



Biosphère
TRANS CANADA
TRAIL
Bio*kit*



Environment
Canada
Biosphere

Environnement
Canada
Biosphère

Canada

Four Seasons of Fun for the Whole Family!



Photo: © Jane Murphy

Discovering the Trans Canada Trail, N.B.



The Biosphère, Montréal

Photo:
© Environment
Canada

A TRAIL TO EXPLORE

The Trans Canada Trail is the longest network of trails in the world. Once completed, it will extend over 22,000 kilometres between the Atlantic, Pacific and Arctic Oceans. Millions of Canadians and visitors use it for hiking, cycling, skiing, horseback riding, canoeing and snowmobiling. The Trail provides countless possibilities to explore Canada's biodiversity.

Environment Canada's Biosphère encourages citizens to take action and get involved in environmental issues. In addition to presenting exhibitions and special events, the Biosphère develops educational and awareness-raising products for a diverse clientele across Canada and is a recognized clearinghouse for environmental information.

The Biosphère, Environment Museum and Trans Canada Trail are providing this activity kit to help you explore the Trail anywhere in Canada all year round.

ec.gc.ca/biosphere
tctrail.ca

Reconnect with your environment...



Photo: © Jean-François Bergeron/Enviro foto

Charlevoix, Que.

How the BioKit Works

1. Choose a section of the Trans Canada Trail near your home. You may use the "Locate Trail" tool on the Trail website to help you.
2. Take your material: GPS device (optional), magnifying glass, binoculars, camera, pencil and clipboard.
3. Head towards the chosen section. Once there, begin your outing and complete the BioKit activities on the following pages.
4. Upon your return, discuss your outing with other people and record the results of your diagnosis on the Web.

In the electronic version of this document, available on the BioKits website, highlighted words are hyperlinks to a website.

Photo: © Dana Meise

It's a Go!

Are you ready to explore the longest trail in the world?



“

Hi there! I'm Blaze!
I'm the Trans Canada Trail blazer!
Look for me on every page and
I'll point you in the right direction as you
explore the Trans Canada Trail.

”



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Name of section visited: _____

Date: _____

Departure time: _____

Return time: _____

GPS coordinates: _____
(optional)

WEATHER

Temperature: _____ °C



Sunny



Partly cloudy



Cloudy



Rainy



Snowy



Windy

Modern explorers leave no trace!

Use the seven principles of the Leave No Trace program, as a guideline to help reduce the impact of your outdoor activities on the Trail environment.

- 1 Plan ahead and prepare.
- 2 Travel and camp on durable surfaces.
- 3 Dispose of waste properly.
- 4 Leave what you find.
- 5 Minimize campfire impacts.
- 6 Respect wildlife.
- 7 Be considerate of others.



