



Biosphere
URBAN
Bio**kit**
VANCOUVER



Environment
Canada
Biosphere

Environnement
Canada
Biosphère



Four Seasons of Fun for the Whole Family!



Photo: © Yvette Yasui

Urban Ecosystems at Your Doorstep

Are you familiar with the animals and plants near your home? Biodiversity, the variety of all life on Earth, is essential to sustaining the ecosystems and networks that provide us with the health, natural wealth and vital services upon which our lives depend. How much do you know about the biodiversity in your neighbourhood? Environment Canada's Biosphere and the City of Vancouver are pleased to present this Urban BioKit, filled with activities to help you explore the biodiversity in and around Vancouver.

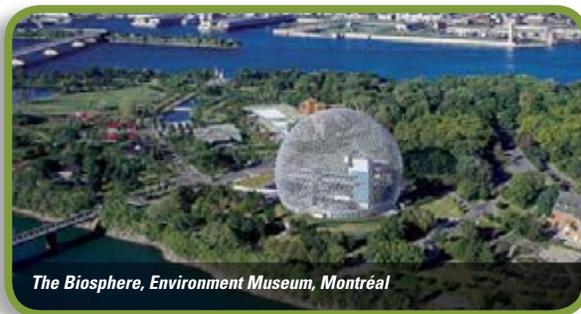
The City of Vancouver plays a significant role in preserving and promoting biodiversity. In fact, Vancouver is recognized internationally as one of the most livable cities in the world. The city shows a deep respect for nature with its many parks, walkable tree-lined streets and public spaces, and its blending of sustainability, activity, natural beauty and safety into a dynamic, multicultural urban setting.

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vancouver.ca

Environment Canada's Biosphere, the only environment museum in North America, encourages citizens to take action and become involved in environmental issues. In addition to presenting exhibitions and special events, the Biosphere develops educational and awareness-raising products for a diverse clientele across Canada, and is a recognized clearinghouse for environmental information. To learn more about the Biosphere, please visit the website below.

ec.gc.ca/biosphere



The Biosphere, Environment Museum, Montréal

Photo: © Environment Canada

Reconnect with your environment ...

Photo : © iStockphoto.com/BorisMrdja



How the BioKit Works

- 1.** Choose a nearby park.
- 2.** Gather up your equipment: GPS unit (optional), magnifying glass, binoculars, camera, pocket-size mirror, pencil and clipboard.
- 3.** Step outside and observe your surroundings in order to answer the questions on the following pages.
- 4.** If possible, walk to the park you chose in step one. Once there, continue observing the environment through the activities offered in the next sections of this BioKit.
- 5.** Reuse the Vancouver Urban BioKit to explore new parks!

Upon your return home, discuss your outing with friends and family. Explore other BioKits and complementary activities by visiting ec.gc.ca/biotrousses-biokits. In the electronic version of this document (available on the BioKits website), **highlighted words** this way are hyperlinks to a website.

