COMMUNITY CONSERVATION PLAN
For the
Lac Deschênes – Ottawa River
Important Bird Area

January, 2014

For the Lac Deschênes – Ottawa River Steering Committee

Nature Canada

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Acknowledgements

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Executive Summary

The Lac Deschênes – Ottawa River Important Bird Area (IBA) is a significant expansion of the Lac Deschênes IBA that includes over 300 square kilometres of natural and anthropogenic habitats of which the core zone is the Ottawa River, from the Chaudière Dam in the downtown area of Ottawa-Gatineau, to the Sault-des-Chats Dam approximately 45 kilometres to the west.

The long term goal of this conservation plan is to have healthy and viable populations of bird species in the IBA – essentially to keep the common birds common, recover the species that are declining or at risk, and sustain its value for waterfowl, waterbirds and aerial insectivores. The shorter-term goal is to provide stakeholders and decision makers with a program aimed at ensuring healthy bird populations and strengthening ecological integrity in the IBA by protecting and managing habitats, encouraging stewardship, mitigating human impacts on species population and ecosystems and connecting people to nature through awareness and outreach.

Knowledge on avian use of this area is made current with examples of several species surpassing IBA thresholds at the national and continental levels, as well as integrating information of species at risk in the connected and adjacent landscape features into the IBA. Key habitats and areas for birds are identified and mapped showing the most sensitive and important sites for bird requiring special attention.

The conservation planning sections include identification and description of conservation targets, an analysis of the threats, and most importantly, an action plan that lays out thirteen conservation strategies, along with objectives and actions for each of them. Strategies range from recognizing and enhancing the ecological integrity of the IBA at a landscape level by identifying and protecting key habitats and enhancing protection and stewardship of wildlife corridors, to specific actions such as restoring natural habitat in target conifer plantations, or engaging golf course operators in making their courses more "bird-friendly." We also address human behaviours within this largely urban area though community-based social marketing, and specific activities to reduce wide-scale human-related threats to birds such as free-roaming cats and window collisions.

This plan will be successful if consensus and support can be garnered for it from the partners, stakeholders and communities within the IBA. Nature Canada is grateful to the people, organizations and institutions that have supported this plan, and encourage their continued involvement in its development and implementation.

1. Introduction

The IBA program

BirdLife International is a global partnership of conservation organizations that strives to conserve birds, their habitats, and global biodiversity, working with people to encourage sustainability in the use of natural resources. BirdLife Partners operate in over 120 countries and territories worldwide, and collaborate on regional work programs in every continent. The Canadian co-partners for the Important Bird and Biodiversity Area[1] (IBA) Program are Nature Canada and Bird Studies Canada (BSC). In Canada, the IBA Program was initiated in 1996, in conjunction with the launch of parallel programs in the United States and Mexico. About 600 IBAs have been identified in Canada.

IBAs are discrete sites that support specific groups of birds: threatened birds, large concentrations of birds, and birds restricted by range or by habitat. The birds define the IBA! IBAs are recognized for breeding, wintering, foraging, roosting, rafting, or migrating birds and range in size from very tiny patches of habitat to large tracts of land or water of thousands of square kilometres. They may encompass private or public land, and they may or may not overlap partially or entirely with legally protected areas such as National Parks, Migratory Bird Sanctuaries, or designated Wilderness Areas etc.

IBAs are not protected areas. However, as they do reflect the most important sites for birds, a key goal of the IBA program is to increase the amount of protection and stewardship of IBAs in Canada where needed. Many IBAs have complex mixes of private and publically-owned land, and legal protection is often not a viable goal. Even protected IBAs can become degraded or be poorly managed hence protection does not necessarily guarantee viability in the long term. Often, as is the case with this IBA, a wide range of strategies including protection, stewardship, and education and outreach are required to maintain the ecological integrity of an IBA and its habitats. In some cases “doing nothing” is perfectly good management, as long as the site and birds are being monitored.

IBAs are identified using criteria that are internationally agreed upon, standardized, quantitative and scientifically defensible. This gives them a conservation currency that transcends international borders and promotes international collaboration for the conservation of the world’s birds. These criteria are described in Section 3: Species Information.

For further information about the IBA Program in Canada, thresholds, and for site specific details, please visit www.ibacanada.ca. Canada’s original criteria are found there.

The Lac Deschênes - Ottawa River IBA

The Lac Deschênes IBA (original name) was originally nominated as an IBA in the late 1990’s as part of the initial push by Nature Canada, Bird Studies Canada, the naturalist community and the Canadian Wildlife Service, to identify Canada’s IBA between 1996 and 1998. Global status was accorded this IBA as it supports periodically over 20,000 colonial waterbirds, and/ or waterfowl, and had a few other species that had surpassed thresholds.

In 2012, Nature Canada, the Club des Ornithologues de l’Outaouais and the Ottawa Field Naturalists

[1] In 2013, BirdLife International changed the name of Important Bird Areas to Important Bird and Biodiveristy Areas in recognition that though these areas are recognized initially for bird, they often capture other important biodiversity, and provide important conservation opportunities for other forms of biodiversity than birds also.

Club initiated a review of the IBA information for the Lac Deschênes IBA, as part of the process of developing a conservation plan for the IBA. This review included analysis of all available observational data over the past 15 years within a much larger area, and consultations with bird experts and naturalists about the bird records, the boundaries of the IBA, as well as the threats to birds and habitat and conservation opportunities. This process was expanded to include key staff from the cities of Ottawa and Gatineau, as well as the National Capital Commission. The Ottawa Riverkeeper was also consulted as part of this process.

After this consultation period, and careful review of the data, Nature Canada decided to significantly expand the boundaries of the Lac Deschênes IBA to capture key bird habitats beyond the original boundaries including feeding and roosting areas along other sections of the river, functional corridors, and species at risk habitat. The current proposed boundaries will extend the IBA east to the Chaudière dam, including the riparian habitats and natural corridor in Gatineau, and to the north and west nearly to the Sault-des-Chats Dam, a stretch of approximately 45 kilometres of river, including a significantly larger terrestrial area. This terrestrial area is intended to capture adjacent protected areas and significant wildlife habitat along and adjacent to the river including the large wetland complex along Constance Creek and Constance Lake, Areas of Provincial and Scientific Interest in Ontario, Fitzroy Provincial Park, agricultural land and low-density rural settlements to the north-east of Dunrobin Road that includes grassland habitat that supports species at risk, the Breckenridge forests in Quebec, and a larger swath of the riparian corridor. Much of this area is already recognized to be of high conservation value. The expanded area of the river is supported by observations of various species surpassing IBA thresholds often multiple times in the past 15 years as well as the presence of species at risk.

This initiative does not address the significance of the Ottawa River east of the downtown area of Ottawa/Gatineau. Data from the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks suggests that there are areas from the town of Plaissance to Gatineau that regularly support even larger numbers of waterfowl, particularly Canada Geese[2]. At some point in the future, there might be merit in considering an expansion of the current IBA in Plaissance, or possibly even linking the two IBAs in some way.

Goals of this initiative

The long term goal of this conservation plan is to have healthy and viable populations of bird species in the IBA – essentially to keep the common birds common, recover the species that are declining or at risk, and sustain its value for waterfowl, waterbirds and aerial insectivores. The shorter-term goal of this conservation plan is to provide stakeholders and decision makers in the IBA with a program aimed at ensuring healthy bird populations and strengthening ecological integrity in the IBA by protecting and managing habitats, encouraging stewardship, mitigating human impacts on species population and ecosystems and connecting people to nature through awareness and outreach.

The conservation plan includes an action plan, which is intended to reflect the priorities of the IBA steering committee who contributed to this conservation plan. Miradi, an open-standards conservation planning software, was used to develop the conceptual plan for the project, and inform the development of the action plan. The plan is intended to be a living document that can always be improved upon and made more relevant as the condition and context changes.

[2] Daniel Toussaint, personal communication

2. IBA Site Information

Proposed boundaries of the Lac Deschênes - Ottawa River Important Bird Area

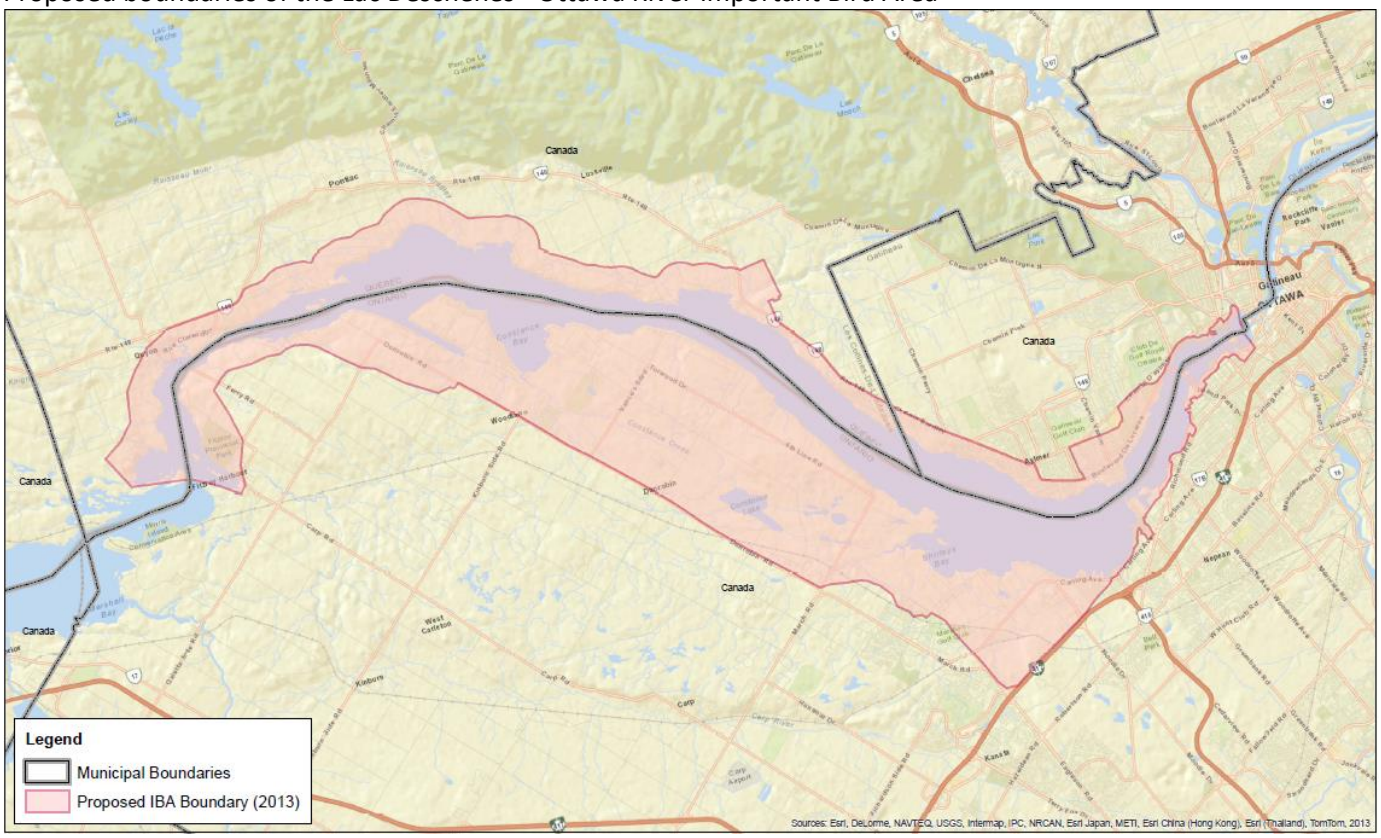

Figure 1: Proposed IBA Boundaries

Site Description

The boundaries of the Lac Deschênes – Ottawa River IBA follow both anthropogenic features (roads), natural features (edge of forests and other natural habitats), and standard distance setbacks from the river's edge. The purpose of boundaries is to imply where the area is that supports the large numbers of bird species that justify this IBA as well as the species at risk in the area, and the habitats on which they depend. Another way of looking at boundaries for the IBA is that they include the area in which human activity could affect the species populations and their habitats.

The boundaries include a core area of approximately 45 kilometres of the Ottawa River from the Chaudière dam in the east to the Sault-des-Chats Dam near Fitzroy Harbour to the west and north which include several key areas where waterfowl, waterbirds and swallows and swifts congregate. The associated terrestrial and wetland habitats include a large amount of private and public lands that fall under a wide range of use and zoning allowances. Much of this area is already recognized to be of high conservation value within the plans and schedules of the respective municipal governments, the provincial governments and the National Capital Commission. Included are protected areas adjacent to the river, significant wildlife habitat and natural areas identified in the plans of the City of Ottawa and the National Capital Commission, and the City of Gatineau, along and adjacent to the river including the large wetland complex along Constance Creek and Constance Lake, Areas of Provincial and Scientific Interest in Ontario, Fitzroy Provincial Park, agricultural land and low-density rural settlements to the

north-east of Dunrobin Road that includes grassland habitat that supports species at risk, the protected Breckenridge forests in Quebec, and a larger swath of the riparian corridor along the Ottawa River in Gatineau from Parc Brébeuf westward to Lamoureux Parc.

3. IBA Species Information

The following table lists 'significant' observations of birds within the Lac Deschênes – Ottawa River Important Bird Area. The records used in this plan are published in local databases (Ottawa Field Naturalist, Étude des populations d'oiseaux du Québec, Royal Ontario Museum), or from reputable local naturalists.

Common and standard criteria are used by all BirdLife Partners to identify sites. Numerical thresholds are established based on reliable population data and estimates, and based on the advice and consensus of experts nationally and internationally. IBAs should regularly[1] support birds in excess of established thresholds. A 'significant number' is the established population threshold. In some cases it equals 1% or more of the relevant population, but may be more or less depending on the designation category.

