



Agriculture by the Numbers: Understanding the Greenbelt's Unique Advantages

JRG Consulting Group



Possibility grows here.

Sixteen in a Series
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The Friends of the Greenbelt Foundation is committed to promoting awareness and education about Ontario's Greenbelt. To this end we occasionally publish research and general interest papers that explore our three program areas: viable agriculture and viticulture; vibrant rural communities; and, a restored and protected natural environment.

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Executive Summary



Encompassing almost 2 million acres of protected agricultural and environmentally sensitive lands, Ontario's Greenbelt spans the Greater Golden Horseshoe. Home to some of the most productive agricultural land in the province, agricultural activity in the Greenbelt plays an essential role in shaping the landscape and economy of Southern Ontario.

This report profiles agriculture in the Greenbelt using information based on the 2001, 2006 and 2011 Agricultural Censuses. The report highlights changes over time and places this information in context by comparing agriculture in the Golden Horseshoe, the Greater Golden Horseshoe, and Ontario as a whole.

The report highlights the natural advantages of agriculture in the Greenbelt in comparison to other areas of the province; these advantages include climate, soil types, and geography. These factors help to underscore why the Greenbelt is home to both of Ontario's two specialty crop regions: the Niagara Peninsula Tender Fruit and Grape Area and the Holland Marsh.

The findings also illustrate the locational advantage of farms in the Greenbelt. Surrounding the Greater Toronto Area (GTA), Canada's largest metropolitan area, the agricultural lands in the Greenbelt benefit from being close to a large and growing market. Fruit and vegetable operations are at a particular advantage because they are near local food supply chains. Proximity to urban areas has also resulted in a growing market for flowers and other nursery products, Christmas tree

“ **The combination of natural and locational advantage is sure to remain a dominant aspect of agriculture in the Greenbelt.** ”

operations, and sod. Agriculture in the Greenbelt is also well situated with respect to the next stage in the value chain: 60% of Ontario's post-farm-gate employment in food processing and manufacturing is located within the region.

The combination of natural and locational advantages is sure to remain a dominant aspect of agriculture in the Greenbelt. In 2011 the Greenbelt accounted for 7% of Ontario's farmland and 11% of Ontario's farms. For a relatively small share of the province's land base, the

Greenbelt has a disproportionately large share of several important food crops, including: 55% of Ontario's acreage in fruit production; 60% of Ontario's celery acreage, and 35% of Ontario's carrot and onion acreage.

The report also finds that the decline in farms specializing in large-animal agriculture, mainly beef, dairy, and hog operations, was more pronounced in the Greenbelt than in the rest of Ontario. This trend is mirrored in near urban areas across the province and reflects common challenges facing large-animal agriculture. Key factors that constrain the viability of such operations include: lack of proximity to supporting infrastructure, nutrient management regulations and associated acreage requirements, complaints about odours, and minimum distance separation regulations that can limit expansion.

This profile highlights how agriculture is changing within the Greenbelt and its larger geographical context. It demonstrates the importance of protecting this area from urban development, but it also illustrates the challenges and opportunities of keeping agriculture viable in a rapidly urbanizing region. It is therefore crucial to maintain and enhance a strong and interconnected agricultural system, one that includes critical infrastructure and support services and allows farmers the flexibility to innovate and adapt, so that they may take advantage of those opportunities provided by the Greenbelt's unique natural and locational advantages.



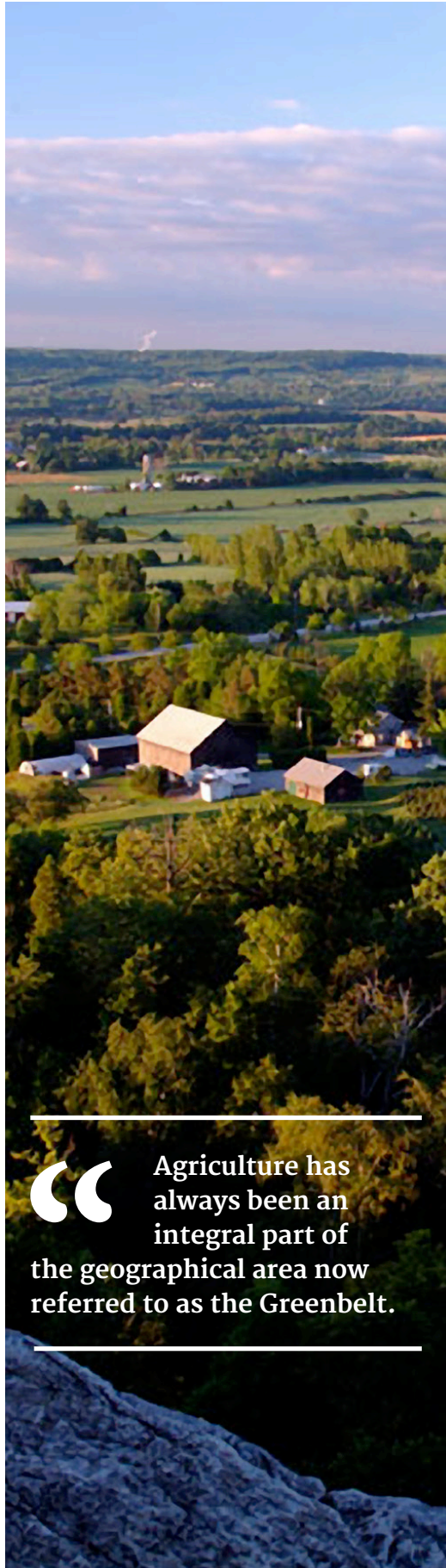
Introduction

This report profiles agriculture in the Greenbelt based on data from the 2011 Census of Agriculture and two earlier censuses, in 2006 and 2001. It highlights changes over time, and uses additional quantitative and qualitative data to explain those changes. In addition, the report places the data in context by examining agriculture in Ontario as a whole, in the province excluding the Greenbelt, and in the Golden Horseshoe and the Greater Golden Horseshoe.¹

