to determine the initiatives and projects needed to meet this target. Further, achieving a 30 percent reduction in emissions will require significant investment.</p> <p> See page 30</p>
<p>The NCC will seek renewable sources of energy. By 2013, 25 percent of all NCC electricity purchases will be from renewable sources.</p>	<p>All electricity purchased by the NCC comes directly from the Ontario and Quebec grid systems, which both contain more than 25 percent renewable energy. The NCC does not need to alter its energy purchases at this time.</p>	<p></p>
<p>The NCC will continue to broaden its knowledge of the effects of climate change on its operations.</p>	<p>In 2014–2015, the NCC will examine the possibility of updating the 2005 study <i>Climate Change: A Long-Term Strategic Issue for the NCC — Implications for Recreation-Tourism Business Lines</i>.</p>	<p></p>

*  The objective is on track or achieved.

 There is some delay in achieving the objective.

 There are significant delays, and the objective may not be met.

4. Progress and priorities: Summary by action area

4.1 Reducing waste

PRIORITY OBJECTIVE:

By 2013, the NCC will have achieved and will maintain a 50 percent reduction, in comparison with the 2009–2010 level, in waste sent to landfill sites from activities associated with the Rideau Canal Skateway.

Environmentally sound waste management focuses on both reducing the quantities of waste and increasing waste diversion through reuse and recycling. One of the goals of the FSDS is to reduce waste generated and minimize the environmental impacts of assets throughout their life cycle. In line with this objective, the NCC aims to reduce the amount of waste produced from all of its operations. This includes addressing the four main sources of waste: office waste, event waste, public area waste and waste created by operations (e.g. construction and maintenance activities). In 2013–2014, the NCC acquired baseline data for waste generated by the public, and continued to divert waste from its demolition program. Going forward, the NCC intends to implement a program to address public area waste and put increased emphasis on managing waste associated with its operations.


OFFICE WASTE AUDITS

In 2010, the NCC conducted a review of its office waste management practices. This review led to a comprehensive overhaul of NCC waste stations, and the introduction of new waste disposal, recycling and composting stations, aimed at reducing the amount of waste going to the landfill. In total, 70 new stations with composting and recycling facilities were installed, and communications efforts were undertaken to increase staff awareness.

A limited waste audit undertaken in January 2012 determined that the NCC was diverting about 56 percent* of its waste generated in the serveries on all floors of the corporation's head office at 40 Elgin Street in Ottawa, Ontario.

* Note: In 2011–2012, it was incorrectly reported that the NCC was diverting 70 percent of all waste generated in the serveries at its headquarters at 40 Elgin Street.

KEY ENVIRONMENT INDICATORS



A total of 14 green demolition projects were undertaken, diverting 95 percent of material from landfills.

From the Rideau Canal Skateway 2013–2014 season, 22 tonnes of waste were sent to landfills, and 1.6 tonnes of recyclable material were diverted from landfills.

The NCC is diverting 58 percent of its office waste from landfills.

In early March 2014, waste audits were undertaken at 40 Elgin Street and the Gatineau Park office at 33 Scott Road in Chelsea, Quebec, to determine how well the new waste management stations were performing, as well as where improvements were needed. The audits determined that 40 Elgin Street is diverting nearly 58 percent of waste generated by staff and services each year, and that the Gatineau Park office is diverting 28 percent. For 40 Elgin Street, this represents an increase from 55 percent in 2010. The Gatineau Park office has seen a considerable improvement, with the diversion rate having risen from 5 percent in 2010 to 28 percent in 2014.

TABLE 1: MARCH 2014 NCC WASTE GENERATION PROJECTIONS (40 ELGIN STREET AND 33 SCOTT ROAD)

	40 Elgin Street	33 Scott Road
Total sent to landfill	10,378.75 kg/year	830.00 kg/year
Total diverted	14,106.63 kg/year	330.00 kg/year
Total generated	24,485.38 kg/year	1,160.00 kg/year
Estimated diversion rate	57.6%	28.45%

With these results, the NCC plans to review the waste management program to determine where improvements can be made. This may include efforts to increase staff awareness about the types of materials that can be recycled, as well as re-examining the feasibility of installing composting facilities at the office in Gatineau Park. A waste audit is planned for Rideau Hall in 2014–2015, to determine the waste diversion rate at the offices of the governor general.

SIGNATURE EVENTS AND PROGRAMS

As a result of the transfer of the Capital Experience program to Canadian Heritage, 2013 was the final year that Canada Day and Winterlude were organized by the NCC. The corporation will continue to manage the Rideau Canal Skateway, and will continue to strive toward a 50 percent reduction in the amount of waste from its activities sent to landfill. The primary objective under this action area has been revised to accommodate this change in the NCC's mandate.

As Canada Day 2013 was still under the responsibility of the NCC, this is the final year that the NCC will report on Canada Day waste reduction statistics. The NCC will work with partners at Canadian Heritage, as well as with partners responsible for other major events produced on NCC lands to provide support and advice to continually improve the waste management practices at these events.

The NCC continues to improve the waste management system on the Rideau Canal Skateway. Four waste station prototypes were used again this year at high volume areas, and achieved positive results. As was done in previous years, NCC staff worked closely with concessionaires, to raise awareness and provide support, as needed.

The cities of Ottawa and Gatineau also continued to offer their support. They provided bins to collect organic waste generated during Canada Day and throughout the Rideau Canal skating season. Moreover, both cities collected and processed the compostable materials.

An estimated 810 Christmas trees were donated for reuse to adorn the rest areas of the Rideau Canal Skateway. Once the canal was closed, the trees were converted into wood chips and used as landscaping material.

All these initiatives have cumulatively resulted in progress toward achieving the NCC's goals for waste management for Canada Day 2013 and the Rideau Canal Skateway 2014. Table 2 indicates the total amount of waste, as well as recyclable and compostable material collected from 2009 to 2014.

TABLE 2: SIGNATURE EVENTS AND FACILITIES WASTE, RECYCLING AND COMPOSTING RESULTS, 2009–2014¹

MEASURED RESULTS	Canada Day					Rideau Canal Skateway				
	2009	2010	2011	2012	2013	2010	2011	2012	2013	2014
Total material collected	12.3	9.0	12.0	8.8	7.7	24.1	33.1	14.1	23.4	22.0
Total amount recycled	2.4	2.0	3.4	4.2	1.8	1.9	2.3	2.8	2.2	1.6
Total amount composted	0	0	2.2	0.7	1.5	0	0	1	1.7	— ²
Total sent to landfill	9.9	7.0	6.3	3.9	4.5	22.2	30.7	10.3	19.5	20.4
NCC 2013 target for waste sent to landfill	(5.0)					(11.1)				

1. Figures in metric tonnes and rounded to one decimal place.

2. Compost collected on the Rideau Canal Skateway was sent to composting facilities. However, changes to the collection system by the City of Ottawa did not allow for the total amount composted to be determined. The NCC is examining ways to obtain this figure for future years.

As Table 2 indicates, the reduction target of sending less than 5 tonnes of waste to landfill was for Canada Day 2013 was achieved, with only 4.5 tonnes of waste sent to the landfill. Since 2009, the NCC has made measureable progress in reducing the amount of waste produced and sent to landfill.

The NCC recognizes that the amount of waste generated is directly linked to the number of skating days. Table 3 (*on page 10*) shows that the amount of waste sent to landfill per skating day in 2014 decreased from that of 2013. Further, a comparison of 2011 and 2014 data, which reflect a similar length of skating season, indicates that, in 2014, the NCC made improvements that resulted in less waste sent to landfill per skating day.

Staff from the NCC and both municipalities, along with contractors, worked in collaboration to develop and implement effective waste management programs for the events.

TABLE 3: RIDEAU CANAL SKATEWAY STATISTICS

	2010	2011	2012	2013	2014
Number of skating days	36	53	26	38	58
Total sent to landfill*	22.2	30.7	10.3	19.5	20.4
Tonnes of waste to landfill per skating day	0.61	0.58	0.40	0.51	0.35

* Note: Figures in metric tonnes.