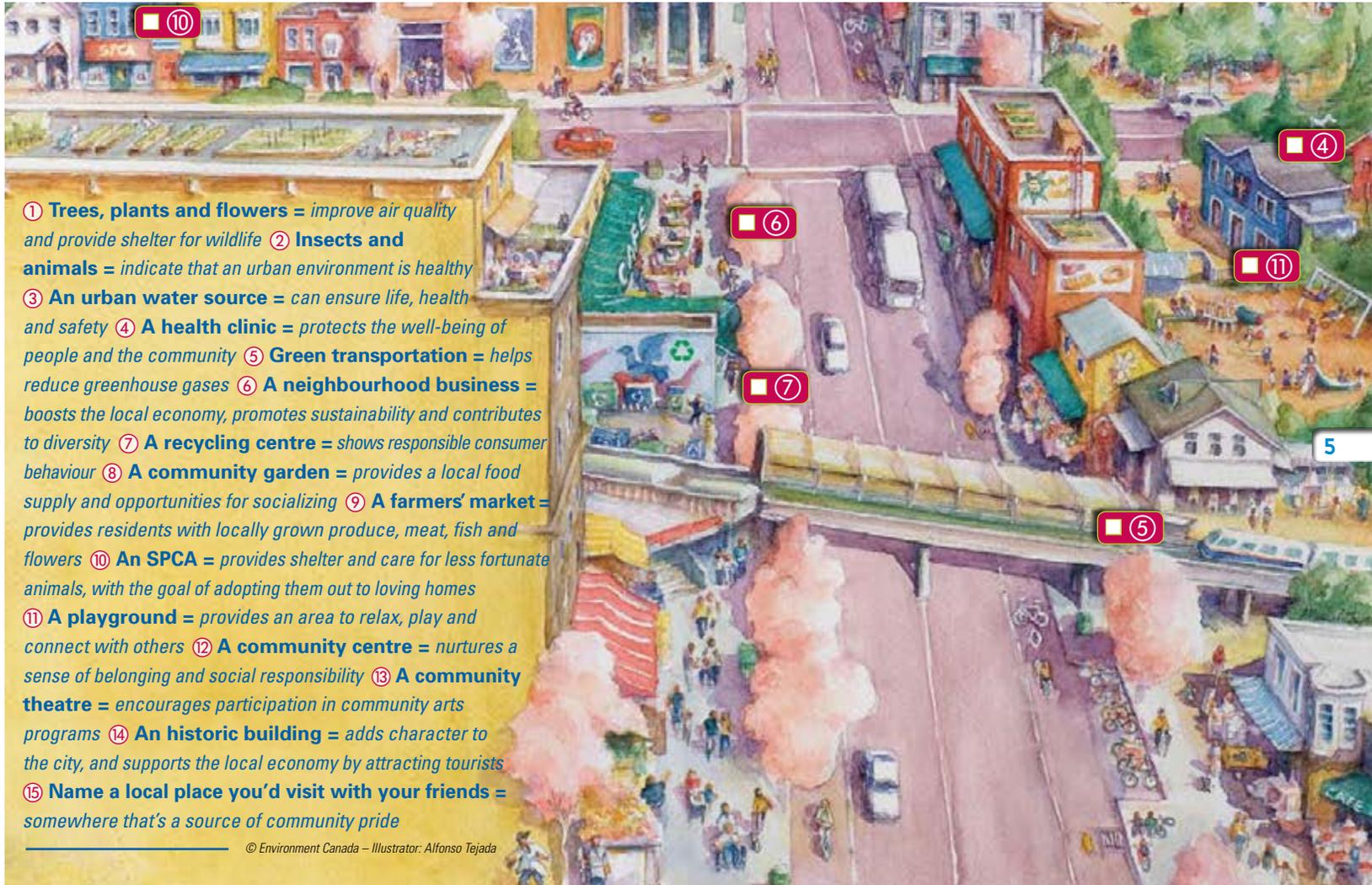
The Urban Environment

As you step outside and make your way to the park, check off the numbered items in the drawing as you notice them. What role do they play in your surroundings?

(See the examples below.)

Vancouver is a naturally beautiful city, located between the Pacific Ocean and the coastal mountains. In fact, all cities in Canada (where 90% of Canada's population is expected to live by 2020) were built in the wilderness and are still surrounded by nature, though this may not always be obvious.





- ① **Trees, plants and flowers** = improve air quality and provide shelter for wildlife ② **Insects and animals** = indicate that an urban environment is healthy ③ **An urban water source** = can ensure life, health and safety ④ **A health clinic** = protects the well-being of people and the community ⑤ **Green transportation** = helps reduce greenhouse gases ⑥ **A neighbourhood business** = boosts the local economy, promotes sustainability and contributes to diversity ⑦ **A recycling centre** = shows responsible consumer behaviour ⑧ **A community garden** = provides a local food supply and opportunities for socializing ⑨ **A farmers' market** = provides residents with locally grown produce, meat, fish and flowers ⑩ **An SPCA** = provides shelter and care for less fortunate animals, with the goal of adopting them out to loving homes ⑪ **A playground** = provides an area to relax, play and connect with others ⑫ **A community centre** = nurtures a sense of belonging and social responsibility ⑬ **A community theatre** = encourages participation in community arts programs ⑭ **An historic building** = adds character to the city, and supports the local economy by attracting tourists ⑮ **Name a local place you'd visit with your friends** = somewhere that's a source of community pride

It's a Go!

Between your home and the park, did you observe green spaces?



Douglas squirrel goes nutty over Vancouver Urban BioKit

Photo : © iStockphoto.com/aznature

Are animals able to travel from one green space to another? _____
If so, the green space may be part of a wildlife corridor.

Wildlife corridors: In cities, the parks, treed walkways, green alleys, flower boxes, balcony planters and gardens can serve as urban wildlife corridors and flight paths. These environments provide vital pathways to connect birds, animals and plants with food, shelter and breeding areas.

Park visited: _____

Date: _____

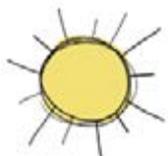
Departure time: _____

Return time: _____

GPS coordinates: _____
(optional)

WEATHER

Temperature: _____ °C



Sunny



Partly cloudy



Cloudy



Foggy



Rainy



Snowy



Windy

SEE ANY CLOUDS IN THE SKY? HOW ARE THEY SHAPED AND WHAT DO THEIR SHAPES TELL YOU?



Photo : © iStockphoto.com/choicegraphx

■ **Cirrus** : Located high in the sky, cirrus clouds sometimes indicate that rain is coming.



Source: Photodisc

■ **Cumulus** : Located low in the sky, these clouds often appear in good weather. On hot, humid summer days, they can transform into cumulonimbus clouds.



Source: Photodisc

■ **Stratus** : Usually sitting fairly low in the sky, stratus clouds often cause "grey" days and can herald storms or drizzle.



Photo : © iStockphoto.com/Kalulu

■ **Cumulonimbus** : These are large grey clouds, taller than they are wide; in summer, they are a sign of stormy weather.

Park Visit



Find out more

See "Urban Biodiversity Issues" on page 35

TAKE A BREATHER!

Take a deep breath and have a good look around you: what is your first impression?

With the people around you, talk about what you see and smell.

Did you know...

The Golden-crowned Kinglet is a natural weather forecaster, known to feed in a frenzy right before a rainstorm. So if you see this bird stuffing its bill, grab your raincoat and umbrella, because chances are it's going to rain soon!



Golden-crowned Kinglet

Photo : © iStockphoto.com/WilliamSherman

Eco-friendly tips for urban nature explorers:

- Don't pick the plants.
- Obey any signs asking you to **stay on pathways.**
- Leave nature **the way you found it.**
- Observe wild animals **from a distance** and **don't feed them.**
- **Leave no trace!**

Photo : © iStockphoto.com/BirdImages



CRICK, CRACK, TWEET!

The sounds in our environment affect our well-being.

- 1. Place an "X" in the centre of the box below. This represents YOU on your sound map.*
- 2. Close your eyes and listen.*
- 3. Around the X on the map, draw symbols for the sound(s) you hear.*

A large, empty rounded rectangular box with a thin black border, intended for students to draw a sound map around a central 'X' representing themselves.