The report is organized as follows:

- | | |
|-----------|---|
| Chapter 1 | Describing the Greenbelt, relevant sections of the Greenbelt Plan, and the study's methodology |
| Chapter 2 | Profiling agriculture in the Greenbelt in terms of area farmed, number of farms, farm size, land tenure, and farm revenue |
| Chapter 3 | Examining farmland use by acreage and activity |
| Chapter 4 | In-depth analysis of plant agriculture |
| Chapter 5 | In-depth analysis of animal agriculture |

¹ The Golden Horseshoe includes the Regions of Niagara, Hamilton, Halton, Peel, York, and Durham, as well as the City of Toronto and the City of Hamilton. The Greater Golden Horseshoe includes the Golden Horseshoe, as well as the Counties of Haldimand, Brant, Wellington, Dufferin, Simcoe, Kawartha, Peterborough and Northumberland, in addition to the Region of Waterloo.



“ Agriculture has always been an integral part of the geographical area now referred to as the Greenbelt.”

1.1 Ontario's Greenbelt

Agriculture has always been an integral part of the geographical area now referred to as the Greenbelt. The Greenbelt surrounds the western shores of Lake Ontario, from Niagara-on-the-Lake, through the GTA, to just north of Cobourg in Northumberland County.

Most of the Greenbelt lies within the Golden Horseshoe, which includes the Regions of Niagara, Halton, Peel, York, and Durham, as well as the City of Toronto and the City of Hamilton. The Golden Horseshoe is where much of Ontario's economic development has occurred as a result of the natural expansion of urban and commercial centres. Such expansion typically requires the development of lands that were previously used for farming. This phenomenon has occurred around major centres world-wide; a variety of approaches have been taken to protect agriculturally and environmentally important areas surrounding metropolitan areas. The objective is to keep lands in current uses, whether for agriculture, as environmentally sensitive green spaces, or for recreation.

Ontario's Greenbelt Plan (GBP) was established in 2005 to permanently protect farmland and environmentally sensitive land in the Greater Golden Horseshoe. The Greenbelt makes up 24% of the land area in the Greater Golden Horseshoe, which has 7.9 million acres (or 32,000 square kilometers). Figure 1-1 provides a view of the Greenbelt within the Greater Golden Horseshoe.

The Greenbelt Plan includes lands within the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan. The remaining Greenbelt area is referred to as the Protected Countryside. Figure 1-2 provides an overview of the Greenbelt area.

The vision for the Greenbelt as outlined in the Greenbelt Plan (2005) indicates that:

The Greenbelt is a broad band of permanently protected land which:

Protects against the loss and fragmentation of the agricultural land base and supports agriculture as the predominant land use;

Gives permanent protection to the natural heritage and water resource systems that sustain ecological and human health and that form the environmental framework around which major urbanization in south-central Ontario will be organized; and

Provides for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation and resource uses.

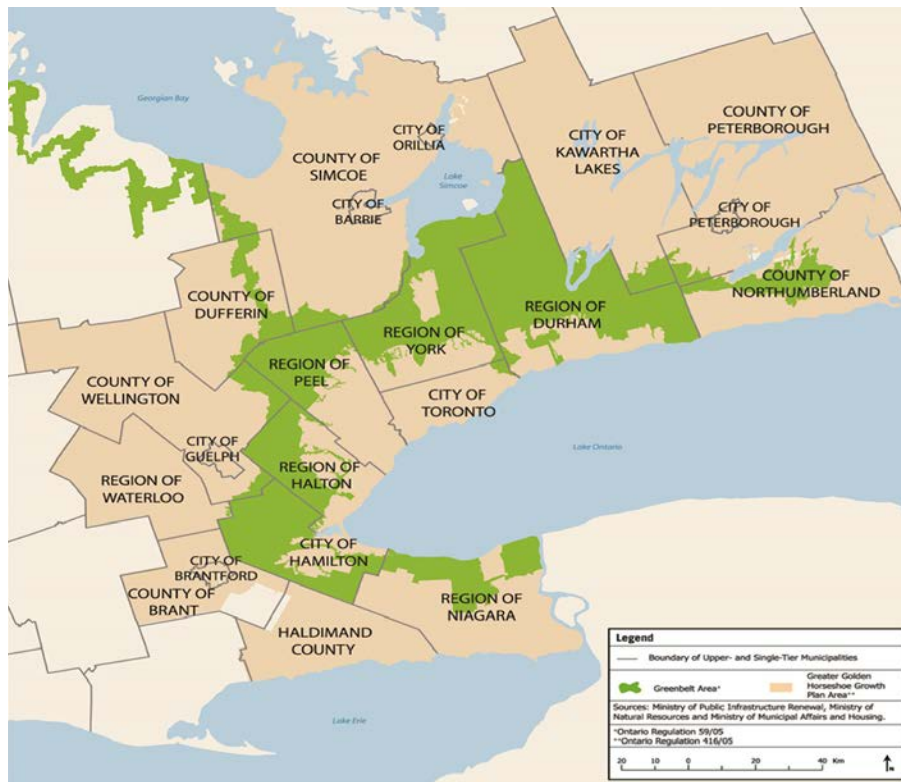


Figure 1-1 The Greenbelt within the Greater Golden Horseshoe.

The Greenbelt Plan also articulated goals, including those for agriculture, which are:

Protection of the specialty crop area land base while allowing supportive infrastructure and value added uses necessary for sustainable agricultural uses and activities;

Support for the Niagara Peninsula specialty crop area as a destination and centre of agriculture focused on the agri-food sector and agri-tourism related to grape and tender fruit production;

Protection of prime agricultural areas by preventing further fragmentation and loss of the agricultural land base caused by lot creation and the redesignation of prime agricultural areas;

Provision of the appropriate flexibility to allow for agriculture, agriculture-related and secondary uses, normal farm practices and an evolving agricultural/rural economy; and

Increasing certainty for the agricultural sector to foster long-term investment in, improvement to, and management of the land.