leave no trace
CANADA

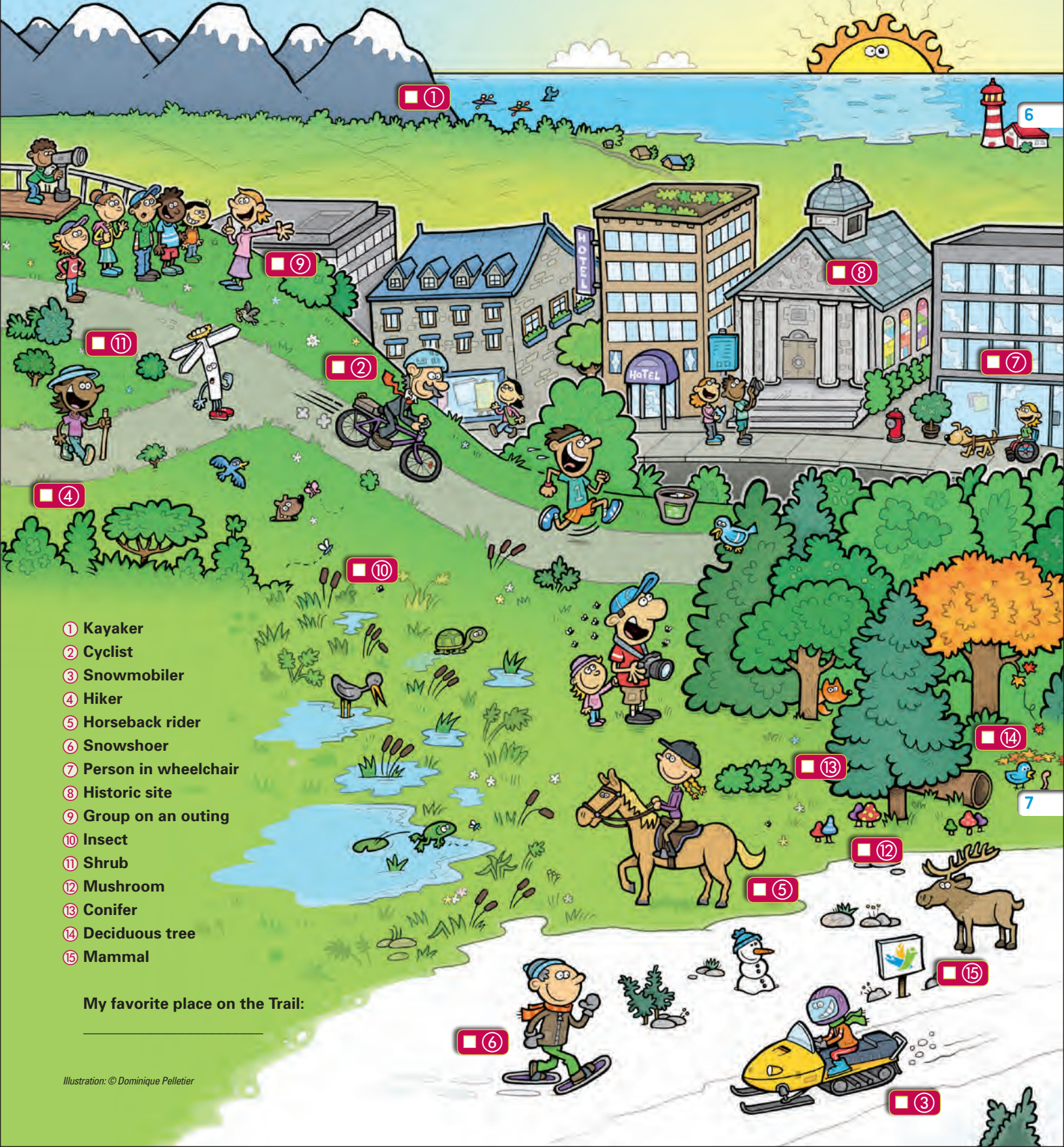


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Discover Your Trail

The Trans Canada Trail offers a beautiful array of natural and cultural diversity along its route. Test your sense of observation and try to locate the different elements in the image all along your expedition.

It's easy to go out and explore the Trans Canada Trail no matter where you are! For 80% of Canadians, the Trail is less than 30 minutes away from their home.



- 1 Kayaker
- 2 Cyclist
- 3 Snowmobiler
- 4 Hiker
- 5 Horseback rider
- 6 Snowshoer
- 7 Person in wheelchair
- 8 Historic site
- 9 Group on an outing
- 10 Insect
- 11 Shrub
- 12 Mushroom
- 13 Conifer
- 14 Deciduous tree
- 15 Mammal

My favorite place on the Trail:

Here's the Trail!



*TCT = Trans Canada Trail



Photo: © TCT*

Lower River Passage, N.B.

You know you're on the Trail when you see this logo!

“You're finally on the Trail! By the way, what is a trail?”

A trail is much more than just an access lane! It can be used to:

- Get back to nature
- Get back into shape
- Travel to work or school
- Learn about our history
- Explore communities

And why are you on the Trail?



Confederation Trail, P.E.I.

Photo: © Tourism P.E.I./Louise Vessey

A TRAIL FOR BIODIVERSITY

Plants and animals also have their own trails that they use for finding food, finding a mate, and getting around. They circulate on what are known as biological corridors. These vegetation strips are very important for maintaining biodiversity.

If you were an animal, could you easily travel along the Trans Canada Trail? If so, you may also be on a biological corridor.



Painted turtle



Grey wolf

Come face to face with the signs!

Found all along the Trail, Discovery Panels provide information on the surrounding wildlife and plants. Keep your eyes open!



Photo: © TCT

Points of Reference

Where are you coming from?

Can you indicate in which direction your house is found?



Where are you?

What is derived from nature?

What was modified by humans?

What was this section of the Trail in the past?

“When you go off on an adventure, it’s important to ask yourself where you came from, where you are and where you’re headed!”

Where are you headed?

Finding north enables explorers to find their way and use a map properly. But how can you manage without a compass? Here are three methods!

A watch with hands

Holding your watch flat, point the hour hand towards the sun. South is located between the hour hand and 12 o’clock, and north is in the opposite direction.