GREEN DEMOLITION PRACTICES

Green demolition projects are conducted primarily in cases where buildings are at the end of their life cycle or their maintenance is not economically viable. For the 2013–2014 fiscal year, the NCC undertook 18 demolition projects, 14 of which implemented green demolition practices. Green demolition involves dismantling a building with the goal of diverting at least 90 percent of the materials from landfill. Materials are reused by non-governmental organizations such as Habitat for Humanity, which collect salvaged items such as windows or doors in order to put them to good use in building affordable housing. The 2013–2014 fiscal year was Habitat for Humanity’s most successful in terms of recovering items from houses set to be demolished.

The NCC also ensures that all demolitions are reviewed under the *Canadian Environmental Assessment Act, 2012*. As part of this review, the NCC assesses the environmental impact of these projects, including effects on species at risk, mature trees and sensitive habitats. For example, barn swallows, designated as a species at risk in Ontario, tend to nest on human-made structures in agricultural areas. Nests were found within an older building that was slated for removal as a health and security risk. To compensate for the loss of habitat, the NCC will construct an artificial barn swallow habitat on the same property. Also, special consideration was given to the timing of the demolitions to limit the impact on the eastern milk snake — a federally listed species of special concern that is known to hibernate in building foundations. The NCC also ensures that careful consideration is given to the historical character of the buildings, as well as to the effect on potential archaeological resources.

All projects achieved at least a 95 percent overall diversion rate. In all, these projects ensured diversion of 190 tonnes of concrete, 45 tonnes of metal and 513 tonnes of wood and, including other material, redirected over 864 tonnes of potential waste. By using green demolition practices and sound environmental management principles, the NCC is helping to reduce waste and preserve the environmental quality of the region.



REDUCING WASTE IN PUBLIC PARKS

To gauge the quantity and type of waste generated in public areas, waste audits were completed last summer at five NCC parks. The chosen locations were three urban parks — Confederation Park, Major’s Hill Park and Jacques-Cartier Park (north and south) — and two picnic parks — Leamy Lake Park and Vincent Massey Park. The parks served as sample locations in Ontario and Quebec of popular areas for both residents and visitors.

Overall, 71 garbage bins and 10 recycling bins were examined in the five parks. For the five parks combined, 29 percent of the

materials were classified as waste, 26 percent were recyclable materials, and 45 percent were compostable. In these five sample parks, there is the potential to achieve a 71 percent diversion rate. This means that, with proper initiatives, — such as providing more recycling containers and compost bins, along with clear signage — a significant amount of waste destined for landfills can be reduced.

The NCC is looking at the feasibility of introducing a waste, recycling and composting pilot project in some of its parks over the next few years.

4.2 Protecting biodiversity*

PRIORITY OBJECTIVE:

The NCC will ensure that all 28 high-value ecosystems and habitats found within the Greenbelt and Gatineau Park and on urban lands in the region are designated as conservation lands by 2012 (in accordance with IUCN categories, through the approval of NCC master plans).

Protecting species and their habitats helps preserve biodiversity — the variety of plants, animals and other life in Canada.

The NCC continues to ensure that high-value ecosystems and habitats are protected for the enjoyment of current and future generations of Canadians. With the approval of the Greenbelt Master Plan, the NCC is emphasizing the protection of ecologically significant habitat. This year, the NCC has acquired an estimated 1.6 hectares of land in Gatineau Park with its primary role of conservation.

These are just some of the ways in which the NCC remains committed to strengthening and protecting natural assets under its stewardship.

HIGH-VALUE ECOSYSTEMS AND NATURAL HABITATS

The IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognized by international standards for defining and recording protected areas and, as such, are increasingly being incorporated into global environmental programs. The NCC is in the process of officially designating each of its 28 high-value ecosystems and habitats according to a specific IUCN category. Through the approved Greenbelt Master Plan (November 2013), the valued ecosystems and habitats in the Greenbelt continue to be protected and managed according to IUCN categories. The Greenbelt's nine high-value ecosystems and habitats have been included in the land designations as core natural areas. These land designations are intended to guide the long-term use and management of the Greenbelt.

* Note: The *enhancing biodiversity* action area was renamed as *protecting biodiversity*, to align the terminology of the NCC environmental strategy with that of the FSDS.

KEY ENVIRONMENT INDICATORS

A total of 1.6 hectares of conservation land was acquired this year in Gatineau Park.

Of 19 aggressive invasive alien plant species, 13 were found in the Greenbelt, another 17 were found on urban lands and 13 were seen in Gatineau Park.

An estimated 130 native trees were planted to replace ash trees affected by the emerald ash borer.



TABLE 4: IUCN PROTECTED AREA CATEGORIES FOR THE NCC'S HIGH-VALUE ECOSYSTEMS AND HABITATS

IUCN Category	Ecosystems	Habitats
Greenbelt		
II ¹	Shirleys Bay Stony Swamp Mer Bleue Bog	
III ²		Pinhey Forest
IV ³		Lester Wetland Chapel Hill's North Forest Green's Creek Pine Grove Forest Black Rapids Creek

1. The primary objective of Category II is to protect the natural biodiversity, along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation.
2. The primary objective of Category III is to protect specific outstanding natural features and their associated biodiversity and habitats.
3. The primary objective of Category IV is to maintain, conserve and restore species and habitats.

An IUCN category has also been assigned for the high-value habitats located in urban areas under the NCC's stewardship. These habitats will be officially designated as valued natural habitats with a focus on conservation within the Capital Urban Lands Master Plan, which is expected to be finalized and approved in 2015–2016. The natural spaces found on urban lands in Canada's Capital Region, including valued natural habitats, are often located near developed communities, and are under pressure from a range of factors such as the expansion of neighbourhoods. By promoting responsible environmental management and linkages between green spaces, this plan aims to protect and enhance natural spaces and landscapes.

IUCN categories have already been designated for Gatineau Park's high-value ecosystems and habitats, by means of the 2005 Gatineau Park Master Plan and the Gatineau Park Ecosystem Conservation Plan, completed in 2009–2010. This plan offers a cohesive approach to conservation that is grounded in concrete actions.

In 2013–2014, the NCC identified priority actions and developed implementation plans for the management of valued habitats and ecosystems based on two studies: *Management Recommendations for the Valued Natural Ecosystems and Habitats of the Greenbelt and Urban Lands* and *Management Recommendations for the Valued Natural Ecosystems and Habitats of Gatineau Park*.

The reports highlight a number of recommendations that require urgent action, including restoring natural vegetation communities, characterizing and delineating species at risk habitat, and establishing targets for vegetation management. To properly implement these priority recommendations, the NCC must first identify, classify and map the characteristics and conditions of the ecosystem types located within the Greenbelt and on the Capital's urban lands.

This objective will be pursued through the Ecological Land Classification (ELC) project. ELC is a standard methodology that is used for ecosystem management and land use planning. It provides tools and techniques for the consistent description, identification, classification and mapping of community types. When the project is completed, ELC data will provide important baseline information to guide the management of the NCC's valued natural habitats and ecosystems. A current understanding of the vegetation communities within these natural areas will provide the knowledge required for evaluation, habitat assessment and detailed ecosystem monitoring.

SPECIES AT RISK

NCC lands provide habitat for an estimated 200 species at risk. The term "species at risk" refers to plant and animal species with special status at the federal or provincial level. It also includes species listed by the Committee on the Status of Endangered Wildlife in Canada and those appearing on provincial lists of species likely to be designated as threatened or vulnerable.

The NCC continues to acquire and manage information about the presence of species at risk on its lands. This includes the development of a database on occurrences of species at risk on NCC lands. The ELC project will contribute to the NCC's ability to map potential habitat for species at risk within the Greenbelt and on urban lands in the Capital Region.

RECOVERY PLANS AND CRITICAL HABITATS FOR SPECIES AT RISK

The NCC remains committed to protecting critical habitats and implementing recovery strategies for species at risk identified on NCC lands. Critical habitat is defined as the habitat necessary for the survival or recovery of a listed species, and is further identified as such in the recovery strategy or in an action plan for the species. For example, critical habitat has been identified for the blunt-lobed woodsia fern in Gatineau Park, and for the flooded jellyskin lichen in the Greenbelt. The presence of critical habitats and the objectives of the various recovery plans are taken in consideration during the environmental effects analysis for individual projects, as well as being integrated into the natural resource management practices for NCC lands.