Figure 1-2 The Protected Countryside, Niagara Escarpment, and Oak Ridges Moraine within Ontario's Greenbelt

1.2 Methodology

The quantitative information for this profile came largely from the 2001, 2006, and 2011 Census of Agriculture data for census subdivisions within the Greenbelt. The census forms were completed by farmers and reflect only what they reported. Since the Greenbelt geography does not map directly with census subdivisions, the Friends of the Greenbelt Foundation commissioned Statistics Canada to do a custom analysis for the Greenbelt, as well as for its component parts: the Niagara Escarpment, the Oak Ridges Moraine, and the Protected Countryside. This report focuses on the Greenbelt but provides some data on these specific areas, with complete data in Appendix 1.

To undertake the custom analysis run, Statistics Canada prepared a “custom-area-to-standard-area” concordance file. This file was based on dissemination areas (DAs),² which are the smallest geographic units used for census data. The file took the DAs in a custom area and determined what percentage they comprised of all the DAs in the standard area. An agricultural land mask (derived from satellite imagery) was also used to better identify where agricultural activity took place. This latter step is new as of 2011, and Statistics Canada believes that this methodology improved the accuracy of the custom analysis. This new step means, however, that Greenbelt-specific requests

2 A dissemination area is a small, stable geographic unit, with a population between 400 and 700.

made to Statistics Canada prior to 2011 are not directly comparable to the current analysis.

The resulting percentage of DAs was used to extract the data from Statistics Canada's Cens Geographic Component database. The percent of DAs for each custom area was directly applied on the values for each measured variable (e.g., acreage planted with a specific crop), as well as on the number of farms reporting for each of these factors.

This data then went to a confidentiality program where suppression was applied as required. Statistics Canada also changed its confidentiality and suppression policies for 2011, so that some data that were previously available are no longer provided for geographical areas that do not conform exactly to census areas.

Most importantly, Statistics Canada was unable to provide data for financial and operational variables. Therefore, this report uses farm revenue data for the Golden Horseshoe as a reasonable estimator or comparator, and as a way to understand some of the changes and trends in farm revenues in the Greenbelt.

In preparing this report, interviews were also conducted with a cross-section of commodity groups and agricultural associations, as well as crop specialists at the Ontario Ministry of Agriculture and Food. Further insight was provided by an advisory committee, which included staff from both the provincial government ministries and the municipalities within the Greenbelt.

2

Agriculture in the Greenbelt

This chapter places Greenbelt agriculture in the context of agriculture Ontario-wide as well as in the Golden Horseshoe and the Greater Golden Horseshoe. It also reviews key characteristics of Greenbelt farms, including acreage, number, and size, and then examines land tenure and farm revenue.

Agriculture is important within the Greenbelt: 43% of the Greenbelt's total area was used for agricultural purposes in 2011. According to the most recent census, the Protected Countryside accounted for almost two thirds of agriculture. As shown in Figure 2-1, the remainder was split almost equally between the Oak Ridges Moraine and the Niagara Escarpment.

Greenbelt agriculture accounted for 6.8% of Ontario's farmland, but a larger 10.6% share of the total number of farms in Ontario (see Table 2-2). The main reason for this difference is that the type of farming conducted in the Greenbelt often does not require as large a land base as the typical Ontario farm. For example, according to census data, significantly more horticultural production occurred within the Greenbelt, with these operations requiring less land and more labour than farms in the rest of Ontario.

As shown in Table 2-2, the Greenbelt accounted for approximately 88% of the area farmed in the Golden Horseshoe, and 90% of the total number of farms in the Golden Horseshoe. In the Greater Golden Horseshoe, the Greenbelt made up 24% of farmland and 31% of farms.

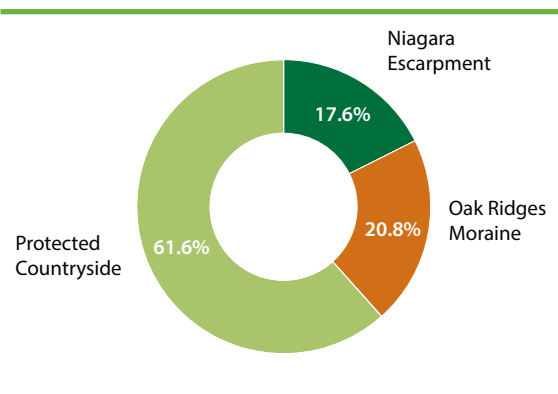


Figure 2-1 Distribution of area farmed in the component plan areas of the Greenbelt (2011)

As seen in Table 2-1, more than half the area in the Protected Countryside was in farming, and approximately one third of the Niagara Escarpment and the Oak Ridges Moraine were farmed.

Table 2-1 Distribution of area farmed, percentage of land in farming, and number of farms in the component plan areas of the Greenbelt (2011)

	Units	Niagara Escarpment	Oak Ridges Moraine	Protected Countryside	Greenbelt Total
Area farmed	acres	150,692	178,127	527,605	856,424
Distribution of acres	%	17.6%	20.8%	61.6%	100.0%
Total area	acres	480,224	469,500	1,040,800	1,990,524
Percentage in farming	%	31.4%	37.9%	50.7%	43.0%
Farms	no.	845	1,008	3,648	5,501

Table 2-2 Distribution of area farmed and number of farms in the Greenbelt, the Golden Horseshoe, the Greater Golden Horseshoe, and Ontario (2011)

	Units	Greenbelt	Golden Horseshoe	Greater Golden Horseshoe	Ontario less Golden Horseshoe	Ontario Total
Area farmed	acres	856,424	977,481	3,551,289	11,811,812	12,668,236
Distribution of acres	%	6.8%	7.7%	28.0%	93.2%	100.0%
Greenbelt share of acres	%	100.0%	87.6%	24.1%	7.3%	6.8%
Farms	no.	5,501	6,090	17,944	46,449	51,950
Distribution of farms	%	10.6%	11.7%	34.5%	89.4%	100.0%
Greenbelt share of farms	%	100.0%	90.3%	30.7%	11.8%	10.6%

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

2.1 Farm Characteristics: Area, Number, and Size

2.1.1 Area Farmed

The Greenbelt reflects province-wide trends toward decreasing farmed acreage and a decreasing number of farms.

