

We need nature

>> Help us conserve local habitats for now and for future generations



“In southern Ontario,
wild natural land is
disappearing fast.
When it is developed,
it's gone for good.
What the Land
Conservancy is doing
is a marvellous idea.”

...

Dr. Diane Arthur
donated a 16-hectare
(40 acres) shoreline
property, the Arthur
Nature Reserve



Ontario
Trillium
Foundation



Fondation
Trillium
de l'Ontario

This booklet was made possible thanks to a
grant from the Ontario Trillium Foundation.

Who We are

The Land Conservancy for Kingston, Frontenac, Lennox & Addington is a local land trust. Our mission statement is to preserve and protect natural sites and landscapes in this region. We work with other land trusts and conservation groups to conserve lands for nature.

Land trusts protect nature by owning land, holding conservation easements on land, and promoting land stewardship. Landowners can donate beloved properties to us so that their land can continue to support diverse species. Sometimes, with the help of financial donors, we will buy a property to conserve valuable habitat.

We are developing a Natural Heritage Plan to help identify important areas for conservation.

A Natural
Heritage Plan compiles
information about a
region and identifies areas
that may be the
most important to
conserve.



Please read more about what you can do to help our land conservation efforts at: LandConservancyKFLA.org

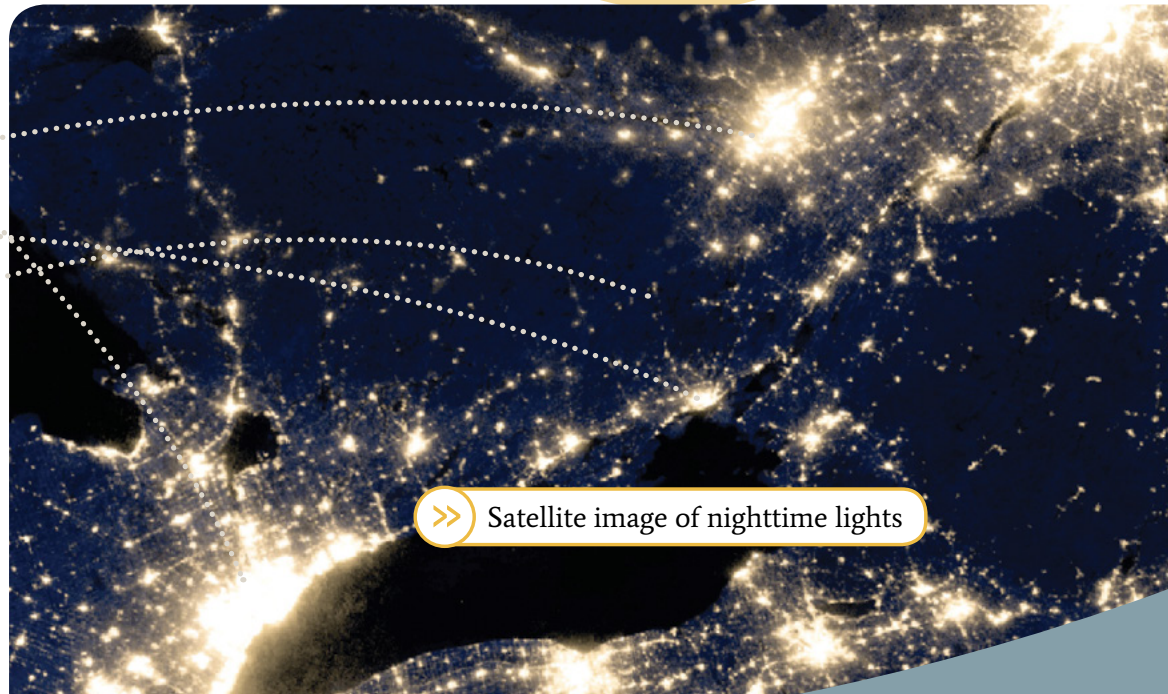


The big picture

We are very lucky.
We live near large cities –
the glowing spots on the
map – in a part of Ontario
where people have not
yet dominated all the
surrounding natural places.

>> Where do you fit on this map?

- ★ Toronto
- ★ Ottawa
- ★ Kingston
- ★ Sharbot Lake



>> Satellite image of nighttime lights

» Kingston, Frontenac and Lennox & Addington Counties

The two counties, including the City of Kingston, stretch from the shores of Lake Ontario to the deep woods north of Highway 7, covering an area larger than Prince Edward Island. It is home to approximately 200,000 people.

> City of Kingston 124,000

> Frontenac County 27,000

> Lennox & Addington County 43,000

Read on to find out more about the geology of the area and the plant and animal species that also call it home.