- Which sounds originate from nature, and which come from human activity?*
- Circle the sound(s) you like the best.*
- Discuss noise pollution and how it might affect animals that use sound to find mates and food.*

Did you know ... The vocal Steller's Jay is the official bird of British Columbia.



Photo: © Chantal Lepire

Prowling for Lichens

Lichens are composed of fungus and alga that form a clump on tree trunks and rocks. The type and amount of lichens growing on tree trunks can tell us about air quality, because most lichens are sensitive to air quality and don't survive when air pollution levels are high. British Columbia is home to over 1100 reported species of lichens, so take a look around: are there lichens on the tree trunks? How many different types of lichens can you find?

Consult the **Air Quality Health Index** when planning your next outing.



Find out more

See "Air Quality Issues" on page 35



Photo: © Shelley Schnurr

Red alder



Photo: © iStockphoto.com/niknak99

Vine maple



Douglas fir

Photo: © iStockphoto.com/flamulated

A Certain Something in the Air

The atmosphere is an ocean of gases that we live in and breathe in all the time. It protects us from the sun's rays and regulates our climate, making life on our planet possible.

Catch the Scent!

Breathe in slowly, describe what you smell:

- Fresh air? Salt air? Floral scents?
- City odours? Other: _____

From where do these scents originate?

How do you know?

Eco-friendly tips for clean air:

- **Walk**, use your bicycle, rollerblade, carpool or use public transit.
- When you're waiting in a car, ask the driver to **turn off the engine**, in keeping with Vancouver's anti-idling bylaws.
- **Turn down the thermostat** and put on a sweater or hoodie.

Blue Vancouver

Water supports biodiversity. How convenient since Vancouver is surrounded by it!

Off to school! Can you match up these pictures of Pacific salmon with their descriptions below? Check out the colour, dorsal fin and tail, among other features.



1



3



2



4

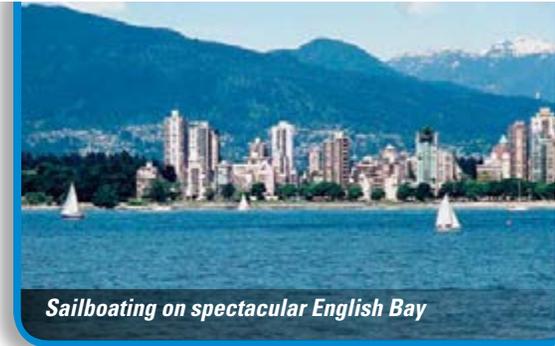


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GRAB YOUR FISHING POLES!

Each summer, on Father's Day weekend, you have a unique opportunity to fish without a licence.

Photos: © Washington Department of Fish and Wildlife



Sailboating on spectacular English Bay

Photo: © Terry Schnurr

- A Chinook** (light-silver body / blue-green spotted back / silver spotted tail / largest of the Pacific salmon)
- B Coho** (bright silver body / few spots on top of back / blue dorsal surface / wide silver tail)
- C Sockeye** (silver-blue streamlined body / silver-blue back / silver tail / prominent, glassy eyes)
- D Pink** (yellowish grey body / brown, olive green humpback / large oval spots on tail / tiny scales / smallest of the Pacific salmon)
- E Chum** (silver body with faint grid-like bars / silver tail, narrow at base / white tip on anal fin)

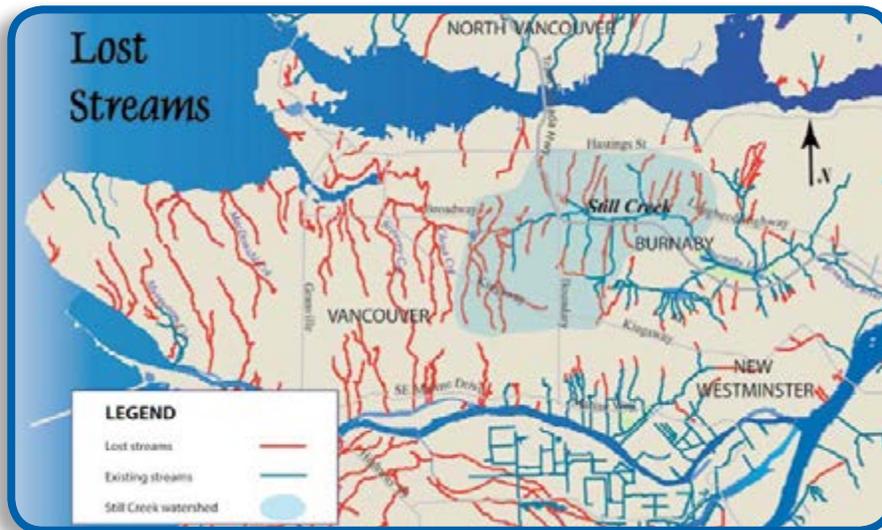
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Answer key: 1D, 2E, 3A, 4C, 5B

Relics of History

This map shows the streams (in red) that once ran through Vancouver. How close do you live to a former stream?

Most of these small streams have been filled in or were redirected during the urbanization of Vancouver. Recent stewardship efforts by the Musqueam Ecosystem Conservation Society, Musqueam First Nation, Pacific Spirit Regional Park Society, Department of Fisheries and Oceans, and Metro Vancouver have restored Musqueam Creek, one of the last three remaining wild salmon-bearing streams in Vancouver. Stewardship groups are also working collaboratively to restore Pacific salmon populations in Spanish Banks Creek in Pacific Spirit Regional Park and Beaver Creek in Stanley Park. **You can help keep our waterways clean by participating in the Great Canadian Shoreline Cleanup.**



Map: © City of Vancouver



Mallard ducks

Photo: © Terry Schnurr

Did you know ... Wetlands are disappearing rapidly as a result of urban and industrial development, invasive species and climate change. Over 84% of bog habitat has been lost in the Fraser River Delta, as has approximately 60% of marsh habitat along estuaries in the Strait of Georgia.

