



Vancouver Bird Strategy

January 2015





VANCOUVER BIRD STRATEGY PARTNERS



Vancouver Bird Advisory Committee. 2015. *Vancouver Bird Strategy*. City of Vancouver

A large flock of ducks is captured in flight over a body of water. The ducks are in various stages of flight, with wings spread, creating a sense of movement. In the background, a city skyline with several tall buildings is visible under a clear sky. The water in the foreground is dark blue with some whitecaps.

VANCOUVER BIRD STRATEGY VISION

By 2020, Vancouver will be a world leader in supporting a year-round rich and diverse assemblage of native birds, accessible to Vancouver residents in every neighbourhood and park in the city, and attracting visitors from all corners of the globe.

EXECUTIVE SUMMARY

Over 250 species of resident, migratory and over-wintering birds are regularly observed in Metro Vancouver. The high visibility and auditory presence of birds creates an experiential link with nature that can foster stewardship of the natural environment and enrich the lives of Vancouver's citizens. Birds also provide important ecosystem services in the form of pest control, pollination and seed dispersal. However, according to *The State of Canada's Birds, 2012* report, habitat loss due to human settlement, industry and forestry has caused a 35% decline in characteristic bird species in the Pacific Coast region of Canada since 1970. Vancouver has a responsibility to reduce the impact that urbanization has on birds along the Pacific Coast.

The Greenest City Action Plan sets out ten goals to make Vancouver the greenest City in the world by 2020. Goal 6: Access to Nature addresses the need to incorporate nature into the urban environment, including a diversity of bird life. The goal of the Vancouver Bird Strategy is to create the conditions for native birds to thrive in Vancouver. The Strategy consists of five action areas that address the biological, social and economic challenges to creating a bird friendly city. Specific activities have been identified for each action area that the City, Park Board, Tourism Vancouver and other partners are currently implementing and recommendations to move forward. In addition, the Strategy identifies key opportunities and challenges to supporting native birds in Vancouver.

TABLE of CONTENTS

- EXECUTIVE SUMMARYiv
- GOAL AND OBJECTIVES2-4
- INTRODUCTION.....5
- CONTEXT – EXISTING POLICY AND REGULATIONS.....7
- CITY BIRD 20158

- KEY OPPORTUNITIES9
 - a. Protect and Restore Habitat..... 10
 - b. Bird Friendly Development 10
 - c. Bird Watching and Tourism 11

- KEY CHALLENGES 12
 - a. Habitat Loss due to Urbanization 13
 - b. Invasive Species..... 14
 - c. Predation and Disturbance by Domestic Pets..... 15
 - d. Building Collisions 16
 - e. Direct Human Disturbance..... 16

- ACTION AREAS 17
 - a. Bird Friendly Landscape Design Guidelines..... 18-19
 - b. Bird Friendly Building Design Guidelines.....20-21
 - c. Research and Monitoring.....22-23
 - d. Arts, Awareness and Education24-25
 - e. Economic Development and Tourism26-27

- APPENDIX A.....30
 - Recommendation Summary Table30-31

- APPENDIX B.....32
 - Bird Friendly Design Guidelines
 - Considerations for Development Permit.....32-33

NOTE:
 Refer to Appendix A for a summary of the recommendations

A large group of ducks of various breeds, including mallards and golden retrievers, are swimming in a body of water. The ducks are densely packed, filling most of the frame. The water is dark and reflects the light. The ducks have various colors, including brown, white, and green. Some have distinctive green heads and yellow bills, while others have more mottled or patterned feathers.

GOAL FOR A BIRD FRIENDLY CITY

In keeping with the Greenest City Action Plan, create the conditions for native birds to thrive in the City of Vancouver.

OBJECTIVES

SUPPORT HABITAT:

Protect, enhance and create habitats for a diversity of native birds.

REDUCE THREATS:

Reduce threats to birds in the urban environment.

ENHANCE ACCESS:

Enhance access to nature for Vancouver residents and visitors to the city.

ENHANCE AWARENESS:

Increase awareness of the importance of birds and their needs.

















GROW BIRD RELATED TOURISM:

Encourage birding tourism and economic development opportunities related to birding.



THE FIVE ACTION AREAS

OBJECTIVES

	SUPPORT HABITAT	REDUCE THREATS	ENHANCE ACCESS	ENHANCE AWARENESS	GROW BIRD RELATED TOURISM
LANDSCAPE DESIGN GUIDELINES					
BUILDING DESIGN GUIDELINES					
RESEARCH AND MONITORING					
ARTS, AWARENESS AND EDUCATION					
ECONOMIC DEVELOPMENT AND TOURISM					

INTRODUCTION

WHY ARE BIRDS IMPORTANT IN VANCOUVER?

Birds bring Vancouver to life with their songs and flight: chatty Black-capped Chickadees, trilling Song Sparrows, soaring Bald Eagles, and colourful Rufous Hummingbirds animate our city. The high visibility and audibility of birds creates an experiential link between people and local biodiversity. Birds also provide ecosystem services in the form of pest control, pollination and seed dispersal. Birding tourism contributes to local economies and accounted for approximately \$36 billion in expenditures in the United States in 2009. For the citizens of Vancouver, experiencing birds is a daily activity that creates a physical and emotional link with nature.



Birds are particularly important in Vancouver because of its location adjacent to the Fraser River delta, a major stop along the Pacific Flyway that extends north to south from Alaska to Central and South America. The Pacific Flyway is traversed by at least a billion birds every year. The diversity of rich habitats in the region, from estuary shorelines to mature coniferous and deciduous forests create a haven for weary migratory birds as well as resident birds that live in the region year-round.