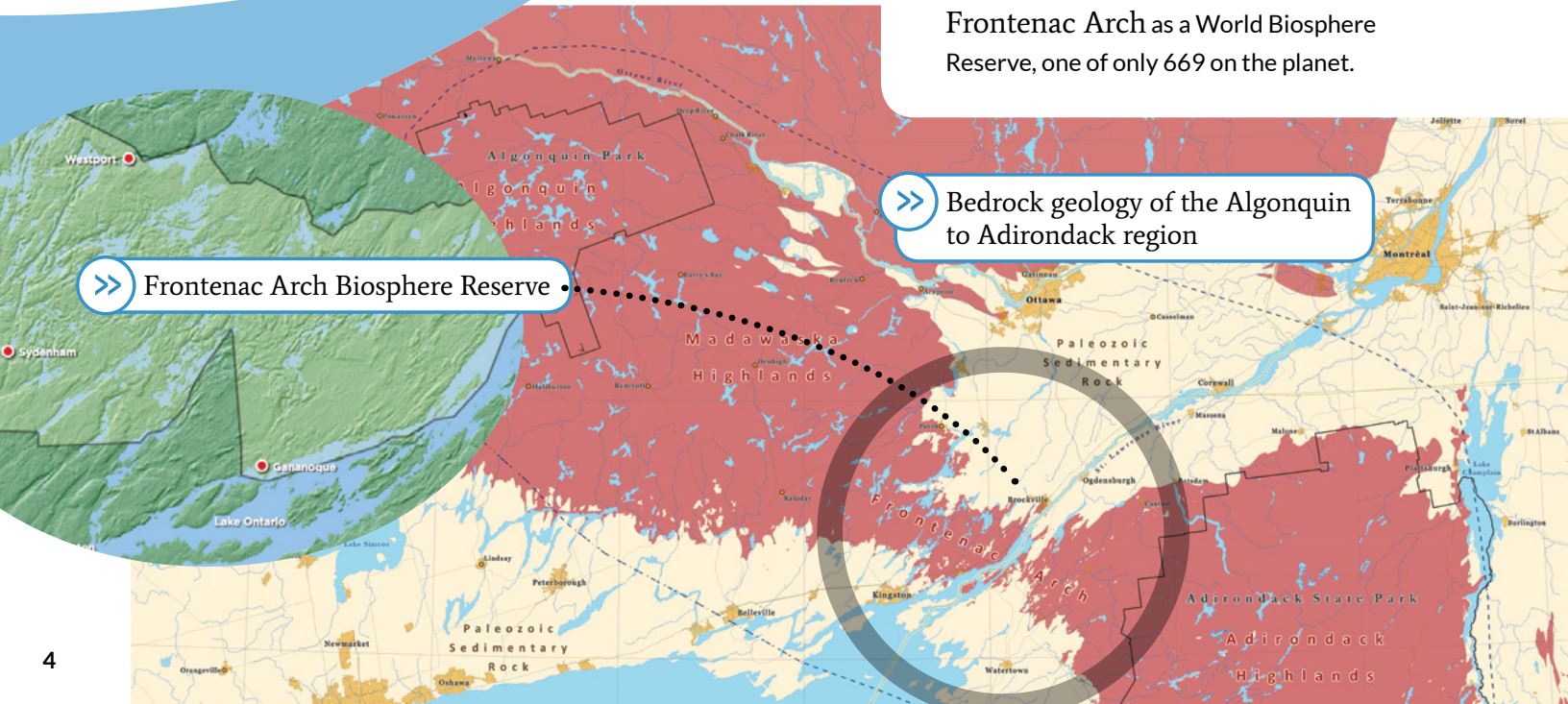
Unique habitats

We know that this part of the world is special. So does the United Nations Educational, Scientific, and Cultural Organization – UNESCO.

In 2002, UNESCO designated the Frontenac Arch as a World Biosphere Reserve, one of only 669 on the planet.

>> Frontenac Arch Biosphere Reserve

>> Bedrock geology of the Algonquin to Adirondack region





>> The Land Between



“Plants and animals don’t recognize political borders.

Connectivity is critical for a healthy and resilient natural environment.”



David Miller
Executive Director,
Algonquin to Adirondack
Collaborative

Our two counties have another important geological feature.


The north is mostly granite, the Canadian Shield. The south is mostly limestone, the Limestone Plain.

Where they meet is a rich, biodiverse transition zone. This “land between” is the northern limit for some species — for example, White Oak, Yellow-throated Vireo and Chorus Frog — and the southern limit for others — for example, Grey Wolf, Moose, and Jack Pine.

“You can walk one kilometre in any direction in The Land Between and reach water – wetlands, streams, ponds, lakes.”



Leora Berman
Chief Operating Officer,
The Land Between



“ Indigenous ways of living on this land for thousands of years make it possible for us to be on the land now. How are we leaving this land for the next seven generations?”

...

Larry McDermott
Plenty Canada

» First peoples

This area has been home to the Anishinaabe and Haudenosaunee peoples for the longest time.

