Guide 6

Protecting and restoring biodiversity

Blue Dot | # Municipal Toolkit
Creating Green Communities

People in Canada take pride in this country's natural landscapes, rich ecosystems and wildlife. But Canada's Constitution doesn't mention environmental rights and responsibilities. Municipalities across the country are recognizing and supporting their residents' right to a healthy environment. By adopting the Blue Dot declaration, more than 150 municipal governments now support the right to clean air and water, safe food, a stable climate and a say in decisions that affect our health and well-being.

For some municipalities, adopting the Blue Dot declaration is a clear statement about environmental initiatives already underway. For others, it's a significant first step. Either way, after passing a declaration, many ask "What happens next?"

This toolkit provides practical ideas for next steps. Its introduction and 13 downloadable guides cover topics related to human health, green communities and a low-carbon future. Written for policy-makers, each guide shares examples of policies and projects undertaken in communities in Canada and around the world. The goal is to inform, inspire and share good ideas and great practices that will lead to healthier, more sustainable communities now and in the future.

The following guides are available:

Introduction to the Blue Dot Municipal Toolkit

Protecting Human Health
Guide 1:   Air quality
Guide 2:   Clean water
Guide 3:   Non-toxic environment
Guide 4:   Healthy food

Creating Green Communities
Guide 5:   Access to green space
Guide 6:   Protecting and restoring biodiversity
Guide 7:   Waste

Building a Low Carbon-Future
Guide 8:   Transitioning to 100% renewable energy
Guide 9:   Green buildings
Guide 10: Sustainable transportation
Guide 11: Green economy
Guide 12: Climate change adaptation
Guide 13: Ecological footprint and land-use planning

To read more about municipal actions for environmental rights, and to access all the Blue Dot toolkit guides, visit **http://bluedot.ca/municipal-toolkits/**. To read more about the Blue Dot movement and work at the local, provincial and federal levels, visit **www.bluedot.ca**.

Ensuring a healthy environment requires action in communities of all sizes and at all levels of government. This toolkit helps municipalities continue to take the lead.

Acknowledgments

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Guide 6: Protecting and restoring biodiversity

Seventy-five per cent of Canada's species at risk live along the southern border where continued habitat loss due to high-intensity agriculture and urban development further threaten their survival.[1] It's vital for municipalities to develop ways to facilitate conservation and protect remaining urban natural areas. Maintaining and restoring urban biodiversity protects important ecosystem services such as pollination and water filtration, and contributes to climate change resilience.[2] No net loss of aquatic and terrestrial habitat sets a high bar for the types of policies needed to truly protect biodiversity. Municipalities may approach biodiversity management through specific measures to protect species at risk and sensitive ecosystems, and through general measures to maintain high-functioning, connected green and blue spaces.

Canadian examples of good practices

a. Edmonton: Urban ecological network and biodiversity strategy

   i. **Initiative:** Edmonton's goal is to be the nation's leader in setting and achieving the highest standards of environmental preservation and sustainability. It aims to protect 10 per cent of the city as natural area and double the urban tree canopy. The city uses an ecological approach to protect biodiversity on a large scale and includes biodiversity goals in its higher-level plans. It adopted an Ecological Network Model, which views the land area as a network of core connected and integrated habitats.[3] The network model attempts to mitigate the effect barriers have on ecosystem health by using semi-natural areas such as golf courses to enhance the ecological network, by creating a buffer between urban areas and core ecosystem functions and by investing in restoration measures (e.g., of brownfields, street naturalization, etc.).[4] The city has created a wildlife passages guideline that provides a methodology for maintaining connectivity between habitats during engineering projects.[5] Edmonton's North Saskatchewan River Valley and Ravines System, the largest municipally owned urban park in North America, provides a cross-city ecological corridor. The Edmonton and Area Land Trust creates partnerships with private landowners and allocates funds to purchase valuable lands. The city prioritizes biodiversity education through its Master Naturalists Program (half stewardship volunteers program and half training program for community members) and Urban Biokit program for new immigrants.[6]

1   Laura E. Coristine and Jeremy T. Kerr, "Habitat, Climate Change, and Emerging Conservation Challenges in Canada," Canadian Journal of Zoology 89 (2011): 435–51, doi:10.1139/Z11-023.; Bill Harrower, Jenny McCune, and Jeannette Whitton, "Are Canada's Species At Risk Recovering?," UBC Department of Botany, accessed August 1, 2015, http://botany.ubc.ca/about_us/story_highlights/are-canada%E2%80%99s-species-risk-recovering.