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Musqueam Creek

Photo: © Musqueam Ecosystem Conservation Society

Hide and Seek

A healthy ecosystem:

- cleans the air and water;
- produces oxygen;
- traps carbon dioxide;
- controls insects and animal pests naturally;
- encourages pollination;
- helps control flooding and erosion;
- produces fertile soil;
- plays an important role in the economy, health and food safety.

These are services that the public would otherwise pay for.



Photo: © Claude Godin

Photo: © iStockphoto.com/imaizawa



Photo: © iStockphoto.com/PeterSander

If you see a bird or squirrel pass by with a twig, string or anything else other than food in its beak or mouth, follow it from a distance and, with a little luck, the animal may lead you to its nest. Take care and remember, do not disturb the occupants!

The Secret Life of Trees

Take a closer look: there could be a nest hiding in that hollow tree trunk! Look closely at the treetops, too.

- Do you see any nests made by birds, squirrels or wasps?
- Are there any cocoons built by insects?
- Are there burrows near the tree roots that could be used for storing food or as shelters?

And even dead trees provide valuable, essential services in nature, like food and shelter for all kinds of wildlife.

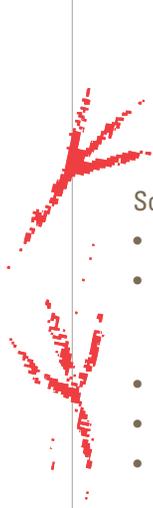
Look for **animal tracks** in the snow or mud. Notice the shape and arrangement of paw-prints or footprints, and follow their trail.



Striped skunk



American Crow



Some key things to look for:

- Do you see two feet or four?
- Are the footsteps close together (maybe indicating a smaller animal) or far apart (a bigger animal)?
- How many toes are there?
- How are the toes oriented?
- Where did the tracks come from and where do they lead?

Photo: © G. J. Lenhard, LSU, Bugwood.org



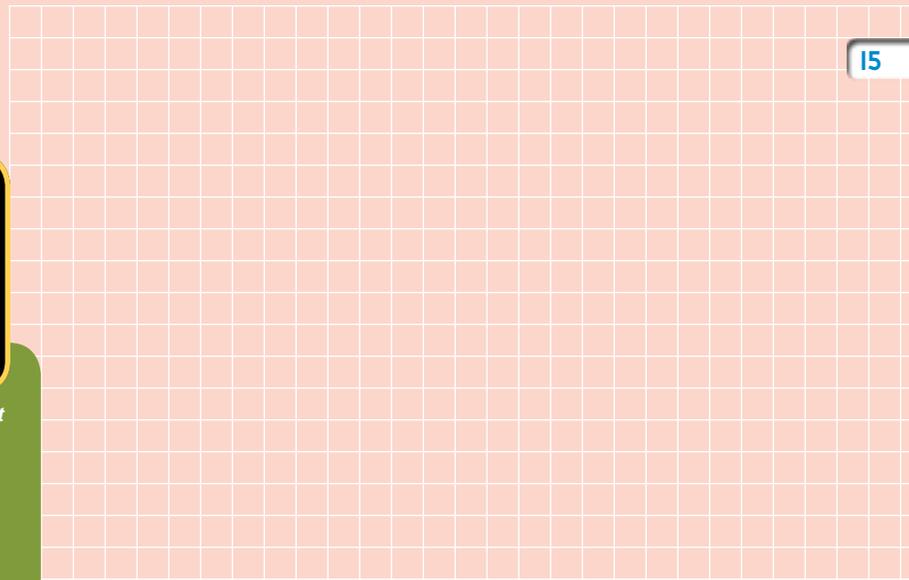
Spittlebug spit

BioMystery Can you find any evidence of seed caches? Do you see any slug slime? Is there spittlebug spit on plant stocks and leaves?

Follow That Trail

Check for signs of animals, like leftover food, scratch marks on trees, dung or tracks. What do you see?

Sketch *a picture of the tracks so you can identify them later.*



Mammals, Reptiles and Friends

HOW MANY DIFFERENT TYPES OF ANIMALS CAN YOU SEE?

Include pets, street animals, farm animals and wild animals:



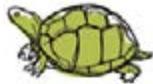
___ *Amphibians*



___ *Mammals*



___ *Fish*



___ *Reptiles*



___ *Birds*



___ *Invertebrates*

Raccoon



Photo: © Robyn Worcester

Eco-friendly ways to support urban biodiversity:

- Support Vancouver's bylaw banning the use of cosmetic pesticides on private and public lands, by using natural alternatives.
- Find out about threatened species in the Vancouver area, so you'll be better able to protect them.
- Learn to live in harmony with urban wildlife.
- Get to Know your wild neighbours.

Find out more
"Urban Biodiversity
Issues" on page 35



Painted Lady butterfly

Photo: © K. Webber

Pollinating Insects

These insects carry pollen from flower to flower. They include bees, wasps, butterflies, beetles, flies and ants, among others.

We owe them credit for over 70% of the food we harvest.

Add plants that attract pollinators to your garden.

Pollinating insects are currently threatened by:

- habitat loss;
- pesticides;
- competition with other species (often alien invasive species);
- monoculture practices in forestry and agriculture;
- diseases and parasites;
- light pollution.