There are also four Important Bird Areas (IBA) in Metro Vancouver: (1) Fraser River Estuary; (2) English Bay and Burrard Inlet; (3) Greater Vancouver Watershed; and (4) Pacific Spirit Regional Park, comprising an area over 1200 km². Vancouver's proximity to these IBAs (a worldwide conservation initiative coordinated by BirdLife International) represents a major opportunity to encourage the greatest diversity and abundance of native birds and thereby enhance access to nature for Vancouver's residents and visitors. The Vancouver Bird Strategy is a priority with important economic, social and environmental benefits as we work towards becoming the Greenest City by 2020.

250 species
of resident, migratory and
over-wintering birds are
regularly observed in
Metro Vancouver



CONTEXT

The Greenest City Action Plan sets out ten goals to make Vancouver the greenest city in the world by 2020. Goal 6: Access to Nature, addresses the need to incorporate nature in the urban environment, including a diversity of bird life. This goal has spurred the development of a number of related strategies that build upon the access to nature vision, including the Biodiversity Strategy, Urban Forest Strategy, Green Operations Environmental Framework, the Vancouver Food Strategy, the Healthy City for All Action Plan and the Environmental Education and Stewardship Action Plan.

The Park Board Strategic Plan, which includes commitments to being a leader in greening with a focus on healthy ecosystems, green operations and engaging people, also supports the Bird Strategy. The Corporate Business Plan provides direction to the City to lead the way on green issues. The Tourism Master Plan will ensure that Vancouver's tourism industry will embrace the vision of the Greenest City 2020 Action Plan, green its operations, and work with the City of Vancouver to develop and promote Vancouver as a world-leading sustainable community and tourism destination.

Vancouver is a leader in Canada when it comes to celebrating birds. World Migratory Bird Day (WMBD) is a United Nations sponsored initiative that recognizes the importance of birds as key indicators of the health of our environment. In 2011 and 2012, Mayor Gregor Robertson signed a proclamation that recognized WMBD.

In 2013 and 2014, Bird Week was proclaimed by the Mayor with the City, Stanley Park Ecology Society, Bird Studies Canada, Nature Vancouver, Vancouver Public Library, Tourism Vancouver and others partnering in a week-long series of events increasing the awareness of birds in the city.

In May 2013, within the context of the Greenest City Action Plan and Metro Vancouver's Regional Biodiversity Strategy, Vancouver City Council and the Vancouver Park Board directed City staff to develop a Bird Strategy for Vancouver.

There are also federal and provincial regulations in place that pertain to birds in Vancouver. Species listed under Schedule 1 of the federal Species at Risk Act (SARA) are extirpated, endangered or threatened in Canada and are afforded protection under the law. The purpose of the federal Migratory Birds Convention Act (1994) is to protect and conserve migratory birds and their nests and eggs. For a complete list of the species protected by the Act, refer to the Environment Canada website.

The British Columbia government lists species that are imperilled in the province through the Conservation Data Centre. The BC Wildlife Act protects birds, nests and eggs, and provides year-round protection to a select group of birds' nests including those of Bald Eagles and Great Blue Herons. The Park Board also follows *Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia* developed by the BC Ministry of Environment.

City of Vancouver's CITY BIRD 2015

Black-capped Chickadee



Vancouver's inaugural City Bird competition was held in 2014 to select a City Bird for 2015. The winner was the Black-capped Chickadee with over 75,000 votes more than the second place Varied Thrush. This can-do bird loves to explore and is always the first to find a feeder in the area. It's a social, popular bird who lives in the forest and in our neighbourhoods, hides food to eat later, and has a well-known whistled song.

key opportunities

1/

protect and
restore habitat

2/

bird watching
and tourism

3/

bird friendly
development



KEY OPPORTUNITIES

PROTECT AND RESTORE HABITAT

Vancouver is known for its proximity to stunning natural environments; mature forests, riparian corridors and coastal shorelines provide habitat for a diversity of birds and make the city a beautiful place to live. Vancouver's world-class parks such as Stanley Park and Queen Elizabeth Park attract an abundance and diversity of birds and people.



Stanley Park, Vancouver's largest park, attracts the highest diversity of birds in the city.

Stanley Park, Vancouver's largest park and a national historic site of Canada, is an excellent example of ongoing protection and maintenance of existing bird habitat in an urban centre. Through a partnership between Stanley Park Ecology Society and the Vancouver Park Board, best management practices for species of significance including nesting eagles, small owls, cavity nesting birds and migratory birds, have been developed and implemented. This partnership is a model that could be replicated to promote the protection and restoration of habitat for birds throughout the city.



Habitat Island at Southeast False Creek provides habitat and allows people to experience nature in the city.

BIRD FRIENDLY DEVELOPMENT

Vancouver has an opportunity to become a global leader in bird friendly development. Habitat Island and Hinge Park at Southeast False Creek, created as part of the Olympic Village, is a model for sustainable urban development that integrates nature into the city. A stormwater-fed freshwater wetland and rocky intertidal zone create valuable habitat for waterfowl. Bald Eagles have been spotted perching on the branches of the Douglas Fir snags at Habitat Island.

Another example of a large-scale development that incorporates bird habitat is the River District, located on a 53-hectare brownfield site on the Fraser River in southeast Vancouver. *River District Urban Songbird Habitat: Landscape Design Guidelines* were written to ensure that songbird habitat is integrated into the design of this new community. This project is an example of how Vancouver is taking steps towards incorporating bird friendly design principles into urban development.

BIRD WATCHING AND TOURISM

Bird watching is one of the fastest growing leisure activities in North America, estimated to generate billions of dollars in tourism and recreation industries. According to a 2006 study, more than 1.8 million Canadians participated in a multi-day bird watching activity within the past two years. The Vancouver area is recognized internationally as a year-round hotspot for birds and a desirable destination for bird watchers. Although there is very little research on the current economic impact of bird watchers or birders living in or visiting Vancouver, opportunities exist to increase the awareness of Vancouver as an important destination in the birding market.