"Trigger species" are those which occur in sufficient numbers and frequency to 'trigger' IBA status (i.e. surpass a threshold). Thresholds occur at three levels – global, continental and national, and are based upon a percentage of a species or subspecies population has occurred in the IBA with some regularity.

BirdLife Canada partners also apply a "congregatory" criterion that is based on knowledge that a site is known or thought to hold, on a regular basis, 20,000 or more birds (one or several species) during breeding, wintering, foraging, roosting, rafting, or migration. This category is modeled, in part, on Criterion 5 of the Ramsar Convention for identifying wetlands of international importance.

In this IBA, thresholds, be it for an individual species or the "congregatory" category, have been surpassed in 1984, 1997, 1998, 1999, 2001, 2003, 2005, 2008, 2009, 2011, and 2012 in the following table. Some species have only surpassed a threshold once (e.g. Red-throated Loon), whereas others have been over the threshold several times (e.g. Herring Gull, Chimney Swift). We have included all of the records of species that surpassed an IBA threshold based on our research, as well as other 'notable observations' of species that occur in unusually high numbers for the region, though below the IBA threshold, or species that are of conservation interest such as species at risk and colonial waterbirds that nest in the IBA. We believe that the IBA provides a good opportunity to undertake conservation efforts for these species as well.

IBA Bird Records[3]

Species	Season	Number and significance		Date
Canada Goose	SM	24,000	C	1999*
	SM	20,190	C	2011
Brant	SM	11,000	C	2001
	SM	4000	C	2011
Red-throated Loon	FM	3,000	C	1984

[3] For details on these records see Appendix 1.

	FM	250		1998
	FM	222		2006
Lesser Scaup	FM	3,500		2011
Black Scoter	FM	700		2009
Long-tailed Duck	FM	5,000		
Herring Gull	SM/FM	8000	C	2009
		5000	C	2003
		5000	C	1998
		4500	C	1997
Great Black-backed Gull	FM	2,000	C	2002
Ring-billed Gull	B			
Chimney Swift	SM/B	3,000 SAR	N	2005
		800	N	2011
		600	N	2005
		400	N	2008
Common Nighthawk	FM	250 SAR		2007
		120		2009
Great Egret	B	2 nests		2011
Black-crowned Night Heron	B	55 nests		2009
Red-headed Woodpecker	B	1 pair SAR		
Bobolink	B	Many pairs SAR		
Eastern Meadowlark	B	Many pairs SAR		

Legend: Season: SM = Spring migration, B = Breeding, FM = Fall Migration, W = winter. Number and Significance: G = Global or > 1% of global population. C = Continental, or > 1% of continental population. N = National or > 1% of national population. SAR = Species at Risk

4. Key areas and habitats in the IBA

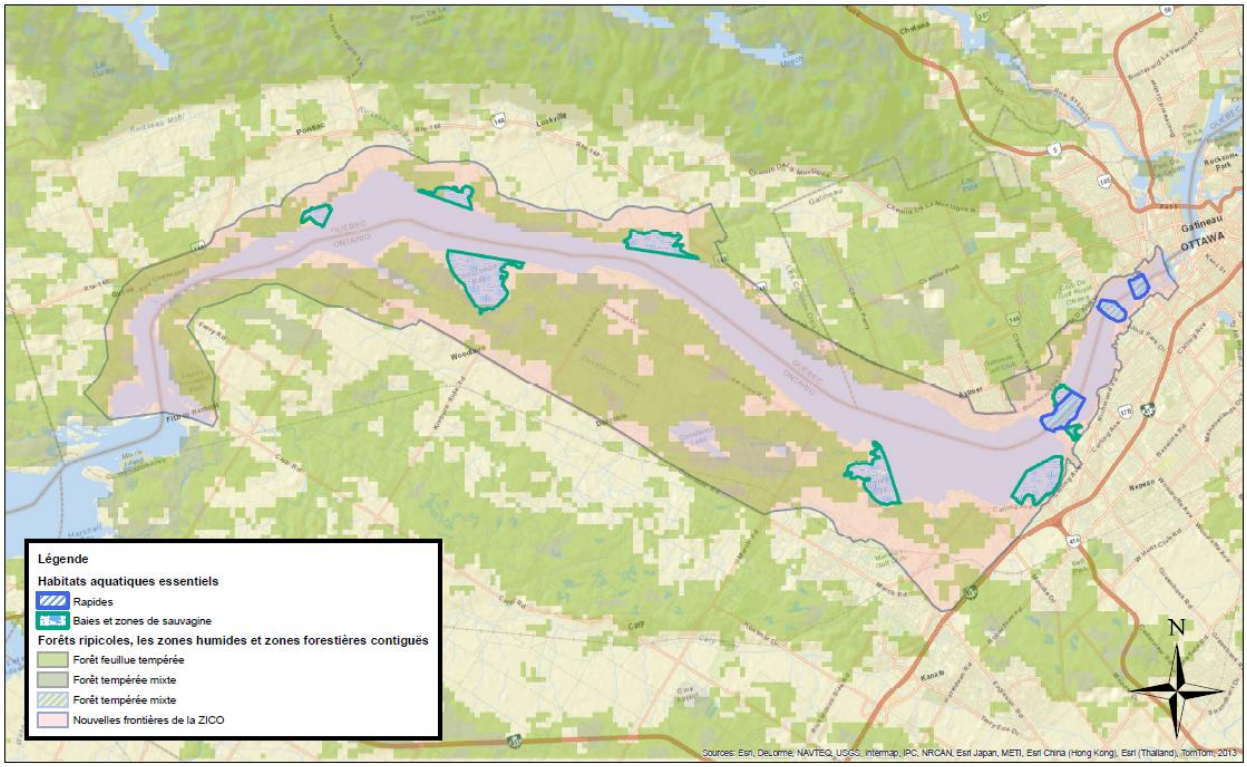

Figure 2: Ecological hotspots in the IBA

Within this vast IBA there several hotspots and habitats that support particular groups of birds of conservation interest and where different species or groups of species concentrate. However, while some areas may be relatively more important than others, it must be recognized that the IBA is part of a larger regional landscape and ecosystem. While this IBA has boundaries, and within it there are bird "hotspots" this fact does not negate the value of the rest of the IBA and the need for a healthy ecosystem.

The areas described in the following text represent locations where high numbers of birds have been observed or where significant habitats are known to support groups of birds or species at risk. Within the IBA, these special areas include:

i. Rapids that are open year round
ii. Riparian forest and other terrestrial and wetland habitats that support particular species or provide an important ecological function, and
iii. Bays and rafting areas for waterfowl, loons and grebes.

Rapids:

Deschênes rapids are the largest and most significant rapids in the IBA, located at the downstream end of "lac Deschênes ." Naturalist Dan Brunton describes these rapids for the Ottawa Riverkeeper in the following way: "only one large rapids remains intact along the entire length of the Ottawa River without the negative impact of a bridge crossing, a hydro dam and/ or industrial development. The Deschênes Rapids descend rapidly down from Lac Deschênes across a sandstone sill, producing a broad,

boiling white water area that is open and flowing year round. Not coincidentally, the rapids retain the only substantial Ottawa River population of the nationally rare Riverweed – once found commonly in other now-compromised fast water sections of the water course. This oxygenating 'lungs-of-the-river' also provide habitat for large numbers of wintering waterfowl (and gulls). These last natural Ottawa River rapids have been threatened with destruction by inter-provincial bridge and/ or industrial development for almost 100 years, protected from destruction on several occasions only by the diligence and actions of various private groups of Ottawa River citizens." [4]

Remic Rapids forms at the next narrows, downstream of the Deschênes Rapides, near the base of Bate Island just east of the Champlain Bridge. These rapids attract large numbers of waterfowl, particularly diving ducks such as Common Goldeneye, Bufflehead and Common Merganser in the fall and winter, and occasionally large numbers of gulls, as well as large numbers of swallows in the spring.

Another set of unnamed rapids occur between Parc Brebeuf in old Hull, and the foot of Parkdale Avenue in Ottawa. This rapids also is attractive to the same species but rarely supports numbers as high as the other rapids.

Bays and waterfowl rafting sites:

On the Quebec side of the Ottawa River, bays that offer shelter and feeding habitat or where large numbers of waterfowl have been recorded 'rafting'[5] including Baie Cornu about four kilometres east of Quyon and just west of Plage Carcajou, Baie Noire, about six kilometres to the east of Baie Cornu, Baie Breckenridge, to the east of Baie Noire, and the large area below the Deschênes Rapids and west of the Champlain Bridge known as Baie Simard. All of these areas include emergent vegetation near the shore that provides feeding and shelter as well as limited protection from wind. Baie Simard, located in Gatineau and easily accessible by birders from several viewing points, provides excellent waterfowl viewing opportunities in the fall in particular.

On the Ontario side of the Ottawa River, the key hot spots for waterfowl, loons and grebes include the large and protected Constance Bay in the west part of the IBA, Shirley's Bay, Lac Deschênes off Andrew Hayden Park, and Mud Lake. The wetlands to the west of the dyke in Shirley's Bay can be teaming with waterfowl, particularly dabbling ducks as well as other waterbirds like Coot, herons, and shorebirds. Andrew Hayden Park and Dick Bell Park are among the best locations on the Ontario side of the river to observe waterfowl on Lac Deschênes. Large numbers of Brant and Red-throated Loon on occasion have been observed from these locations. Mud Lake is a small lake within the Britannia Conservation Area that supports a remarkably rich variety of waterfowl and waterbirds in the spring and fall.

Riparian forest and other terrestrial and wetland habitats:

Pontiac and Gatineau Quebec

From Quyon east along the Ottawa River north to highway 148, a rich riparian forest connects to large blocks of forest to the north that are contiguous with Gatineau Park, providing a landbird corridor, and extending east to Baie Cornu. A patch of riparian wetland and forest extends west for two kilometres from Baie Noire. A seven kilometre stretch of riparian forest and scrub forest, forming a 200 metre to one kilometre wide buffer to the Ottawa River stretches from Baie Noire east to Breckenridge Bay. This stretch of forest is bisected by roads and some settlements.

[4] Brunton, D, http://ottawariverkeeper.ca/river/ecosystem_diversity/

[5] Rafting refers to when waterfowl gather in large groups floating together.

A large patch of privately-owed, protected riparian and mixed wetland forest and shoreline marsh occurs on the east side of Breckenridge Bay. The forested patch extends north-east along Breckenridge Creek, and links to an important forested corridor that connects to Gatineau Park to the north. Established in 2004 as a result of the active encouragement of the property owners, the Aldred family, this 270 ha Nature Conservancy of Canada property protects one of the finest marsh habitat areas in the lower Ottawa River as well as ecologically valuable backshore habitats. These provide habitat for a wide variety of provincially and regionally rare flora and fauna. The Reserve provides an excellent example of a successful individual conservation initiative that was soundly based on scientific evaluations and which will provide permanent protection for significant Ottawa River shore habitats.[6]

Within the Aylmer and Hull Sectors of Gatineau is a well forested residential area extending south-east from the Aylmer marina to Parc Louis Roy and Chemin Fraser that includes three urban parks with mature forest. On the east side of chemin Fraser is Parc Lamoureux. This important park with mature swamp forest and Burr Oak open forest, connects to the east with the Deschênes village, the Deschênes rapids, and to the north to contiguous forest patches that link to the Boucher Forest and Gatineau Park, forming an important wildlife corridor that includes a well-wooded subdivision around Chemin Grimes, and the Club de Golf Gatineau.

East north-east from the Deschênes rapids and Parc Lamoureux is a rich and contiguous stretch of nearly six kilometres of riparian forest and wetland that extends past the Champlain Bridge to Parc Moussette. This corridor buffers the sheltered Baie Simard from human activity, and provides rich stopover habitat for migrating landbirds. The riparian corridor becomes narrow on its eastward extension to its terminus at the Ruisseau de la Brasserie where there is a hydrological connection to Lac Leamy and the Gatineau River.

Riparian forest and other terrestrial and wetland habitats, Ottawa, Ontario

Fitroy Provincial Park is located at the north-west corner of the IBA near the confluence of the Carp and Ottawa Rivers just down-stream of the community of Fitroy Harbour, and the Sault-des-Chats dam which marks the upper reach of Lac Deschênes. The park is linked to a larger block of forest with mature White Pine and Bur Oak that extends north toward the West Carleton – Quyon Ferry Crossing and MacLaren's Landing where it connects with a large block of forest to the south-east. East of MacLaren's Landing, a few forest patches are contiguous to the river, linking with larger forests to the south east include the Torbolton Forest which provides habitat for Red-headed Woodpecker.

The large riparian forest at the south-east end of Constance Bay is the north-west end of the most important terrestrial feature in the IBA – a contiguous forest that stretches about 18 kilometres to the west of Shirley's Bay and Innis Point along Constance Creek and Constance Lake. This area is a significant wildlife corridor that contains a wide range of significant habitats from open bog and fen, lake, wetland forest, jack pine stands, and mixed and upland forest. To the north between this feature and the Ottawa River is an "island" of patchy agricultural land, forest and residences along the river. The agricultural land provides habitat for threatened grassland bird species.