The management plan for the yellow rail — a bird species found in the Greenbelt — was approved by Environment Canada in 2013. Yellow rails are found nesting in marshes dominated by sedges and grasses, where there is minimal water. Moreover, the recovery plan for the channel darter, a threatened fish species known to be present in the Gatineau River, was also approved by Environment Canada.

In 2013, the NCC commented on the draft recovery plans prepared by Environment Canada on two bird species: the chimney swift and the golden-winged warbler. In addition, the NCC has been collaborating with the Quebec government on a recovery plan for the Blanding's turtle, known to be present in Gatineau Park.

BIODIVERSITY INDICATORS

The NCC continues to prioritize the monitoring of key biodiversity indicators and ecosystem health, as a means of informing natural resource management decisions. During 2013–2014, the suite of indicators was reviewed by an expert panel and revised

to ensure that the indicators are both effective and efficient, as well as consistent across all portfolios. In the Greenbelt, ongoing aquatic monitoring and assessment continued in order to assess the state of aquatic systems.

IMPROVING KNOWLEDGE OF THE SHORELINES

The NCC considers the Ottawa River as a vital part of Canada's Capital Region and aims to enhance the public's enjoyment of these lands, while respecting the natural environment that is unique to the shoreline. The NCC will undertake an environmental characterization of segments of the Ottawa River shoreline in order to gain a better understanding of its sensitive ecological features.

In 2013, the Greenbelt portfolio worked with the Rideau Valley Conservation Authority, in partnership with Abbott Point of Care, to naturalize 550 metres of shoreline along Stillwater Creek. This allowed for the protection of the water quality of the creek by reducing shoreline erosion and helping reduce water temperatures. Over 2,700 trees and shrubs were planted to facilitate naturalization and reforestation. This project also included the creation of turtle nesting habitat along the shoreline.

AGGRESSIVE INVASIVE ALIEN SPECIES MANAGEMENT

Invasive, non-native species represent a serious threat to environmental sustainability due to their ability to rapidly spread across the landscape and impact native ecosystems.

In 2013–2014, the NCC developed an action plan to address and potentially reduce the impact of aggressive invasive alien species on NCC lands. Ultimately, the action plan aims to preserve and protect biodiversity, and provides opportunities for collaboration, partnership and education. The action plan includes prevention measures to minimize the introduction of other types of invasive species.

In addition, an aggressive invasive alien species inventory was conducted in the summer of 2013 and is expected to serve as baseline information for determining trends in populations and colony sizes. Nineteen aggressive invasive alien plant species were selected and surveyed throughout each of high-value ecosystems and habitats on NCC lands.

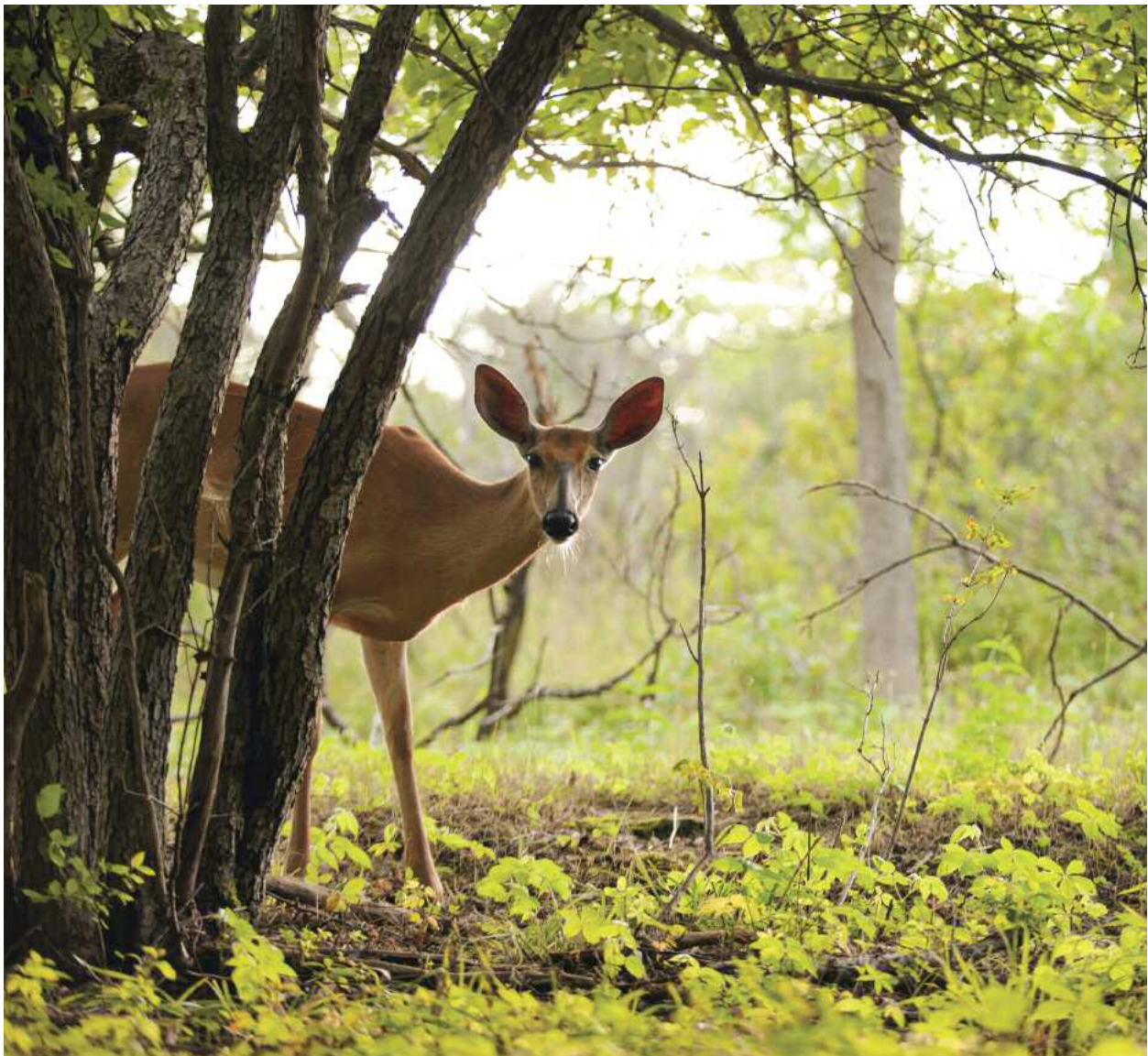
Of the 19 aggressive invasive alien plant species that were examined in the study, 13 were found in the Greenbelt, another 17 were found on urban lands and a further 13 were seen in Gatineau Park. The five most common aggressive invasive plant species found were glossy buckthorn, common buckthorn, non-native honeysuckle, reed canary grass and purple loosestrife. The NCC will continue to monitor these transects at least every three years in order to determine trends in population and colony size.

In 2013, the NCC completed a study, *Aggressive Invasive Alien Species Management Strategy for National Capital Commission Lands*, to assess the current extent of invasive species on its lands. Out of 2,241 hectares of NCC-owned urban land, 1,090 hectares are affected by the presence of aggressive invasive alien plant species. The 10 percent reduction target is thus 109 hectares of NCC urban land on which invasive plant species must be controlled. The NCC is prioritizing the management of these invasive species by addressing areas where there is frequent interaction between the public and the environment.

Specific areas are being targeted, and maintenance contractors are cutting and physically removing buckthorn and dog-strangling vine. Aggressive invasive plant species require continuous management, and represent a major challenge, due to the capacity of these species to invade new areas quickly and to damage native species. Specific measures to control invasive species are also being implemented in the Greenbelt and in Gatineau Park, where the focus will be on the removal of invasive species in priority areas. In the Greenbelt, an experimental project is under way to test different methods to control dog-strangling vine at Stony Swamp.

MANAGING INVASIVE SPECIES AT RIDEAU HALL

Since 2001, several studies have been undertaken at Rideau Hall to address forest management issues. These studies provided baseline information about the 12 existing aggressive invasive alien plant species present, and form the basis for determining trends.