A report released by the U.S. Fish and Wildlife Service which focuses specifically on birders in the U.S. revealed that bird watchers spent an estimated \$15 billion on trip expenditures and \$26 billion on equipment expenditures in 2011. Promoting bird watching in Vancouver has economic, social and environmental benefits that contribute to increasing awareness and stewardship of birds while simultaneously growing the green economy.



In the U.S. in 2011,
bird watchers spent
\$15 billion
on trip expenditures.

key challenges

1/
habitat loss
due to
urbanization

2/
invasive
species

3/
predation and
disturbance by
domestic pets

4/
building
collisions

5/
direct human
disturbance



KEY CHALLENGES

HABITAT LOSS DUE TO URBANIZATION

Habitat loss is the leading cause of bird population declines in British Columbia. According to *The State of Canada's Birds, 2012* report, habitat loss due to human settlement, industry and forestry has caused a 35% decline in characteristic bird species in the Pacific Coast region of Canada since 1970. In Vancouver, it is estimated that approximately 87% of the forest cover has been replaced with urban development since the 1850's. As urban development increases, habitat loss is expected to become the single largest driver of bird extinction in this century.

Scientists have been increasingly interested in the effects of urbanization on birds and the relationship is complex. An early study, conducted in Vancouver in 1979, found that the total bird density is actually higher in urban areas than rural areas, but species richness is lower, due to the dominance of a few introduced species. Therefore, the Vancouver Bird Strategy focuses on creating the conditions for native birds to thrive.

A study performed in Vancouver in 2003 found that species richness declined in relation to increasing urbanization. The same study found that site-scale habitat features, like mature trees and fruit bearing plants, is correlated with increased bird diversity. When site-scale habitat features are multiplied across the landscape, the result is a green, bird friendly city.



Stanley Park is a forest remnant; approximately 87% of Vancouver's forest cover has been replaced with urban development since the 1850's.

This issue is now being studied on a global scale. A recent study using the largest existing global dataset for birds in cities revealed that, although urbanization has caused declines in bird populations, urban areas still retain endemic native species. Researchers found that cities retain about 8% of their native bird species. On a global scale, cities support close to 20% of the world's bird species. This study suggests that the conservation and restoration of vegetation within urban landscapes could support higher concentration of native bird species and provide opportunities for urban wildlife to thrive.

Habitat loss has caused a **35% decline** in characteristic bird species in the Pacific Coast region of Canada since 1970.

INVASIVE SPECIES

Invasive plants and animals are non-native organisms that spread quickly and pose a threat to local ecosystems and species, further contributing to habitat loss. Invasive plants are common in urban landscapes where they thrive on disturbed sites and outcompete native plants. Native bird species are less abundant within urban landscapes where non-native understory vegetation is more common than a diversity of native vegetation. Invasive plants must be actively managed if native vegetation is to be maintained and native birds are to thrive in our urban forests.

The management of invasive plants is a complex issue as it can pose a threat to birds if it disturbs nest sites and may even be in violation of the federal Migratory Birds Convention Act (1994) or the BC Wildlife Act. In addition, some invasive plants, particularly Himalayan Blackberry, can provide food and shelter for some birds, and research should inform urban landscape management practices.

Invasive and nuisance birds out-compete native birds, thereby causing overall bird diversity to decline, but it can be very difficult to exclude invasive birds. More research is needed to investigate the complex problem of invasive plants and animals and how they impact Vancouver's native bird populations.



A House Finch eating invasive blackberries. Invasive plants must be managed with care as some birds will use them for nesting and foraging habitat.



English ivy is an invasive plant and will outcompete native plants that provide ideal habitat for native birds.

PREDATION AND DISTURBANCE BY DOMESTIC PETS

Predation by feral and house cats is considered to be the largest source of direct human-related bird mortality, with an estimated loss of 100-350 million birds per year in Canada. The extent of the problem is not currently known in Vancouver and should be investigated further to inform management.

Options to mitigate this loss are complex and can be controversial. For example, trap, neuter and release programs for feral cat colonies are considered to be largely ineffective in reducing colony size and can be unpopular among local residents. However, many stewards of these cat colonies and others concerned with cat welfare believe this is an acceptable option.

Keeping cats indoors can help reduce the threat of bird predation from cats and is safer for cats. The BCSPCA strongly recommends keeping cats indoors to protect them from traffic accidents, contagious disease and predation from wild animals.

Dogs also pose a threat to birds when they are allowed to run off-leash, causing disturbance, injury or even death to birds. Dogs should be kept on leash except in designated off-leash areas as per the Animal Control By-Law No. 9150. More cost-effective and humane solutions to minimize predation and disturbance of birds by domestic pets are needed.



It is estimated that
100 - 350 million birds
die every year in Canada
due to predation by feral
and house cats.

In Canada, an estimated
16-42
million birds
collide with glass on
buildings every year.



BUILDING COLLISIONS

An estimated 16-42 million birds collide with clear and reflective glass on buildings and structures of all sizes each year in Canada. Of the top ranking sources of mortality, bird collisions with buildings is a threat for which there are well-documented solutions and for which Vancouver can play a clear role by implementing *Bird Friendly Building Design Guidelines*.

Although bird collisions are known to occur in Vancouver, the extent of the problem is not known, as a monitoring program to assess bird collisions and evaluate buildings does not currently exist. A monitoring program is needed in Vancouver to learn more about the problem of bird collisions in our city.

DIRECT HUMAN DISTURBANCE

Human activity is not always compatible with bird habitat. Activities like off-trail hiking and biking can cause disturbance to birds, particularly ground nesting birds, and trail networks can fragment habitat patches. Humans are perceived as a threat by many birds and when humans approach, birds will move away, resulting in less time for feeding and tending to their young. Direct human disturbance is also a common issue along shorelines and beaches where recreational users can conflict with resting and feeding waterfowl and shorebirds.

Adopting strategies that simultaneously increase recreational users' appreciation of the parks they enjoy and the birds and other nature around them, and minimizing disturbance impacts at key times of year, can cultivate voluntary stewardship and protect important habitat patches from direct human disturbance.