Innis Point and Shirley's Bay (terrestrial and wetland section) are likely the best examples of globally rare alvar habitat in the Ottawa Valley, and include a remarkable diversity of riparian forest, swamp forest and marsh habitats. These include ancient, primary growth Red Maple swamps and a long-established

[6] Brunton, D, http://ottawariverkeeper.ca/river/ecosystem_diversity

Wild Rice marsh. Most of the site is managed by the Department of National Defence (Connaught Ranges) who have worked co-operatively with the City of Ottawa, the Ottawa Duck Club and others to successfully enhance wildlife populations and protect particularly significant habitats.[7] Shirley's Bay also provides the only extensive shorebird habitat within the IBA and one of the most important shorebird stop-overs in eastern Ontario.

East of Shirley's Bay, there is nearly one kilometre of forest buffering the shoreline that extends east to Barry Mullen's park and Carling Avenue to the South. About five kilometres to the east is Andrew Hayden Park, a popular urban park along the river which is also a top birding location with good views into Lac Deschênes. To the east of the park is mainly natural habitat between the Ottawa River Pathway and the shoreline, forming a natural buffer that extends nearly two kilometres to the Britannia Yacht Club and the well-treed Village of Britannia.

The Britannia Conservation Area which includes Mud Lake is the most significant natural area in urban Ottawa. "On a national scale it is probably the National Capital region's best known migratory bird observation location, with over 300 species observed, some of which are known from only a handful of records in Canada. . . . It is situated at a constriction of the Ottawa River, surrounded by a sea of less suitable urban development. The conservation area is heavily used by naturalists and passive hikers alike, a fact recognized by the construction of low-impact recreational pathway in 2004 by the site's manager, the National Capital Commission, which aids in the site's long term protection."[8]

East of Britannia Park and Mud Lake, there is very little riparian forest habitat left between the John A. MacDonald Parkway and the Ottawa River.

5. Stakeholders, Governments and key institutions

• **Government of Canada** – The Canadian Parliament lies just downstream of the Lac Deschênes – Ottawa River IBA, and the most Federal Government offices are based in the National Capital Region which includes Ottawa and Gatineau. A few federal government departments in particular have a stake in the IBA. The federal government is responsible for implementing the Species at Risk Act and the Migratory Birds Convention Act. Both Acts concern species found at the Lac Deschênes – Ottawa River IBA.

• **Environment Canada** – The Department of the Government of Canada responsible for coordinating environmental policies and programs as well as preserving and enhancing the natural environment and renewable resources.

• **Department of National Defence (DND)** – The Department of the Government responsible for defending Canada's interests and values at home and abroad, as well as contributing to international peace and security. DND is a major property owner at Shirley's Bay. Innis Point Bird observatory, a key location for bird study within the Lac Deschênes – Ottawa River IBA, is located on this DND land.

• **Natural Resources Canada (NRCAN)** – The department of the Government responsible for developing policies and programs that enhance the contribution of the natural resources sector to the economy and improve the quality of life for all Canadians.

[7] Brunton, D, http://ottawariverkeeper.ca/river/ecosystem_diversity/
[8] Brunton, D, http://ottawariverkeeper.ca/river/ecosystem_diversity/

• **Ontario Ministry of Natural Resources (MNR)** – The MNR works to promote healthy, sustainable ecosystems and conserve biodiversity by conducting scientific research developing resource management policies. The MNR also manages Ontario's Crown land.

• **Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs du Quebec** (**MDDEFP**) – This Ministry is responsible for the protection of wildlife and natural resources in Quebec as well as Quebec' park system and sustainable development of resources.

Ontario Ministry of Transport – The vision of this ministry is to be a world leader in moving people and goods safely, efficiently and sustainably, and to support a globally competitive economy and a high quality of life.

Ministry des Transports du Quebec – The mission of the ministère des Transports du Québec is to ensure the mobility of people and goods throughout Québec on safe, efficient transportation systems that contribute to the sustainable development of Québec.

Hydro Quebec – Hydro-Québec generates, transmits and distributes electricity. Its sole shareholder is the Québec government. It uses mainly renewable generating options, in particular large hydro, and supports the development of other technologies—such as wind energy and biomass

• **Algonquin First Nation** – The Algonquin First Nations is a group of Indigenous Canadians with settled land claims in Ontario and Quebec. Currently they have no settled land claims within the Lac Deschênes – Ottawa River IBA, however they hold significant local knowledge and interest in the project, and the IBA would include parts of their traditional territories.

• **City of Ottawa** – The City of Ottawa owns and manages a significant amount of land within the Lac Deschênes – Ottawa River IBA, and is empowered to guide and regulate land use and many human activiites within the Ottawa City boundaries which include all of the IBA on the Ontario side of the Ottawa river, through powers granted by the Province of Ontario. The City has is a key partner in the development and implementation of this conservation plan.

• **City of Gatineau** – The City of Gatineau owns and manages a significant amount of land within the Lac Deschênes – Ottawa River IBA and is empowered by the Province of Quebec to guide and regulate land use and many activities within the City of Gatineau boundaries. The City has provided Nature Canada with funds through the Fond Vert to support the development of this conservation plan, and also is a key partner in the development and implementation of this conservation plan.

• **National Capital Commission** – A crown corporation of the Government of Canada responsible for a portion of land in the National Capital Region, both in Ontario and Quebec. The National Capital Commission is also a major landholder within the Lac Deschênes – Ottawa River IBA and has been consulted during the development of this conservation plan.

• **CREDDO: The regional council for the environment and sustainable development in Outaouais** – Mission is to promote the preservation and improve the environment and the conservation of the natural resources in a sustainable development perspective.

• **Nature Conservancy of Canada** – The Nature Conservancy of Canada protects area of natural diversity

for their intrinsic value and for the benefit of future generations through securing natural areas. The Nature Conservancy of Canada currently manages more than 200 properties across Ontario and works in 18 priority natural areas across Quebec. The Nature Conservancy of Canada is joint owner with Bird Protection Quebec of the Breckenridge – Ghost Hill Farm which protects a large forested – wetland complex west and north of Aylmer sector of Gatineau, and which forms part of an important wildlife corridor between the IBA and Gatineau Park to the north.

Bird Protection Quebec – Since its founding in 1917, Bird Protection Quebec has been active in bird protection and advocacy. In addition to managing and maintaining several bird sanctuaries, the Society sponsors numerous bird-related education and research programmes. BPQ are joint owners with NCC of the Breckenridge – Ghost Hill Farm which is west of Aylmer sector of Gatineau. A primary importance of this site was as a breeding and release location to reintroduce the Loggerhead Shrike to Quebec. This program has been discontinued.

• **Rideau Valley Conservation Authority (RVCA)** – Provincial legislation provides this environmental protection and advisory agency with the power and means to work with local municipalities, government agencies, special interest groups and the general public to protect watershed resources. RVCA management area includes the Eastern section of the Lac Deschênes – Ottawa River IBA.

• **Mississippi Valley Conservation Authority (MVCA)** – The government body appointed to manage the Mississippi Valley watershed. MVCA works across 11 municipalities, including Ottawa, to keep drinking water, local ecosystems and property safe. MVCA management area includes the Western section of the Lac Deschênes – Ottawa River IBA.

• **University of Ottawa** – The University of Ottawa is located in the heart of downtown Ottawa. Local universities and colleges will be an important source of students and interns for the development of this program which will include extensive community outreach and some research projects.

• **Carleton University** – Carleton University is located along both the Rideau River and the Canal, both of which connect to the Ottawa River. Local universities and colleges will be an important source of students and interns for the development of this program which will include extensive community outreach and some research projects.

• **Algonquin College** – Algonquin College is situated across campuses in Ottawa, Pembroke and Perth. The College offered hands on learning programs offering degrees, certificated and advanced diplomas. Local universities and colleges will be an important source of students and interns for the development of this program which will include extensive community outreach and some research projects.

• **Ottawa Field Naturalists' Club (OFNC)** – Founded in 1879, the Ottawa Field-Naturalists' Club is the oldest natural history club in Canada. Over 1300 members and subscribers to The Canadian Field-Naturalist have interests in all aspects of the natural world, from birding to botanizing, investigation and conservation management. The OFNC leads the Macoun Club for Young Naturalists. OFNC and COO are project delivery partners of the Lac Deschênes – Ottawa River IBA program.

• **Club des ornithologues de l'Outaouais (COO)** – The COO is a non-profit organization bringing together individuals and organizations with an interest in the observation and protection of birds and their habitats. The Club has 310 members who practice birding and conservation in the Outaouais and the North-West of the Upper Laurentians, Quebec. COO and OFNC are project delivery partners of the Lac

Deschênes – Ottawa River IBA program.

• **Bird Studies Canada (BSC)** – Bird Studies Canada is Canadian co-partner in Bird Life International with Nature Canada, and tother, delivers the Important Bird Areas program in Canada.

• **Ottawa Riverkeeper** – The Ottawa Riverkeeper is a grassroots non-governmental organization that works to protect, promote and enhance the health of the Ottawa River and its tributaries. Ottawa Riverkeeper conducts research, citizen inspections, works collaboratively to inspire conservation action, encourages and assists in responsible decision making, holds polluters accountable and recommends alternative practices and policies to safeguard our local waterways. The Ottawa RIverkeepers work to protect all of the Ottawa River, including the area of the Lac Deschênes – Ottawa River IBA.

• **Ecology Ottawa** – Ecology Ottawa is a not-for-profit, grassroots, volunteer-driven organization working to make Ottawa the green capital of Canada. They believe that Ottawa residents are concerned about issues such as climate change, pollution and waste, and that citizens want sustainable communities where clean energy, air, and water, public transit, recycling, and green space protection take priority. Ecology Ottawa provides residents with the information and tools they need to understand local environmental issues and promote environmental leadership at city hall.

• **Innis Point Bird Observatory (IPBO)** – Founded in 1982 as the Ottawa Banding Group, one of a network of banding stations around the world, is dedicated to the study of birds and natural history. IPBO is located along the Ottawa River, near Shirley's Bay, within the Lac Deschênes – Ottawa River IBA. The property that IBPO rests on is DND land.

• **Ottawa Duck Club** – Leads the nest box program which targets wood ducks, hooded mergansers, eastern bluebirds, American kestrels and purple martins.

• **Private land owners** – A majority of the land within the Lac Deschênes – Ottawa River IBA is owned by private landowners.

Statutory Land Use Designations Within the Proposed IBA Boundary

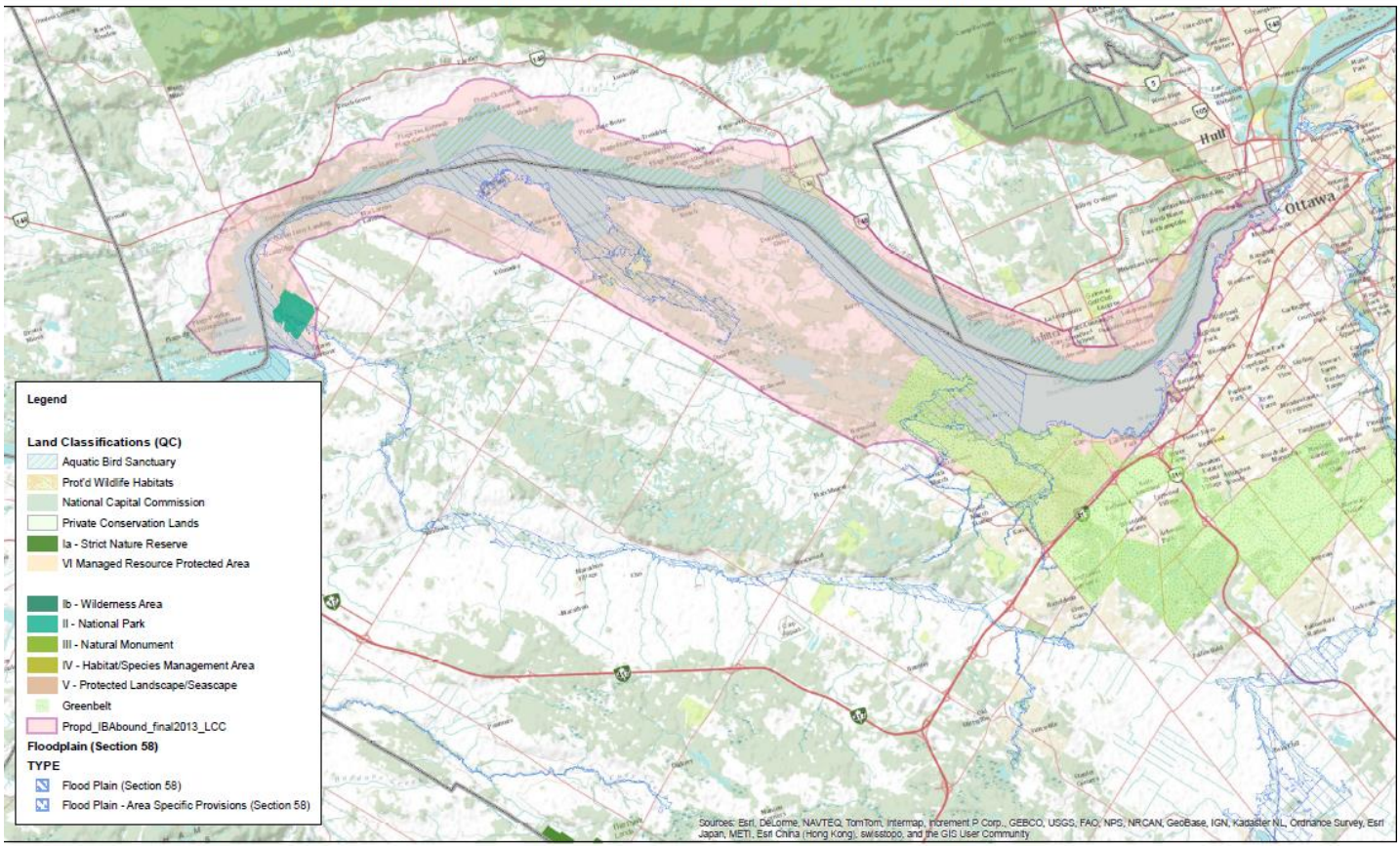

Figure 3. Land ownership and protected areas

6. Conservation Targets and Goals

Conservation targets are the focus of the conservation efforts of this Conservation Plan. The targets include groups of species of birds that share similar habitats and or behaviours (e.g. aerial insectivores, migrant landbirds, and waterfowl), individual species (e.g. Species at Risk) as well as the water that sustains everything in the IBA.