2   ICLEI-Local Governments for Sustainability, Biodivercities: A Handbook for Municipal Biodiversity Planning and Management, 2015, http://icleicanada.org/images/BiodiverCITIES_Handbook_Final_small.pdf.

3   City of Edmonton, City Policy: Natural Area Systems, 2007, https://www.edmonton.ca/city_government/documents/PoliciesDirectives/C531.pdf.

4   ICLEI-Local Governments for Sustainability, Biodivercities: A Handbook for Municipal Biodiversity Planning and Management.

5   City of Edmonton, Wildlife Passage Engineering Design Guidelines, Stantec Consulting Ltd., 2010, http://www.edmonton.ca/city_government/documents/WPEDG_FINAL_Aug_2010.pdf.

6   ICLEI-Local Governments for Sustainability, Cities and Biodiversity: Exploring How Edmonton and Montreal Are Mainstreaming the Urban Biodiversity Movement.

ii. **Results:** The Wildlife Passage Program has led to the construction of 27 wildlife passages, which have reduced traffic and wildlife collisions by 51 per cent since 2007.[7]

b. Kelowna and Regional District of Central Okanagan

i. **Initiative:** Kelowna's Sensitive Ecosystem Inventory found that 28 per cent of its land base contains sensitive ecosystems. The city conducted sensitive habitat and mapping and wetland inventories; and classification, evaluation and mapping studies to track and inventory all creeks within the city. Together these studies suggested that urban development was the primary pressure on wetland degradation. The city identified Natural Environment Development Permit Areas in environmentally sensitive areas and areas with important groundwater resources. Development permit applications include guidelines about wildlife corridors, recovery efforts, habitat protection and buffers as stated in the Official Community Plan.[8] The OCP also includes an option for the city to require an applicant to provide financial security based on the estimated cost of site rehabilitation. The city has developed an aquatic habitat compensation bank and included a no net loss of aquatic or terrestrial habitat policy in the OCP. Compensation measures must take into consideration lag times and habitat quality to establish a compensation ratio (the ratio of area that must be protected or rehabilitated to the area being developed).

c. Montreal

i. **Initiatives:** Montreal has goals to protect six per cent of land cover and increase tree canopy coverage from 20 to 25 per cent by 2025. The city has a $36 million budget for acquisition and development of natural lands. The city has developed an ecological network approach by designating 10 Ecoterritories that focus on connecting core natural areas with green corridors and providing buffers for core areas.

ii. **Results:** The city has a network of 24 large parks totalling 2,000 hectares and is active internationally as one of five communities on the Global Partnership on Cities and Biodiversity.[9]

d. Guelph: Pollinators park

i. **Initiative:** Guelph is developing a 45-hectare pollinators park on a closed landfill. It will be one of the first and largest pollinator initiatives in the world. The first hectare was seeded in 2013 with more seeded in 2014. A bee hotel was added in 2014. Guelph is also developing six smaller pollinator planting projects.[10] The Official Plan prioritizes the importance of pollinator species. Pollination Guelph, a community group, runs the park.[11]

7   City of Edmonton, "Why Didn't the Deer Cross the Road?," News Archive, 2015, http://webdocs.edmonton.ca/news_archives/news-archive-689148-54e6.pdf.

8   City of Kelowna, "Chapter 12: Natural Environment DP Guidelines."

9   ICLEI-Local Governments for Sustainability, Cities and Biodiversity: Exploring How Edmonton and Montreal Are Mainstreaming the Urban Biodiversity Movement.