Table 2-3 Area farmed, number of farms, and average farm size in the Greenbelt and the rest of Ontario (2001, 2006, and 2011)

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Area farmed	acres	955,896	915,821	856,424	12,551,461	12,394,395	11,811,812	6.8%
Change by 2011	acres	-99,473	-59,397		-739,648	-582,583		
Change by 2011	%	-10.4%	-6.5%		-5.9%	-4.7%		
Farms	no.	6,380	6,193	5,501	53,348	51,018	46,449	10.6%
Change by 2011	acres	-879	-692		-6899	-4569		
Change by 2011	%	-13.8%	-11.2%		-12.9%	-9.0%		
Average farm size	acres	150	148	156	235	243	254	
Change by 2011	acres	5.9	7.8		19.0	11.4		
Change by 2011	%	3.9%	5.3%		8.1%	4.7%		

As shown in Table 2-3, over a 10-year period the area farmed declined by 10.4% in the Greenbelt, and by 5.9% in the rest of the province. This represented a 4.2% decrease in farm acreage in the Greenbelt between 2001 and 2006, compared with a 1.3% decline elsewhere in Ontario and a 6.5% decrease in the Greenbelt between 2006 and 2011, compared with 4.7% in the rest of the province. Though the percentage reduction in area farmed was greater in the Greenbelt relative to the rest of Ontario for both periods, the rate of decrease was slower in the Greenbelt. That is, the reduction in the Greenbelt was only 2.3 percentage points larger in the second period than in the first, while the comparable difference in the rest of Ontario between the two periods was 3.5 percentage points.

By way of comparison, the trend in the area farmed in the Golden Horseshoe was virtually the same as in the Greenbelt, as shown in Table 2-4, with the area farmed decreasing by 6.3% between 2006 and 2011. Moving outside the Golden Horseshoe itself to the rest of the Greater Golden Horseshoe (referred to as the outer Greater Golden Horseshoe), the percentage reduction in farmland was somewhat less at 3.6%.³

³ The Outer Greater Golden Horseshoe includes counties of Haldimand, Brant, Wellington, Dufferin, Simcoe, Kawartha Lakes, Peterborough, and Northumberland, as well as the Region of Waterloo. These regions plus those of the Golden Horseshoe comprise the Greater Golden Horseshoe.

Table 2-4 Area farmed in the Golden Horseshoe and Outer Greater Golden Horseshoe (2001, 2006, and 2011)

	Units	Golden Horseshoe			Outer Greater Golden Horseshoe		
		2001	2006	2011	2001	2006	2011
Area farmed	acres	1,081,138	1,042,899	977,481	2,685,307	2,669,947	2,573,808
<i>Change by 2011</i>	<i>acres</i>	<i>-103,657</i>	<i>-65,418</i>		<i>-111,499</i>	<i>-96,139</i>	
<i>Change by 2011</i>	<i>%</i>	<i>-9.6%</i>	<i>-6.3%</i>		<i>-4.2%</i>	<i>-3.6%</i>	

A decrease of 59,397 acres in the area farmed in the Greenbelt was reported for the period of 2006 to 2011. A variety of explanations may be offered for this decline, including but not limited to economic, region-specific or other factors such as:

- Farmable land may have been used for road construction, commercial, industrial, or residential development pre-approved before the establishment of the Greenbelt.
- The reported acreage may not have necessarily equalled actual farmable acres. For example:
 - Although the amount of arable land remained the same, the landowner may have reduced the acreage used for farming.
 - Or when land was previously farmed by the owner, the entire property may have been reported as farmed acreage. However, when the land was rented out, only land used for production may have been reported. In this case, woodlots, wetlands, and buffer areas formerly reported as agricultural land may have been excluded.

This decline in area farmed was more complex when examined by type of commodity. For example, as explained later in this report, between 2001 and 2011 the land area in fruit production decreased by 6.4% in the Greenbelt, but by five times as much (30.5%) in the rest of Ontario. As well, from 2001 to 2011 the land area in vegetable production decreased by 9.1% in the Greenbelt, but by more than twice as much (25.6%) in the rest of Ontario. From 2006 to 2011, the acreage devoted to field vegetables in the Greenbelt remained relatively constant, with only a small 0.9% decrease, compared to an 18.6% decline in the rest of the province. Conversely, the cattle and calves population decreased 1.5 times as rapidly in the Greenbelt as in the rest of Ontario over both the 2001-2006 and 2006-2011 periods. This in turn reduced the amount of pastureland needed to support cattle production.

2.1.2 Farm Numbers, Average Size, Size Distribution, Size Based on Revenue

As indicated in Table 2-3, between 2006 and 2011 the number of farm operations decreased by 11.2% in the Greenbelt and by 9% in the rest of the province.

Not surprisingly, with a larger percentage decrease in farm numbers than in area farmed, the average farm size in the Greenbelt increased by 5.3% to 156 acres in the period between 2006 and 2011. This reflected longer-term trends in both the Greenbelt and the rest of the province.

As shown in Table 2-5, average farm size for the Golden Horseshoe at 161 acres was approximately the same as in the Greenbelt. In the Greater Golden Horseshoe, average farm size increased to 198 acres per farm.