Target	Goals
Aerial insectivores Chimney Swift, Cliff, Barn, Rough-winged, Bank, and Tree Swallow, Purple Martin, and Common Nighthawk	• Large numbers of aerial insectivores use IBA for staging, stopover and migration • Safe and healthy populations of Swallows and Martins breed in the IBA • Safe and healthy breeding populations of Chimney Swifts breed in the IBA
Waterfowl, loons and grebes Canada Geese (migrants) Brant (migrants), and a wide variety of ducks (e.g. Mallard, Lesser Scaup, Am. Black Duck, Common	• Current staging area for waterfowl, grebes and loons are healthy and undisturbed during staging times of the year • Wintering waterfowl areas are safe and healthy • Healthy breeding populations of waterfowl in the IBA

Target	Goals
Goldeneye, etc.), loons and grebes.	
Migrant landbirds Migrant landbirds use riparian habitats for stopover and use the many corridors connecting the riparian zone to major regional natural features	• Migratory stop-over habitat is protected, well managed and enhanced • Functionality of regional landscape through connectivity of IBA habitats to other major regional natural features such as Gatineau Park and Greenbelt is enhanced
Colonial Waterbirds Breeding colonies of Ring-billed Gull, Double-crested Cormorant, Black-crowned Night Heron and occasionally Great Egret. Stop over for gulls, herons and shorebirds.	• Healthy and diverse waterbird colonies protected • Important staging and stopover areas for waterbirds (Gulls, herons, shorebirds) protected • IBA supports large numbers of wintering waterbirds
Species at risk Chimney Swift, Common Nighthawk, Red-headed Woodpecker, Bobolink and Eastern Meadowlark Barrow's Goldeneye, Harlequin Duck, Peregrine Falcon, and other avian and non-avian species at risk	• Effective and regular volunteer monitoring of Avian Species at Risk in IBA • Recovery of Species at Risk in the IBA through habitat management, protection and stewardship projects
Water. water quality and quantity Chemical, physical and bio-indicators of quality	• Water quality is high, as measured by a range of factors including: • chemical indicators, • biological indicators (presence of abundance invertebrate life and fish populations), and • physical factors like turbidity

7. Threats to Conservation Targets

Threats to the conservation targets were determined during meetings with the local naturalists' club members and staff from the cities of Ottawa and Gatineau and National Capital Commission. A large number of threats were initially identified and distilled to the following list (in alphabetic order):

- Agricultural activity in and upstream of the IBA – Agricultural activities can have both general impacts on groups of species (e.g. from pesticides that enter surface water and impact invertebrate production in the river), and individual species (e.g. early hay harvesting can destroy Bobolink and Eastern meadowlark nests). Certain pesticides, such as widely used nicotinoides, may be causing serious harm to insect populations, and compromising the food supply for insect-eating birds.
- Air pollution – motor vehicles (cars and trucks), are the biggest source of air pollution in the IBA. Air pollution can have many deleterious effects on nature, such as reduced invertebrate numbers (i.e. food for aerial insectivores), or egg thinning and reproductive failure.
- Conifer plantations – Conifer plantations on public land, over sand deposits within the IBA (e.g.

Torbolton Forest), results in the loss of diverse grassland and open woodland habitat used by species at risk such as the Red-headed Woodpecker or the Whippoorwill.

- Destruction of nesting and roosting chimneys for Chimney Swift – Chimney Swift is currently dependent upon chimneys in the National Capital Region for sustaining its regional population. Capping, or destroying the old chimneys that they roost in, which are often associated with a school, factory or institution, or rendering nesting chimneys uninhabitatable removes important staging and breeding habitat for this threatened species.
- Domestic animals and feral animals – This threat mainly addresses cat predation of birds, but also dogs that prey on, or disturb birds when allowed to run in sensitive areas. Cat predation is a threat to all land birds including aerial insectivores.
- Golf courses in the IBA – Golf courses constructed adjacent to the Ottawa River or across a nature area remove habitat for migratory landbirds, and the vegetation buffer for waterfowl and waterbirds, add nutrients and chemical pollution to the river and favour highly adaptable species like Canada Goose.
- Human disturbance – The Ottawa River is of great importance to local citizens for a wide variety of recreation activities from swimming to sailing, and fishing to kayaking. Some of these activities potentially disturb congregating birds. In particular, the use of the river by kite surfers has increased with advances in equipment and technology, meaning that kite surfers are on the river earlier in the spring and later in the fall when large numbers of waterfowl and waterbirds are begin gathering in the IBA.
- Hydro-electric dam – A potential hydro electricity station between from the shoreline near the foot of Vanier Avenue in Aylmer to Conroy Island at the Deschênes Rapids, where the ruins of a historic dam now stand, may be considered for a future micro-generation project. Conroy Island has an important regional bird colony of Ring-billed Gulls, Double-crested Cormorants and Black-crowned Night Herons, with occasional Great Egrets. A dam or hydro- electric project would likely destroy the bird colony.
- Invasive, non-native species – numerous invasive, non-native species have changed the ecology of our forests, grasslands and aquatic habitats. Many of these species can out-compete native species, and can lead to the extirpation of local populations of native species, leading to the loss of biodiversity. European Buckthorn, a berry-rich thorny small tree has taken over many urban park and disturbed riparian forests. Its berries are favoured by robins and waxwings, and hence spread far and wide by the birds themselves.
- Light pollution – Light pollution attracts nocturnal migrating birds during certain weather conditions. When these lights are powerful enough, birds fly to their source, which may be a house, an office tower, a communications tower or a high smoke stack for example. Birds die either from collision with windows, or they exhaust themselves fluttering around the light, and fall exhausted to the ground to be eaten by predators.
- Mosquito control programs (biocides) The City of Gatineau deploys biocides (principally *Bacillus thuringiensis* or *BT**)*** to kill mosquitos in response to citizen requests and complaints. Ottawa also uses BT, but only in response to a proven threat from West Nile Virus- bearing mosquito larvae. While this activity in Gatineau is more focused on the eastern end of the city (not in the IBA), it has the potential to be used elsewhere in the city including in the IBA. There is evidence linking the use of BT to reduced reproductive success of some swallow species.
- Residential development - Development pressures are most acute on privately owned lands adjacent to the Ottawa River in Quebec from the Deschênes village west into the Pontiac to Quyon, and in Ontario on the west side of Ottawa around Crystal Bay, and from Durobin Shore to McLaren's Landing.

- Resource extraction. Extraction of sand or gravel from active and potential operations in the Dunrobin shores area could impact grassland bird habitat (species at risk).
- Road networks and potential bridges across the Ottawa River – A new bridge crossing of the Ottawa River would introduce a new set of impacts in the IBA. While Deschênes Rapids is no longer considered a viable crossing location, another location that would extend Ridell Road, west of Shirley's Bay across the river, is one of several potential future bridge sites under consideration. The current development footprint and protected area network along both sides of the river leave very few options for new roads or bridges that would impact the IBA. Howerver, expanded or upgraded roads (that increase the speed limit) that bisect significant wildlife corridors that connect the IBA with regional natural areas will increase the amount of road-kill of birds and other wildlife.
- Water pollution – There are many sources of water pollution associated with the urban area including storm sewers, lead from the shooting range, road salt, pollution from vehicles (e.g. oil), industry, agriculture and litter, especially plastics. Water pollution degrades the quality of the river, making it less productive and unable to support the large number of birds that currently use it.

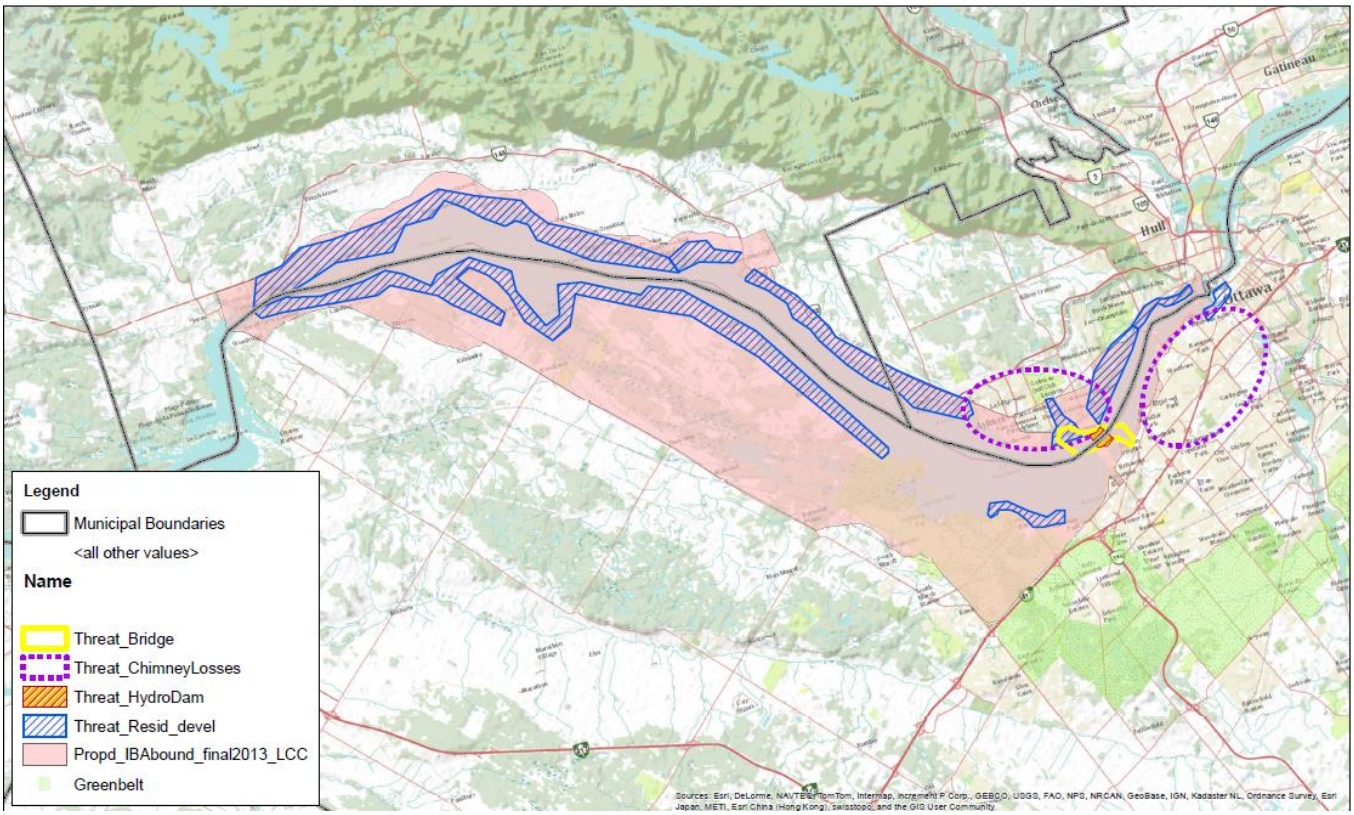

Figure 4: Spatial distribution of high and very high threats

This table of threats was created using the Miradi, Open Standards in Conservation software. Each threat was rated by its scope (amount of the area of the IBA affected), severity (how imminent the threat is and how much of the target could be impacted by it), and reversibility (whether the threat can be mitigated). The ratings on this table are computed by Miradi, and reflect a combination of the rating per target and the number of targets impacted. This assessment was based on a combination of input from the steering committee (threats were rated by main partner representatives) and the author's

personal judgement. This table can be used to prioritize and inform conservation actions for the IBA.