Vancouver Bird Strategy action areas



1/
landscape
design
guidelines



2/
building
design
guidelines



3/
research
and monitoring



4/
art,
awareness
and education



5/
economic
development
and tourism



LANDSCAPE DESIGN GUIDELINES



The *Bird Friendly Landscape Design Guidelines* (refer to Appendix B) will be applied on a voluntary basis to protect, enhance and create bird habitat in the city, as well as reduce threats to birds in the urban environment. The guidelines are targeted towards developers, planners and designers and public landowners and private landowners. These guidelines provide strategies to protect birds and enhance their habitats and are for use when developing new public and private landscapes. This document will draw from existing best management practices, relevant scientific literature and emerging strategies.



Hinge Park at Southeast False Creek is a model for sustainable urban development that integrates nature into the city.

CURRENT ACTION

- Park Board manages parks and street trees which include a variety of habitats and natural and naturalized areas, and has had an integrated pest management (IPM) program in place since 1987.
- The City supports non-profit societies who manage natural habitats across Vancouver.
- The City requires or promotes bird habitat on private property through various by-laws (e.g. tree by-law), guidelines (e.g. waterwise landscape guidelines), and awareness programs.
- Best Management Practices for Species of Significance in Parks are intended for the management of certain wildlife species including most bird groups and species at risk.
- In 2014, Park Board banned the use of neonicotinoids in parks.
- Stanley Park Ecological Action Plan provides priority actions for Vancouver’s largest green space.
- Stanley Park Invasive Plant Management Plan outlines an invasive plant species management approach including priorities and activities used in Stanley Park which are translatable to other Vancouver parks.
- Stanley Park Forest Management Plan includes guidelines for wildlife, invasive species, tree disease, etc.
- Creation of bird habitat in parks such as Hinge, Creekway and Jericho.
- The City currently encourages the construction of green roofs and walls in new developments.

RECOMMENDATIONS

- 1.1 Adopt and promote voluntary *Bird Friendly Landscape Design Guidelines* for developers, planners and designers and public and private landowners.
- 1.2 Apply and integrate *Bird Friendly Landscape Operational Guidelines* into public land operations and maintenance for staff, stewardship groups and landscape industry personnel.
- 1.3 Develop and promote voluntary *Bird Friendly Residential Landscape Guidelines* and other resources for homeowners and renters.
- 1.4 Apply the *Bird Friendly Landscape Design Guidelines* and *Bird Friendly Landscape Operational Guidelines* to parks, school grounds and other civic properties, working with City staff and Vancouver School Board to address potential challenges.



Example of habitat enhancement for birds at a pond in Vanier Park.



BUILDING DESIGN GUIDELINES

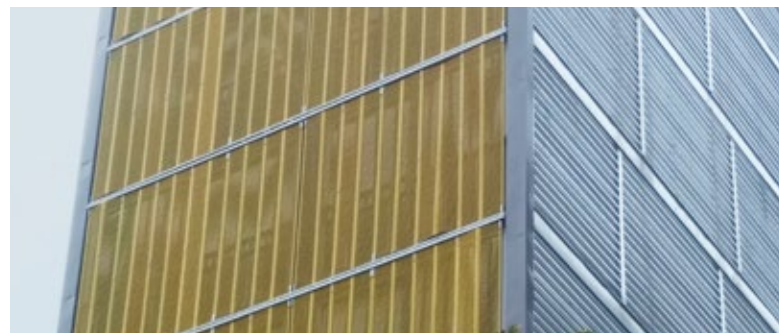


Collisions with glass are considered to be one of the largest sources of direct human-related mortality for birds in North America. Awareness of this problem is growing and the *Bird Friendly Building Design Guidelines* (refer to Appendix B) will help reduce bird deaths caused by collisions with buildings. Birds collide with clear and reflective glass on buildings and structures of all sizes, including homes, bridges and guardrails. Collisions occur day and night and throughout the year.

The *Bird Friendly Building Design Guidelines* are intended to be used by planners, architects, designers, builders and homeowners to provide a basic understanding of bird friendly building design and to offer practical solutions that can be applied to new buildings and retrofit existing structures.



An example of a bird friendly design in Vancouver.



An example of a bird friendly design in Vancouver.

CURRENT ACTION

- The City's *Rezoning Policy for Sustainable Large Developments* requires all large development projects to review opportunities to support urban agriculture, trees and other green initiatives through the rezoning process.

RECOMMENDATIONS

- 2.1 Apply and promote voluntary *Bird Friendly Building Design Guidelines* for planners, architects, designers, builders and homeowners to provide a basic understanding of the issue of bird collisions and bird friendly building design.
- 2.2 Initiate pilot projects on civic facilities to reduce the threat of bird collisions and explore further integration into all new City-owned developments.
- 2.3 Explore solutions to the impact of light pollution on birds and select City-owned buildings and infrastructure of special concern to demonstrate light pollution reduction.





RESEARCH AND MONITORING

Research and monitoring of birds in Vancouver has been pursued by a number of researchers and organizations, however more research and monitoring is required. Local naturalists groups and post-secondary students have been collecting data, and national initiatives such as Christmas Bird Counts have been ongoing for many years.

Data on birds in the city has been increasing with the growing trend of birders recording sightings through online resources such as eBird. The primary data management location for monitoring and sightings in Vancouver is Bird Studies Canada's Nature Counts website. Research is pursued by a variety of groups and stored in a variety of places, so although there is much known about birds in Vancouver, more could be done to centralize access to this information.



CURRENT ACTION

- The primary non-governmental organizations that monitor birds in Vancouver include:

Bird Studies Canada - Christmas Bird Counts, Breeding Bird Atlas, Beached Bird Survey, Important Bird Area program (with BC Nature), Coastal Waterbird Survey, etc. All data are publicly and freely available online at www.naturecounts.ca.