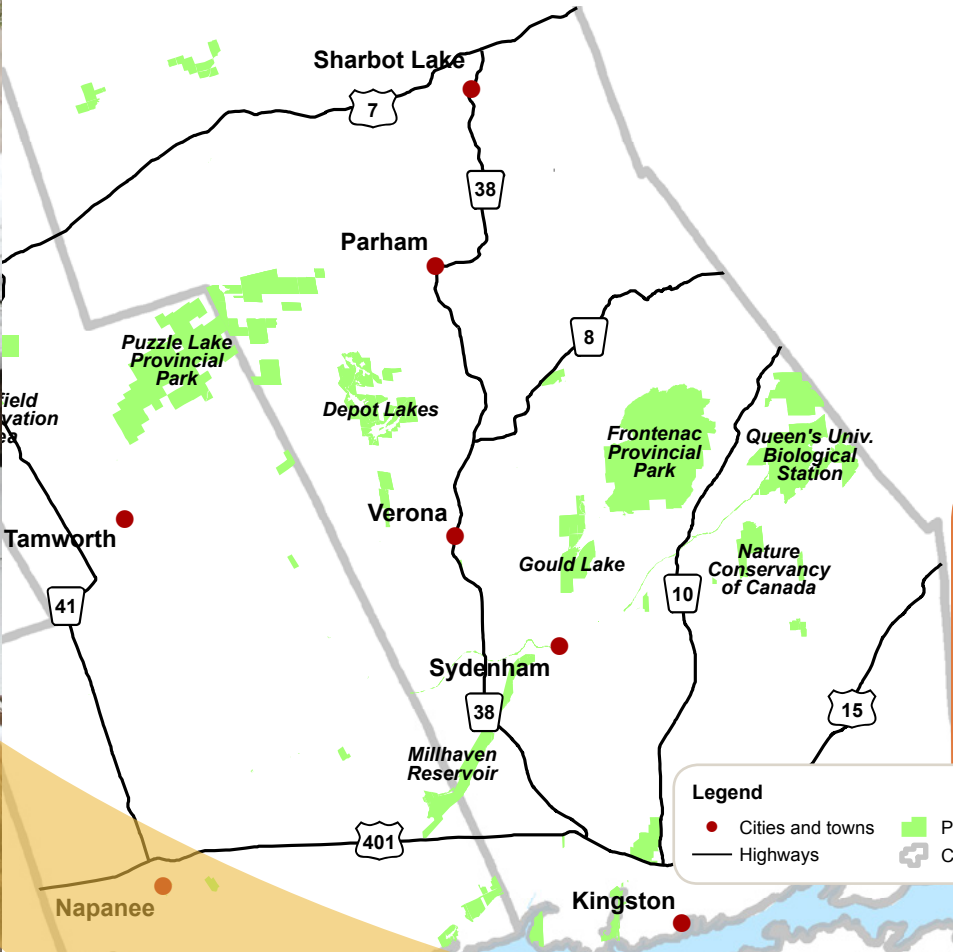


Already protected lands

Many organizations are working actively to protect our water systems, conserve land for nature, and promote land stewardship. Many landowners are keeping their shorelines natural, managing their forests, and trying to minimize their impact on nature. We can do more here to keep nature near always.

Some land in this area is already being conserved.

We need to do more.



Two geological regions

There are big differences between the northern & southern parts of Frontenac and Lennox & Addington Counties.

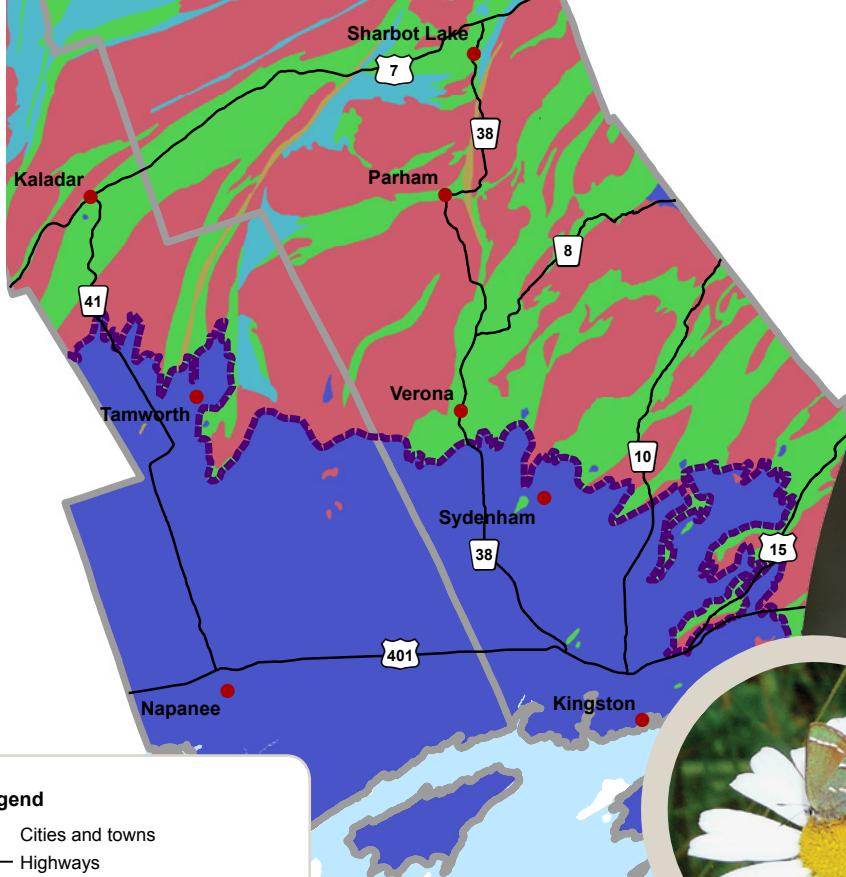


»» The Limestone Plain

The fragmented habitat of the Limestone Plain has fewer connected natural spaces. There are small woodlots and a few areas of savanna grasslands with alvar communities that are home to species found only there.

»» The Canadian Shield

Natural spaces in the Canadian Shield are generally well connected with few barriers to prevent animal and plant dispersal. The landscape is rugged and relatively undeveloped with large woodlands, wetlands, and many lakes.



Legend

- Cities and towns
- Highways
- - - Boundary between the Canadian Shield and the Limestone Plain
- ⊕ County Boundaries

Geologic Units

- Plutonic rocks
- Metasedimentary rocks
- Sedimentary rocks
- Metavolcanic rocks
- Tectonite unit



As unbelievable as it may look, there really is a wavy geological line that separates the sedimentary rock that forms the bedrock of the Limestone Plain from the igneous rock of the Canadian Shield. This tells the story of the many geological events that have shaped this area.

“The barren, jointed limestone of the Napanee Limestone Plain has rare alvar habitats that are home to at-risk plants and animals including Loggerhead Shrike, Bobolink, and Juniper Hairstreak Butterfly.

...
Mark Stabb
Program Manager,
Central East-Ontario, Nature
Conservancy of Canada

