



RURAL WELLBEING

Ecological Footprint Factsheet

HIGHLIGHTS



- Rural and urban areas have a similar Ecological Footprint, however rural communities have a much higher biocapacity.
- Forests make up half of the biocapacity in rural areas, while cropland makes up most of the urban biocapacity.
- The carbon component makes up the largest proportion of Ecological Footprint for all community types.

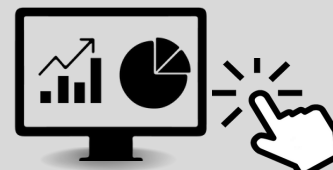
Overview

ROI partnered with York University's Ecological Footprint Initiative to downscale Ontario's accounts to the municipal level. This partnership is part of the International Ecological Footprint Learning Lab, a multi-year global partnership funded by the Social Sciences and Humanities Research Council. This project is the first attempt at creating comprehensive Ecological Footprint and Biocapacity accounts at the community level for all municipalities in Ontario. This factsheet provides a summary of the results for rural and urban communities in Ontario. For more information, see [Ecological Footprint and Biocapacity for Rural Ontario](#).

Data source:

The downscaling of Ontario's accounts were made possible through the use of 2021 Census data, ecological land classification, and satellite imagery (Southern Ontario Land Resource Information System (SOLRIS) Version 3.0 & Ontario Land Cover Compilation (OLCC) Version 2.0). For details about data sources and methods, see the [Methodological Handbook: Deriving Ecological Footprint and Biocapacity for Ontario Communities](#).

This factsheet presents information about Ecological Footprint indicators from ROI's [Community Wellbeing Dashboard](#). Explore the dashboard to view interactive maps and data visualizations.



Definitions:

Community: Census subdivisions, municipalities, and areas treated as municipal for statistical purposes, including unorganized territories and Indigenous reserves and settlements.

Community type: Categories of communities as First Nations, Rural, or Urban.

Rural: Any non-Indigenous municipality outside of census metropolitan areas.

Urban: Any non-Indigenous municipality within a [census metropolitan area](#).

First Nations communities: Communities designated as First Nations reserves or settlements.

Global hectares (Gha): The global average amount of biological regeneration for human use in a given year.

See the [Indicator Definitions](#) website for more information.

Rural communities have a much higher Biocapacity than all other community types (Table 1). This is mostly because of the vast land area covered by rural communities. Rural areas in Ontario are less developed and have more natural land cover - mostly forests. In contrast, urban areas are smaller and more developed, so they have very low Biocapacity.

Ecological Footprint is influenced by many factors including population, population change, population density, dwelling types and sizes, income, and commuting patterns (for details see [Ecological Footprint and Biocapacity for Rural Ontario](#)). First Nations communities have the lowest Ecological Footprint of all community types. Rural and urban communities have a similar Ecological Footprint, which is interesting given their different population sizes and economic contexts.

It is possible that the influence of large population sizes in urban areas is offset by smaller dwellings, higher population density, and better access to public transit. Conversely, the lower population size of rural areas may be offset by larger dwelling sizes, lower population density, and limited access to public transit.

Table 1. Summary of results with contextual information for First Nations, rural, and urban communities.

Community type	Number of communities	2021 Population	Land area (sq km)	Median individual income	Biocapacity (Gha/capita)	Ecological Footprint (Gha/capita)	Biocapacity balance (Gha/capita)
First Nations	147	54,808	6,746	\$27,300	13.4	4.7	8.6
Rural	329	2,430,261	852,225	\$36,400	31.7	6.3	25.2
Urban	101	11,738,873	33,441	\$40,000	0.8	6.4	-5.6
Ontario	577	14,223,942	892,412	\$36,400	6.1	6.3	-0.3