Threat Ratings – Table

	Threats \ Targets	Waterfowl, loons and grebes	Migrant landbirds and shorebirds	Colonial Waterbirds	water quality and quantity	Aerial insectivores	Species at risk	Summary Threat Rating
	Resource extraction						Medium	Low
	Management of water flow from upstream dams	Low	Low	Medium	Low			Low
	hydro electric dam at the Deschenes Rapids			Medium	Low			Low
	Mosquito and other insect control programs				Low	Medium	Low	Low
	Invasive, non-native species	Low	Low		Medium		Low	Low
	Air pollution					Low		Low
	Destruction of roost chimneys					High	Low	Medium
	Golf Courses in the IBA	Low	Medium		Medium	Low		Medium
	Light pollution - window strikes		High			Medium	Medium	Medium
	Human Disturbance	Medium	Low	Medium	Low	Medium	High	Medium
	Residential Development	High	High	Low	Medium	Medium	Medium	High
	Road networks and potential bridges	Medium	Medium	High	Medium	Medium	Medium	High
	Domestic animals and feral animals in the IBA		High			Medium	High	High
	Agricultural	Low		Low	Medium	High	High	High

	Threats \ Targets	Waterfowl, loons and grebes	Migrant landbirds and shorebirds	Colonial Waterbirds	water quality and quantity	Aerial insectivores	Species at risk	Summary Threat Rating
	and silviculture activity							
	Water pollution	Medium		Medium	High	High	Medium	High
	Summary Target Ratings:	Medium	High	Medium	High	High	High	High

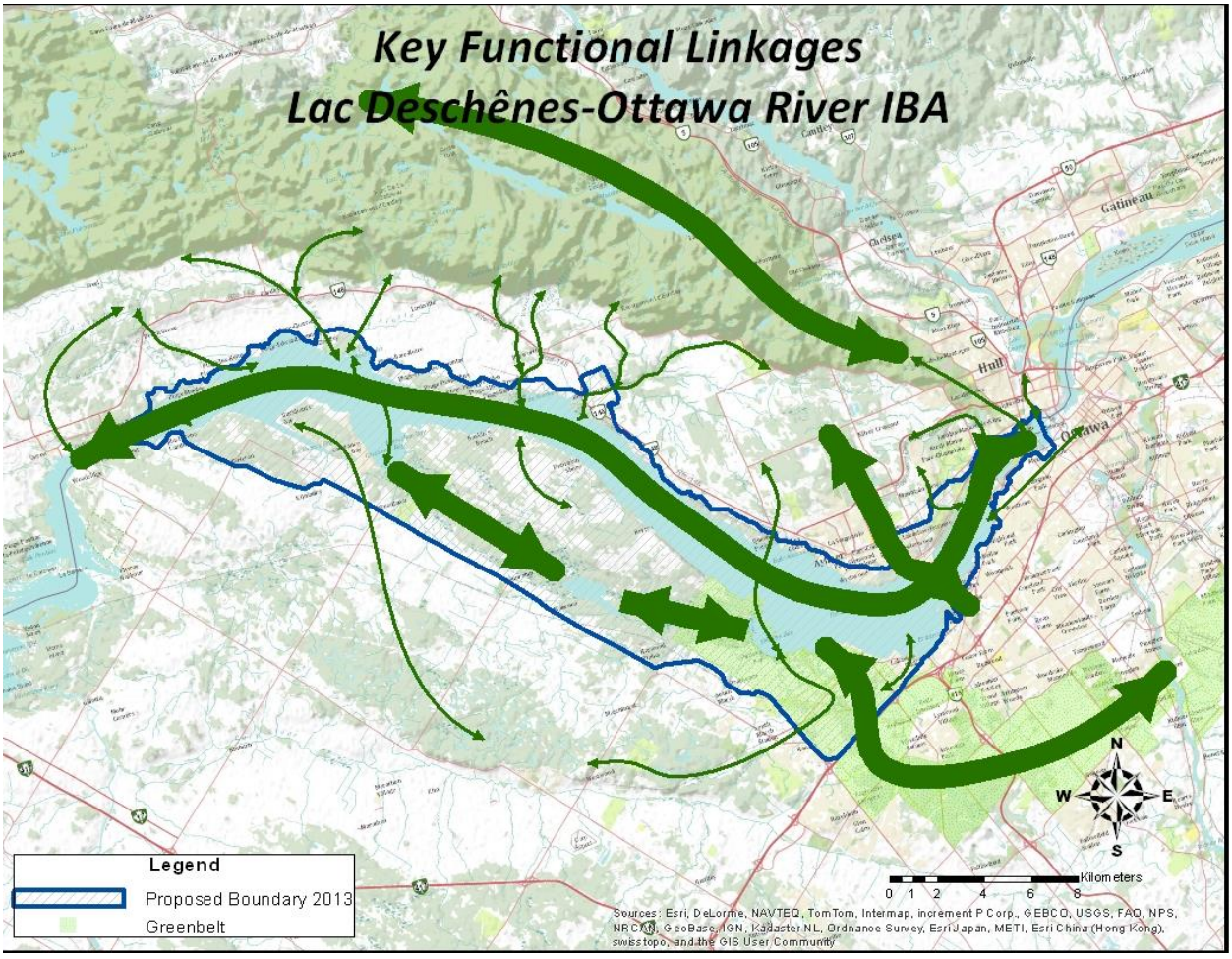

Figure 5: Corridors and linkages

8. Action Plan for Lac Deschênes - Ottawa River IBA

The Action plan that follows presents 13 strategies with accompanying objectives and actions. These strategies address both specific threats to the conservation targets, as well as general behaviours and attitudes of people living in or near the IBA. There are no attempts to prioritize strategies or actions in this plan, though priority of actions could be determined by applying the Threat table in Chapter 7 to the strategies that follow.

To operationalize this plan requires assigning or taking responsibility for implementing actions, placing action implementation into a timeframe or schedule, determining and finding resources, undertaking actions and evaluating results. Many of the actions presented in the plan are already operationalized in one form or another. For example, the Cities of Ottawa and Gatineau have Official Plans that identify natural heritage networks, or elements thereof, which overlap in many cases with key areas in the IBA. Many partners are involved in various forms of outreach to raise the awareness of citizens living in the region of IBAs and birds.

Finally, this plan is intended as a living document to be added to, subtracted from and revised from time to time. We acknowledge that there are other strategies, objectives and actions that are likely absent, or which could positively impact one of the conservation targets. We see this plan as an important first step in focusing constructive attention on the most important regional area for birds, the Lac Deschênes – Ottawa River Important Bird Area.

STRATEGIES, OBJECTIVES AND ACTIONS	
Objective	Actions
STRATEGY 1: **Protect and restore buffers, corridors and linkages within the IBA and from IBA to major regional features**	
To recognize, protect and manage a natural corridor along the Ottawa River within the IBA and connector corridors from the IBA to major regional features within Ottawa and Gatineau	• Encourage the Cities of Ottawa and Gatineau to expand their natural heritage systems mapping to include the IBA corridor, and its linkage corridors to major regional natural features that are not already captured within their respective planning schedules (as identified in Figure 2) and accord appropriate recognition/ zoning and signage to mitigate human threats such as wildlife collisions with vehicles • Encourage the Cities and National Capital Commission to take management actions to strengthen the riparian corridor and connector corridors in the IBA by expanding and restoring natural habitats using native species on all public lands within the IBA, and encouraging urban forests in key residential areas identified in Figure 2
To explore opportunities with the Municipality of the Pontiac to recognize, protect and manage natural corridors and public lands along the Ottawa River in the IBA and connector corridors from the IBA to major regional features within this municipality	• Encourage the Pontiac to recognize the IBA corridor, and its linkage corridors to major regional natural features within its planning schedules (as identified in Figure 5) and accord appropriate recognition/ zoning and signage • Encourage the Municipality of the Pontiac to take management actions to strengthen the riparian corridor and connector corridors in the IBA by expanding and restoring natural habitats using native species on all public lands within the IBA, and encouraging native tree planting in residential areas within the IBA
STRATEGY 2: **Encourage support for the IBA and positive behaviours in citizenry in key neighbourhoods of the IBA through community-based social marketing**	
To raise awareness about the IBA and encourage community engagement in IBA activities in the neighbourhoods/ communities of: Brittannia, Bayshore, Dunrobin shores and Constance Bay in Ottawa, and Val Tetraux, Deschênes, and	• Meet with community associations and City councillors for each target neighbourhood to present the IBA, and discuss opportunities to support its conservation goals

Queen's Park in Gatineau, and Quyon, Baie Cornu, Baie Noire and Baie Breckenridge in the Pontiac	
To make the IBA more visible to the public	• Install permanent signage including kiosks/ display panels, and IBA border signs at key locations
To engage the communities in bird monitoring and bird conservation and raise awareness about the IBA	• Hold an annual regional Bird Fair in the IBA • Engage citizens from a wide spectrum of the community in 'citizen science' opportunities such as Christmas Bird Count and Swift Watch • Develop programs with key schools in IBA so that students are familiar with it and its birds, and participate in citizen science projects • Develop print resources to promote the IBA • Hold regular events such as bird watching hikes and bird banding demonstrations that introduce the public to birds and the IBA, and target some events at non-traditional audiences (e.g. new Canadian and recent immigrants)
To use of social media to promote the IBA, bird conservation and reach new audiences	• Develop and support a webpage and facebook site that focusses exclusively on the IBA • Build a social community around the IBA • Use social media to promote IBA events and related events of partners
STRATEGY 3: **Recognize and protect key areas and habitats within the IBA**	
To identify key habitats and biodiversity hotspots in the IBA for birds (Figure 2)	• Nominate key bird habitats and areas identified in this plan (see Figure 2), (e.g. breeding colonies, species at risk locations, areas of key habitat function) for consideration for formal protection from negative development by the appropriate levels of government (e.g. provinces, municipalities)
STRATEGY 4: **Encourage and protect breeding populations of aerial insectivores in the IBA**	
To undertake actions to recover populations of Chimney Swift within IBA and the greater Ottawa-Gatineau area	• Work with project Swift Watch partners, the Club des Ornithologues de l'Outaouaois and Regroupment Quebec Oiseaux to identify and encourage protection of swift nesting and roosting sites in the IBA and the surrounding region • Where possible at roost sites, hold public events to encourage interest and support for this species • Ensure that activities are supportive of the recovery strategy goals and activities for this species
To undertake activities to raise public awareness of swallows in the IBA and encourage stewardship and monitoring of	• Map the location of swallow nesting sites in the IBA (including Purple Martin, Barn Swallow, Cliff Swallow, Bank Swallow, Tree Swallow and Rough-winged Swallow)

nesting sites	• Analyze conditions of and threats to sites • Encourage and promote stewardship with owners of buildings or structures that have nest sites
STRATEGY 5: **Expand migratory stopover for shorebirds in IBA**	
To promote and enhance habitat for migrating shorebirds at one of more locations such as Shirley's Bay	• Develop partnership to support this initiative (e.g. Ducks Unlimited, naturalist clubs, provincial wildlife ministries) • Conduct an inventory of actual and potential shorebird stop over habitat in the IBA • Contact land owners to explore interest in potential management actions in support of shorebirds
STRATEGY 6: **Reduce bird collisions with windows and towers**	
To implement a 'lights out' campaign for major sources of light pollution in and near IBA	• Establish a Fatal Light Awareness Program in Ottawa Gatineau • Initiate monitoring of window casualties within the Cities and the IBA • Work with each level of government to encourage adoption of guidelines to reduce window strikes for their own buildings • Promote guidelines to private building owners and managers
STRATEGY 7 : **Conduct campaign to reduce cat predation and dog disturbance of birds in IBA**	
To strengthen pet bylaws in IBA municipalities	• Work with the Cities of Ottawa and Gatineau to review pet bylaws • If required, recommend changes to strengthen these bylaws based on best practices elsewhere
To engage in social marketing activities to influence the behaviour of cat owners in a positive way	• Use social media and other outreach opportunities to engage citizens in key communities in the IBA in a dialogue about the impacts of outdoor cats on birds, and encourage cat owners to control their cats
To control dogs in sensitive habitats	• Identify areas in the IBA where dog running presents a problem to birds and share results with respective City departments • Encourage Cities to post these areas with signs prohibiting dog running
STRATEGY 8: **Reduce impact of mosquito control on birds**	
To reduce the impact of mosquito control on aerial insectivore birds in Gatineau and Ottawa through more restricted use of biocides for pathogenic virus (e.g. West Nile) control only	• Conduct literature search on the use of pesticides/biocides for mosquito control. Investigate Gatineau's and Ottawa's mosquito control program to determine their potential impact on bird populations, including: location of use, the amount and type of pesticides used, and the outcome for both mosquitos and other organisms

	• Make recommendations to City departments/ councillors based on findings
STRATEGY 9: **Encourage bird and IBA friendly golf courses**	
To prohibit further development of golf courses within the IBA	• The Cities of Ottawa and Gatineau, and the Municipality of the Pontiac prohibit any further creation of new golf courses within the IBA through their zoning bylaw
To reduce the impact of current operational golf courses	• Engage owners and managers of golf courses in the IBA or its connecting corridors to adopt 'bird friendly' practices such as reducing amount of pesticides and fertilizers, increasing the amount of unmanaged habitat and "rough," and undertaking other 'bird-friendly' measures. Efforts would be voluntary and incentivized
STRATEGY 10: **Assess disturbance of human recreation activities to congregating waterfowl in IBA**	
To understand impact of human recreational activities on the Ottawa River on congregating birds and mitigate threats through outreach and education	• Determine severity and scope of disturbance impact on waterfowl through empirical research • Depending on results, implement an awareness-building campaign targeting recreationists
STRATEGY 11: **Undertake targeted actions to restore natural habitat in key hotspots of the IBA**	
To promote habitat restoration in highly degraded or anthropogenic habitats on public lands within key biodiversity hotspots and linkage corridors identified in Figure 2 and Figure 5.	• Develop a community-driven project in the community of Constance Bay, in conjunction with the City of Ottawa Forestry Services Group, to remove sections of pine plantation on City Land, and encourage natural regeneration that supports the Red-headed Woodpecker • Identify a community-driven habitat restoration project to enhance migratory bird habitat in Queen's Park or Val Tetraux in the City of Gatineau • Identify and support additional projects as interest and resources permit.
STRATEGY 12: **Best farming practices to protect water quality**	
To reduce pesticide and sediment loading in the IBA from agriculture sources	• Work with the municipalities, provincial ministries, the Ottawa Riverkeeper, and farmers associations to promote setbacks and buffers to all water courses from farming activities including cropping and grazing
STRATEGY 13: **Develop strategy to address 'nuisance' birds in IBA**	
To reduce the impact of 'nuisance' birds on the ecosystem and communities in the IBA	• To work with IBA steering committee partners and key stakeholders to determine strategic actions to discourage the 'nuisance' factor associated with Ring-billed Gulls and Canada Geese primarily.

9. Monitoring Plan

The success of this plan will be evaluated by progress in achieving conservation goals and objectives. Below are a series of indicators that are worthy of monitoring that will allow us to gauge our progress over time. The following table presents the conservation goals and objectives in the first column, a series of columns about how the objective will be done (operationalized), and an indicator column that describes how success will be measured.