With the help of a shadow

Using a stone or any other object, mark the location where the shadow of a pole or branch planted in the ground ends. Wait fifteen minutes and then place a second stone where the shadow now ends. Connect both stones with a line. The first stone indicates the west and the second the east.

In relation to the sun

The sun rises in the east, is located south at noon and sets in the west.



After you completed one of the three activities, use this compass to find the cardinal points.

Did you know...

When you turn out your lights at night, you help migrating birds. Some use the stars to navigate at night. Unfortunately, city lights sometimes cause them to lose their way and they use up their energy going in the wrong direction.

The Trail from Another Viewpoint



Little brown bat

Bats situate themselves by emitting high-pitched cries that humans cannot hear: ultrasounds. These cries bounce off the various surrounding objects. The bat perceives this echo and can easily locate in mid-air the insects it feeds on. This is called echolocation.

Try echolocation! 1. Blindfold a person in your group to be the “bat”. 2. The rest of the group will be “insects”. 3. The “bat” repeatedly calls out “Beep, Beep”. 4. The “insects” must respond “Buzz, Buzz”. 5. The “bat” tries to catch an “insect”.

Test your senses with these activities and, at the same time, compare them with the senses of different Canadian animals.

HEARING

Hold your breath and identify the sounds around you.

Sounds of other Trail users: _____

Sounds of nature: _____

“Skilful adventurers must use all of their senses to fully explore the Trail!”



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SMELL

Have your companions try to guess a natural element on the Trail simply by its odour and by placing it under their nose. Be creative: choose a blade of grass, some moss or a damp leaf!



A polar bear's sense of smell is highly developed: it can easily detect the presence of a seal more than a kilometre away!

Near-blind like most moles, the star-nosed mole uses its tentacles to easily find its food beneath the earth. These tentacles are believed to be six times more sensitive to touch than your hands are!



TOUCH

Using your hands, locate the object in nature that is... the smoothest, the roughest, the spikiest.

And if you were to tickle someone, what would you choose?

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The Trail Year-round



Photo: © 123RF

Colour code

Among animals, bright colours are used to seduce or to signal danger, whereas discreet colours help for camouflage and concealment or to hunt prey.

If you were an animal, what colour would you be?



Did you know...

The coat colour of the snowshoe hare changes with the seasons so it can hide from its predators. From brown in the summertime, it becomes entirely white in the winter.

One trail, four versions

If you passed through here during another season, what would be different?



Near Penetanguishene, Ont.

Photo: © Dan Andrews



Montréal, Que.

Photo: © Dana Meise



Kettle Valley Rail Trail, B.C.

Photo: © Bruce Obee



Confederation Trail, P.E.I.

Photo: © Michael Nesbitt

“ No matter the season, the Trail will unveil all of its colours and shapes to you! Use your eagle eyes to find the following natural elements. ”

Colours:



Which colour is the least common?

And the most common?

Shapes:



Can you see other shapes?

On a trail!

Keep your eyes open near muddy or snow-covered areas of the Trail. No matter the season, you'll probably find some tracks made by animals or by Trail users.

What footprints did you see on the Trail?

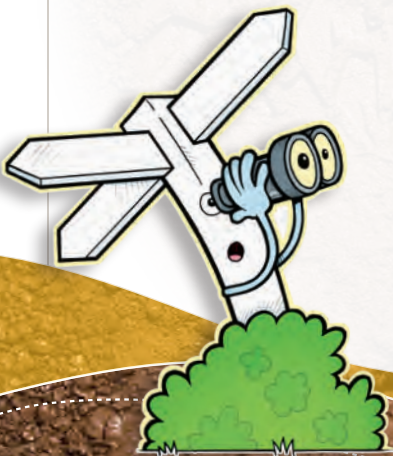


Photo: © Jamie Bastedo

Black bear, N.W.T.

Small, Medium and Large Explorers!



“As a signpost, I discover the world my way: at trail intersections. What would I see if I explored it in the form of...”



Photo: © Travel Alberta Banff, Alta.

... a bird?

Stand upright on a raised area such as a rock, a bench or a hill, and fly away! As a bird:

Where do you build your nest?

What do you eat?

... a tree?

First find a place to take root! Then spread out your arms to make branches. Now you're a big tree:

What plants or animals seek shelter on your trunk or branches?

Are the other trees similar to you? Why?