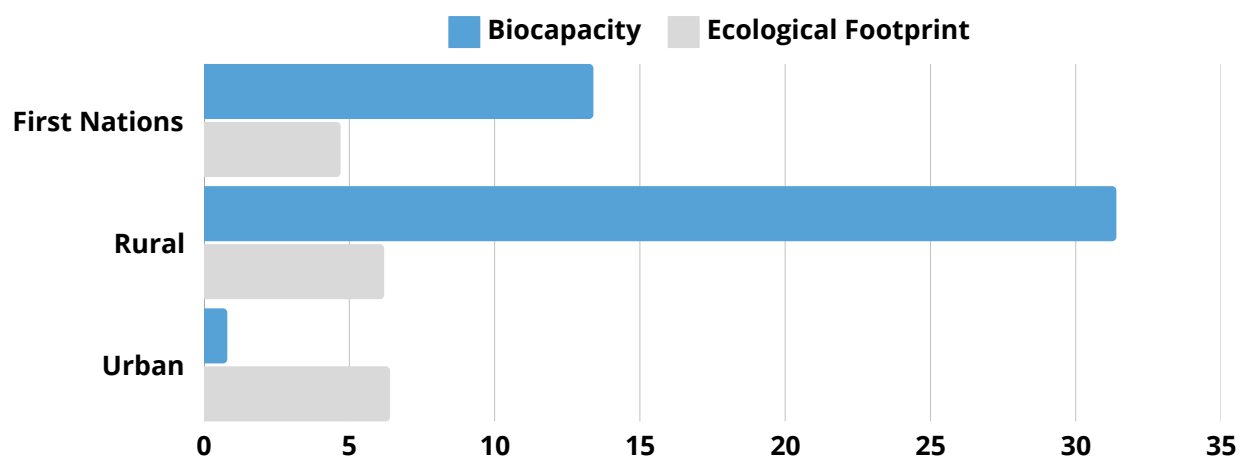


Figure 1. Biocapacity and Ecological Footprint accounts for First Nations, rural, and urban communities (global hectares per capita).

Biocapacity balance is the difference between Biocapacity and Ecological Footprint. First Nations and rural communities have a positive Biocapacity balance because of their high Biocapacity (Table 1). Urban areas have a negative balance because of their low levels of Biocapacity. Overall, Ontario has a slightly negative Biocapacity balance. Strategies for improving sustainability include increasing natural land cover in highly developed areas, improving access to public transit, and reducing greenhouse gas emissions.

Components of Biocapacity

Biocapacity has 6 components: cropland, grazing land, and fishing grounds to support food production; forests to support forest products and absorb carbon; wetlands to absorb carbon; and built-up land for infrastructure and shelter. In addition to providing the goods we consume, ecosystems also provide critical services like wildlife habitat, air and water filtration, and carbon storage. Forests provide two important types of ecosystem services for people: forest products, and carbon absorption.

Forests account for about half of the Biocapacity in rural and First Nations communities but represent only 11% of urban Biocapacity (Figure 2). Fishing grounds make up more Biocapacity for First Nations communities than both rural and urban communities. Wetlands account for 16% of rural Biocapacity, but only 7% of First Nations Biocapacity and 1% of urban Biocapacity. Not surprisingly, built up land represents 36% of urban Biocapacity, which is much higher than the 7% of First Nations Biocapacity and 9% of rural Biocapacity. Grazing land contributes more of the urban Biocapacity than for rural and First Nations communities.

Surprisingly, cropland makes up only 13% of rural Biocapacity. Rural areas do have a lot of cropland, however, their contribution to overall Biocapacity is smaller than both forests and wetlands. The cropland component comprises 47% of Biocapacity in urban communities, which is unexpected. Urban communities have less forests, so croplands make up more of their ecosystems. Another reason for this interesting result could be how we classified communities

as rural or urban. Communities with agricultural lands that are located within the Greenbelt were classified as urban if they are part of a census metropolitan area. See the ROI website for more information about [community classification](#).

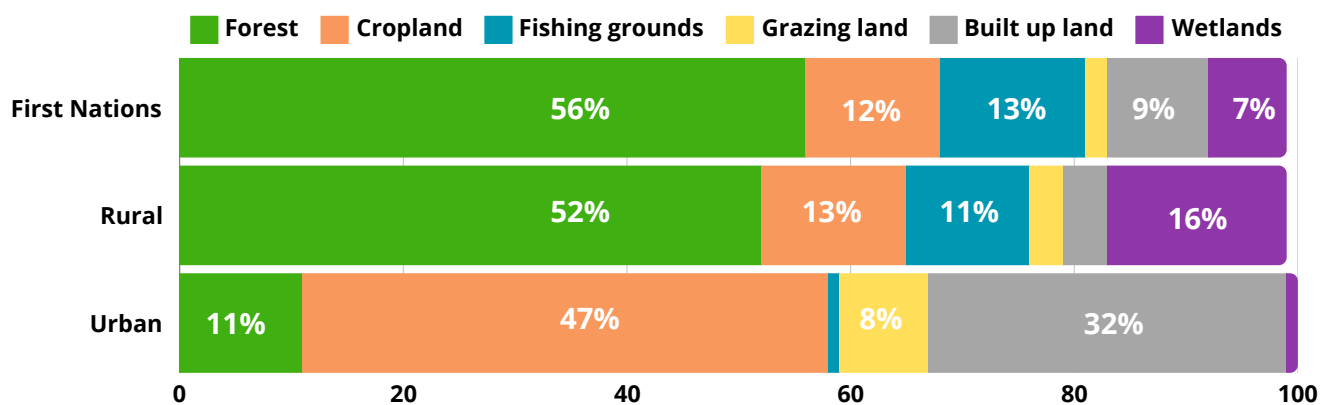


Figure 2. Proportion of Biocapacity by component.