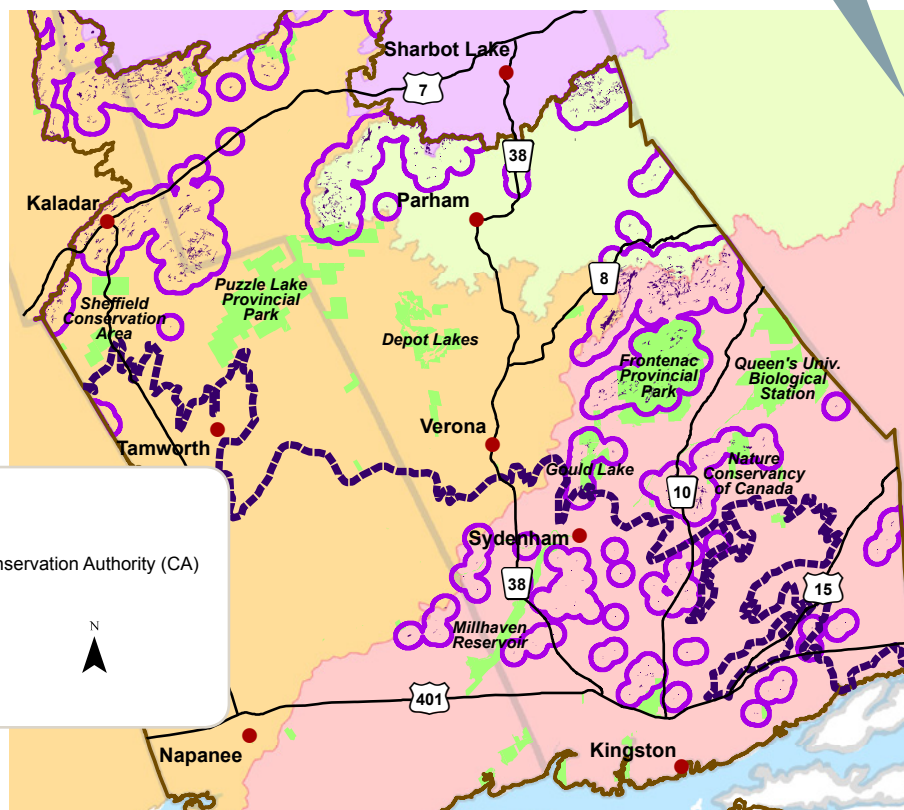
Data layers

The following maps show various features from Land Information Ontario (LIO) data maps and other sources. Together these feature layers form our compilation maps that give direction to our Natural Heritage Plan.

Watersheds and Headwater Lake Areas

Conservation Authorities are responsible for managing and conserving Ontario's water. Their areas are defined by watersheds.

Some land trusts also use watersheds as the basis for their activities. Instead, we follow the county boundaries. In the north, we overlap with the Mississippi Madawaska Land Trust. To avoid duplicating efforts, we are focusing on the Salmon River watershed, north and south of Highway 7, and the area south of Highway 7.



Legend

- Cities and towns
- Highways
- - - Boundary between the Canadian Shield and the Limestone Plain
- Protected Lands
- County Boundaries
- LC-KFLA Focus Area
- Headwater Lake Area
- Catabaqui Region Conservation Authority (CA)
- Mississippi Valley CA
- Quinte CA
- Rideau Valley CA

Wetlands

Wetlands are vital.

- They absorb rainfall and snow melt and thereby limit flooding and moderate droughts.
- They clean water through natural filtration and plant and animal activity.
- They provide habitat for many species that need them to survive.

Provincially Significant Wetlands have been identified by the province of Ontario. They have special protection under the law.

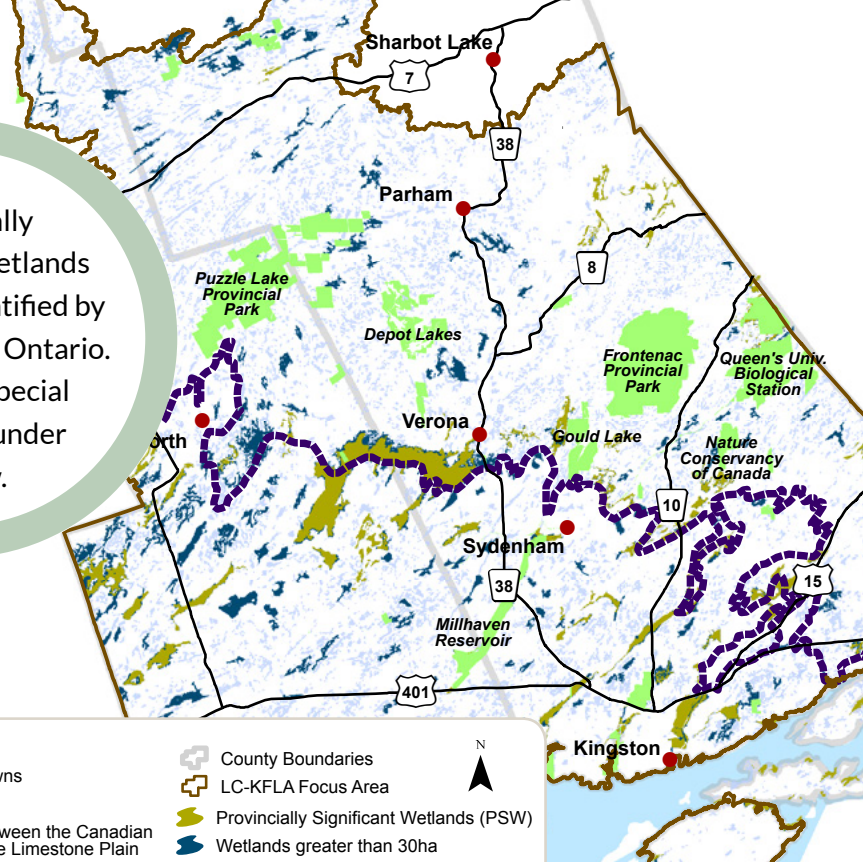
Legend

- Cities and towns
- Highways
- Boundary between the Canadian Shield and the Limestone Plain
- Protected Lands
- ▭ County Boundaries
- ▭ LC-KFLA Focus Area
- Provincially Significant Wetlands (PSW)
- Wetlands greater than 30ha
- Wetlands less than 30ha



➤➤ 5 of 6 local turtle species are listed “at risk” in Ontario

- Blanding’s
- Musk
- Northern Map
- Snapping
- Spotted
- Midland Painted Turtle (not yet listed)