Stanley Park Ecology Society - English Bay-Burrard Inlet IBA caretaker, Vancouver Bald Eagle and Great Blue Heron nest monitoring, various other Stanley Park bird monitoring programs.

Nature Vancouver - bird checklist, as well as various other programs and publications.

- Previous research studies on urban bird diversity have been conducted by UBC Geography Department and governmental agencies such as Environment Canada have data on some bird populations.
- eBird online resources (www.ebird.ca), run by Bird Studies Canada in partnership with Cornell Lab of Ornithology, provides data on bird abundance and distribution at a variety of spatial and temporal scales.

RECOMMENDATIONS

- 3.1 Establish a bird research and monitoring advisory group with associated agencies, organizations and academic partners to compile and standardize bird data collection and reporting protocols.
- 3.2 Explore opportunities for a citywide research and monitoring program to conduct and compile data from bird surveys, create habitat maps, monitor bird collisions, and investigate other important research topics on urban bird populations.
- 3.3 Evaluate City-owned buildings for bird collisions to assess the extent of the problem.
- 3.4 Monitor and assess the effectiveness of the *Bird Friendly Design Guidelines*.



Monitoring by the Canadian Wildlife Service and thousands of volunteers has found clear trends in bird populations in Canada. Barn Swallows, previously a common bird in Canada, have declined by over 70% across the country and by over 90% in our Pacific Coast region since the early 1970s.



ARTS, AWARENESS AND EDUCATION



Arts and awareness programs can engage and educate people about birds in Vancouver in a fun and creative way. As a public engagement tool, the Arts can draw attention to the importance of birds, bird habitat and urban biodiversity. Art makes ideas accessible by representing them in alternative and creative formats, whether visual, auditory or tactile. Raising awareness of issues through creative mediums can stimulate discourse and an appreciation for birds in people of all ages.

Educating the public about threats to birds is an important step towards protecting birds in Vancouver and activating citizens. Education about native birds and their needs within the urban environment is essential for the successful implementation of the Vancouver Bird Strategy and for the conservation of birds in the city. Awareness about birds among Vancouverites is growing due in part to an increasing interest in birding as a recreational activity as well as through concerted efforts by non-governmental organizations to raise awareness of bird conservation.

Residents would benefit from information about what they can do for birds in their own backyards. City staff and developers should be made aware of threats to birds and their habitat requirements to ensure that birds are considered during new developments as well as within existing operational regimes.



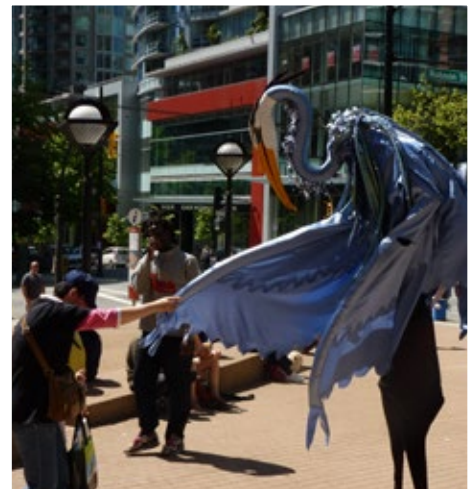
CURRENT ACTION

- In 2011 and 2012, Mayor Gregor Robertson signed a proclamation that recognized World Migratory Bird Day. In 2013 and 2014, Bird Week was proclaimed by the Mayor with the City, Stanley Park Ecology Society, Bird Studies Canada, Nature Vancouver, Vancouver Public Library, Tourism Vancouver and others partnering in a week-long series of events.
- Awareness projects and celebrations have been integral parts of the public engagement strategies of many of our partner organizations.
- Past community art projects such as Mainly for the Birds, Strathcona Pavilion Frieze and the current Bird Project Fieldhouse Residency engage people in the creative process to further increase awareness.



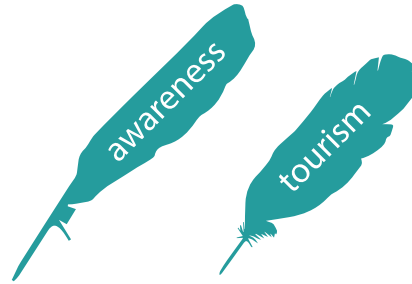
RECOMMENDATIONS

- 4.1 Increase awareness through the continuation and expansion of Bird Week and other events.
- 4.2 Develop a communication strategy to support the Vancouver Bird Strategy Objectives.
- 4.3 Develop educational programs and materials to inform different audiences about bird conservation (e.g. how to reduce bird collisions with windows).
- 4.4 Develop a residential bird habitat program and educational material to engage the public in bird conservation on private property.
- 4.5 Engage artists and the creative community in highlighting, profiling and involving the larger community in discussion and awareness of birds.
- 4.6 Continue the annual City Bird competition to increase public awareness and generate a high profile for birds.
- 4.7 Co-ordinate with the BCSPCA on an awareness campaign to educate people about the impact of domestic pets, especially cats, on birds.





ECONOMIC DEVELOPMENT AND TOURISM



There is very little research at the present time on the economic impact of bird watchers or birders living in or visiting Vancouver.

A report released by the U.S. Fish and Wildlife Service which focuses specifically on birders in the U.S. revealed that bird watchers spent an estimated \$15 billion on trip expenditures and \$26 billion on equipment expenditures in 2011. According to the agency, in 2011 48 million people in the U.S. age 16 or older watched, fed, and/or photographed birds. Relatively equal numbers of men (46%) and women (54%) participated. Almost 42 million watched, fed, and photographed birds around the home, with around 20 million traveling away from home to enjoy birds (an increase of 8% over the 2001 survey).

As the report suggests, this increasing interest in nature tourism offers new economic opportunities for Vancouver.