Between 2001 and 2014, the number of aggressive invasive alien species was reduced by 10 percent in accordance with the reduction target outlined in the environmental strategy for Rideau Hall. This has been done primarily by the cutting and physical removal of species within the forest. However, the loss of ash trees in the sugar bush as a result of infestation by the emerald ash borer has led to increased light levels on the forest floor. This, in turn, could have the effect of advancing the spread of aggressive invasive alien species. A landscape management plan, which includes a section on aggressive invasive alien species management, is currently being developed.

EMERALD ASH BORER

The emerald ash borer is an exotic beetle that attacks and kills virtually all species of ash trees. It has been spreading through the region since July 2008. In North America, the emerald ash borer has few effective natural enemies, and native ash trees have limited resistance to attack. The area infested by emerald ash borer is expected to continue to expand, mostly through the movement of infested material such as firewood.

To help prevent the spread, the federal government prohibits the movement of specific materials, including any ash material and firewood of all species from specific areas of Ontario and Quebec. The NCC ensures that these measures are integrated into maintenance contracts and implemented for any construction activities that are undertaken.

On the Capital's urban lands, an estimated 600 ash trees affected by the emerald ash borer were removed during 2013–2014. In order to try to protect the remaining ash trees, 166 of 264 inventoried and protected ash trees were treated with a registered systemic insecticide to prevent further damage. In addition, around 130 maples, oaks and other native trees were planted in strategic locations to replace current and future losses of ash trees. At Rideau Hall, more than 200 infected ash trees were removed and replaced with a mix of hickory, oak and maple trees. About 50 ash trees were cut down by the NCC in the Greenbelt, but these removals were primarily to address public safety concerns. The trees will be replaced on an as required basis. Since 2013, Gatineau Park has been part of the regulated zone. However, since the number of ash trees in the Park is limited, the NCC is hopeful that the impact will be relatively minimal.

GEESE MANAGEMENT

The NCC continues to work with partners and to test new strategies to minimize the impact of Canada geese on NCC lands. This has meant modifying habitats to discourage the presence of the species, such as adding boulders and planting native species along the shoreline. The NCC has also installed temporary fences, to prevent geese from accessing the shore. In 2012, an experimental study at Philippe Lake showed that covering the ground with pine needles or maintaining tall grasses proved to be a deterrent to the large birds. As a result, in 2013, pine needles were left on the ground and grass was grown longer at recreational sites.



PHOTO: CHRIS HIRNCHIAI

TRACKING WOLVES IN GATINEAU PARK

One element of Gatineau Park's ecology that has received little attention is the presence and role of top predators. Top predators such as wolves and coyotes (canids) play a key role in maintaining healthy ecosystems. They have the capacity to regulate populations of prey, such as beavers and deer, which in turn moderates the impact on native vegetation, provides food to scavengers and controls the spread of wildlife-borne diseases.

While it has long been suspected that there were wolves in Gatineau Park, it was not known until recently whether the eastern wolf (*Canis lycaon*), a federally listed species at risk, was present. The presence of these wolves means that the Park could be critical habitat for their survival and that specific protection measures could be required.

Gatineau Park has implemented a multi-year study to answer the following questions:

- Is the eastern wolf present in Gatineau Park?
- Is there important seasonal habitat for canids (eastern wolf, wolf-coyote hybrids) in the Park?
- Are canids using ecological corridors to move between the Park and other important habitats in the region?

Using remote-sensing cameras and hair-snagging traps, Phase I of the study aimed to determine the general presence of canids

in the Park. Using snowshoes, skis and snowmobiles, investigators detected canid tracks on 78 percent of the surveys.

The preliminary conclusion of Phase I is that the western portion of Gatineau Park appears to host up to three packs of wolves and three packs of coyotes during the winter months. It is likely that these animals regularly move in and out of the Park in pursuit of prey and to meet other habitat requirements.

Phase II of the study will provide a more detailed genetic identification of the canids present in the Park, and of the movements and habitat use of individual animals within and outside of the Park. Movements of individual canids from different groups are being monitored through the use of satellite tracking collars.

Wolf trapping is a difficult science, so it may take several seasons of trapping to deploy all of the collars. By early winter 2013–2014, three animals had been collared, and their movements are being carefully monitored. The results of the study are expected to inform Gatineau Park biologists which species of canids are present in the Park, as well as to identify important seasonal habitats such as winter deer yards, wolf denning sites and rendezvous sites (which are important for young wolves before they join their packs in the hunt). This information will be used to inform Park management decisions.

4.3 Preventing pollution

PRIORITY OBJECTIVE:

All contaminated sites on NCC lands will be secured by 2017.

CONTAMINATED SITES

The ambitious target of securing all contaminated sites will not be achieved by 2017. In order for a site to be considered secure, all necessary studies, remediation and other risk management actions must have been completed, in a manner consistent with the designated use of the site. Because the management of contaminated sites is an iterative process, which is influenced by many external factors, it is extremely difficult to meet a set target date by which all sites will be secured. The NCC continues to manage an extensive contaminated sites program, which is moving toward the long-term goal of securing contaminated sites on NCC lands.

In 2013–2014, the NCC conducted 52 high-priority assessments, undertaking the remediation of several key contaminated sites, and completing a large remediation project at LeBreton Flats in downtown Ottawa. Securing the existing contaminated sites will be a priority for the NCC again in 2014–2015. The NCC is also seeking approval for funding under the Federal Contaminated Sites Action Plan (FCSAP) for 2014–2015 and 2015–2016. The FCSAP program provides significant funding that assists the NCC in securing its contaminated sites and reducing its environmental liability.

Active remediation took place at four sites during the past year. The remediation of a six-hectare site at LeBreton Flats was completed, and planning for the future use of the site is currently under way. At Stanley Avenue Park, the first phase of a three-phase capping program was completed in another section of the park (Stanley Avenue at Sussex Drive), providing clean cover for other areas of the park with identified contamination. The former Ridge Road landfill was partly capped, and maintenance and monitoring continued. At the NCC's Bayview property, the long-term project to remediate groundwater for trichloroethylene continued, along with plans to expand the remediated area.

KEY ENVIRONMENT INDICATORS

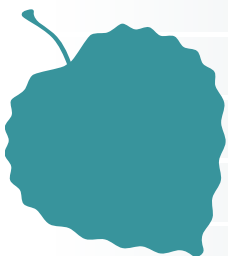
The NCC has 82 secured contaminated sites.

There were two small spills on NCC lands during 2013–2014.

The remediation of a six-hectare block at LeBreton Flats was completed.

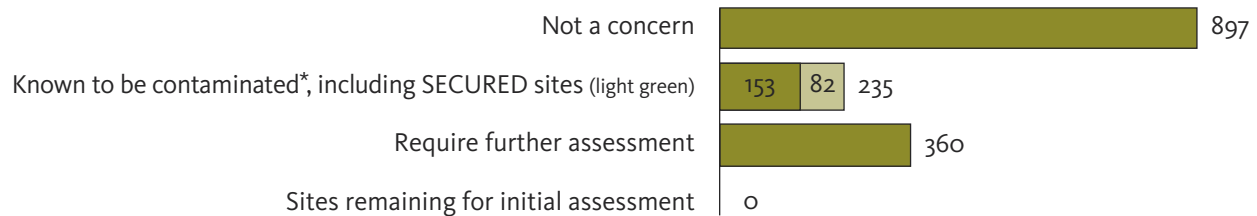
There was one beach closure due to poor water quality during summer 2014.

Four soil remediation projects were undertaken in 2013–2014.



Planning for the remediation of two other sites commenced. At Hurdman North, new remediation strategies were developed for the site, which took into consideration future land use changes associated with the City of Ottawa’s light rail transit project. In support of the future National Holocaust Monument, planning for the remediation of another sector of LeBreton Flats was initiated. Both remediation projects are expected to commence in 2014–2015.

FIGURE 1: STATUS OF CONTAMINATED SITES, 2014–2015



* *Note:* The sites known to be contaminated and secured are also included in the total number of sites known to be contaminated.