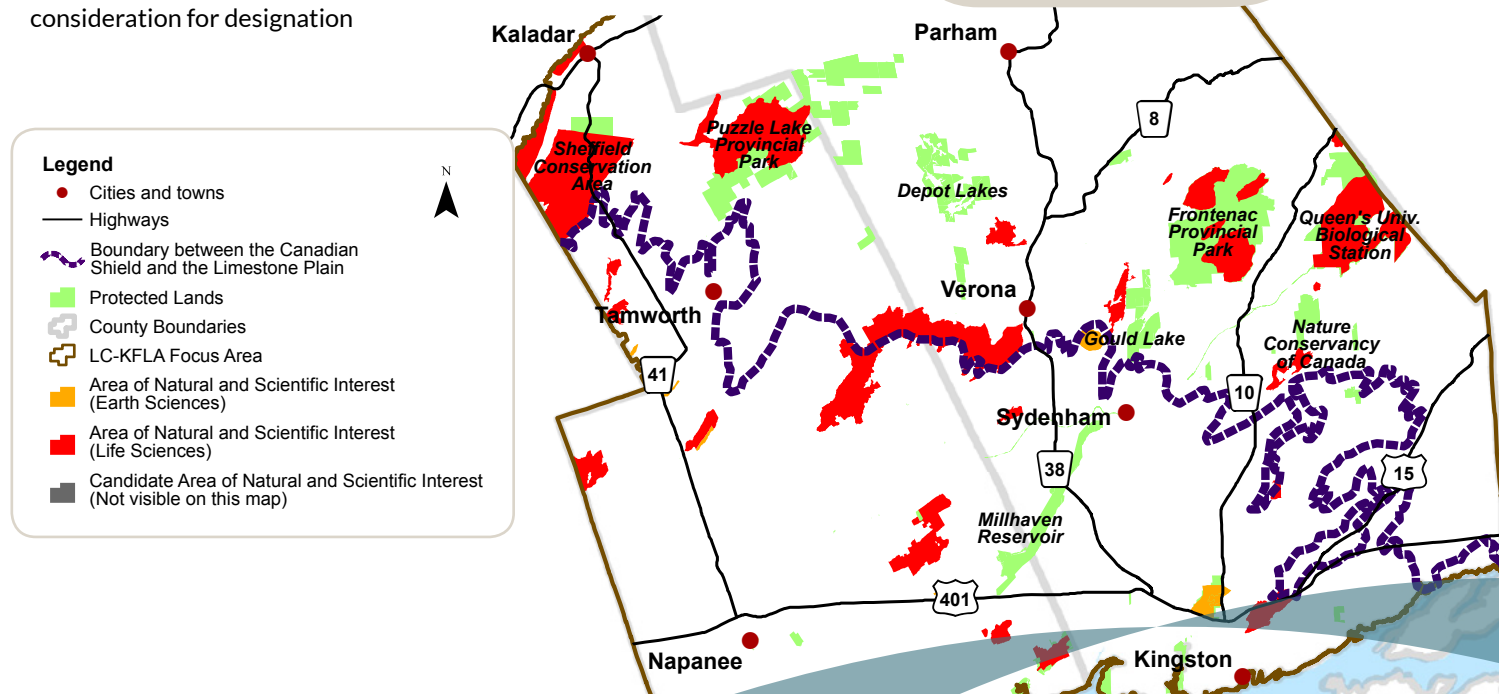


Areas of Natural & Scientific Interest (ANSIs)

The Ontario government defines an ANSI as “lands and waters with features that are important for natural heritage protection, appreciation, scientific study, or education.”

There are three categories of ANSIs:

- Life Sciences ANSIs with ecological/biodiversity features
- Earth Sciences ANSIs with geological features
- Candidate ANSIs that are under consideration for designation



Forests

The edge of a forest is more exposed to the sun, drier, windier, and more vulnerable to invasive species, while the interior of a large woodland is generally damper and denser. Some animal and plant species need the habitat provided by a large, unfragmented forest to reproduce successfully and survive.

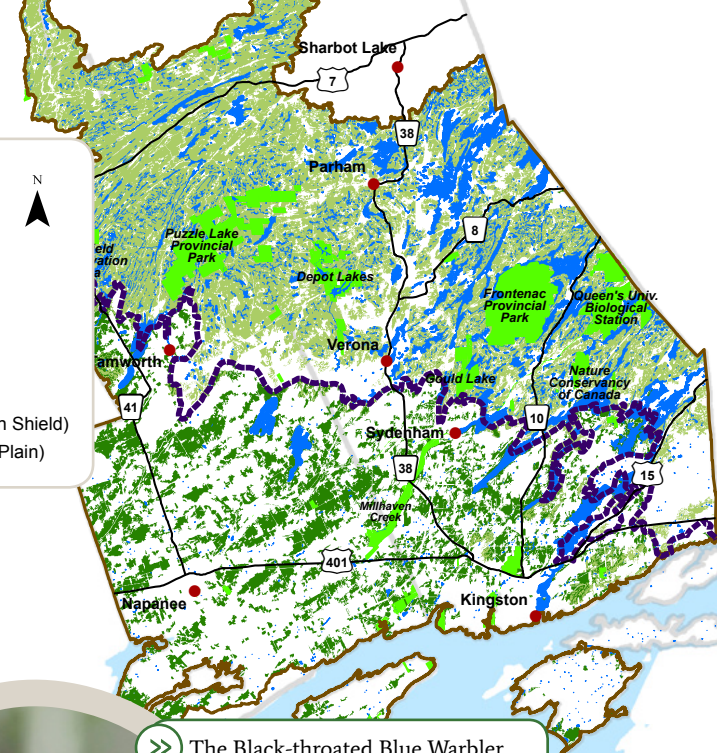
The forest data layer is based on aerial and satellite photographs and Natural Topographic Systems maps. These sources may no longer be accurate to 2017. Despite this limitation, this data layer gives an indication of where forest habitats are found.