Result or outcome	Method	Indicator
All water courses entering the Ottawa River are buffered from pollution sources	GIS measurement	Chemical and biological metrics, GIS landscape analysis of watershed
Breeding populations of Chimney Swifts safe and healthy	Swift Count	Number of known chimney swift roosts and breeding sites is maintained or increased over time
Change of behaviour of cat owners so that cats do not wander freely	Polling	Percent change in the number of cat owners who let their cat's wander, or the number of feral cats picked up by animal control
Control of dogs in sensitive habitats	Reporting by municipalities	Sensitive habitats in the IBA are identified and posted to make dog running illegal there
Determine impact of mosquito control on prey insects	New study	Completion of a study to determine the impact of mosquito control programs on prey populations of birds directly and birds indirectly
Effective corridors link IBA with large natural areas	GIS calculations over time (e.g. 5 to 10 year intervals)	Connectivity of the IBA core areas to the major regional features (e.g. Gatineau Park), as measured by GIS connectivity metrics
Formally protect key features in IBA	Reporting	Key bird habitats (e.g. breeding colonies, species at risk locations, areas of key habitat function) identified within this plan receive formal protection or zoning protection
General Public more aware of IBA and engaged in conservation activities	Polling, reporting from events	Number of people who know about the IBA and who are involved in activities associated with it as a proportion of the overall population
Healthy and diverse waterbird colonies	Colony counts (annual)	Number of breeding pairs or nests of Ring-billed Gull, Double-crested Cormorant, Black-crowned Night Heron, Great Blue Heron, and Great Egret
Healthy breeding populations of waterfowl	Breeding bird counts, Atlasses	Number of breeding Mallards, Black Ducks, Wood Duck, Hooded Mergansers, Blue-winged Teals, and other species such as

Result or outcome	Method	Indicator
		Wigeon, Gadwall and Northern Shovelor
IBA is an Important staging areas for waterbirds	Fall roundup data analysis (by sections), eBird	Numbers of waterbirds during their migrations, including loons, grebes, Great Black-backed Gull and Herring Gull in particular
IBA supports large numbers of aerial insectivores	Migration counts	Numbers of individuals on each count. Indices over time
IBA supports large numbers of wintering waterbirds	Christmas Bird Count, analysis of sectional information, eBird	Numbers of overwintering waterbirds
Increase stewardship for Swifts	Reporting	A campaign to increase stewardship of Swift nest and roost sites is implemented
Less disturbance of waterfowl and waterbirds	Polling	Recreational users are aware of IBA and consider their routes in function of where the birds are and avoid disturbing birds
More buildings are turning their lights off or down at night during migration period	Reporting	Number of buildings that follow "bird friendly" design standards to reduce wind strikes
More naturalized golf courses	Self reporting by golf course managers	Area (m^2) of golf courses that are allowed to revert to natural habitat, including un-manicured rough
Municipalities strengthen bylaws to reduce numbers of free wandering cats	Municipal tracking, analysis by third party	Stronger municipal bylaws (changes to bylaws) with regard to controlling pets (especially cats)
No additional golf courses	Permitting	There is no further loss of natural habitat within the IBA from golf course creation
Recovery of Species at Risk	Species-specific monitoring	Number of individuals or breeding pairs of SAR in the IBA increases over time
Reduction in fertilizer and pesticide use on golf courses	Self reporting or survey	Amount of pesticides, herbicides and fertilizers used by golf courses
Reduction in the use of pesticide and biocide by Municipalities	Reporting	Volume and frequency of use of pesticides and biocides to control mosquitos
Reduction in window strike casualties of birds	Targeted counts and surveys	Need baseline. Reduction in the number of birds killed from window strikes over time
Restore native plant communities in key publically-owned anthropogenic habitats in IBA	Measurement (GIS)	Hectares of habitat recovered, number of trees removed, transformation of breeding bird community to more diverse and healthy community
Safe and healthy breeding	Requires special	The number of individuals in each colony and

Result or outcome	Method	Indicator
populations of Swallows and Martins	counts	the number of colonies of swallow and martin species breeding in the IBA
Safe and healthy staging area for waterfowl	Migration counts	Numbers of waterfowl, loons and grebes during spring and fall migrations
Stronger policies to protect and restore shorelines and habitats that borders the river	Reporting	Hectares of urban or rural space protected in natural vegetation, and from removal of trees and shrubs. Proportion of forested land within 200 metres of the Ottawa River or its tributaries
Water quality is high and quantity adequate	Water quality testing	Chemical and biological metrics
Wintering waterfowl areas safe and healthy	Christmas Bird Count, analysis of sectional information, eBird	Numbers of wintering waterfowl

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11. Appendices

Appendix 1. Notable Birds Records

After the species name, the level of significance is given (Global, Continental, National) and the threshold number (1% of respective population). Congregatory means 20,000 individuals or more.

Red-throated Loon (Continental 400)

250	1998/11/10	Lac Deschênes – EPOQ[9] OFNC[10]
222	2006/11/13	Lac Deschênes – Di Labio
3000	1984 11/4	Lac Deschênes Di Labio

Canada Goose (Continental congregatory 20,000)

[9] EPOQ = Étude des populations d'oiseaux du Québec

[10] OFNC= Ottawa Field Naturalists' Club

24000	1999/5/1	Beech Grove/ Breckenridge – EPOQ
10200	2002/10/24	Beech Grove/ Breckenridge – EPOQ
14000	2009/3/24	Aylmer – EPOQ
20190	2011/3/4	Point Noire, Breckenridge, Aylmer – EPOQ
12000	2009/11/30	Andrew H Park Ottawa – Skevington
6000	2003/11	Shirley's Bay – ROM
5000	2004/11	Andrew Hayden – ROM
14000	2004/3/29	Aylmer – EPOQ
8000	2009/3/27	Aylmer – EPOQ

Brant (Global 5637 Continental 3800)

4000	2011/5/26	Rapides Deschênes – EPOQ
11000	2011/05/26	Lac Deschênes – Di Labio

Chimney Swift (National at risk 118)

3000	2005/5/23	Deschênes – EPOQ
800	2011/5/17	Deschênes – EPOQ
600	2005/5/22	Deschênes – EPOQ
400	2008/5/21	Deschênes – EPOQ
280	2011/5/17	Below Remic Rapids – Van Herff

Common Nighthawk

250	2007/8/20	Aylmer – EPOQ
120	2009/9/3	Rapides Deschênes – EPOQ

Herring Gull (Continental 3700)

8000	2009/11/8	Andrew Heyden Pk. – Skevington
5000	2003/11/8	Shirley's Bay – Skevington
4500	1997/4/14	Rapides Deschênes – EPOQ
5000	1998/10/27	Rapides Deschênes – EPOQ
4000	2003/4/8	Rapides Deschênes – EPOQ
3500	2002/2/26	Rapides Deschênes – EPOQ
3600	2003/3/17	Rapides Deschênes – EPOQ
3000	2008/3/27	Rapides Deschênes – EPOQ

Greater Black-backed Gull (Continental 1800)

2000	2002/12/15	Parc Moussette – EPOQ
1450	2002/2/26	Rapides Deschênes – EPOQ
1000	2005/4/29	Rapides Deschênes – EPOQ

Ring-billed Gull

222 nests, 400+ adults. 2009/5/22 Ile #3, water purification plant, Prince of Wales bridge – MDDEFP
180 nests, 350+ adults. 2009/5/22 Ile #3, water purification plant, Prince of Wales bridge – MDDEFP

Lesser Scaup

3500	2011/10	Shirley's Bay – ROM
1200	2007/10/24	Rapides Deschênes – EPOQ
1000	2000/10/21	Rapides Deschênes – EPOQ

Black Scoter

700	2009/10/23	Aylmer – EPOQ
600	2006/10/28	Deschênes Rapids – EPOQ

Common Merganser

800	2011/11/15	Pinhey's Point – J. Skevington

Black-crowned Night Heron

55 nests	2009/5/22	Ile #3, near water purification plant, Ottawa Pont Prince of Wales
9 nests	2009/5/22	Ile #4 near water purification plant, Ottawa, Pont Prince of Wales

Started nesting on Conroy Island in 2007

Great Egret

32 (2)	2011/9/12	Ile Conroy – EPOQ (2 nests)
21	2010/8/18	Ile Conroy – EPOQ
3	2009/8/17	Ile Conroy – EPOQ

Tree Swallow

1000	2013/4/21	water purification plant, Mud Lake – B. Ladouceur

Purple Martin	Colonies near Dick Bell Park, Innis Point Bird Observatory, and Park Brebeuf 6 to 12 pairs each
Cliff Swallow	Colony beneath the Champlain bridge 50 to 250 active nests.
Red-headed Woodpecker	Regularly nests in the Torbolton Forest near Constance Bay. Historically nested at Breckenridge.

Appendix 2. Species Accounts and Descriptions

Part A. "Trigger Species"

Brant (Branta bernicla)

Brant is a small, dark goose of the littoral zones of the ocean for much of its non-breeding cycle (September to May), occurring only on freshwater lakes and wetlands during its migration journey from its wintering grounds along both the east and west coasts of southern North America to the Arctic where it breeds (Cornell, 2013).

Brant is not considered at risk across its territory as the population size is very large and the species has an extremely large range (BirdLife International, 2013).

Distribution and Abundance

This species travels through the Lac Dechenes – Ottawa River IBA in late May, stopping for a few to several days on its way to James Bay and then the Hudson Bay lowlands or further north to breed, and on its return journey in October. Brant are typically observed around May 24 in Lac Deschênes from the Dechenes Rapids to Shirley's Bay (e-bird, 2013).

Natural History

Brant nest in relatively dense colonies in the low arctic and are increasingly dispersed towards the high arctic. Egg laying and hatching is synchronised (Reed, 1998). Like many other geese species, Brant lead their young during the first migration and usually mate for life. During the non-breeding season the species remains gregarious, gathering in groups of only a few to several thousand individuals. However extremely large groups are uncommon (BirdLife International, 2013).

A game species, Brant rely on a herbivorous diet of the aquatic plant *Zostera* but have recently increased their reliance on grazing cultivated grasslands and crop fields near the coast on wintering grounds. (Lewis, et al 2013).

Photo credit: Shutterstock

Canada Goose (*Branta canadensis*)

The iconic Canada Goose is easily recognized by its long black neck, brownish chest and white cheeks and chinstrap. Its call is a distinctive honk and it is often seen in large flocks or flying overhead in a v-shaped pattern in the spring and fall.

Distribution and Abundance

Canada Goose inhabits a wide variety of

habitats, including tundra, boreal forest, prairie, agricultural lands and has even become common in urban areas (Cadman, 2007). Its breeding range stretches across Alaska and the Canadian tundra southwards to the northern USA (BirdLife, 2013). It winters in southern North America including Mexico. Over ten distinct races of Canada Goose have been described based on distribution and physical characteristics such as size.

Although the Canada Goose is a mainly migratory species, some populations in the central USA and southern Canada have become resident, the result of captive breeding and release programs in the mid to late 1900s. There has also been a northward range shift observed in which some migratory populations are not traveling as far south in the winter as they used to. This change can be attributed to higher availability of waste grain in fall and winter from farming, changes in hunting pressure and changes in weather (Cornell, 2013).

While there are many Canada Geese that breed in the IBA, the thousands that are observed from late March to early May and occasionally in the fall are mainly migratory birds, travelling between the Atlantic coast or the central- eastern USA and their breeding grounds along James and Hudson Bay.

Natural History

For most of the year Canada Geese are found in flocks composed of family groups and some individuals. Flocks travel day or night and move in a v formation with the most experienced birds taking the lead (Cornell, 2013). In spring, migration follows the retreating snow line and open water, and pairs will break from the flock to defend a nesting territory.

In the fall family groups join into a flock and migrate together. Individuals will return following the same route including visiting the same stopover and wintering sites every year (Cornell, 2013). Canada Goose eats grain from fields, grazes on grass and dabbles in shallow water.

Historical populations were greatly reduced during the early years of settlement in North America. In the 1920s reintroduction efforts began, and a formal reintroduction program was started by the Ontario Ministry of Natural Resources in the 1960s. Today populations are increasing across its range (BirdLife, 2013) despite a significant hunt. The populations that breed in settled areas of southern Canada and the USA do extremely well to the point that they are considered pests in some municipalities.

Photo credit: Shutterstock

Chimney Swift (*Chaetura pelagica*)

Chimney Swifts fly continuously for long periods of time and are almost never seen perched. They are easily identified in flight by their silhouette characterised by long, narrow, curved wings (Cornell, 2013). As a member of the guild of aerial insectivores it has the specialized ability to catch insects while flying. Chimney Swift has a significant role to play in controlling insect populations as a single bird is capable of eating more than 1,000 insects in one day.

Distribution and Abundance

Chimney Swift is associated with urban settings, although it travels to river-edge forest and other edge habitats to forage.

It is easy to believe that Chimney Swift nests in colonies as it is most often seen in large groups funneling into a chimney to roost. However this is not the case. Swifts migrate into Ontario around early May and roost together until late May or early-June when pairs go off to nest by themselves. During this period between arrival from wintering grounds and dispersal to breeding locations, large numbers of Swifts are regularly observed flying over the Ottawa River in the hundreds and even thousands, feeding on the prolific hatches of midges, mayflies and other flying insects in May and early June. This is the period when the species has often surpassed threshold numbers in the IBA.