In 2013–2014, the NCC reported an unaudited liability cost of \$24.2 million, \$3.4 million lower than the value reported in the previous year (\$27.6 million). The NCC also reported an increase in contingent liability cost of \$478.2 million in 2013–2014, up from \$471.2 million reported for the 2012–2013 fiscal year.

FUEL STORAGE TANKS

At the end of the 2013–2014 fiscal year, a total of 48 tanks on NCC lands were subject to the federal Petroleum and Allied Petroleum Products Storage Tanks Regulations. In 2013, the majority of the tanks were inspected in order to monitor the progress made toward meeting the compliance requirements.

For the NCC-owned tanks, the following specific information is noted.

- Five of the 48 regulated tanks are owned by the NCC.
- One regulated underground storage tank owned by the NCC is deemed non-compliant.
 - The non-compliant tank is expected to be decommissioned during summer 2014.

DESIGNATED SUBSTANCES

The NCC owns 1,204 buildings in active use, and implements a program to identify and assess buildings where designated substances such as asbestos and paint containing lead may be found. This type of work is required by the *Canada Labour Code*, Part II. In 2013–2014, designated substance surveys were completed at 87 buildings, including 36 high-priority buildings and an additional 51 lower-priority buildings. The lower-priority buildings were assessed because of their proximity to the high-priority structures or because an individual building assessment indicated that a designated substance survey was warranted. In addition, five designated substance abatement projects

were undertaken in 2013–2014, including one radon gas mitigation project and four hazardous material abatement projects.

To date, the NCC has determined that 564 buildings are not likely to pose a risk, based on a desktop analysis and results from designated substance surveys. Designated substances were found at another 626 buildings. Work on buildings with designated substances is advancing on a case-by-case basis, primarily under the direction of the various NCC portfolios.

All of the remaining 14 priority buildings are slated for inspection during 2014–2015.

TABLE 5: STATUS OF REVIEW OF NCC BUILDINGS FOR DESIGNATED SUBSTANCES, MARCH 31, 2014

Building status	2009–2010 results	2010–2011 results	2011–2012 results	2012–2013 results	2013–2014 results
Buildings in active use	1,322	1,296	1,284	1,225	1,204
Buildings determined to be unlikely to pose a risk	727	714	618	600	564
Buildings with designated substances	248	289	558	578	626
Buildings remaining to be assessed	347	293	108	47	14
<i>Scheduled for assessment in 2014–2015*</i>				30	14

* Note: The buildings scheduled for assessment in the next fiscal year are also included in the buildings remaining to be assessed.

FEDERAL PCB REGULATIONS

Owners of equipment that contain polychlorinated biphenyls (PCBs) are required to comply with the federal PCB regulations, which came into effect in 2008 and are part of the *Canadian Environmental Protection Act, 1999*. These regulations include reporting, record-keeping and labelling requirements, as well as end-of-use dates when PCB-containing equipment must be removed from service and destroyed. One key date is December 31, 2025. By this date, all PCB-containing equipment, including fluorescent light ballasts, must be removed.

The NCC is gradually compiling information to complete an inventory of PCB-containing equipment. To ensure efficiency, some of the information is collected when designated substances and hazardous materials surveys are undertaken.

FEDERAL HALOCARBON REGULATIONS

The NCC owns equipment containing substances that are subject to the Federal Halocarbon Regulations, 2003. The regulations are intended to reduce emissions of halocarbons by ensuring that equipment is in good working order. The NCC is gradually compiling information to complete an inventory of equipment that may contain halocarbons, such as refrigeration units and air conditioners, and upgrading the equipment as required.

PESTICIDE MANAGEMENT

In 2012, the NCC Executive Management Committee approved the NCC's Pesticide Policy. This policy aims to strictly control the use of pesticides for cosmetic purposes on NCC lands and follows laws under the governments of both Quebec and Ontario. A reporting mechanism was developed in 2013–2014 to track the use of pesticides on NCC lands.

SPILLS AND EMERGENCY RESPONSE

Two small spills occurred on lands belonging to the NCC in 2013–2014. A small hydraulic system spill occurred on the Rideau Canal Skateway, where it was quickly scraped up and cleaned. A minor sewage spill occurred at Jacques-Cartier Park, which was cleaned and repaired quickly. However, site inspection after snow melt determined that some remedial action may be required. As these spills did not pose a threat to the environment, they were not required to be reported to Environment Canada.

WATER QUALITY

The NCC is responsible for overseeing the quality of water for drinking and swimming at a number of locations on its lands. The NCC manages six beaches in Gatineau Park and one at Leamy Lake Park. Breton Beach, located at Philippe Lake, was closed for six days during summer 2014 due to the high level of bacterial contamination in the water.

STABILIZING THE GREEN'S CREEK WATERSHED

The Green's Creek watershed covers an estimated area of 11,150 hectares, and is made up of seven tributary sub-watersheds in the Greenbelt. The watershed has been subject to increased urbanization, which has led to increased runoff from rain and snow into nearby creeks. This has led to increased slope instability, including frequent landslides, increased channel erosion, and loss and degradation of aquatic and terrestrial habitat.

The NCC has undertaken several studies on issues related to watershed geomorphology, hydrology and biology, in order to respond to development pressures affecting the Green's Creek watershed. These studies allowed the completion of fluvial risk-mapping and determined erosion thresholds for the sensitive areas of the rivers. In 2013, the NCC also undertook a study to identify potential restoration projects, with the overarching principles of preserving and enhancing the health of the watershed. This was further advanced in 2014 with the conceptual development of three priority projects:

- one in the upper reaches of Mud Creek;
- one in Green's Creek between Innes and Walkley roads; and
- one in the former Blackburn Nursery area, which is in transition back to agricultural use.

Each priority project identified above is composed of subprojects, such as the expansion of floodplain areas, creation of wetlands and realignment of channels. The NCC plans to assign these subprojects as compensation for environmental impacts from other projects in the region.

STORMWATER MANAGEMENT

The NCC has been working with local universities to assess, define and establish water quality thresholds for stormwater discharge to Stillwater Creek and Watts Creek in the Greenbelt. Multi-year research findings indicate that the increasing pressures of development are having an impact on both creeks.

During the past two years, the NCC has worked with the Rideau Valley Conservation Authority and the University of Ottawa to establish a better understanding of creek dynamics. Stillwater Creek is a cool body watercourse, which provides important fish habitat to species that are sensitive to temperature changes. The effects of urbanization have led to increased runoff from rain and snow, which has the potential to increase the water temperature, erosion and sedimentation of the creek. This, in turn, could potentially affect fish species, as well as the overall ecosystem health of the creek and the greater watershed.

The Watts Creek watershed is composed primarily of two watercourses: Watts Creek and the Kizell Municipal Drain. The NCC is a primary steward of Watts Creek and the lower portion of the Kizell Drain. This creek supports a diverse array of freshwater fish species and is highly impacted by surrounding urbanization. The NCC is working with Carleton University to assess the link between fish behaviour and habitat association, by monitoring water temperature and erosion rates. This area is also undergoing habitat remediation, including the planting of over 250 trees, removal of beaver dams and creation of fish habitat.