These are examples of bird species that depend on larger interior forest habitat:

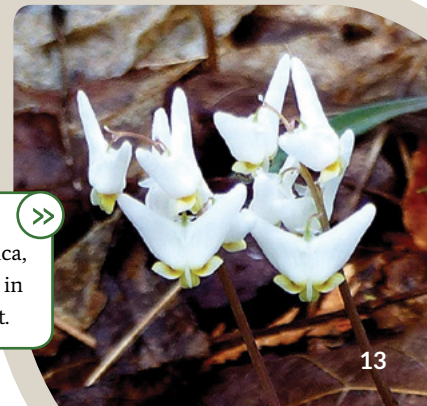
- > Northern Goshawk
- > Yellow-billed Cuckoo
- > Wood Thrush
- > Black-throated Blue Warbler
- > Cerulean Warbler
- > Blackburnian Warbler
- > Ovenbird

Legend

- Cities and towns
- Highways
- Boundary between the Canadian Shield and the Limestone Plain
- Protected Lands
- County Boundaries
- LC-KFLA Focus Area
- Lakes
- Woodlands greater than 60ha (Canadian Shield)
- Woodlands top 20% in size (Limestone Plain)



The Black-throated Blue Warbler requires a large deciduous forest for breeding success. It winters in the Caribbean.



Spring ephemerals, such as White Trillium, Dutchman's Breeches, Round-lobed Hepatica, and White Trout Lily, grace the forest floor in early spring before the tree canopy leaves out.

Putting it all together

“The mapping work that we have been doing gives us a much better understanding of our area, based on available data. We still need to get on the ground to check its accuracy, and we will continue to consult to add to our knowledge.”

...

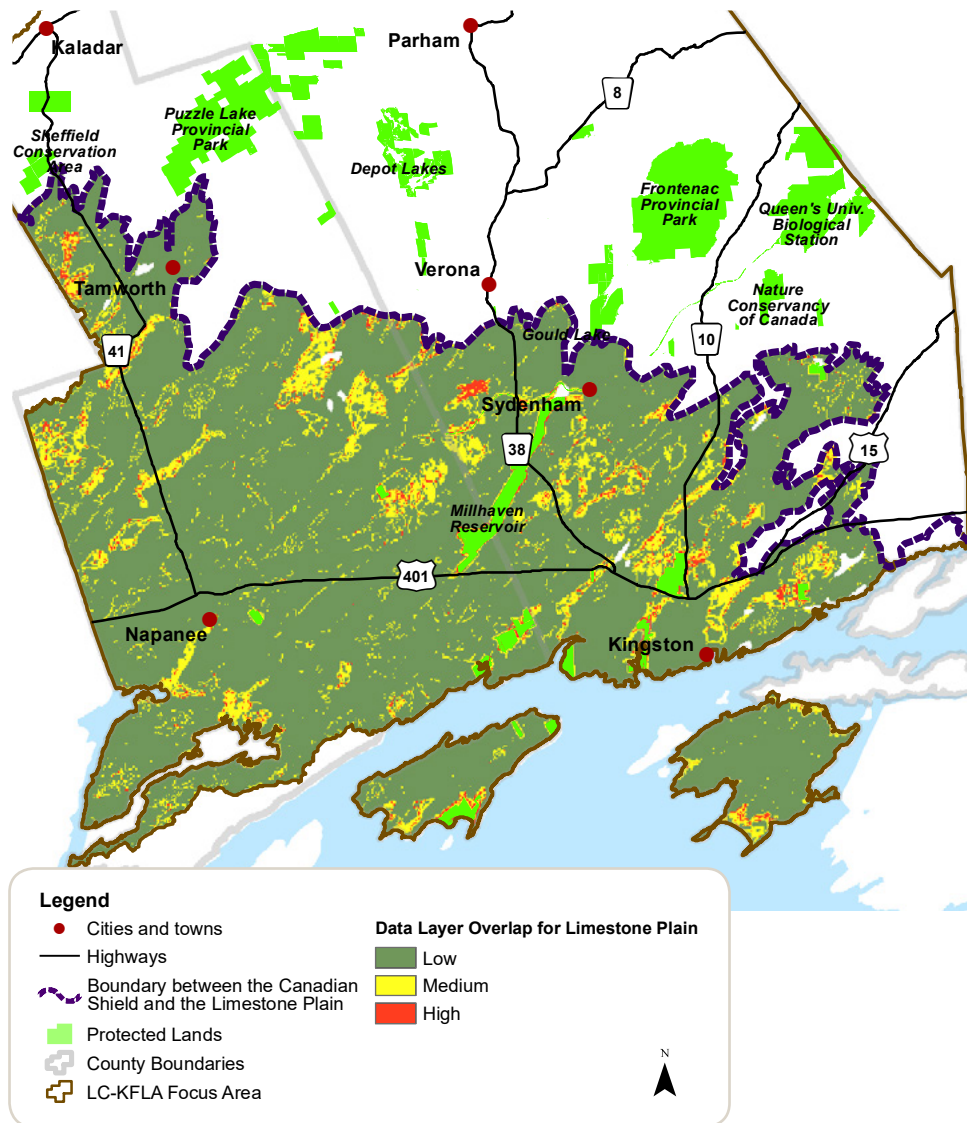
Dr. Kate Laird
Chair of the LC-KFLA's
mapping committee

» Limestone Plain Compilation Map

By overlaying all the data from the various maps, we produced a map that highlights where the various data layers intersect.