A healthy ecosystem

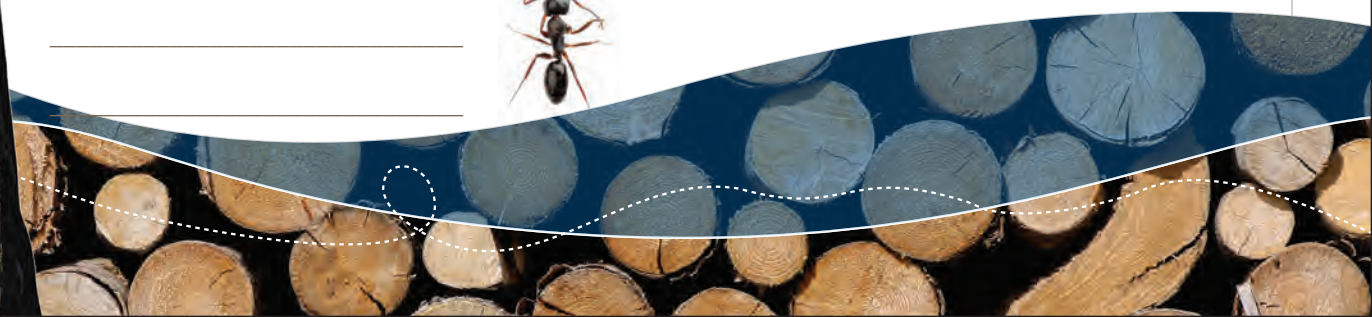
- cleans the air and water,
 - produces oxygen,
 - traps carbon dioxide gas,
 - controls insects and animal pests naturally,
 - encourages pollination,
 - helps control flooding and erosion,
 - produces fertile soil,
 - plays an important role in the economy, health and food safety.
- These are services that the public would otherwise pay for.*

... an ant?

Find a little patch of grass along the trail. Now get down on all fours! Explore this site in great detail as though you were an ant:

How many plant species do you see?

Are there any other tiny creatures around?



Source of Life

If you don't see any water at first glance, try looking right underneath your feet! The ground acts like a huge sponge by collecting rainwater. If possible, try to plunge your finger in the ground to feel its buried dampness!

Wetlands are among sites that welcome the most incredible biodiversity. They also act as huge filters by removing over 90% of the pollutants found in water.

Cattails



American toad



Fill up! To remain well hydrated during an outing on the Trail, it's important not to run out of water! If your bottle is empty, where is the closest place you can go to fill it up with drinking water?

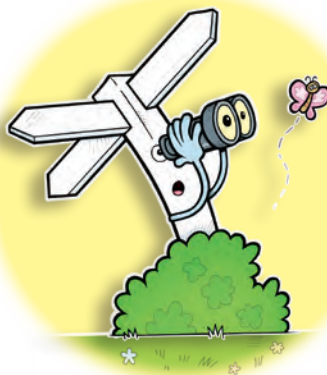
What do you see next to water?

- Birds
- Insects
- Fish
- Amphibians
- Mammals
- Algae
- Mosses
- Bushes
- Trees
- Ferns



Photo: © Gilles Belliveau

Dragonfly



“ During your adventure, you'll probably come across some water in a variety of forms such as a waterfall, a lake, a pond. Take a moment to stop and observe since where there's water, there's life! ”

Did you know...

Before it begins zigzagging through the air, the dragonfly can spend up to four years under water. During that period, it is in the form of a larva.

SECOND RIVER TO THE RIGHT

For many years, water was the best option for exploring Canada. Why is that? In the past, travelling on rivers or lakes was the only way to cover long distances within the country.

If you took the next watercourse in your canoe, where could you go? _____



Photo: © Jamie Bastedo

Celebrate Diversity!

IF YOU WERE AN EXPLORER, WHAT NEW ABILITY WOULD YOU INVENT TO EASILY EXPLORE:

The mountains? _____ Underwater life? _____

The Arctic? _____ The forest? _____



Attempt to locate a plant or animal that has adapted to its environment in a unique way. What did you find?



“The tremendous diversity and adaptation capacity of species allow life to exist in all parts of the country, and by means that are sometimes quite astounding!”

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Here are a few original species you may see along the Trail:



The Canada lynx has very large feet covered with coarse hair that enable it to travel over thick snow, like snowshoes.

Skunk cabbage is one of the only known plants able to produce heat. By bringing its temperature to more than 20°C over that of the ambient air, it manages to melt the snow in spring for early blooming!



Cacti in Canada? You bet! Four species have adapted to the country's conditions. Brittle pricklypear is found from British Columbia to Ontario and is one of the cacti that grows the furthest north.