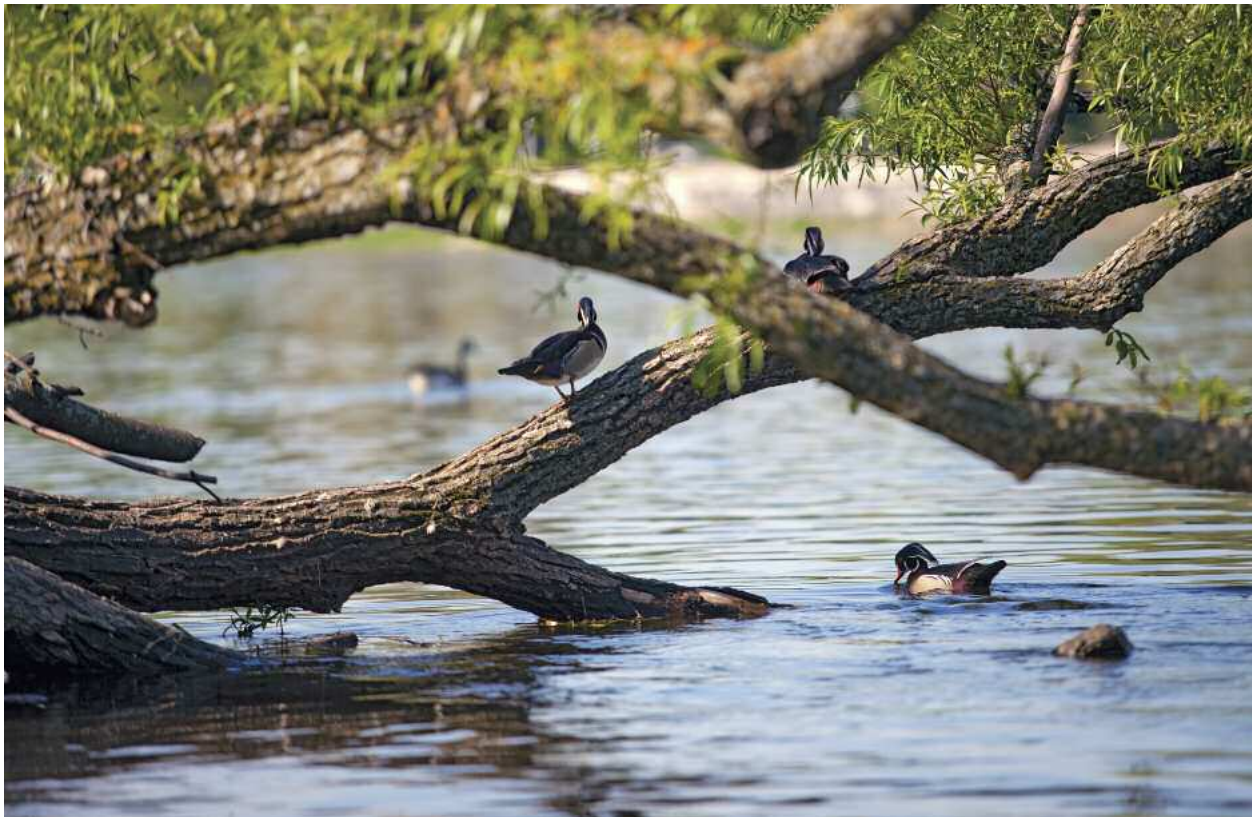




PHOTO: GABY STEIN, PIXABAY

TESTING ECHINACEA AS A SOIL DECONTAMINANT

In 2013, the NCC partnered with researchers at the University of Ottawa to undertake a pilot phytoremediation project on Victoria Island. Phytoremediation is a term that refers to the use of plants for the restoration and decontamination of soils. The aim of the study was to determine if echinacea plants could be used to reduce contaminants in soils on lands belonging to the NCC. The experiments consisted of growing echinacea plants in combination with fungi to take up and break down contaminants in soils from Victoria Island that had been contaminated with polycyclic aromatic hydrocarbons and metals.

The soil contaminants in the Victoria Island area are the result of industrial land use from the late 19th century, before environmental protection laws were in place. The NCC is interested in studying alternative decontamination approaches that could be effective on sites with lower levels of contamination. Because phytoremediation is an in situ approach to soil remediation, if effective, it could reduce the need for the costly removal of impacted soils. The initial results of the project have been promising, and the NCC and the university plan to expand the study in 2014–2015.

4.4 Leading in environmental practices

PRIORITY OBJECTIVE:

All new building construction on NCC lands, for buildings more than 250 square metres in size, will be certified LEED® (Leadership in Energy and Environmental Design) Gold by 2013, and all major building renovations will meet LEED® certification standards.

One of the objectives of the FSDS is to reduce greenhouse gas emission levels by contributing to the development and generation of renewable energy and supporting energy efficiency. The NCC supports this goal through the adoption of energy-efficient products and practices that help to reduce the greenhouse gas emissions produced in its operations.

The NCC continues to implement best practices in the management of lands under its stewardship. This includes ensuring a long-term vision for environmental management of urban lands, the Greenbelt and Gatineau Park, as well as rigorous environmental analysis for projects on NCC lands.

BUILDINGS

The NCC is responsible for a number of building assets, ranging from heritage structures to bridges. The NCC has made a commitment to LEED® standards. LEED® is a third-party certification program administered by the Canada Green Building Council for the design, construction and operation of high-performance green buildings.

The NCC did not construct any new buildings over 250 square metres in 2013–2014, nor did it undertake any major building renovations. However, many smaller initiatives were carried out, including upgrading the septic lagoon at Philippe Lake and the rehabilitation of existing bridges. The NCC continues to improve the energy efficiency of its infrastructure, including a major renewable energy project at Rideau Hall and the replacement of lighting on urban lands.

The NCC is currently completing the installation of a ground-source heating and cooling system at the governor general's residence at Rideau Hall. The ground-source system

KEY ENVIRONMENT INDICATORS



The Greenbelt Master Plan was approved in November 2013.

A total of 44,365 cycling trips were taken using the BIXI bike share program in the Capital.

Over 100 projects were evaluated to ensure compliance with the *Canadian Environmental Assessment Act, 2012*.

replaces the existing air-cooled chillers, and provides a means of cooling during the warmer seasons and partial heating during cooler seasons. The ground-source system will reduce both steam and electricity consumption, in accordance with Rideau Hall's environmental strategy and in support of the Governor General's vision of sustainability. The system is forecast to come online during the spring or summer of 2014. The project provides a good example of the appropriate and site-specific usage of clean energy. As part of the life cycle maintenance, Rideau Hall also replaced 12 toilets with low-consumption alternatives.

As the electrical systems along NCC pathways and parks reach the end of their life cycle, the NCC is upgrading the existing standard light bulbs to LED lighting. The use of LED lights helps reduce greenhouse gas emissions and saves on energy costs.

This year, the NCC once again participated in Hydro Ottawa's saveONenergy Retrofit Program. The NCC secured incentives that have offset a portion of the project costs for upgrading 100 light bulbs to LED lighting at Rideau Hall. In addition to the upgrades undertaken during 2012–2013 (where 556 LED bulbs were upgraded), these projects will save 488,748 kWh over the life cycle of the LED bulbs.

TABLE 6: SUMMARY OF OFFICIAL RESIDENCES ENERGY EFFICIENCY PROJECTS, 2013–2014

Official Residence	No. of Bulbs	Simple Payback (years)	Project Cost	SaveON Energy Incentive	Yearly Savings (kilowatt hours)	Life Cycle Savings (kilowatt hours)
Rideau Hall — State Areas	100	0.4	\$3,000	\$1,500	28,000	159,748
Total	100	0.4	\$3,000	\$1,500	28,000	159,748

LAND USE PLANNING

The Greenbelt Master Plan was approved by the NCC's Board of Directors in November 2013. The plan details a new vision in which the Greenbelt serves as an environmental showcase for Canada's Capital Region. The plan emphasizes the natural environment, along with the importance of sustainable agriculture. A commissioning plan, which will highlight the priorities and approaches of the master plan, is currently being completed.

The master plan sets out four roles for the Greenbelt. Its primary role is to protect and enhance natural areas; the other roles are to provide opportunities for sustainable agriculture, to offer rich and diverse recreational experiences, and to provide support for federal and other facilities. The finalized master plan also includes the conclusions from the cumulative effects assessment study on transportation infrastructure projects in the Greenbelt. The study developed a new approach to facilitate understanding of the cumulative effects of multiple projects at the scale of landscape ecology units in the Greenbelt.

The NCC is working with partners across Canada's Capital Region to ensure the long-term sustainability of the Greenbelt. For example, the NCC is collaborating with agricultural

tenants to ensure the implementation of farming best practices and with the Rideau Valley Conservation Authority to encourage the enhancement of the shoreline areas of creeks that cross farmlands. Following an initiative by an agricultural tenant, livestock access has been restricted in a two-kilometre riparian area along Stillwater Creek that needs improved vegetation cover.

During 2013–2014, the planning concept and land designations were developed for the Capital Urban Lands Master Plan. The master plan is intended to protect, conserve and enhance the network of green spaces, including waterways, shorelines and high-value natural habitats. This master plan is expected to be finalized in 2015–2016, with sector plans to be developed following approval by the NCC's Board of Directors of the concept and land designations.