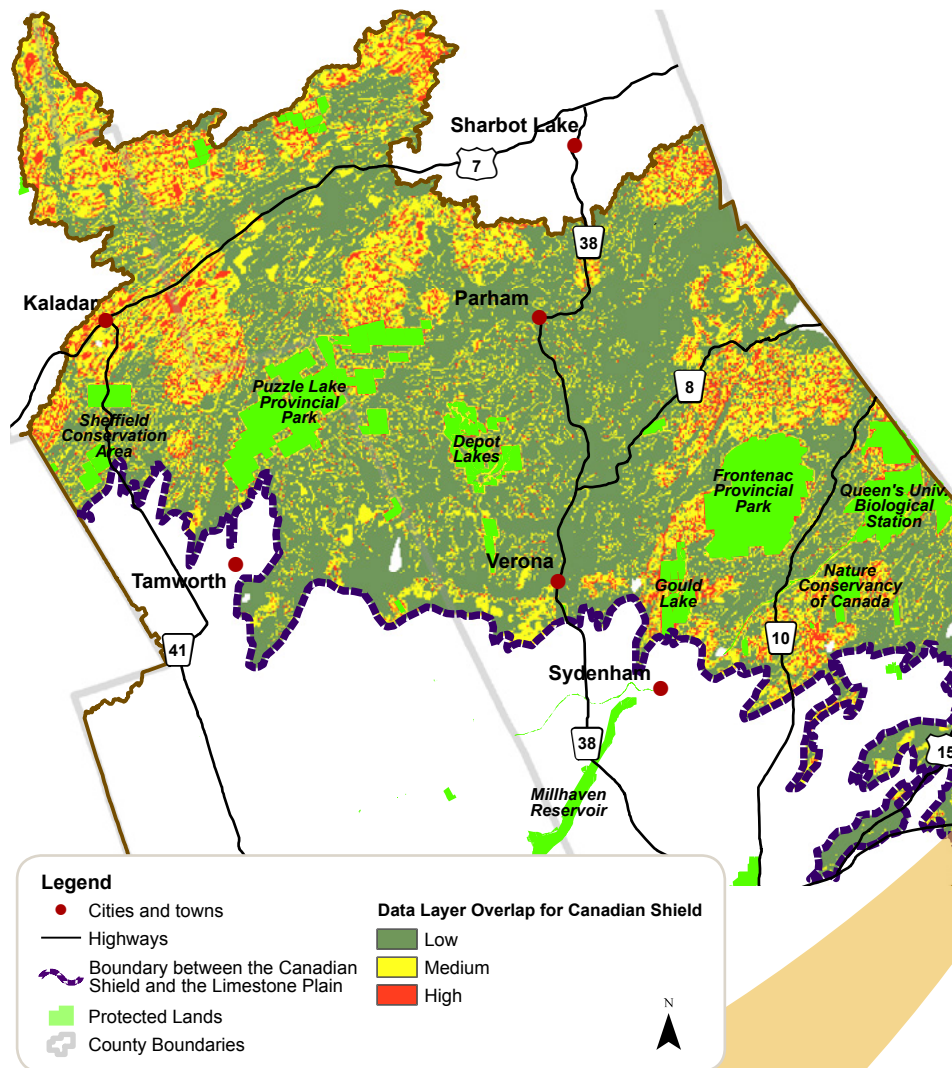
Our mapping took into account protected areas, provincially significant wetlands, other large complex wetlands, watercourses and waterbodies, Lake Trout lakes, ANSIs, and forests. We also focused on the sources of water, the creeks and streams that start on the highest ground and form the headwater areas in the region.

The compilation maps show where these natural features are most concentrated in the landscape.



>> Canadian Shield Compilation Map

The compilation map for the northern portion of our study area shows distinct sections that may have the greatest biodiversity. Note that the area between Puzzle Lake Provincial Park to the west and Frontenac Provincial Park to the east does not have as many focus point clusters. That is because the area is not the highest ground and therefore not a headwater area. It does not mean that this area is less significant, only that it scored lower when all the data layers were assembled.



Climate change predictions

It is challenging to understand how climate change may affect the lands in this part of Ontario. Queen's University master's student, Rebecca Hudson, compiled local data and used climate change modelling to predict these changes over the next 75 years.

4-6°C
Increase in
temperature

More
fluctuations
in
water
levels

Increase in
pests, plant
diseases,
and fires

Soil moisture
80%
increase during the winter
30%
decrease during
the summer

Fewer days when
lakes are frozen
from 90-100 days
to 45-60 days

Conserving habitat

For the last several years, government programs have reacted to the staggering declines in some species and focused on protecting habitat that supports these “species at risk”. As we developed the data layers, we considered how to account for species at risk. For the most part, there is insufficient reliable species data at the local level.

We chose to focus on supporting habitat diversity and increasing connections between protected areas. This approach recognizes that many species require more than one habitat, their needs changing with the seasons or with their life cycles. The most important conservation strategy may be to preserve opportunities for natural processes to take place and support biodiversity.

- The World Wildlife Fund’s 2017 Living Planet Report Canada found that 451 of 903 monitored mammal, bird, reptile, amphibian, and fish species in Canada declined between 1970 and 2014. The average decline was 83%.
- The State of North American Birds Report, 2016, said that 1 billion birds have disappeared from North America since 1970. It predicts that one in three bird species could become extinct.
- The Land Conservancy currently provides habitats for 19 species at risk on the six properties it owns and on two conservation easement properties.

“It is time to change our thinking. We need to safeguard the landscape mosaics of diverse patches that, together, constitute species’ habitat. This is a better way to enable all natural processes to continue.”



Dr. Gray Merriam
Landscape Ecologist living
in Central Frontenac

>> Some species at risk



Barn Swallow
Hirundo rustica



Common Nighthawk
Chordeiles minor



Eastern Wood-Pewee
Contopus virens



Golden-winged Warbler
Vermivora chrysoptera



Five-lined Skink
Plestiodon fasciatus

Milk Snake
Lampropeltis triangulum



Gray Ratsnake
Pantherophis spiloides



Northern Map Turtle
Graptemys geographica



Monarch Butterfly
Danaus plexippus



Butternut Tree
Juglans cinerea



These are 10 of 19 species at risk that make use of habitats on LC-KFLA properties. For the complete list visit: LandConservancyKFLA.org



Conservation possibilities for landowners

Landowners often ask the Land Conservancy “how can we protect the land we love into the future?” They want the lands that they have enjoyed over the years to continue to be a place for nature. They want to be reassured that their land will not be clearcut or subdivided for cottages, and that the animals and plants that have given them so much pleasure will continue to thrive on the land for generations to come.

Landowners have many options. Choosing the best one depends on each person’s personal and financial situation and vision for the future.

1

You can donate your land

The Land Conservancy protects the property for conservation purposes and makes plans for its long-term stewardship. This means letting natural processes continue without human interference. Donors will receive a charitable receipt for the appraised fair market value of the property, and can be assured that the land they care so much about will remain a place for nature.