Table 2-5 Area farmed, number of farms, and average farm size in the Greenbelt, the Golden Horseshoe, the Greater Golden Horseshoe, and Ontario (2011)

	Units	Greenbelt	Golden Horseshoe	Greater Golden Horseshoe	Ontario less Greenbelt	Ontario Total
Area farmed	acres	856,424	977,481	3,551,289	11,811,812	12,668,236
Farms	no.	5,501	6,090	17,944	46,449	51,950
Farm size	acres/farm	156	161	198	254	244

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

In tandem with the smaller average farm size in the Greenbelt, the size distribution also differed relative to the rest of Ontario. As seen in Figure 2-2, 50.6% of Greenbelt farms were smaller than 70 acres, compared with 27.2% of farms in the rest of Ontario. As shown in Table 2-6, this distribution did not change significantly over the decade.

Table 2-6 Size distribution of farms in the Greenbelt and the rest of Ontario (2001, 2006, and 2011)

	Greenbelt					
	2001		2006		2011	
	Area	Distribution of Acres	Area	Distribution of Acres	Area	Distribution of Acres
	acres	%	acres	%	acres	%
< 10 acres	608	9.5%	643	10.4%	544	9.9%
10 to 69 acres	2,429	38.1%	2,467	39.8%	2,237	40.7%
70 to 129 acres	1,375	21.5%	1,272	20.5%	1,094	19.9%
130 to 399 acres	1,431	22.4%	1,294	20.9%	1,113	20.2%
400 to 1,119 acres	467	7.3%	446	7.2%	428	7.8%
> 1,120 acres	70	1.1%	71	1.1%	86	1.6%

	Rest of Ontario					
	2001		2006		2011	
	Area	Distribution of Acres	Area	Distribution of Acres	Area	Distribution of Acres
	acres	%	acres	%	acres	%
< 10 acres	2,252	4.2%	2,520	4.9%	2,197	4.7%
10 to 69 acres	10,087	18.9%	11,223	22.0%	10,444	22.5%
70 to 129 acres	12,887	24.2%	11,585	22.7%	10,685	23.0%
130 to 399 acres	19,848	37.2%	17,354	34.0%	15,117	32.5%
400 to 1,119 acres	7,190	13.5%	7,004	13.7%	6,544	14.1%
> 1,120 acres	1,084	2.0%	1,450	2.8%	1,343	2.9%

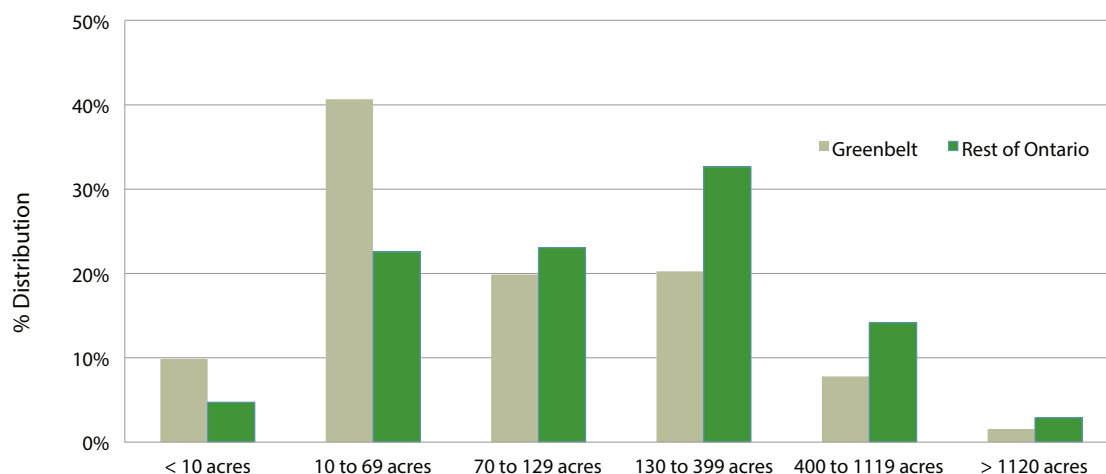


Figure 2-2 Size distribution of farms in the Greenbelt and the rest of Ontario (2011)

The smaller average farm size in the Greenbelt can be explained by differences in type of farm operation.⁴ A larger share of farmers in the Greenbelt use land more intensively, such as in fruit and vegetable production, greenhouse operations, poultry farms, or horse farms. In comparison, agriculture in the rest of the province places more emphasis on grain and oilseed production, which requires more land.

Another measure of farm size is average Gross Farm Revenue (GFR) or cash receipts (Table 2-7). As mentioned in the methodology, Statistics Canada was unable to provide financial information for the precise geography of the Greenbelt; data for the Golden Horseshoe was used instead. This included GFR and a classification of farms based on the major output of the farm operation, using the North American Industry Classification System (NAICS).⁵

“ The average Gross Farm Revenue was 23% larger than the Ontario average.

For Ontario as a whole, based on the 2011 Census of Agriculture, the GFR was \$228,890 per farm. This was quite similar to the GFR for the average farm in the Greater Golden Horseshoe, with \$230,800 per

farm. However, the average GFR for a farm in the Golden Horseshoe increased to \$281,807 – 23% larger than the Ontario average. As there is significant overlap between the Golden Horseshoe and Greenbelt agricultural lands, the average GFR in the Golden Horseshoe is a reasonable estimate for the GFR per farm in the Greenbelt.

⁴ In 2011, the distribution of farms by size was not materially different in any of the three areas that are part of the Greenbelt (Appendix Table A3).

⁵ The major output, based on GFR, does not necessarily equal or exceed 50%.

Table 2-7 Gross Farm Revenues and average per farm revenue in the Golden Horseshoe, Greater Golden Horseshoe, and Ontario (2011)⁶

	Units	Golden Horseshoe	Greater Golden Horseshoe	Ontario less Golden Horseshoe	Ontario Total
Farm cash receipts	\$ million	\$1,716	\$4,141	\$10,642	\$11,891
Farms	no.	6,090	17,944	46,932	51,950
Per farm revenues	\$/farm	\$281,807	\$230,800	\$226,750	\$228,890

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

2.2 Tenure Within the Greenbelt

Relative to the rest of the province, slightly more farmers in the Greenbelt used rented land as part of their farm operation and a larger portion of the overall farmland base was rented.