Chimney Swift typically builds its nest in chimneys, with rarely more than one nest per chimney. The nest is a structure of small twigs held together with saliva which acts as glue, adhering the cup-like formation to the inside wall of a chimney. Extra-parental cooperation has been well established in this species (Birdlife International, 2013). Non-breeding swifts will still stay together in the summer, and are joined by the breeding pairs for the migration journey around the end of August. Chimney swifts breed in eastern North America and winter in north western South America.

Many roosting sites in Ottawa are monitored by "Ontario Swift Watch", a program of Bird Studies Canada. Finding roost sites can be very challenging, while monitoring or stewarding these sites can also be difficult due to private property issues. Ontario Swift Watch recruits local citizens to be on the lookout for chimney swifts, and report active roost sites to the program.

Sites in Gatineau and the Pontiac are monitored by the Regroupement Quebec Oiseaux and the Club des Ornithologues de l'Outaouais. These groups are engaged in stewardship efforts to protect known roost and nesting sites.

No natural nests or roost are known in the region, though habitat does exist (tall very old trees and snags) in regional parks and protected areas.

Natural History

Chimney swifts are easily located by their fluid chattering calls as they bank and swerve seemingly effortlessly in large flocks or small groups. Chimney Swifts do not sit on perches like most birds, but instead cling to the walls of rough, vertical surfaces with their long claws. Before European settlement these birds roosted in caves and hollow tress. The construction of stone and brick chimneys provided an alternative as much of its natural roosting and nesting habitats was removed by logging. The species thrived in urban areas and became common.

Currently, Swift numbers are declining and its was recently listed as Threatened both federally and provincially in Ontario. Many changes to chimney design and the destruction of large chimneys associated with old factories or institutions (e.g. schools or churches) has been identified as a contributing factor to the decline of this species. Also, fewer buildings are being constructed with chimneys as a chimney's function has become obsolete with changes in heating technology. These factors limit the number of available breeding sites to the point where only a portion of the breeding-age adults are able to reproduce, which partially explains the rapid population decline they have experienced in recent years (BirdLife International, 2013).

As an aerial insectivore, Chimney Swift declines may also be related to a reduction in food supply (flying insects) reducing productivity. Factors related to climate change such as a lack of synchronicity between the species migration and food availability (insect hatches for example) and loss of wintering habitats in South America have also been suggested as possible explanations for declines in populations of aerial insectivores. A long-term goal of Chimney Swift recovery in eastern North America is to foster natural nesting habitat in Canada (old growth forest with snags over 40 cm) and shift the breeding population's preferred habitat from chimney's to old growth forests.

Photo credit: Dominic Sherony

Herring Gull (*Larus argentatus*)

Herring Gull is one of the most familiar gulls of the North Atlantic and is often referred to as a "seagull" though it also occurs on lakes, large rivers and even islands.

It takes four years for this large gull species to reach sexual maturity, and it has a variety of plumages during this time which can make identification challenging. Adults have a grey back and white head and under parts. Its bill is long and yellow with a red spot near the tip of the lower mandible. During the winter its head become darker with streaks of white. Juveniles are a uniform dark brown overall with heavily patterned wings and a long, dark grey or black bill. Herring Gulls always have pink legs (Cornell, 2013). The more common Ring-billed Gull is very similar but smaller, with a black ring around the tip of its bill, and with yellow legs.

Abundance and Distribution

Herring Gulls congregate in a diverse array of habitats, always near a food source though. They are loud and competitive predators and scavengers (Cornell, 2013). The Herring Gull has an extremely large range and a large population size. The range of the Herring Gull is expanding south along the Atlantic coast, displacing the Laughing Gull and is in turn being displaced by increasing numbers of Great Black-backed Gulls (Pierotti, 1994).

Herring Gull is commonly observed in the Lac Dechenes – Ottawa River IBA in the fall, winter and spring, particularly along the river shoreline and at the Dechenes and Remic rapids (e-bird, 2013). Highest numbers have been observed from late October to November, and in March and early April. There are no recent records of Herring Gull breeding in the IBA. In contrast, Ring-billed Gull has established colonies on islands within the IBA, and is expanding.

Natural history

Most Herring Gulls within the IBA are likely migrants from the Arctic or James Bay, taking advantage of the Ottawa River and rich feeding areas around the rapids.

The Atlantic coast population of Herring Gulls was hunted for feathers and eggs, nearly resulting in its extinction in the late 1880s (BirdLife, 2013). Populations have since recovered fully, possibly even expanding beyond historical numbers due to both the adaptability of this species and the changing ecological conditions that favour it. The growing number of offshore refuse dumps also attracted gulls (Cornell, 2013).

Photo credit: Colin Rigney

Great Black-backed Gull (*Larus marinus*)

The Great Black-backed Gull is the largest gull species world wide with a domineering attitude to match. This species is distinguished from other gulls by the adult's large, (nearly Eagle-sized) stout body and namesake black back and upper wings. The adults also have a white head, dull pink legs and a big yellow bill with a red spot rear the tip. Juveniles take four years to fully mature and pass through a variety of plumages to adulthood. Juveniles are grey-brown and white with a checkered pattern on their back, have a white tail with a black tip, a black bill and dark flight feathers (Cornell, 2013).

Abundance and Distribution

Great Black-backed Gulls are found in a variety of habitats along the Atlantic coast and the Great Lakes including rocky shores, sandy coasts, large freshwater lakes and rivers (BirdLife International, 2013). It migrates to the ocean coasts in the winter in search of more abundant food sources, although northern breeders will migrate further distances than southern breeders (BirdLife International, 2013).

Feeding opportunistically, this gull hunts or scavenges along rocky shores for fish, small mammals, insects, marine invertebrates, carion, refuse, bird eggs and chicks and even some species of adult birds (BirdLife International, 2013). It forages widely over the ocean and feeds on prey at or near the surface. Sometimes it will even find a pod of humpback whales and feed on fish driven to the surface by the whales (Cornell, 2013).

Great Black-backed Gulls are a common sight in the Lac Deschênes – Ottawa River IBA in the winter. It is often seen at the Deschênes Rapids, and at popular parks along the river such as Andrew Hayden Park and Parc Moussette from November to April (e-bird, 2013).

Natural History

Male and female Great Black-backed Gulls form a monogamous pair bond lasting many seasons, if not for life (Good, 1998). The pair nests on their own or in loose colonies sometime with other species. Within the colony the male establishes a territory which the pair defends, which is often the highest part

of the colony (Cornell, 2013). The pair digs several potential nests and fills them with grass, moss and seaweed before the female chooses one in which to lay her eggs (BirdLife International, 2013).

This species, like other gulls, is frequently seen at garbage dumps. The creation of garbage dumps and other sources of human refuse many have contributed to this species' range expansion (Cornell, 2013).

Once actively hunted for its feathers and eggs in the 1900s (Cornell, 2013), today the Great Black-backed Gull faces population control measures in some regions of its range, and oil contamination continues to be a threat to both eggs and adult birds (Good, 1998). This species has an extremely large range and the population appears to be increasing (BirdLife International, 2013).

Red-throated Loon (*Gavia stellata*)

The Red-throated Loon is the smallest species of loon. During the breeding season (April – November) both males and females are dark grey with a dark red throat. Its face and throat becomes white and their back speckled during the non-breeding season (October-April) (Sibley, 2000). This species also has a slightly upturned and thinner bill than the very similar Common Loon. Red-throated loons are not listed as "at risk" anywhere within their range. (BirdLife International, 2013).

Distribution and abundance

The Red-throated Loon breeds in tundra wetlands and bogs as well as forest ponds in the Arctic regions of the northern hemisphere (North American and Eurasia). It winters in sheltered marine habitat along the Pacific and Atlantic coasts of North America as far as the Southern US as well as on the coast of Portugal and on the Pacific coast of Asia as far south as China (BirdLife International, 2013).

Flocks as large as 200 to 1,200 birds stage on large lakes during migration (BirdLife International, 2013). Small numbers and occasionally large flocks of 200 to 300 Red-throated Loons gather on Lac Dechênes during the spring and fall migration (e-bird, 2013). In 1984 Bruce Di Labio observed an estimated 3000 Red-throated Loons on Lac Deschênes on November 12. The larger and more heavily-built Common Loon also occurs within the IBA during all seasons, likely breeding in the Constance Lake area and just north of the IBA limits in Gatineau Park.

Natural history

Breeding begins in June, although nesting further north start later depending on the timing of the ice thaw. Pairs are monogamous and typically nest in territories isolated from other pairs (Cadman, 2007). Both male and female of the species make vocalizations, often in unison. Individuals form flocks when migrating and wintering.

The Red-throated Loon is the only loon species which regularly forages far from its breeding territory. Its diet consists of marine and freshwater fish as well as aquatic insects, annelid worms and plant matter (BirdLife International, 2013).

Major threats to Red-throated Loons are degradation of habitat and entanglement in fishing nets. Reasons are not well understood for declines noted in populations.

Photo credit: Dave Menke/U.S. Fish and Wildlife Service

Part B. Other species of interest

• Double-crested Cormorant (*Phalacrocorax auritus*) is a prehistoric looking, fish-eating colonial waterbird. It is the most wide spread of the cormorants in North America, and the most frequently seen in freshwater. This species is found throughout the IBA during its migration, and nests on islands from the Prince of Wales bridge to Conroy Island at the Deschênes rapids. It has a large, heavy body covered in glossy black feathers, a thin strong bill and a bright patch of yellow-orange skin exposed on the lower face. The inside of its mouth is bright blue, as are its eyes. In the breeding season adults develop a double crest of black feathers (white in Alaskan birds). Double-crested Cormorant is an expert at diving to catch fish. It spends about half of its time perched with its wings open to dry its feathers. This is necessary since Cormorants produce less preen oil than other birds and their feathers get saturated as they dive. Historically populations were shot and suffered from pesticide poising. Despite continued persecution, Double-crested Cormorant numbers have rebounded and it is now a widespread and abundant species expanding into new areas such as James Bay.

• Great Egret (*Casmerodius albus*) is a long legged heron-like wading bird. Its feathers are completely white with a long neck, long black legs and a yellowish bill. It is a large bird with an impressive wingspan, although slightly smaller than its well known cousin, the Great Blue Heron. In flight the Great Egret tucks in its neck and extends its legs straight behind past the tail. It hunts in the classic heron fashion, slowly wading in shallow water and holding completely still waiting for prey to pass by. When an aquatic animal such as a fish, crayfish, snake or frog passes by, the Great Egret uses its long dagger-like bill to capture it. The Great Egret was hunted nearly to extinction in the late 1800s, mainly for its long feather plumes that it grows in the breeding season. This species is found at the IBA during migration, and is a rare breeder, recently confirmed nesting on Conroy Island. From mid summer into the fall, many Great Egrets can occasionally be found on Shirley's Bay.

• Black-crowned Night Heron (*Nycticorax nycticorax*) is stocky for a heron with a thick neck and a heavy pointed bill. It has a light grey body with a black back and crown, and a black bill. The Black-crowned Night-heron is the most widespread of all the herons. It is a social bird that nests and roosts in groups, although it forages on its own. It spends its days concealed, perched on tree limbs and comes out to forage at dusk and during the night to avoid competition with other herons which use the same area. They are opportunistic feeders and will eat a variety of terrestrial, marine and freshwater species, and even prey on the eggs and young of other birds nesting nearby. The Black-crowned Night-heron is found at the IBA during the breeding season, and nests in trees on islands in the eastern sections of the IBA near the water purification plant for the City of Ottawa near the Prince of Wales Bridge, and also on Conroy Island.

• Ring-billed Gull (*Larus delawarensis*) is seen at the IBA year-round, although is less common in winter. It is the gull species that we associate with fast food restaurants, school years and beaches. Ring-billed Gulls are often seen circling overhead in screeching flocks, looking for food. It is an opportunistic feeders, adept at snatching food from the air. It will eat most things, usually fish, insects, farm grain,

some fruit and berries, and of course discarded (or unattended) human food. Most Ring-billed Gulls nest away from the coast near freshwater, unlike other gull species. The Ring-billed Gull can be distinguished from other gull species by its name sake black band around its bill. It has a white head, body and tail, grey back and wings with black wing tips spotted with white. Its legs and bill are both yellow. Ring-billed Gull nests in several locations within the IBA, including islands near the water purification plant close to the Prince of Wales Bridge, and on Conroy Island.

Waterfowl

Large numbers of waterfowl use the IBA at different times of the year. The Deschênes rapids and the Remic rapids provide open water for hundreds of Common Goldeneye, Common Merganser and Buffleheads throughout the winter. In the fall, thousands of ducks of a wide variety of species use the IBA for feeding and shelter. The Quebec Ministry of Sustainable Development, the Environment, Wildlife and Parks conducted surveys of waterfowl use on the Ottawa River in 2007-2008. Approximately 4000 to 5000 waterfowl were recorded in the IBA on their October, November and April surveys, with Breckenridge Bay and Baie Noire being key concentration point. [11]

Mid October to mid-November is the time that attracts the largest numbers of ducks, with Lesser Scaup being the commonest diving duck, along with impressive numbers of Greater Scaup, Ring-necked Duck, Black Scoter and Long-tailed Duck. Mallard, Black Duck, Wood Duck, American Wigeon and Green-winged Teal are the most common dabblers. The quiet bays east of the Deschênes Rapids on the north side of the Ottawa River, the rapids themselves, along with bays to the north-west, including Breckenridge, Baie Noire and Constance Bay can also attract large numbers of ducks. Shirley's Bay attracts large numbers of dabbling ducks. Two federal species at risk, the Barrow's Goldeneye and the Harlequin Duck, are observed annually in very small numbers in the IBA.