2

You can both sell and donate land

By making a gift of part of your land and selling part to the Land Conservancy, you can conserve it for the long term. Canadian tax rules allow a land trust to pay fair market value for a portion of a property and to receive a portion as a gift. You will receive a charitable receipt for the value of the gift.

3

You can donate land with a life interest

For some landowners, increasing property taxes, decreasing mobility, or living a long distance away may make keeping a property unrealistic. They may still want to be able to use the property from time to time. Donating the property to the Land Conservancy with a right to use the property for a number of years may be an option that provides conservation and tax advantages.

4

You can agree to a conservation easement

A landowner can negotiate an agreement with the Land Conservancy to protect nature. A conservation easement agreement may, for example, prohibit land subdivision or changes to the shoreline. The restrictions are registered on the property title at the Land Registry Office.

The landowner continues to own the land and can pass it on to heirs or sell it. The easement restrictions remain in force forever. The easement donor will receive a charitable receipt for the appraised value of the easement.



Environment Canada's Ecological Gifts Program provides tax incentives for donors of land that has high conservation values.

Report wildlife sightings

Information on where people see a bird, turtle, bumblebee, or butterfly species is important to building knowledge and finding ways to protect species that are in decline. You can help by reporting your wildlife sightings.

» See something. Say something.



See a turtle, snake, frog, or salamander? Report it to Ontario Nature's Reptile and Amphibian Atlas through the online form, e-mail or app: [OntarioNature.org](https://ontariounature.org)



About a third of our Bumblebee species have declined over the last two decades. Submit your photo to BumbleBeeWatch.org



eBird tracks the locations of all birds seen, all over the world. Your reports are kept in an account with your sightings and added to the data base.

eBird.org



When you see a Monarch Butterfly, eggs, larvae, or patches of Milkweed, the Monarch Larvae Monitoring Project would like to hear from you. MLMP.org



Report invasive species to EDDMaps.org/ontario



A vernal pool is a water pond that provides habitat for amphibians and other species. It does not have fish and may disappear during dry summer months. Ontario Nature is collecting information about the locations of vernal pools. OntarioNature.org/vernal_pools/vernalpoolform.php

>> You can also help nature in other ways

Sandy Pines Wildlife Centre rehabilitates injured turtles. When you find an injured or recently killed turtle, call the Centre. They have successfully hatched turtle eggs harvested from female turtles killed on the road.

613-354-0264, SandyPinesWildlife.org

Report out-of-season or over-the-limit hunting or fishing, poaching (hunting without permission), the illegal sale of species at risk, or other violations of natural resource laws to the **Ministry of Natural Resources and Forestry TIP line** at 877-847-7667.



About US

The Land Conservancy for Kingston, Frontenac, Lennox & Addington is a registered charity established in 2004. It is eligible to receive EcoGifts under Environment Canada's Ecological Gifts program.

We follow the Canadian Land Trust Standards and Practices.

We are an all-volunteer group. All the money that we receive from members and donations supports land conservation work in Frontenac County and Lennox & Addington County.

Maps:	Nanor Momjian
GIS data analysis:	Adam Clow
Research:	Janet Elliott, Lesley Rudy
Text:	Vicki Schmolka
Photographs:	Janet Elliott, Kurt Hennige, Paul Mackenzie, John Poland, Bruce Ripley, Mary Alice Snetsinger
Design:	1dea Design + Media Inc.
LC-KFLA Mapping Committee:	Dr. Kate Laird, Adam Clow, Dale Dilamarter, Paul Mackenzie, Lesley Rudy, Vicki Schmolka

Data from Land Information Ontario under the terms of the Ontario Geospatial Data Exchange



Photo Index

Cover: Band-winged Meadowhawk – *main*;
Monarch Butterfly, Fringed polygala – *insets*

Inside Front Cover: Red Fox – *inset*

Page 2: Robert Simmon, NASA, 2012 – *inset*

Page 3: Woodchuck (Groundhog), Common Five-lined Skink, Great Blue Heron, Spotted Salamander, Gray Treefrog – *insets*

Page 4: Canadian Parks and Wilderness Society – *main*;
Frontenac Arch Biosphere – *inset*

Page 7: Common Milkweed – *inset*

Page 9: Juniper (Olive) Hairstreak Butterfly on a Oxeye Daisy – *inset*

Page 11: Northern Map Turtle – *inset*

Page 13: Black-throated Blue Warbler, Dutchman's Breeches – *insets*

Page 14: Barred Owl in Sugar Maple – *main*

Page 16: Pink (Pale) Corydalis – *inset*

Page 21: American Bittern – *main*

Page 22: Blue-spotted Salamander, Bumblebee – *insets*

Page 23: American Robin (juvenile), Monarch Butterfly (chrysalis), European (Pale) Swallowwort (Dog-strangling Vine) – *insets*; Bluegill – *large inset*

Inside Back Cover: Six-spotted Green Tiger Beetle, Black Swallowtail – *insets*

“Nature inspires feelings of awe, reverence and gratitude, motivating us to work to protect the environment for all species. We are always interested in talking to you about ways to protect habitat in this region.”

...

Paul Mackenzie
Chair, LC-KFLA Land
Acquisition Committee





Keeping nature near... always



**As of October 2017,
we are protecting**

- > 133 hectares (330 acres)
on 6 owned properties
- > 87 hectares (214 acres)
on 2 conservation
easement properties

Our goal is
to conserve
500 hectares
(1236 acres)
by 2020



Join us:

- > Family membership \$60
- > Individual membership \$50
- > Young adult, 18 to 25 \$20

Our annual meeting is in April.

We would be pleased to speak at your
event or lake association meeting.

LandConservancyKFLA.org



The Land Conservancy KFLA is committed to being an
environmentally responsible organization. This document
is printed on Enviro 100 – 100%PC recycled stock.