As reported in Table 2-8, 40.1% of farms in the Greenbelt rented land (or sharecropped), compared with 37.9% in the rest of the province. Within the Greenbelt, farmers' use of rented land was lowest in the Protected Countryside at 38.2%. The proportion of farms renting land increased by 8.8% in the Greenbelt between 2006 and 2011, while it decreased slightly in the rest of Ontario.⁷

Table 2-8 Number of farms renting and area of rented land in the Greenbelt and the rest of Ontario (2001, 2006, and 2011)

	Units	Greenbelt			Rest of Ontario		
		2001	2006	2011	2001	2006	2011
Farms renting & sharecropping	no.	2,350	2,280	2,203	21,981	19,429	17,603
<i>Change by 2011</i>	%	-6.2%	-3.4%		-19.9%	-9.4%	
Percent of farms renting & sharecropping	%	36.8%	36.8%	40.1%	41.2%	38.1%	37.9%
<i>Change by 2011</i>	%	8.7%	8.8%		-8.0%	-0.5%	
Area rented & sharecropped	acres	396,796	386,492	394,682	3,737,383	3,819,436	3,764,023
<i>Change by 2011</i>	%	-0.5%	2.1%		0.7%	-1.5%	
Percent of land rented & sharecropped	%	41.5%	42.2%	46.1%	29.8%	30.8%	31.9%
<i>Change by 2011</i>	%	11.0%	9.2%		7.0%	3.4%	

When one examines the area farmed as opposed to the number of farms, the difference in tenure between the Greenbelt and elsewhere is more significant. The amount of land that was rented in the Greenbelt was 46.1% of the total farmed area, compared to 31.9% in the rest of Ontario. A comparable amount of farmland was rented in the Golden Horseshoe at 44.8% and this decreased to 33.4% in the Outer Greater Golden Horseshoe.

⁶ Farm revenue data is collected in 2011, but based on the 2010 incomes.

⁷ This increase in the Greenbelt is most pronounced in the Oak Ridges Moraine at 14.8% in 2011 compared to 2006.



During the period between 2006 and 2011, the absolute number of rented acres increased by 2.1% in the Greenbelt, while it declined by 1.5% in the rest of the province. Furthermore, the proportion of rented land increased by 9.2% in the Greenbelt, but only by about a third as much in the rest of Ontario.

The higher share of rented farmland in the Greenbelt and Golden Horseshoe is likely a unique structural feature, as shown by the consistently higher rates of rented farmland in these two areas, compared to the rest of Ontario, in past censuses. This pattern reflects such factors as retired farmers not wanting to sell their assets, land being held by investors and developers, individuals wanting to live a rural lifestyle without farming, and homeowners buying a farm for residential purposes and renting out part of the property to nearby farmers.

“ A comparable percentage of farms rented land in both the Greenbelt and the rest of Ontario, at 40.1% and 37.9% respectively.

Considering how hard it is to acquire or hold land due to high prices, renting provides a more economically viable option for many farmers. There can be other benefits as well. For example, renting frees up capital for other investments and provides flexibility for farmers to respond to market conditions and engage in entrepreneurial endeavours. In many cases, longer-term leases permit necessary investments by the farmer to maintain productivity levels on rented land, though the extent of this cannot be confirmed since the census survey did not track the type of renting arrangements or length of leases. On the other

hand, year-to-year rental arrangements are not conducive to investment in maintaining or improving the land base, and can result in land not being used to its full potential.

2.3 Farm Revenue

2.3.1 Farm Revenues for Various Types of Farms in the Golden Horseshoe

As reported through the 2011 Census of Agriculture, the Golden Horseshoe generated annual gross farm revenues of \$1.7 billion, accounting for 14.4% of province-wide farm cash receipts. Table 2-9 summarizes the structural data using NAICS classifications.

The 1,119 grain and oilseed farms (producing corn, soybeans, wheat, mixed grains, etc.) in the Golden Horseshoe were categorized based on the major commodity output of each operation. While 1,119 farms were included in the grain and oilseed category, a much larger share of the 6,090 farms in the Golden Horseshoe also grew these field crops, with another commodity as their major enterprise (such as milk production).

As shown in Figure 2-3 and Figure 2-4, the most economically productive types of farm were not necessarily the most numerous or the biggest in terms of acreage. In the Golden Horseshoe, farms classified as grain and oilseed accounted for the largest share of acreage at 48.2%, but only 13.7% of revenues. The next largest uses of farm acreage were dairy and beef operations, with 9.6% and 6.9%

of the land base respectively. However, dairy generated only 6.3% of revenues and beef 2.4%. Farms in the floriculture business accounted for the largest share of overall gross farm revenue at 21.9%, while representing only 5.1% of farms and 0.8% of total acreage.

Table 2-9 Gross Farm Revenue, average revenue, and distribution of revenue by farm type in the Greater Golden Horseshoe (2011)