INSECTS ARE ANIMALS TOO

Scientists have identified about a million species of insects so far, and estimate that there may be up to 30 million. Insects differ from other animals in that they have three pairs of legs. With or without your magnifying glass, scour the ground or search among the flowers for insects. Who knows, you might discover a new species!

Photo: © iStockphoto.com/spxChrome



Wolf spider

Spiders and millipedes are not insects, but they still belong to our larger environmental family.



Butterflies and caterpillars



Ladybugs and beetles



Bees, wasps and ants



Flies and mosquitoes



Dragonflies and damselflies

Others

Ant photos: © iStockphoto.com/Antagain

Vulnerable Species

Vancouver provides shelter to several vulnerable species. To learn how they cope with challenges they face, put yourself in their place.

IMAGINE THAT YOU'RE A GREAT BLUE HERON...

First, you need to find a home. Usually, you like to build your nest in high trees near the water. **But where can you build in the city?**



Photo: © Robyn Worcester



Photo: © Martin Passchier

In Vancouver, this huge bird readily trades its place in local estuaries for a towering view above Stanley Park.



Photo: © Martin Passchier

In the 1960s and early 1970s, the synthetic insecticide DDT was widely used. But it was incredibly harmful to Great Blue Herons and other large birds, including falcons and eagles, because it severely weakened the shells of their eggs. Their eggs broke before they could hatch, so the birds' populations declined significantly. Following the implementation of stronger pollution regulations and the restoration of lost and degraded habitat, the resident Great Blue Heron population is now steadily increasing. Bald Eagles and most falcon populations are also recovering, but remain vulnerable to habitat loss, pollution and food shortages due to their reliance on declining Pacific salmon stocks returning to spawn through local rivers.

You can follow Bald Eagles and other species through the [Hancock Wildlife Foundation's webcams](#) and the [Stanley Park Ecology Society's eagle nest monitoring program](#).

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Did you know ... the Great Blue Heron is listed under the federal Species at Risk Act as a species of special concern in British Columbia.

SPOTLIGHT ON SPECIES AT RISK



Peregrine Falcon
Photo: © Gordon Court

Vancouver's position on the Pacific Flyway, a migration corridor between Patagonia in South America and Alaska in the Arctic, makes it an ideal rest stop for migratory species, including the threatened Peregrine Falcon and the blue dasher dragonfly.



Blue dasher dragonfly

Photo: © Lea Maimone

The Henderson's checkermallow, a fuchsia-coloured vascular plant, is also vulnerable, due to increasing loss of its wetland habitat. The same is true for the Pacific water shrew, one of the rarest small mammals in Canada.



Henderson's checkermallow

Photo: © Virginia Skilton



Pacific water shrew

Photo: © Dennis Knopp

On the Lookout

Plants and animals must overcome many challenges to ensure their survival in any given area. Look around you: can you observe any of the threats listed below? Check off the ones you identify:

- Habitat loss (due to development)
- Wetland destruction
- Pollution
- Competition from invasive species
- Climate change impacts

Can you think of anything else?

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Did you know ... The endangered Pacific water shrew has the remarkable ability to walk on water for several seconds, thanks to webbing and stiff hairs on its hind feet.

Find the Invader



Find out more

See "Ways to Improve the Environment" on page 35



Photo: © Robyn Worcester

BULLFROGS were introduced into British Columbia. They've become very abundant in wetlands, displacing native species.

Help native biodiversity thrive by removing invasive species with a volunteer "invasive weedbuster" group.

INVASIVE ALIEN SPECIES

Brought into a region accidentally or on purpose, these plant and animal species are a major threat to biodiversity and are very difficult to control.

Question:
Which of the following species are considered invasive alien species in Vancouver (see answer below)?



a) **Eastern grey squirrel**

Photo: © iStockphoto.com/DamianKuzdak



b) **English ivy**

Photo: © Jillayne Peers



c) **Scotch broom**

Photo: © R. Old, XID Services, Inc., Bugwood.org



d) **Apple maggot**

Photo: © Agriculture and Agri-Food Canada 2008



Photo: © Robyn Worcester

Giant hogweed

Photo: © Fraser Valley Regional District

Seacoast angelica

Photo: © U.S. Fish and Wildlife Service

Did you know that ...

The invasive giant hogweed and the native seacoast angelica look alike. A quick way to tell them apart: giant hogweed has red or purple spots, and stiff white bristles, on its stems.

Warning: Giant hogweed should be removed by a professional because its sap can cause blistering on skin, and even blindness.

Answer:

If you guessed that they're all invasive species, you're right! The larger Eastern grey squirrel poses a threat to native squirrels that must compete for territory and food. English ivy and Scotch broom are out-competing native seedlings, spreading like wildfire, and degrading habitat for local species that depend on native plants. The apple maggot has recently been found in the Lower Mainland and poses a serious threat to orchards.

CAN YOU SPOT THE INVADER?

Cityscape photo : © iStockphoto.com/brytta

Many invasive species don't look as out of place as a polar bear would on the Vancouver seawall, but their impact on native species and local ecosystems is still **unbearable**.



Bear photo : © iStockphoto.com/akinshin

Urban Landscapes

HEAD FOR THE HILLS!

Over time, humans have transformed the natural landscape. Look for some high ground in the park, and divide what you see into groups.

Do you see any wildlife corridors (vegetation strips) that animals could use to move from place to place in the city?