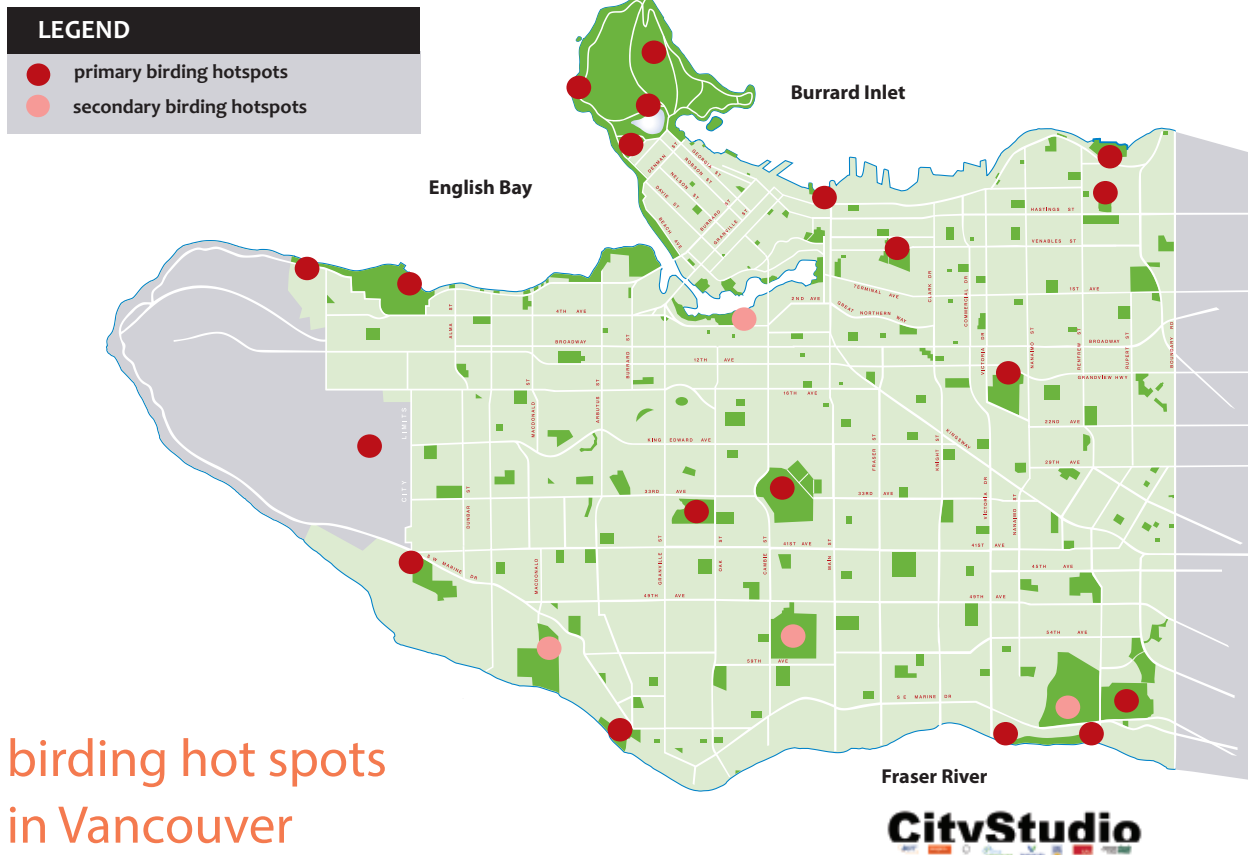


CURRENT ACTION

- Tourism Vancouver’s bid to bring the International Ornithological Congress to Vancouver in 2018 was successful.
- Bird Week is promoted on the City of Vancouver and Tourism Vancouver websites and marketing channels.
- Stanley Park Ecology Society, VanDusen Botanical Garden and Nature Vancouver offer bird-walking tours in Vancouver.
- Although not native species, the Bloedel Conservatory provides a unique climate-controlled experience to visit more than 100 free-flying exotic birds.

RECOMMENDATIONS

- 5.1 Seek opportunities to host large bird conferences in Vancouver in the future.
- 5.2 Establish a comprehensive resource inventory for Vancouver’s birding products and experiences by beginning an audit of existing contacts, products, locations, venues and programs.
- 5.3 Develop Vancouver-specific birding resources geared towards tourism.
- 5.4 Increase the awareness of Vancouver as a destination for the emerging birding market and build content about birding for marketing material including websites, blogs and visitor guides.
- 5.5 Expand birding offerings for visitors to Vancouver, increase awareness of them and encourage longer tourist visits through strategic partnerships with tour operators in Vancouver.



PARTNERS

The City of Vancouver partnered with a number of organizations to form the Vancouver Bird Advisory Committee and develop the Bird Strategy, and recognizes the need to continue to build partnerships as we move forward towards a more bird friendly city. The Committee will continue to advise on issues related to birds and oversee the implementation of the Vancouver Bird Strategy.

VANCOUVER BIRD ADVISORY COMMITTEE MEMBERS AND PARTNERS

- Bird Studies Canada
- Environment Canada
- Nature Vancouver
- Pacific Wildlife Foundation
- Stanley Park Ecology Society
- Tourism Vancouver
- UBC Greenest City Scholar Program
- Vancouver Artist Studio Residencies in Parks
- Vancouver Board of Parks and Recreation
- Vancouver - Corporate Communications
- Vancouver - Facilities Planning and Development
- Vancouver - Planning and Development Services
- Vancouver Public Library
- Vancouver School Board
- Vancouver - Sustainability Group

PHOTO AND IMAGE CREDITS (BIRD NAMES)

Right to left, and top to bottom where applicable.