Photo: © Harold Sellers

The wood frog can easily survive even if its body temperature drops below the freezing point: its blood contains 100 times more sugar than that of humans, preventing it from freezing!



Photo: © Environment Canada

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The Secret Life of Cities



Photo: © Forest and Kim Starr, Starr Environmental, Bugwood.org

Take a close look at the cracks on the ground. You may come across the broad-leaved plantain, a species commonly found in major Canadian cities.

With their agile hands and their ability to eat just about anything, raccoons have adapted to city living.



“ The Trail will lead you through the heart of the country's major cities. A unique biodiversity can be found here if you know where to look for it. This is the perfect mission for an urban explorer! ”

So, what did you see?

Plants: _____

Animals: _____

PROWLING FOR LICHENS

Did you know that the type and amount of lichens growing on tree trunks can tell us about the air quality? Most lichens are sensitive to air quality and deteriorate when air pollution levels are high.

Take a look at the tree trunks around you.

Do you see any lichens? _____

Do you see different types of lichens? _____

Lichen: composed of a fungus and an alga living in symbiosis (a relationship that benefits both). Lichen forms a clump, sometimes coloured, on tree trunks and rocks.



Photo: © Chantal Lepire

City streets are often tree-lined. Draw the leaves and bark of your favourite one. You can try to identify it upon your return.

Intrusive Travellers

Introduced to a region by accident or on purpose, these plants and animals represent a major threat to biodiversity and are very hard to control.



European green crab

Found on Canada's east and west coasts since the 1950s, the European green crab causes significant damage to mollusc and crustacean populations. It also hunts the common crab, an indigenous species.



Photo: © T. Wells, DFO-MPO

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“ Here are several examples of invasive alien species found in Canada. Have you seen them? ”



Photo: © Klaus Bolte, CFS-SCF, NRCan-RNCan

Emerald ash borer

Detected in Quebec and Ontario in 2002, this insect has already caused the death of millions of ash trees in America. Its larvae bore tunnels under the bark, which prevent the sap from circulating, causing the death of the tree.

Advice on fighting against invasive alien species

- Don't transport firewood from one region to another; it may contain invasive insects.
- Keep your garden in bloom with local species.
- Clean your outdoor equipment regularly to prevent dispersal of plant seeds.
- Be aware of the invasive species found in your region.
- Don't bring back any fruits, vegetables, plants or animals from your trips abroad.



Leafy spurge

Found mainly in the Prairies, the leafy spurge is a ruthless enemy of biodiversity. Its roots even produce a substance that inhibits the growth of other nearby plants! In addition, its sap may irritate human skin and can poison livestock.

Photo: © Jan Samanek, State Phytosanitary Administration, Bugwood.org



Common buckthorn

Originally from Europe, this large bush grows very densely, inhibiting the growth of all other plants. Even when you cut it, its branches will grow back again from the stump without a problem.

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United We Stand!



“Canada has more than 500 species at risk. Why? To find out, pretend you are an imaginary flower, the *Transcanadensi trailium*, which only grows beside the Trans Canada Trail!”

The small white lady's-slipper is at risk in Canada.

Photo: © David R. McAdoo, Lady Bird Johnson Wildflower Center

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What happens to you if...

- Part of the Trail is closed to build homes?
- A great many of you are picked to make bouquets?
- A new plant takes up all the space and puts you in the shade?
- Contaminated water makes you sick?
- The temperature in your region becomes too high for you?



Strength in diversity

Species diversity allows an ecosystem to better resist disruptions, such as disease or natural disaster. This is why every species, big or small, is important.

Is there a species at risk in your region? _____

If the answer is yes, which one? _____

Main causes of biodiversity loss

- Habitat loss
- Overharvesting of natural resources
- Pollution
- Introduction of invasive alien species
- Climate change

IF THERE'S A WILL, THERE'S A WAY!

Different measures have improved the status of these species at risk in recent years:

Whooping Crane



Swift fox



Peregrine Falcon



Eastern Bluebird



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Don't Miss It



Legend

- TCT Land route
- TCT Water route
- Provincial boundary

Ecozones

- | | | |
|---|--|---|
| ■ Arctic Cordillera | ■ Hudson Plains | ■ Prairies |
| ■ Atlantic Maritime | ■ Mixedwood Plains | ■ Southern Arctic |
| ■ Boreal Cordillera | ■ Montane Cordillera | ■ Taiga Cordillera |
| ■ Boreal Plains | ■ Northern Arctic | ■ Taiga Plains |
| ■ Boreal Shield | ■ Pacific Maritime | ■ Taiga Shield |

- A** The north end, in Tuktoyaktuk, Northwest Territories, on the Arctic coast
- B** The west end, in Victoria, British Columbia, on the Pacific coast
- C** The east end, in St. John's, Newfoundland and Labrador, on the Atlantic coast

Canada's 15 terrestrial ecozones each have unique features with varied wildlife and plant life. What ecozone are you in?