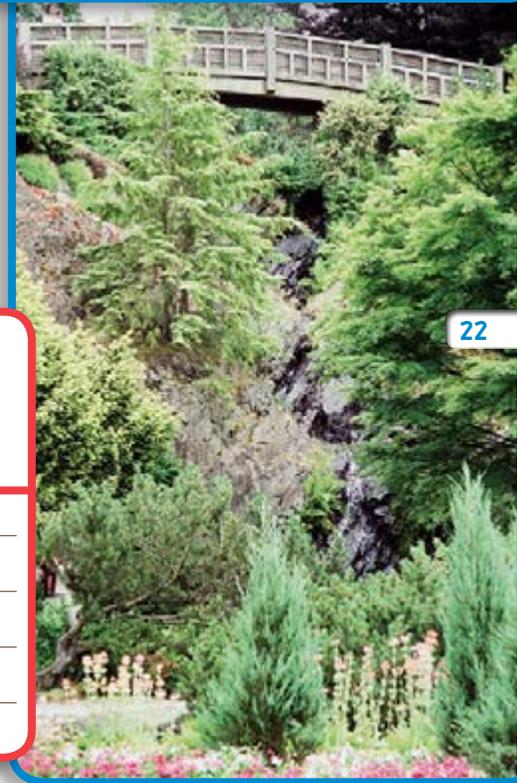
Natural features:

hills, waterways, fields, forests, lakes and the ocean

Human-made features:

roads, power lines, buildings, bridges, seawalls, marinas, fountains, gardens and lawns

Queen Elizabeth Park, known as "Little Mountain," is the highest vantage point in Vancouver.



A DIFFERENT ANGLE

Sometimes, just looking at something from a different angle can lead to surprising discoveries.

- Take out your pocket-size mirror and walk backwards. Does the landscape look any different?
- Touch your toes and look back between your knees, then describe what you see.
- What is your favourite feature in the surrounding natural landscape?
- Ask a senior what the landscape around you looked like when he/she was your age.
- What do you think it will look like in the future?

Did you know ...

Stanley Park and Queen Elizabeth Park held Vancouver's original water reservoirs. Today, our clean tap water comes from the Capilano, Seymour and Coquitlam reservoirs. Consider taking the Metro Vancouver Tap Water Pledge.

WATER, WATER, ANYWHERE?

Life depends on water. Look around you. Do you see a waterway, pond, lake or the ocean? What varieties of plants and animals do you see in or near the water? If you wait long enough and pay careful attention, you might catch a glimpse of some elusive animal species.



Capilano Reservoir

Photo: © Metro Vancouver

Vancouver: Spectacular by Nature



Did you know ...

- One of the largest trees on Vancouver's streets is a giant sequoia on the Cambie Street median near King Edward Avenue. Its trunk circumference measures more than five metres. Of the trees you observe, which has the largest circumference? Is it also the tallest?
- There are over 16 000 Japanese flowering cherry trees that line Vancouver's boulevards. Many were presented as gifts from Japan in the 1930s, and are honoured during the annual Vancouver Cherry Blossom Festival.



Photo: © Nancy Wong

Historical Perspectives on Biodiversity



Giant sequoia tree on Cambie Street median

Photo: © Terry Schnurr



Photo: © Leoboudv

Vancouver lies within the shared traditional territory of the Musqueam, Tsleil-Waututh, Tsawwassen and Squamish First Nations. Traditional Aboriginal cultures relied heavily on local biodiversity for their survival and prosperity. Plants and animals provided important sources of food, shelter and medicine.

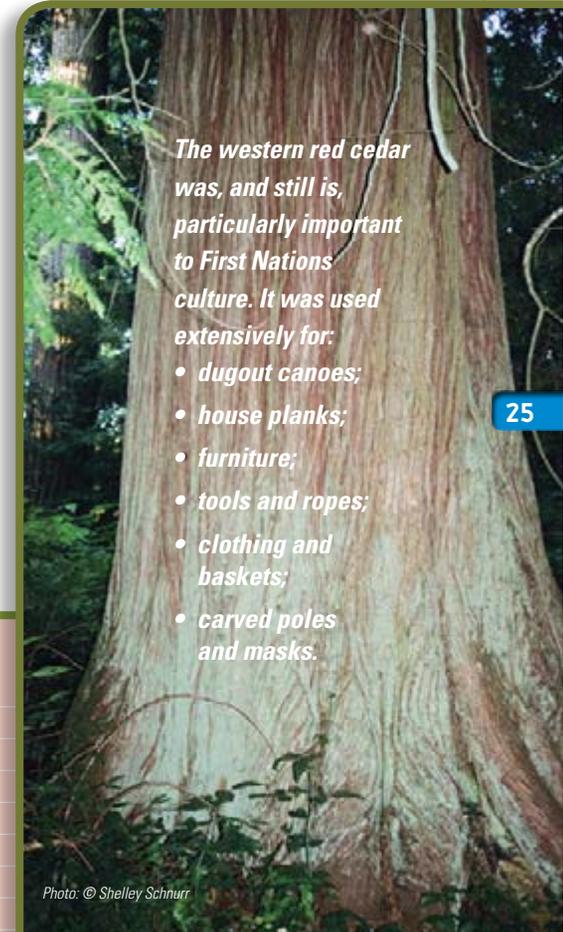
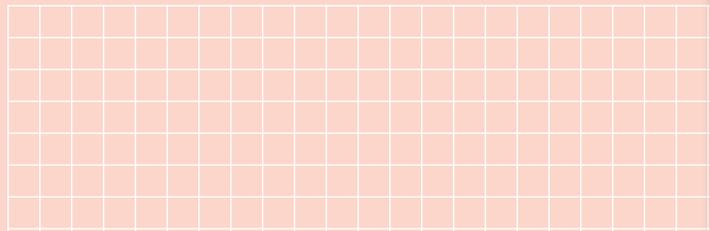
FIRST NATIONS ...

are renowned for living sustainably, in harmony with biodiversity—treating the Earth, its inhabitants and its natural resources with deep respect. The inherent interconnection between humans and the animals that shared the land was, and still is, an important aspect of First Nations culture. Various animals, for example, are symbolized on carved poles, artwork and masks, such as bears, wolves, orcas, salmon, ravens and the mythical Thunderbird, to name a few.