10 Pollination Guelph, "Our Planting Sites," 2013, http://www.pollinationguelph.ca/gardens.

11 ICLEI-Local Governments for Sustainability, Cities and Biodiversity Case Study Series: Canadian Best Practices in Local Biodiversity Management, 2010, http://icleicanada.org/images/icleicanada/pdfs/Cities_and_Biodiversity_Case_Study_Series_english.pdf.

e. Gibsons: EcoAsset Strategy

    i. Initiative: Gibsons is one of the first Canadian communities to account for natural assets or "eco-assets" when making planning decisions about municipal infrastructure. The town passed a municipal asset management policy that recognizes natural assets and creates requirements for the town to operate, maintain and replace natural assets alongside engineered infrastructure. The town is working to customize its asset management software to include eco-assets.

    ii. Results: The town has already calculated the asset substitution costs for its aquifer. It plans to make similar ecosystem service calculations for other eco-assets. These calculations will be used in long-term asset management strategies.[12]

International examples of good practices

f. Essen, Germany

    i. Background: Essen won the European Commission's 2017 Green Capital Award, partially based on its approach to nature and biodiversity management.

    ii. Initiatives: The municipality is expanding protected areas and protecting species and habitats while land is being actively used for other purposes such as agriculture and forestry. Essen naturalized an oxbow lake, which improved water quality and compensated for the development of a wastewater treatment plant, by decommissioning two campsites to develop into woodland habitat. Resulting shade increases led to a decrease in invasive giant hogweed. Essen's woodland is FSC-certified and is managed to maintain a diverse forest. Fallow fields and grassland protection are incorporated into agricultural development to compensate for land-use impacts. The city is currently naturalizing a river and tributaries, which when completed will be the largest naturalization project in Europe and will convert 39 kilometres of ditches into streams.

    iii. Results: The city is 53 per cent green areas and open spaces (15.7 per cent of this is agricultural land). The municipality has protected 34.4 per cent of its area. Four kilometres of the stream naturalization project have already been completed.

g. The Illinois Tollway Authority is working with a non-profit organization to plant milkweed to support monarch butterflies along 460 kilometres (286 miles) of roadways. The state sent milkweed seed packets to every school in Illinois.[16]

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12   Town of Gibsons, Towards an Eco-Asset Strategy in the Town of Gibsons, 2017, http://www.gibsons.ca/eco-assets.

13   European Green Capital, "2017-Essen," 2017, http://ec.europa.eu/environment/europeangreencapital/winning-cities/2017-essen/index.html.

14   City of Essen, Essen 2017 Application: Nature and Biodiversity.

15   Michelle Manchir, "Tollway Working with Environmentalists to Boost Population of Monarch Butterflies," Chicago Tribune, January 31, 2015, http://www.chicagotribune.com/news/local/breaking/chi-tollway-monarch-butterflies-20150130-story.html.

16   Illinois Department of Natural Resources, "Monarch Mania!," 2017, https://www.dnr.illinois.gov/education/pages/monarchgen.aspx.

Good practices documents and links

o **biodiverCITIES: A Handbook for Municipal Biodiversity Planning and Management** — provides guidance on developing and implementing a Biodiversity Action Plan

o **biodiverCITIES: A Primer on Nature in Cities** — provides examples of how different Canadian cities have approached biodiversity management and protection

o **Planning for Urban Pollinators** — Environmental Youth Alliance

o **Green Bylaws Toolkit** — Provides examples of specific municipal bylaws and policies used in British Columbia to protect green space and biodiversity; includes detailed options on development permit areas, zoning and regulatory tools

Advisory services

The **Natural Step Canada (TNSC)** is a national charity whose mission is to tackle climate change and accelerate the transition to a truly sustainable society that thrives within nature's limits. Its academy, advisory services and Sustainability Transition Labs use best-in-class science, systems thinking and facilitation to help individuals and organizations collaborate, solve complex problems, foster innovation, optimize performance and drive systems change.

TNS Canada offers a **Service Cycle for Sustainable Communities** to help municipal governments plan for long-term sustainability and resiliency, embed sustainability into their culture and operations, and engage community stakeholders in their sustainability plans.

To learn more go to: **http://naturalstep.ca/**

The **Whistler Centre for Sustainability (WCS)** is a non-profit organization with the mission to "inspire and facilitate effective planning and meaningful conversations for a better world." WCS provides innovative community engagement, planning and implementation services to local governments across Canada, drawing on its expertise and experience in more than 40 communities. The Centre's work is rooted in future-focused social, environmental and economic values, so that final deliverables embed sustainability throughout.

To learn more go to: **http://whistlercentre.ca**