- Page i, Robyn Worcester (Red-winged Blackbird)
- Page ii and iii, Rob Butler (Rufous Hummingbird)
- Page iv, Stanley Park Ecology Society (Scaup and Scoter)
- Page 2, Robyn Worcester (Mallard and American Coot)
- Page 6, Tom Middleton (Song Sparrow)
- Page 8, Martin Passchier
- Page 9, Mark White (Snow Goose)
- Page 10, both photos CofV
- Page 11, Rob Butler
- Page 12, Liron Gertsman (Osprey)
- Page 13, Stanley Park Ecology Society
- Page 14, Ralph Hocken, Wikimedia Commons
- Page 15, Stock Photo
- Page 16, Christine Sheppard
- Page 17, Nick Page, Michele Campbell, Karen Magill, Ann Hohenberger, Laslovarga
- Page 18, CofV
- Page 19, Michele Campbell
- Page 20, Michele Campbell
- Page 21, all photos Christine Sheppard
- Page 22, Robyn Worcester (Great Blue Heron)
- Page 23, Ken Billington
- Page 24, Genevieve Raiche-Savoie
- Page 25, Genevieve Raiche-Savoie, CofV, Genevieve Raiche-Savoie, CofV
- Page 26, Rockwood Adventures, Stanley Park Ecology Society
- Page 27, CityStudio
- Page 29, Tom Middleton (Rufous Hummingbird)






Layout and graphic design by Michele Campbell and Genevieve Raiche-Savoie















Appendix A

RECOMMENDATION

SUMMARY TABLE

RECOMMENDATIONS	SHORT TERM (2 Years)	LONG TERM (5 Years)
1.1 Adopt and promote voluntary <i>Bird Friendly Landscape Design Guidelines</i> for developers, planners and designers and public and private landowners.		
1.2 Apply and integrate <i>Bird Friendly Landscape Operational Guidelines</i> into public land operations and maintenance for staff, stewardship groups and landscape industry personnel.		
1.3 Develop and promote voluntary <i>Bird Friendly Residential Landscape Guidelines</i> and other resources for homeowners and renters.		
1.4 Apply the <i>Bird Friendly Landscape Design Guidelines</i> and <i>Bird Friendly Landscape Operational Guidelines</i> to parks, school grounds and other civic properties, working with City staff and Vancouver School Board to address potential challenges.		
2.1 Apply and promote voluntary <i>Bird Friendly Building Design Guidelines</i> for planners, architects, designers, builders, and homeowners to provide a basic understanding of the issue of bird collisions and bird friendly building design.		
2.2 Initiate pilot projects on civic facilities to reduce the threat of bird collisions and explore further integration into all new City-owned developments.		
2.3 Explore solutions to the impact of light pollution on birds and select City-owned buildings and facilities of special concern to demonstration light pollution reduction.		
3.1 Establish a bird research and monitoring advisory group with associated agencies, organizations and academic partners to compile and standardize bird data collection and reporting protocols.		
3.2 Explore opportunities for a citywide research and monitoring program to conduct and compile data from bird surveys, create habitat maps, monitor bird collisions, and investigate other important research topics on urban bird populations.		
3.3 Evaluate City-owned buildings for bird collisions to assess the extent of the problem.		
3.4 Monitor and assess the effectiveness of the <i>Bird Friendly Design Guidelines</i> .		

RECOMMENDATIONS	SHORT TERM (2 Years)	LONG TERM (5 Years)
4.1 Increase awareness through the continuation and expansion of Bird Week and other events.		
4.2 Develop a communication strategy to support the Vancouver Bird Strategy Objectives.		
4.3 Develop educational programs and materials to inform different audiences about bird conservation (e.g. how to reduce bird collisions with windows).		
4.4 Develop a residential bird habitat program and educational material to engage the public in bird conservation on private property.		
4.5 Engage artists and the creative community in highlighting, profiling and involving the larger community in discussion and awareness of birds.		
4.6 Continue the annual City Bird competition to increase public awareness and generate a high profile for birds.		
4.7 Co-ordinate with the BCSPCA on an awareness campaign to educate people about the impact of domestic pets, especially cats, on birds.		
5.1 Seek opportunities to host large bird conferences in Vancouver in the future.		
5.2 Establish a comprehensive resource inventory for Vancouver's birding products and experiences by beginning an audit of existing contacts, products, locations, venues and programs.		
5.3 Develop Vancouver-specific birding resources geared towards tourism.		
5.4 Increase the awareness of Vancouver as a destination for the emerging birding market and build content about birding for marketing material including websites, blogs and visitor guides.		
5.5 Expand birding offerings for visitors to Vancouver, increase awareness of them and encourage longer tourist visits through strategic partnerships with tour operators in Vancouver.		

Appendix B

BIRD FRIENDLY DESIGN GUIDELINES CONSIDERATIONS FOR DEVELOPMENT PERMIT

A. LANDSCAPE DESIGN

1. Problem: Habitat Loss

According to *The State of Canada's Birds, 2012*, habitat loss due to human settlement, industry and forestry has caused a 35% decline in a representative sample of bird species in the Pacific Coast region of Canada since 1970.

2. Goal

To protect, enhance and create bird habitat in the city, as well as reduce threats to birds in the urban environment.

3. Design Process

- a. **SURVEY** the site for birds and existing bird habitat features. Developers should consider hiring a qualified environmental professional to survey and document nesting sites and any bird supportive habitat, in order to inform design choices such as building location and vegetation retention.
- b. **REDUCE THREATS** to manage the impact of urbanization on birds. Aim for net zero reduction in bird habitat, mimic hydrological systems through storm water management, restore riparian habitat through day-lighting streams and pursue traffic calming to reduce noise pollution and bird deaths due to vehicle collisions.
- c. **CREATE** bird habitat to increase bird diversity and abundance. Providing opportunities for food, shelter, nesting sites and water, creates or restores habitat for birds throughout Vancouver.
- d. **MAINTAIN** new and existing bird habitat to increase bird diversity and abundance. Create a long term management guide that informs maintenance staff and land owners with strategies and best practices for their new bird friendly landscapes.
- e. **MONITOR** changes in bird populations and adapt site design. For large public sites such as parks and other government lands, monitoring programs should be established to identify problems and allow for adjustments. For private lands, property owners are encouraged to seek the help of qualified environmental professionals and local birders to assess the success of their landscape installations.