Do you see any carved poles from your vantage point? Can you identify the animals carved on them? If not, can you identify any of the animals on the Musqueam carved pole pictured on the left side of this page?

Create your own pole, using the materials of your choice. Take a moment to let nature inspire you.

Sketch your ideas below.



The western red cedar was, and still is, particularly important to First Nations culture. It was used extensively for:

- dugout canoes;
- house planks;
- furniture;
- tools and ropes;
- clothing and baskets;
- carved poles and masks.

Photo: © Shelley Schnurr

Heading Home

On your way home, consider taking an alternate route. Residential back lanes, sidewalks and the many tree-lined streets give you varied opportunities to observe urban biodiversity. Challenge yourself to the following Biodiversity Bingo. Can you find the elements in one line, two ... or can you find them all?



Photo : © Richard Semik / Shutterstock.com



Vegetable garden

Photo: © Shelley Schnurr



Compost bin

Photo : © iStockphoto.com/cotesebastien



Rain barrel

Photo: © Environment Canada



Bird feeder

Photo: © R. D. Wallace, UGA, Bugwood.org



Bird's nest

Photo: © Claude Godin



Garter snake

Photo: © Terry Schnurr



Bushes

Photo: © Terry Schnurr



Squirrel

Photo : © iStockphoto.com/DamianKuzdak

Back lanes are an ideal place to observe biodiversity in the city. On your way home, pass by some back lanes and observe carefully. Are they grey or green? Discuss what elements contribute to a "green" lane.



Listen for a bird call

Photo : © iStockphoto.com/PaulTessier



Butterfly

Photo : © Kristine Webber



Ladybug

Photo : © Kristine Webber



Marked storm drain

Photo : © Shelley Schnurr



Tiny flower

Photo : © Terry Schnurr



Spider web

Photo : © iStockphoto.com/BruceBlack



Honey bee

Photo : © iStockphoto.com/arlindo71



Clover

Photo : © Environment Canada

Do you see storm drains marked with salmon logos? They remind us that what goes down the drain ends up in our rivers and oceans.

What plants are covering the ground? Do they benefit the soil and pollinators? Do they need watering?

Take the Biodiversity Stewardship Pledge:

I pledge to do what I can, when I can, where I can, to conserve and restore biodiversity in my neighbourhood.

Signature: _____

Did you know?

Vancouver's streets are lined with over 138 000 trees from nearly 330 different species.

Urban Environment: My Diagnosis

Now that you've gathered many observations, use them to make your own diagnosis about the health of your urban environment, by filling in the chart opposite.

Note: This diagnosis can be printed from the [BioKits website](#) and be used for other park visits.

Check the boxes that apply	Excellent!	Not bad but ...	Things must improve!
Trees, bushes, balcony planters and gardens providing a wildlife corridor between your home and the park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
First impression of the park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surrounding sounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biodiversity: plants and trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Find out more
See "Ways to Improve
the Environment"
on page 35

Biodiversity: animals

Presence of pollinators

Control of invasive species

Waterways, ponds or lakes



Kayaking at Jericho Beach near sunset

Photo : © iStockphoto.com/MAFORD



Crows fighting over territory

Photo: © Jutta Maue Kay

Recommendations:

Enjoy your environment and help preserve the threatened species in your area.

Choose one thing that you would like to improve and think of a possible solution.

Many heads are better than one! Talk to people about your concerns; they could join your improvement efforts.

Think Back on Your Outing

A large grid of graph paper, consisting of approximately 30 columns and 30 rows of small squares, intended for writing or drawing.

Explore other BioKits and complementary activities by visiting ec.gc.ca/biotrousses-biokits.

Back Home

Create a souvenir of your outing by making a drawing, story, poem, photo or collage. Or draw the "web of life," as you interpret it for your neighbourhood. The web of life shows the connections between how every animal and plant relies on other plants and animals to survive. Do you think your web would be the same in another neighbourhood, city or country?



Orca on its migration route along the Strait of Georgia

Encourage Biodiversity

Now it's your turn

Vancouver is striving to become **the greenest city in the world by 2020**. Whether you have a backyard or balcony, you can help achieve this goal by taking action to promote biodiversity.



Photo: © iStockphoto.com/stevecalinimages

For example, maintain a yard that welcomes biodiversity. Plant **native plants** to create a supportive environment for **birds** and animals.



Photo: © UBC Farm



Black-capped Chickadee

Photo: © Benoit Audet

Photo: © UBC Farm

Buy local food from farmers' markets, located throughout the city. Or buy a weekly produce basket through a **community-supported agriculture program**.

Eco-friendly tips for gardeners:

- Avoid synthetic pesticides—Vancouver has a bylaw against their use.
- Use compost. **Create your own** or **obtain some from the city**.
- Plant the types of plants that help **protect gardens** by keeping away pests and diseases.

Did you know ... Vancouver is home to the original **100-Mile Diet**, a worldwide initiative to eat locally produced food.

Grow vegetables in one of Vancouver's many community gardens, your yard or in containers.



Purple loosestrife

Photo: © Robyn Worcester

Help control invasive alien plants.