	Farms no.	Area Farmed acres	Gross Farm Revenue \$	Revenue Per Farm \$	Share of Farms %	Share of Acreage %	Share of Revenues %
Grain and oilseed	1,119	470,996	\$234,554,934	\$209,987	18.4%	48.2%	13.7%
Horse and other equine production	829	42,307	\$99,501,338	\$120,026	13.6%	4.3%	5.8%
Fruit and tree nut farming	801	43,584	\$159,750,554	\$199,439	13.2%	4.5%	9.3%
Hay farming	508	50,872	\$10,959,746	\$21,574	8.3%	5.2%	0.6%
Beef cattle ranching and farming, including feedlots	472	67,891	\$41,443,639	\$87,804	7.8%	6.9%	2.4%
Nursery and tree production	405	44,525	\$183,501,446	\$453,090	6.7%	4.6%	10.7%
Floriculture production	308	7,663	\$375,546,099	\$1,219,306	5.1%	0.8%	21.9%
Other vegetable (except potato) and melon farming	298	27,752	\$79,020,825	\$265,171	4.9%	2.8%	4.6%
Dairy cattle and milk production	255	94,166	\$108,956,699	\$427,281	4.2%	9.6%	6.3%
All other miscellaneous crop farming	185	45,300	\$22,070,704	\$119,301	3.0%	4.6%	1.3%
Livestock combination farming	183	28,887	\$15,578,805	\$85,130	3.0%	3.0%	0.9%
Broiler and other meat-type chicken production	181	11,662	\$115,837,450	\$639,986	3.0%	1.2%	6.7%
Sheep farming	112	6,966	\$3,917,252	\$34,975	1.8%	0.7%	0.2%
Apiculture	86	1,223	\$1,017,403	\$11,830	1.4%	0.1%	0.1%
Chicken egg production	67	5,995	\$23,456,247	\$350,093	1.1%	0.6%	1.4%
Other food crops grown under cover	51	1,743	\$48,542,673	\$951,817	0.8%	0.2%	2.8%
All other miscellaneous animal production	35	1,323	\$363,259	\$10,379	0.6%	0.1%	0.0%
Fruit and vegetable combination farming	34	3,511	\$3,660,488	\$107,661	0.6%	0.4%	0.2%
Goat farming	32	1,577	\$1,395,883	\$43,621	0.5%	0.2%	0.1%
Hog and pig farming	29	7,264	\$8,655,278	\$298,458	0.5%	0.7%	0.5%
Mushroom production	21	921	\$23,719,535	\$1,129,502	0.3%	0.1%	1.4%
Other poultry production	18	1,136	\$21,804,037	\$1,211,335	0.3%	0.1%	1.3%
Maple syrup and products production	18	751	\$62,452	\$3,470	0.3%	0.1%	0.0%
Turkey production	15	361	\$5,084,299	\$338,953	0.2%	0.0%	0.3%
Potato farming	10	2,019	\$3,218,506	\$321,851	0.2%	0.2%	0.2%
Combination poultry and egg production	7	69	\$-	\$-	0.1%	0.0%	0.0%
Fur bearing animal and rabbit production	7	88	\$-	\$-	0.1%	0.0%	0.0%
Dry pea and bean farming	3	-	\$-	\$-	0.0%	0.0%	0.0%
Poultry hatcheries	1	-	\$-	\$-	0.0%	0.0%	0.0%
All Farms	6,090	977,481	\$1,716,206,729	\$281,807.34	100%	100%	100%

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

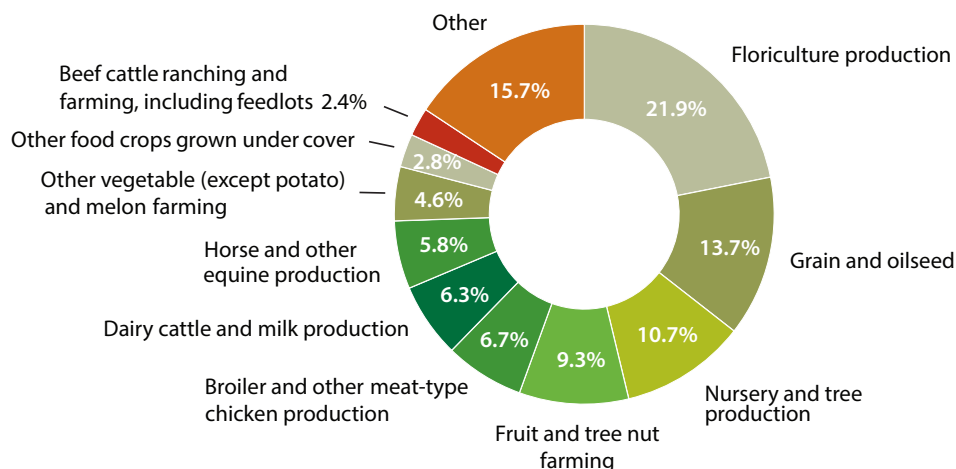


Figure 2-3 Share of total revenue by farm type in the Golden Horseshoe (2011)

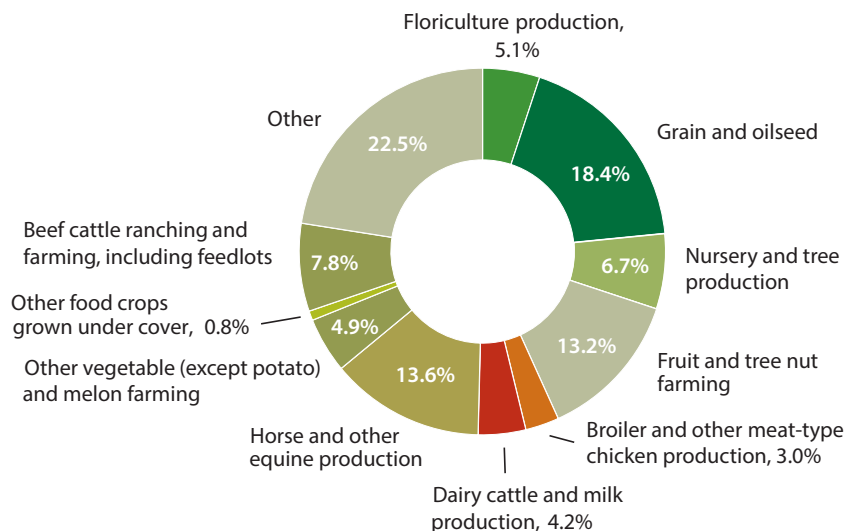


Figure 2-4 Share of total number of farms by farm type in the Golden Horseshoe (2011)

As noted in Table 2-10, per farm revenue varied by farm type within the Golden Horseshoe. On average, floriculture operations had over \$1.2 million in gross revenues in 2010, as did “other poultry” producers. Mushroom operations had \$1.1 million in per farm gross revenues, followed by greenhouse vegetable producers at \$950,000 each.⁸

Some types of farms had average revenues below \$100,000 per operation, as shown in the lower portion of Table 2-10, including beef, goat, sheep, and hay farms, as well as apicultures.