The Importance of Protecting Agricultural Land

Croplands are a critical component of urban Biocapacity. About half of Ontario’s farmlands are protected by provincial policy. The other half is at risk from human pressures for residential development and resource extraction. Existing protections are not guaranteed as policies change over time. Protecting cropland from urban sprawl and development is critical for maintaining Ontario’s food security, providing wildlife habitat, and supporting jobs in the food and agriculture sector.



Components of Ecological Footprint

Ecological Footprint has 6 components: cropland, grazing land, forest products, fishing grounds, built up land, and carbon. Cropland refers to the area required to grow crops. Grazing land refers to the area required to feed livestock. Forest products is the area of forests needed to support consumption of forest products. Fishing grounds is the area of marine and inland waters needed for fish consumption. Built up land reflects the area covered by human-made infrastructure. Carbon is the amount of forest area that would be required to absorb carbon emissions.

The carbon component makes up the largest proportion of the Ecological Footprint for all community types (Figure 3). This is similar to other Ecological Footprint accounts at the provincial, national, and global levels where the carbon component is typically the largest. The proportion of Ecological Footprint components are roughly the same across all community types. This is also similar to the proportion of the Ecological Footprint components for Ontario.

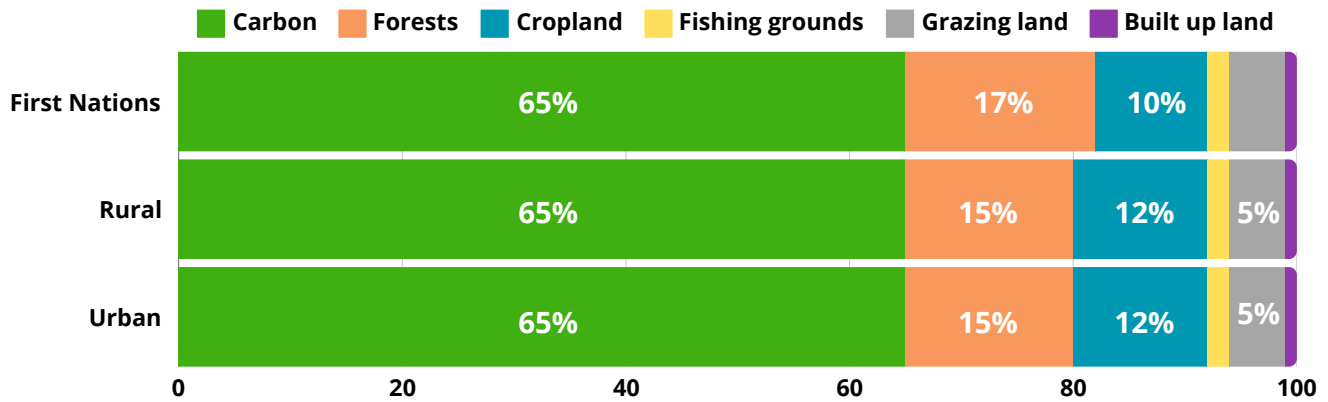


Figure 3. Proportion of Ecological Footprint by component

Summary

All levels of government are responsible for sustainable development. However, the impacts of climate change will be felt at the local level. Municipalities and regional governments are responsible for land use planning decisions, public transportation, emergency management, and waste management, and more issues that have an impact on the local environment. It can be difficult for communities to develop plans for sustainable development and climate action because of a lack of readily available information, especially for rural communities in Ontario.

ROI's [Community Wellbeing Dashboard](#) presents indicators for Ecological Footprint and Biocapacity that provide insight into a community's consumption and how this relates to the environment. The results presented in the dashboard and in this factsheet will help rural communities understand their ecological impact and facilitate plans for sustainable development and climate action.



This factsheet was prepared by Danielle Letang, Manager of Data Strategy for the Rural Ontario Institute. Questions about data sources and comments or feedback can be directed to facts@ruralontarioinstitute.ca.

This factsheet complements ROI's [Community Wellbeing Dashboard](#). Factsheets provide insight and analysis of rural facts and trends featured in the dashboards.

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