Photo: © City of Vancouver

Join the City of Vancouver's Green Streets Program to create green public spaces. Green spaces provide havens for birds and pollinators.

It is estimated that millions of birds fall prey to cats each year in Canada. **To help make your neighbourhood more bird-friendly:**

- consider keeping your cat indoors, particularly from dawn until dusk;
- set up safe birdhouses and feeders that are not easily accessible to cats; and
- promptly inform your local SPCA about any stray or feral cats.

You can also help birds by turning off any excess lighting at night.

Photo: © Jeff Thrower/Shutterstock.com

Keep your dog on a leash (except in designated off-leash areas), so your dog doesn't chase and scare off birds and wildlife.

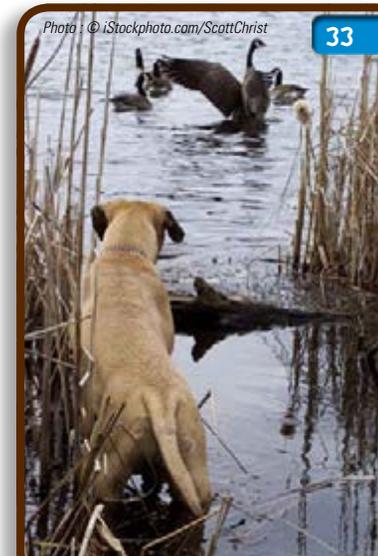


Photo: © iStockphoto.com/ScottChrist

Great Places to Explore Biodiversity in Vancouver

Vancouver is home to many cultures from around the world. The City of Vancouver values this diversity, and considers it a source of strength, vitality and prosperity. Multiculturalism is reflected not only in social programs and community events, but also in the many cultural gardens in several of Vancouver's neighbourhoods and parks—great places to explore biodiversity.

Take some time to explore cultural gardens in Vancouver, including the following:

- **The World in a Garden**, an international community garden in Kerrisdale
- **UBC Botanical Garden and Centre for Plant Research**, a living museum of plants from around the world, and home to the **David C. Lam Asian Garden** and **Nitobe Memorial Garden**.
- **Il Giardino Italiano** (the Italian Gardens) and the **Momiji Japanese Gardens**, located in Hastings Park
- **Queen Elizabeth Park**, featuring striking landscaped quarry gardens, a 1500-tree arboretum and the Bloedel Conservatory
- **Dr. Sun Yat-Sen Chinese Garden** in Vancouver's Chinatown, the first classical Chinese garden outside of China
- **VanDusen Botanical Garden**, featuring over 11,000 different plant species throughout Canadian heritage and international gardens, a children's garden and several human-made lakes



Momiji Japanese Gardens

Photo: © City of Vancouver



Il Giardino Italiano

Photo: © City of Vancouver

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Check out these great places to explore biodiversity as well...

- **The Stanley Park Ecology Society's Nature House**
- **Marine Mammal Rescue Centre** at the Vancouver Aquarium
- **Centre for Sustainable Food Systems** at UBC Farm
- **Museum of Anthropology** at UBC
- **Beaty Biodiversity Museum** at UBC
- **Metro Vancouver's Regional Parks**
- **British Columbia's Provincial Parks**
- **National Parks of Canada**



Find out more!

AIR QUALITY ISSUES:

Air Quality Health Index ec.gc.ca/cas-aqhi

WAYS TO IMPROVE THE ENVIRONMENT:

Stewardship Centre for British Columbia	stewardshipcentre.bc.ca
British Columbia Environmental Network	ecobc.org
Nature Trust of British Columbia	naturetrust.bc.ca
Federation of BC Naturalists	bcnature.ca
Young Naturalists' Club of BC	ync.ca
Nature Vancouver	naturevancouver.ca
BC Wildlife Federation	bcwf.net
Pacific Streamkeepers Federation	pskf.ca
Robert Bateman Get to Know Program	gettoknow.ca

URBAN BIODIVERSITY ISSUES:

Biodiversity BC	biodiversitybc.org
Stanley Park Ecology Society	stanleyparkecology.ca
Science World British Columbia	scienceworld.ca
Vancouver Aquarium	vanaqua.org
Hinterland Who's Who	hww.ca
Wildlife Rescue Association of BC	wildliferescue.ca
Green Club of BC	greenclub.bc.ca
Invasive Plant Council of BC	invasiveplantcouncilbc.ca
Native Plant Society of British Columbia	npsbc.org
Bird Studies Canada	bsc-eoc.org

HEALTHY COMMUNITIES:

City of Vancouver	vancouver.ca
Vancouver Board of Parks and Recreation	vancouverparks.ca
Metro Vancouver	metrovancover.org
BC Healthy Communities	bchealthycommunities.ca

Stream-keepers working hard to restore Musqueam Creek

Photo: © Nicholas Scapilatti



Harbour seal pup

Photo: © Robyn Worcester



Wood Duck

Photo: © Robyn Worcester



Hiker enjoying the lakeshore view on the Opabin Plateau in Yoho National Park

Photo: © Parks Canada, P. McCloskey

EXPLORE FURTHER!

After you've explored your local parks using the Vancouver BioKit, why not explore further, by using the **Nature BioKit** to explore biodiversity in some of our spectacular **regional, provincial and national parks?**



Photo : © iStockphoto.com/Maica

Explorers in the forest

Explore other BioKits and complementary activities by visiting
ec.gc.ca/biotrousses-biokits.

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City of Vancouver
Environment Canada
Metro Vancouver
Parks Canada
Science World
Stanley Park Ecology Society
Vancouver Board of Parks and Recreation
Young Naturalists' Club of BC