The NCC has a network of an estimated 100 kilometres of parkways that remain vital to Canada's Capital Region. The 1984 Parkway Policy is currently under review, and the proposed approach is to envision the evolution of the parkways as continuous green corridors that include walking and cycling paths. It is expected that the updated version of the 1984 Parkway Policy will be approved in 2014–2015.

SUSTAINABLE TRANSPORTATION

In 2013–2014, the NCC finalized the Gatineau Park Sustainable Transportation Plan. The volume of cars travelling through the Park can be considered as an environmental concern. The measures recommended by the plan have been prioritized and key stakeholders have been identified for collaboration. The content of the transportation plan will be considered in the next revision of the Gatineau Park Master Plan.



CYCLING

The Capital Pathway network comprises more than 300 kilometres of multi-use pathways that link natural areas, parks, gardens, museums and attractions across Canada's Capital Region. Cycling can play a crucial role in reducing air pollution. The NCC continues to maintain and promote its pathway network as an important contribution to ensuring a sustainable urban area.

The NCC has undertaken a range of initiatives in 2013–2014 to promote cycling in the region, including the following examples.

- The NCC continues to collaborate with the City of Ottawa and Ville de Gatineau to produce an Ottawa–Gatineau cycling network map, which covers the area's off-road multi-use pathways, as well as on-road cycling infrastructure.
- As part of the Park and Cycle program, 10 parking lots in Gatineau and Ottawa were once again available to the public free-of-charge to facilitate active commuting to work.
- In 2013, the Capital BIXI bike share program generated 44,365 cycling trips, stemming from 305 monthly and yearly subscribers and 9,815 distinct occasional users.
- Continuing improvements of pathways include the completion of the new Ottawa River Pathway — a 500-metre pathway link along the Rockcliffe Parkway — and the pathway between the Gatineau Parkway and Rue des Fées.

ENVIRONMENTAL EDUCATION

The NCC has many opportunities to create interest and educate the public on topics related to the environment. In 2013–2014, Gatineau Park's experienced naturalists provided guided tours for the general public and students. These include "Spring Flowers Have Sprung" and "The Sights and Sounds of Birds," during spring 2013, and "Animal Tracking on Snowshoes," during winter 2014, which attracted more than 550 participants. As part of the celebrations for the 75th anniversary of Gatineau Park, the NCC invited the public to discover or rediscover this conservation park. Visitors were able to view a demonstration with birds of prey; participate in nature interpretation walks; and visit interactive kiosks with biologists, conservation officers, and search and rescue experts. In the Stony Swamp area of the Greenbelt, the Macoun Field Club continues to give children the opportunity to experience direct contact with nature. The Greenbelt portfolio, in partnership with Biodiversity Conservancy International, continues to engage students in learning about the unique sand dune habitats located in Pinhey Forest.

ENVIRONMENTAL EFFECTS ANALYSIS

In compliance with the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), the NCC has reviewed more than 100 projects to determine if they are likely to cause significant adverse environmental effects under section 67 of the Act. The level of assessment varied depending on the scope of project and level of environmental risk. In 2013–2014, no project evaluated under section 67 of CEAA 2012 was deemed likely to cause significant adverse environmental effects, once the proposed mitigation measures were implemented. Further, none of the projects proposed on NCC lands was considered to be a designated project under sections 13 and 14 of the Act.

The NCC continued in 2013–2014 to work with internal and external stakeholders in developing the new NCC Environmental Assessment Policy, which is expected to be approved in 2014.

Along with other federal departments, the NCC helped develop an interdepartmental approach to evaluate projects on federal lands, and participated with other federal authorities in the evaluation of a number of projects. For example, the NCC worked with Public Works and Government Services Canada and Parks Canada to complete an environmental effects analysis of the project to provide structural upgrades to the National War Memorial.

The NCC also began the strategic environmental assessment of the Plan for Canada's Capital, in alignment with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals.

In 2013–2014, the NCC also participated as a member of the Technical Advisory Committee to the Municipal Class Environmental Assessment conducted by the City of Ottawa for the Kanata South (Terry Fox to West Hunt Club Road) project. The NCC is working closely with partners to achieve a rigorous but timely review of this project, ensuring that both transportation and environmental requirements are met.

NEW GUIDELINES FOR MAINTENANCE CONTRACTS

This year, the NCC replaced the general environmental guidelines with specific operational procedures, incorporating recent changes in the *Canadian Environmental Assessment Act, 2012*. The revised environmental guidelines have now been linked to individual operational activities, such as grass cutting, minor repairs, and repairs to conduits and electrical works. Each designated operational activity now has one or more associated environmental mitigation measures. This approach not only ensures that newly issued contracts continue to be legally compliant, but also creates new awareness and gives contractors practical, operational guidance that facilitates the delivery of services to the NCC.

For example, contracts will also now contain maps indicating sites that are most likely to have archaeological potential, as well as details on best practices for environmental management.

Training is planned for spring 2014 to help familiarize staff and contractors with the content of the guidelines, and to assist contractors in complying with environmental laws. NCC staff will also work to implement these guidelines in other business areas and within other contracts.



4.5. Combatting climate change

PRIORITY OBJECTIVE:

The NCC will reduce its overall carbon footprint by 30 percent by 2017, based on a 2011–2012 baseline.

The second cycle of the FSDS emphasizes reducing the environmental footprint of federal government operations by 17 percent below 2005 levels by 2020. Best practices include reducing greenhouse gas emissions from federal facilities and fleets, reducing waste, and improving water conservation measures.

In alignment with the FSDS, the NCC is also committed to reducing its environmental footprint from its operations. The NCC recognizes that reducing its environmental footprint by 30 percent by 2017 is an ambitious target, because of the complexity of achieving substantial emission reductions. However, the corporation aims to show measurable progress in reducing its greenhouse gas emissions over the next few years.

NCC GREENHOUSE GAS INVENTORY

The NCC measured the amount of greenhouse gas emissions resulting from its operations in 2011–2012. This provides a reference level in terms of the sources and amount of emissions that the NCC is producing, and allows for the subsequent development of a reduction strategy.

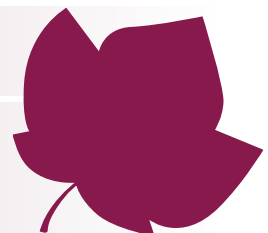
Following the internationally recognized standards of the Greenhouse Gas Protocol and ISO 14064-1, the boundaries of the NCC carbon footprint were defined. The types of emissions are grouped into the following three categories.

- Scope 1 (direct greenhouse gas emissions) are emissions from sources that are owned and controlled by the NCC. Emission sources that fall under this category include the following:
 - Natural gas used to heat buildings owned and occupied by the NCC, and used in buildings that are not owned by but are occupied by the NCC;
 - Fuel consumption by the NCC vehicle fleet and motorized equipment;
 - Electricity used in generators at rented offices and NCC buildings;

KEY ENVIRONMENT INDICATORS

The NCC completed a greenhouse gas inventory of its operations for the 2011–2012 fiscal year.

The total direct and indirect greenhouse gas emissions related to the operations of the NCC for the 2011–2012 fiscal year was 2,795 tonnes of carbon dioxide (CO₂) equivalent.



- Refrigerant leaks from cooling units in offices rented by the NCC and in NCC-owned and -occupied buildings; and
- Domestic wastewater treatment systems (e.g. septic systems) that are owned and operated by the NCC.
- Scope 2 (indirect greenhouse gas emissions from consumption of electricity) are emissions that are indirectly controlled by the NCC. This is the generation of purchased electricity that is consumed by the corporation, but produced elsewhere, and includes the following:
 - Electricity consumed in NCC-owned and -occupied buildings;
 - Electricity consumed in buildings that are only occupied by the NCC; and
 - Electricity consumed on NCC lands.
- Scope 3 (indirect emissions) are an optional reporting category (as per Greenhouse Gas Protocol and ISO 14064-1) and include all other emissions that are a consequence of activities of the NCC but occur from sources not owned or directly controlled by the corporation. Due to substantial data gaps, the NCC will not report any Scope 3 emissions at this time.