• Lesser Scaup (*Aythya affinis*) is medium-sized diving duck with a dark head and back, a bluish bill, and pale sides or flanks. Its breeding range stretches west from Quebec across the boreal forest into Alaska and includes the prairie potholes of central Canada. It occurs in the Lac Deschênes - Ottawa River IBA in large numbers, (500 to 3500) in October and November. It is most easily observed in the fall downstream of the Deschênes rapids on the north side of the Ottawa River, often in mixed flocks with Greater Scaup and other species. Lesser Scaup forages on invertebrates and bivalves, including mussels. While waterfowl populations are generally on the increase, Lesser Scaup populations have declined over the past several decades.

• Black Scoter is a black, heavy 'sea duck' that breeds in the boreal forest with disjunct population in Quebec, east of Hudson Bay, and from Alaska to the MacKenzie delta. It over-winters of the Atlantic and Pacific coasts of North America. The adult male has a bright yellow bill whereas the female is dark, with a distinctive pale cheek patch and grey bill. Black Scoter is by far the most common of the three scoter species observed in the IBA, occasionally in the hundreds, and once up to 700. It is observed mainly from mid-October to mid-November, often around the Deschênes Rapids or up-stream. Like the previous species, Black Scoter populations have been declining over the past several decades.

Swallows

[11] Toussaint, Daniel and Jocelyn Caron, 2010

Swallows are relatively small (smaller than a Robin) birds with long-pointy wings that spend their lives catching insects on the fly (aerial insectivores). The swallows that regularly occur in the IBA including Tree, Barn, Bank, Cliff and Rough-winged Swallow, and their slightly larger relative, Purple Martin. All species of swallow in the IBA have experienced serious declines over the past several decades, some losing over 90% of their populations in eastern Canada. Barn and Bank Swallow are two recent additions to the COSEWIC [12] list of Threatened wildlife species in Canada. A very large colony of Cliff Swallows occurs beneath the Champlain Bridge. Purple Martin colonies occur at the Britannia Yacht Club, Innis Point Bird Observatory in Ottawa, and near Parc Brebeuf in Gatineau. Barn Swallows nest throughout the rural parts of the IBA. Large numbers of swallows, in the thousands, regularly use the IBA for feeding and foraging, and gather in very large numbers in the spring, particularly late April and May before dispersing to breeding areas, and again in the late summer after breeding and prior to fall migration. Hundreds and even thousands of Tree Swallows have been observed from the water purification plant near Mud Lake and the Deschênes Rapids. Hundreds of Bank Swallows, Cliff Swallows, Barn Swallows and Purple Martins, have also been counted in the IBA. The IBA is an important feeding area for these swallows as large numbers of flying insects regularly hatch from the river, providing a vital source of food.

[12] COSEWIC = Council on the Status of Endangered Wildlife in Canada

Appendix 3. Species At Risk in the IBA

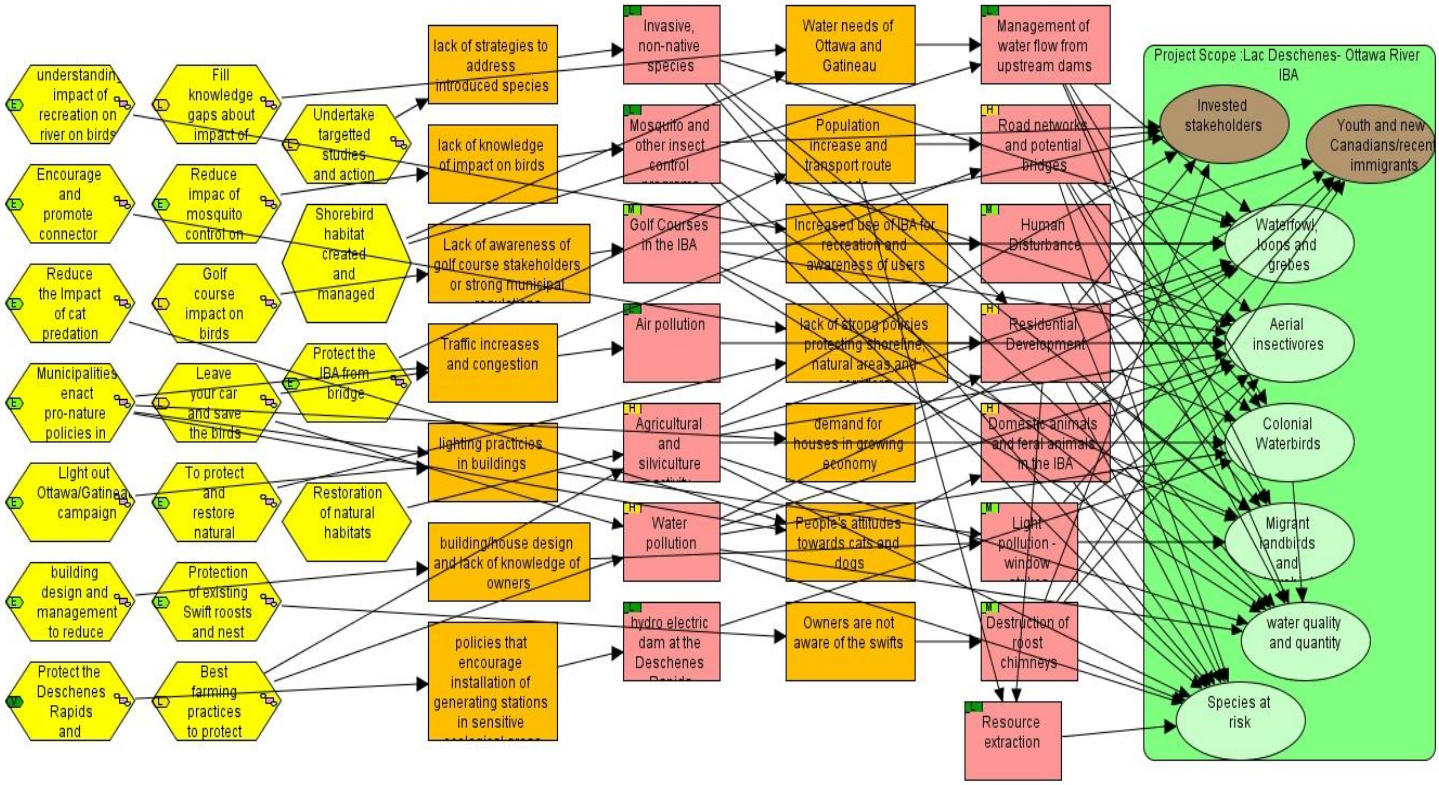
Taxon	Species	Listed Status	When and Where it is seen at the IBA
Birds			
	Black Tern Guifette noire Chlidonias niger	SARA Schedule 1: Not Listed COSEWIC: Not At Risk Ontario: Special Concern Quebec: Not Listed	Rare, migrant, spring, Shirley's Bay
	Bobolink Dolichonyx oryzivorus	SARA Schedule 1: Not listed COSEWIC: Threatened ON ESA: Threatened Quebec: Not Listed	Local breeder: May to August, Dunrobin and Pontiac, pasture
	Common Nighthawk Engoulevent d'Amérique Chordeiles minor	SARA Schedule 1: Threatened COSEWIC: Threatened ON ESA: Special Concern Quebec: Special Concern	Uncommon migrant, late August – early to mid September, Ottawa River corridor
	Eastern Meadowlark Sturnella magna	SARA Schedule 1: Not Listed COSEWIC: Threatened ON ESA: Threatened Quebec: Not Listed	Local breeder, May to August, Dunrobin and Pontiac (Aylmer to Baie Noire), pasture
	Golden Eagle Aigle royal Aquila chrysaetos	SARA Schedule 1: Not Listed COSEWIC: Not At Risk ON ESA: Endangered Quebec: Vulnerable	Rare migrant, fall, winter, spring, anywhere along Ottawa River
	Horned Grebe Grèbe esclavon Podiceps auritus	SARA Schedule 1: Not Listed COSEWIC: Special Concern ON ESA: Special Concern Quebec: Endangered	Uncommon migrant, Ottawa River, spring and fall
	Least Bittern Petit blongios Ixobrychus exilis	SARA Schedule 1: Threatened COSEWIC: Threatened ON ESA: Threatened Quebec: Vulnerable	Rare breeder, Spring and Summer, Shirley's Bay
	Loggerhead Shrike Pie-grièche migratrice Lanius ludovicianus migrans	SARA Schedule 1: Endangered COSEWIC: Endangered ON ESA: Endangered Quebec: Endangered	Rare breeder (perhaps extirpated), Pontiac, spring and summer
	Peregrine Falcon Faucon pèlerin anatum Falco peregrinus	SARA Schedule 1: Special Concern COSEWIC: Special Concern ON ESA: Special Concern Quebec: Vulnerable	Rare breeder and migrant in spring and fall, Ottawa River, downtown Ottawa, Eardley Escarpment
	Red-Headed Woodpecker Pic à tête rouge Melanerpes erythrocephalus	SARA Schedule 1: Threatened COSEWIC: Threatened ON ESA: Special Concern Quebec: Endangered	Rare breeder, Torbolton Forest, Breckenridge
	Red Knot rufa Bécasseau maubèche rufa Calidris canutus rufa	SARA Schedule 1: Endangered COSEWIC: Endangered ON ESA: Endangered Quebec: Special Concern	Very rare migrant, summer, Shirley's Bay
	Short-eared Owl Hibou des marais Asio flammeus	SARA Schedule 1: Special Concern COSEWIC: Special Concern ON ESA: Special Concern Quebec: Special Concern	Rare migrant, open areas, farm fields and wetlands

	Eastern Whip-poor-will Antrostomus vociferus	SARA Schedule 1: Threatened COSEWIC: Threatened ON ESA: Threatened Quebec: Not Listed	Locally rare beeder, large forests in western sector of IBA
Other non-avian species of interest			
	Monarch Danaus plexippus	SARA Schedule 1: Special Concern COSEWIC: Special Concern ON ESA: Special Concern Quebec: Not Listed	Locally uncommon throughout IBA in meadows
	Blanding's Turtle Tortue mouchetée Emydoidea blandingii	SARA Schedule 1: Threatened COSEWIC: Threatened ON ESA: Threatened Quebec: Endangered	Locally uncommon, Mud Lake, Shirley's Bay, along Constance Creek
	Eastern Ribbon Snake Couleuvre mince Thamnophis sauritus	SARA Schedule 1: Special Concern COSEWIC: Special Concern ON ESA: Special Concern Quebec: Special Concern	Locally rare, riparian zones near Fitroy Provincial Park and confluence of Mississipi, Carp and Ottawa Rivers.

Appendix 4. Project Plan For Lac Deschênes Ottawa River Conservation Plan

Miradi allowed us to develop a conceptual plan showing the relationships between the plans different factors. This conceptual model is very organic. The version below reflects the moment that this document was published. In the diagram below, the key factors of the plan are portrayed in different shapes and colours, and their relationships depicted through connecting arrows. On the right side of the diagram, the green polygon represents the Project scope (geographical and temporal), and captures its conservation targets. The five "biological" and one abiotic (water) targets appear as green ovals whereas the two 'human welfare' targets appear as brown ovals. Each target has goals which are presented in Section 12. The red rectangles represent threats to the targets. The orange rectangles represent contributing factors to the threats, and the yellow hexagons on the left represent strategies to address the threats. Arrows represent relationships between factors.

[Main Diagram]



Legend Table
Target
Direct Threat
Contributing Factor

Legend Table
Strategy
Goal
Objective

Appendix 5. Canadian BirdLife Partners

The Canadian Important Bird Areas Program is lead by a partnership of two national organizations, Nature Canada and Bird Studies Canada, which are BirdLife International's official Canadian partners.

Nature Canada (NC)

Nature Canada is a national charity with a mission to protect and conserve wildlife and habitats in Canada by engaging people and advocating on behalf of nature. With strategies based on sound science and a passion for nature, Nature Canada effects change on issues of national significance, including bird conservation, wilderness protection, and species at risk. Nature Canada works in partnership with individuals and groups of the Canadian Nature Network, including affiliated provincial naturalist organizations and local community groups to implement on-the-ground conservation efforts at Important Bird Areas (IBA) across the country. Nature Canada has invested in more than 150 community stewardship projects at local IBAs on diverse conservation actions such as habitat restoration, removal of invasive species, re-vegetation, monitoring and safeguarding endangered species, and environmental education. For further information about Nature Canada, visit www.naturecanada.ca

Bird Studies Canada (BSC)

The mission of Bird Studies Canada is to advance the understanding, appreciation and conservation of wild birds and their habitats in Canada and elsewhere, through studies that engage the skills, enthusiasm and support of its members, volunteers, staff and the interested public. Bird Studies Canada is a not-for-profit organization built on the enthusiastic contributions of thousands of volunteer Citizen Scientists. Data from Bird Studies Canada's volunteer surveys and targeted research projects are used to identify significant population changes and help direct conservation planning. Bird Studies Canada is recognized nation-wide as a leading and respected not-for-profit conservation organization dedicated to the study and understanding of wild birds and their habitats. Bird Studies Canada's web site is www.bsc-eoc.org.

BirdLife International

A pioneer in its field, BirdLife International (BL) is the first non-government organization dedicated to promoting world-wide interest in and concern for the conservation of all birds and the special contribution they make to global biodiversity. BirdLife operates as a partnership of non-governmental conservation organizations in over 120 countries, grouped together within geographic regions (e.g. Europe, Africa, Americas) for the purpose of planning and implementing regional programs ranging from Important Bird and Biodiversity Areas (IBA) to local empowerment. These organizations provide a link to on-the-ground conservation projects that involve local people with local expertise and knowledge. There are currently 20 countries involved in the Americas program throughout North, Central and South America. For further information about BirdLife International, visit: www.birdlife.org.