“Your adventure is coming to an end... but many other wonders await you on the Trail. What will your next destination be?”

My Diagnosis

Check the boxes that apply

Excellent!

Not bad but...

Things must improve!

General impression of the Trail

Diversity of Trail users

Presence of a wildlife corridor

Surrounding sounds

Biodiversity: plants and trees

Biodiversity: animals

Air quality

Presence of water

Invasive species control

Condition of trail surface

Recommendation:

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

Choose one thing you would like to improve and think up a feasible solution.

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

“ Now that you have gathered an abundance of observations, use them to reach your own diagnosis about the health of your Trail by filling in the chart opposite on the Web. ”

Note: This diagnosis can be printed directly from the BioKits website and used for other visits on the Trail.



Biking the Trail, Que.

Photo: © TCT



Black swallowtail caterpillar

Encourage Biodiversity



“After your great expedition, it’s now your turn to encourage biodiversity! Whether on the Trail or at home, there are plenty of actions you can take.”



Northern Cardinal

Maintain a yard that welcomes biodiversity.

Compost outdoors or indoors using vermicomposting.



Remove invasive alien plants.

Common reed



Fredericton, N.B.

Photo: © Jane Murphy

Participate in the activities organized on the first Saturday of June, on International Trails Day.



Slave River, N.W.T.

Photo: © TCT

Learn about and practice the seven principles of Leave No Trace.

Find out about the activities held on the Trail by the local organization responsible for it.



Atikokan Trail, Ont.

Photo: © Kirsten Spence

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 bird houses and feeders that are not easily accessible to cats;
- Promptly report any stray or feral cats;
- Turn off any excess lighting at night.

Create a supportive environment for fauna with indigenous plants.



Mackenzie River, N.W.T.

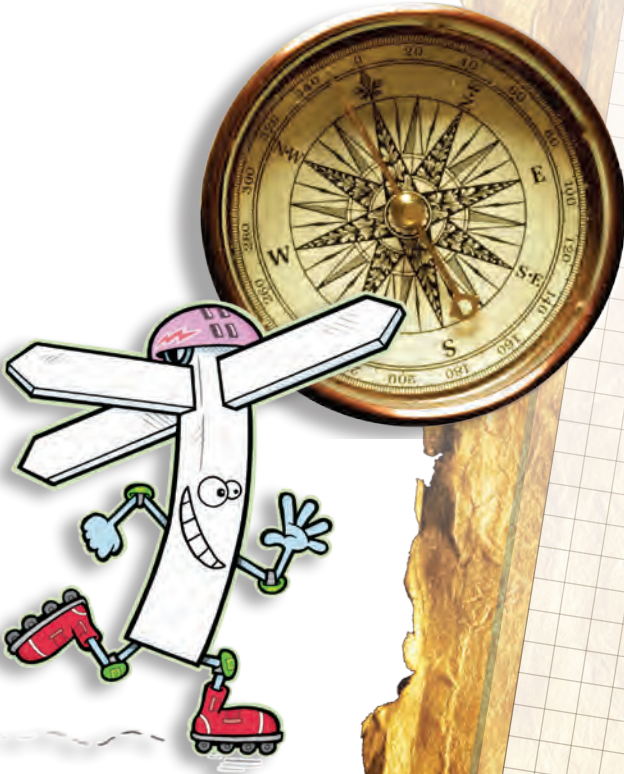
Photo: © TCT



Think Back on Your Outing

Draw the route that you covered on the Trail.

Note your discoveries: a magnificent bridge, specific bird, unknown flower, etc.



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“ You have explored a section of the Trail on the lookout for its small wonders. As a reminder of your experience and in order to share it, it's time to create a map of your outing.”

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Photo: ©TCT

Slave River, N.W.T.

PRODUCTION TEAM

Production: **Trans Canada Trail and Biosphère, Environment Canada**
Research and coordination: **Etienne Angers and Jane Murphy**
Writing: **Etienne Angers**

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