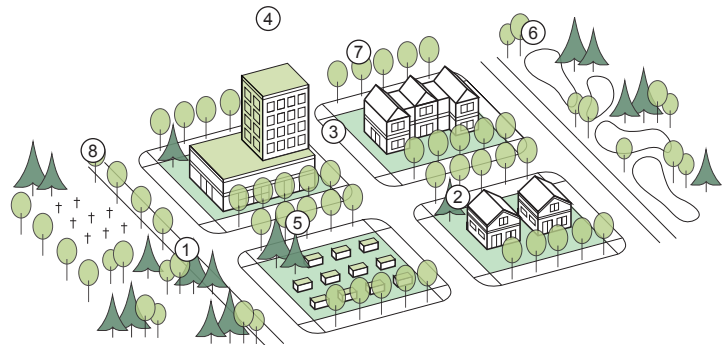
4. Landscape Design Guidelines

- a. Protect and enhance large patches of habitat.
- b. Green the urban landscape by planting native trees and shrubs for birds.
- c. Incorporate a mix of habitat types including: coniferous forest, deciduous/mixed forest, shrubland, meadow, freshwater wetland, riparian and coastal shoreline.
- d. Increase vertical vegetation structure by planting and maintaining native trees and shrubs.
- e. Select a diversity of native and non-invasive plants.
- f. Control invasive plants without disturbing breeding birds.
- g. Minimize direct disturbance from humans.
- h. Reduce light pollution.
- i. Minimize lawn area.
- j. Incorporate snags and downed wood.
- k. Provide water for birds to drink and bathe.

NOTE: It is your responsibility to be aware of and comply with provincial and federal legislation protecting birds including the BC Wildlife Act and the Migratory Bird Convention Act.

OPPORTUNITIES FOR BIRD FRIENDLY DEVELOPMENT ON PUBLIC AND PRIVATE LAND

- | | |
|--------------------------|----------------------|
| 1. Parks and Gardens | 5. Community Gardens |
| 2. Residential Gardens | 6. Golf Courses |
| 3. Green Streets | 7. School Grounds |
| 4. Green Roofs and Walls | 8. Cemeteries |



Please refer to *Bird Friendly Design Guidelines: Explanatory Note*.

Diagrams are not to scale.

B. BUILDING DESIGN

1. Problem: Building Collisions

Windows are considered to be one of the largest sources of direct human-caused mortality for birds in North America. Glass, whether reflective or clear, is effectively invisible to birds. Birds collide with windows because they are trying to fly into the habitats they see beyond or reflected by the glass. It is estimated that across Canada, 16-42 million birds are killed annually by collisions with buildings. Bird collisions with windows are indiscriminate; they can occur anywhere, at any time, day and night, year-round, across urban and rural landscapes, affecting migratory, resident, young, old, large, small, male and female birds.

2. Goal

To help reduce bird deaths caused by collisions with buildings.

3. Building Design Guidelines

a. Increase visibility of glass.

The height that presents the highest collision probability is up to mature tree height, or up to the fourth floor of a building, whichever is highest.

- i. Apply visual markers to the exterior of glass surfaces (markers on the interior surface of glass are less effective). Gaps between markers should be no greater than 5 cm vertically or 10 cm horizontally.

Applied visual markers are not an optimal solution for all building types; visibility may be better improved with greater use of ii. and iii

- ii. Interrupt reflective glass by increasing the density of external visual markers including spandrel panels and mullions.
- iii. Other strategies can include adapted fenestration patterns, external blinds, shutters, sunshades, grilles, louvers or artwork.
- iv. Design corner windows, glass walkways, glass railings, and other similar features to reduce the appearance of clear passage to sky or vegetation.

b. Dampen reflections.

- i. Use canopies or sunshades to cover windows at ground level.
- ii. Use screens, drapes or blinds to increase the opacity of clear glass.

c. Reduce the dangers of attractants and landscape reflections.

- i. Ensure outdoor landscaping is at appropriate distance from glass, to reduce reflections. If this is not possible, landscaping should occur directly (0-1 m) adjacent to glass or measures should be taken to make glass visible.
- ii. Avoid interior landscaping near windows.
- iii. Locate bird feeders 0-1 m from windows.

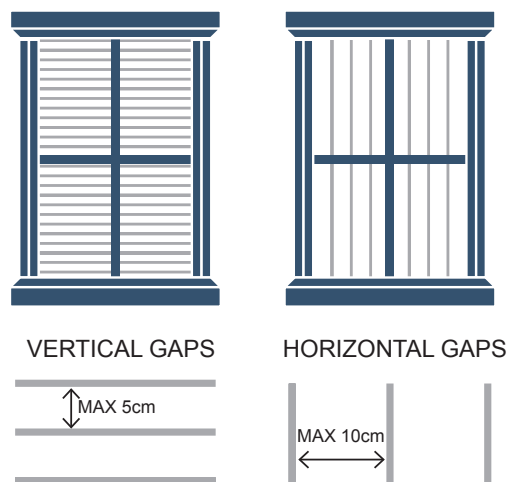
d. Reduce light pollution.

- i. Reduce unnecessary light-spill through shielding, targeted lighting and reduction of vanity lighting.
- ii. Down lighting should be selected over up lighting and floodlighting should be avoided.
- iii. Use the minimum wattage fixtures.

e. Reduce the dangers of open pipes, ventilation grates and drains.

- i. Ventilation grates and drains should have openings no larger than 2 by 2 cm or 1 by 4 cm to ensure that birds cannot be trapped within.
- ii. Cap or screen the ends of all open pipes, large and small, so that birds do not become entrapped when investigating these openings for nesting opportunities.

APPLY VISUAL MARKERS TO EXTERIOR OF GLASS



Please refer to *Bird Friendly Design Guidelines: Explanatory Note*.

Diagrams are not to scale.