The breakdown of the emissions by scope is provided in Table 7. The majority of Scope 1 emissions result from natural gas use in buildings that are rented by the NCC, as well as owned and occupied by the NCC. The bulk of Scope 2 emissions derive from the use of electricity in buildings that are only occupied by the NCC (517 tonnes of CO₂ equivalent), together with that consumed on NCC lands, for lighting in parks and along pathways.

TABLE 7: TOTAL EMISSIONS BY SCOPE, 2011–2012

	Emissions (tonnes of CO ₂ equivalent)	Share of Emissions (percentage)
Scope 1 (direct greenhouse gas emissions)	1,655	59.3
Scope 2 (indirect greenhouse gas emissions from the consumption of electricity)	1,140	40.7
Total	2,795	100

Using this inventory as a baseline, the NCC determined that the reduction target is 838 tonnes of CO₂ equivalent for a total of 1,957 tonnes of CO₂ equivalent. The NCC will develop an action plan that targets projects and activities within its control in order to reduce emissions. For example, the NCC will assess the reduction in emissions from the switch to energy-efficient lighting along the pathways. The NCC is also continuously increasing its environmental performance standards for projects. The NCC greenhouse gas inventory will be recalculated periodically to evaluate the corporation's progress toward meeting its objective.

5. Engaging NCC staff

The NCC believes that engaging staff throughout the organization is fundamentally important to achieving objectives in its environmental strategy. The following are some highlights of activities that the NCC undertook in 2013–2014.

- The EcoMobility Initiative was launched in June 2013 to encourage staff to use sustainable forms of transportation for their commute to work. This program provides NCC staff with information about commuting options and local business travel. NCC staff have a direct link through the corporation's intranet to information about public transit in the region, tips on biking to work and maps with cycling routes.
- As part of the EcoMobility Initiative, the NCC joined the City of Ottawa carpooling website, Ottawa Ride Match, a free, region-wide online tool that helps find carpool partners.
- In fall 2013, the Greenbelt organized a trip to Stony Swamp to provide tools to help environmental staff identify flooded jellyskin lichen, a threatened species under Canada's *Species at Risk Act*.
- A workshop on the Ecological Evaluation of Environmental Goods and Services was held in November 2013. Experts from Environment Canada were available to provide advice and expertise on the *Environmental Enforcement Act*, and how to evaluate environmental goods and services.
- Staff continued to receive updates on environmental issues, such as invasive species management, as well as on environmental awareness days.



6. Conclusion

The NCC's progress in meeting specific objectives during the previous five years is documented in this report. A few examples of this progress include promoting sustainable agricultural practices, testing innovative techniques in soil decontamination, stabilizing watersheds, tracking new wolf populations and conducting surveys on aggressive invasive alien plant species.

The NCC remains dedicated to its role as principal steward over lands in Canada's Capital Region, pursuing a complex balance between ensuring public access, the protection of wildlife, and the sound management of both natural and built environments.

This annual report is the fifth of its kind since the NCC's environmental strategy was launched in 2009. The strategy laid out the strategic direction that is essential to planning, developing, and managing the region's natural and urban spaces, in a sustainable manner.

The NCC owes much of its success in preserving and overseeing the natural wealth and health of lands in the Capital Region to its committed staff, along with many public and private partners, stakeholders, and suppliers. This report underscores how the NCC's achievements are underpinned by solid research, planning and collaboration.

The updated environmental strategy, with its emphasis on conservation and responsible environmental management, coupled with the NCC's refocused mandate, provides the corporation with a solid foundation on which to build its continuing leadership in environmental sustainability, and contributes to its mandate of planning and stewardship of lands of significance to the Capital.

The next several years will prove equally important, as the NCC strives, with ongoing collaboration, to meet its long-term objectives and achieve five out of the 23 more ambitious targets. The NCC is committed to continuous improvement in all of its efforts to show measurable progress in meeting these ambitious objectives.

Over the next several years, the NCC plans to build on the progress it has made to date by continuing to secure contaminated sites, promote waste reduction in public areas, develop actions to reduce energy consumption and minimize the impact of invasive plant species. The NCC will continue to address secondary objectives and work with partners and stakeholders in building a greener capital.

Above all, the NCC's strives to ensure that Canada's Capital Region remains a source of pride and natural beauty that will benefit all Canadians today and in the future.

7. Glossary

Biodiversity: The full range of animals, plants and other living things, and the places where they live on the planet.

Capital BIXI: A public bike share system that promotes alternative urban transportation. Bikes are available for hire, or on a subscription basis, 24 hours a day, seven days a week, with pickup and drop-off stations located around downtown Ottawa and Gatineau.

Carbon dioxide (CO₂): A greenhouse gas produced in part by human activities, whose emissions are largely responsible for climate change.

Carbon footprint: The total set of carbon-containing emissions (mainly CO₂) caused directly and indirectly by an individual, organization, event or product.

Carbon neutral: Having a net zero carbon footprint by balancing the greenhouse gas emissions created with an equivalent amount sequestered or offset.

Carbon offset: An investment in a project or activity elsewhere that reduces greenhouse gas emissions, or sequesters carbon from the atmosphere, which is used to compensate for unavoidable greenhouse gas emissions created by one's own activities.

Conservation land: Land specially designated by federal, provincial/territorial or local bodies to protect fragile or important ecosystems, habitats and species at risk.

Contaminated site: Areas of land that contain chemical substances (e.g. heavy metals or petroleum products) that may pose a hazard to human health or the environment, or that exceed the levels set out in policies and regulations.

Critical habitat: The habitat that is necessary for the survival of a species at risk and that is identified under law in a recovery strategy or action plan for that species.

EcoLogo®: North America's most recognized environmental standard and certification mark for products and services that demonstrate environmental leadership.

Ecosystem: A unit of interdependent organisms that share the same habitat.

Energy efficiency: Refers to how effectively energy is being used for a given purpose. For example, performing a similar function or providing a similar (or better) level of service with less energy consumption on a per unit basis is considered an improvement in energy efficiency.

Green demolition: The process of dismantling a building in such a way as to ensure that as many of its elements as possible can be recycled or reused, rather than sent to landfills.

Greenhouse gas: Emissions of gases such as nitrous oxide (N₂O), methane (CH₄) and especially carbon dioxide (CO₂) that accumulate in the atmosphere and act to retain atmospheric heat, thus contributing to climate change.

Greenhouse Gas Protocol: The most widely used international standard, the Greenhouse Gas Protocol is an accounting tool for understanding, quantifying and reporting corporate greenhouse gas emissions.

Green procurement: An approach to business purchasing in which the environmental impacts of goods and services, in addition to price and quality, play an important role in purchasing decisions.

High-value ecosystem or habitat: An ecosystem or habitat that is considered important for the maintenance of biodiversity because it has some combination of the following characteristics: a large diversity of species, habitat for species at risk and/or migratory species, and intact natural processes likely to support increased genetic diversity.

IUCN (International Union for the Conservation of Nature) category: Internationally recognized designations that classify protected areas according to their management objectives and take into account the following aspects: wilderness level; scientific, spiritual, educational and recreational opportunities; significant cultural, geological or natural features; species and habitat management; and sustainable use of natural resources.

LEED® (Leadership in Energy and Environmental Design): A third-party certification program administered by the Canada Green Building Council for the design, construction and operation of high-performance green buildings.

Recovery strategy: A detailed plan that outlines short-term objectives and long-term goals for protecting and recovering a specific species at risk.

Renewable energy: Energy derived from sources that are either inexhaustible, such as the sun (solar energy), wind or waves (tidal energy), or can be naturally replenished before being exhausted, such as biomass and river flow (hydroelectric power).

Secured site: A contaminated site where all necessary study, remediation and other risk management actions have been taken, consistent with the designated use of the site.

Species at risk: Plant and animal species with special status at the federal or provincial levels because they are vulnerable to extinction. Species may be listed as special concern, threatened, endangered, extirpated or extinct.

Waste diversion: The reduction, reuse and recycling of waste, leading to a reduction of waste being sent to the landfill.