⁸ It should be noted that there can be more farms producing a certain output than shown for any commodity type. The data is organized to show the number of farms where this output is the most prominent output for the operation.

Table 2-10 Average farm size and average per farm revenue by farm type in the Golden Horseshoe (2011)

	Farms	Area	Acreage	Gross Farm	Revenue
	no.	Farmed	Per Farm	Revenue	Per Farm
		acres	acres	\$	\$
Floriculture production	308	7,663	25	\$375,546,099	\$1,219,306
Other poultry production	18	1,136	63	\$21,804,037	\$1,211,335
Mushroom production	21	921	44	\$23,719,535	\$1,129,502
Other food crops grown under cover	51	1,743	34	\$48,542,673	\$951,817
Broiler and other meat-type chicken production	181	11,662	64	\$115,837,450	\$639,986
Nursery and tree production	405	44,525	110	\$183,501,446	\$453,090
Dairy cattle and milk production	255	94,166	369	\$108,956,699	\$427,281
Chicken egg production	67	5,995	89	\$23,456,247	\$350,093
Turkey production	15	361	24	\$5,084,299	\$338,953
Potato farming	10	2,019	202	\$3,218,506	\$321,851
Hog and pig farming	29	7,264	250	\$8,655,278	\$298,458
Other vegetable (except potato) and melon farming	298	27,752	93	\$79,020,825	\$265,171
Grain and oilseed	1,119	470,996	421	\$234,554,934	\$209,987
Fruit and tree nut farming	801	43,584	54	\$159,750,554	\$199,439
Horse and other equine production	829	42,307	51	\$99,501,338	\$120,026
All other miscellaneous crop farming	185	45,300	245	\$22,070,704	\$119,301
Fruit and vegetable combination farming	34	3,511	103	\$3,660,488	\$107,661
Beef cattle ranching and farming, including feedlots	472	67,891	144	\$41,443,639	\$87,804
Livestock combination farming	183	28,887	158	\$15,578,805	\$85,130
Goat farming	32	1,577	49	\$1,395,883	\$43,621
Sheep farming	112	6,966	62	\$3,917,252	\$34,975
Hay farming	508	50,872	100	\$10,959,746	\$21,574
Apiculture	86	1,223	14	\$1,017,403	\$11,830
All other miscellaneous animal production	35	1,323	38	\$363,259	\$10,379
Maple syrup and products production	18	751	42	\$62,452	\$3,470
All Farms	6,090	977,481	161	\$1,716,206,729	\$281,807

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

Information provided earlier indicated that acreage per farm was lower in the Greenbelt than in the rest of Ontario (Table 2-3). The middle column, acreage per farm, in Table 2-10 highlights the farm types that were larger than the Golden Horseshoe average of 160.5 acres; these included dairy, potato, hog, grain, and oilseed, as well as other miscellaneous crop farms. As further illustrated in the far-right column, those farm types with the most revenue per farm did not necessarily correspond to those with the most acreage per farm.

The smaller average farm size arose from the prevalence of operations that do not require a large land base to generate considerable levels of income; these include poultry, greenhouse, nursery, mushroom, fruit, and vegetable operations. The more intensive use of land made it easier to expand in land-limited settings, compared to other types of farming, such as grains, oilseeds, or dairy.

2.3.2 Agriculture and Food as an Employer in the Golden Horseshoe

Agriculture is an important contributor to economic activity within the Greenbelt, and provided an estimated 15,000 on-farm jobs according to the most recent data.⁹ Using the Golden Horseshoe as a proxy for the Greenbelt, Table 2-11 illustrates the Greenbelt's economic impact in a few dimensions.

Table 2-11 Farm Cash Receipts, absolute and per farm employment, and food manufacturing employment in the Golden Horseshoe, Greater Golden Horseshoe, and Ontario (2011)

	Units	Golden Horseshoe	Greater Golden Horseshoe	Ontario less Golden Horseshoe	Ontario Total
Farm Cash Receipts	\$ million	\$1,716	\$4,141	\$10,175	\$11,891
Distribution	%	14.4%	34.8%	85.6%	100.0%
Farms	no.	6,090	17,944	45,860	51,950
Distribution	%	11.7%	34.5%	88.3%	100.0%
Farm employment	no.	17,020	37,960	68,925	85,945
Distribution	%	19.8%	44.2%	80.2%	100.0%
Food manufacturing employment	no.	52,135	67,410	34,175	86,310
Distribution	%	60.4%	78.1%	39.6%	100.0%
Farm employment per farm	no.	2.8	2.1	1.5	1.7

Source: Planscape for Golden Horseshoe Food and Farming Alliance, based on custom analysis by Statistics Canada using 2011 Census of Agriculture data.

In 2011, the Golden Horseshoe accounted for 19.8% of Ontario farm employment or 17,020 direct jobs. This percentage was larger than the region's share of province-wide farm numbers or cash receipts. The Golden Horseshoe had almost twice as many workers on the average farm compared with the rest of the province. This suggests that the average Golden Horseshoe farm operation supports more families through employment than farms outside the region. Farming in the region is more labour-intensive; this reflects its much larger proportion of Ontario's horticulture output.

\$4.89 billion
in overall economic activity in the Golden Horseshoe

The value-added (or Gross Domestic Product [GDP]) generated by farming in the Golden Horseshoe was estimated to be \$2.65 billion (in 2011 dollars), based on a gross output (or overall economic activity) of \$4.89 billion. This economic activity includes the direct, indirect, and induced effects of farm output.¹⁰ This activity supported 42,012 full-time jobs, with wages and salaries totalling \$1.7 billion. Taxes generated provided

\$790 million in revenues to all three levels of government, with the largest share going to the federal government and \$82.3 million to local governments.

⁹ The 15,000 jobs is based on the Golden Horseshoe on-farm jobs or 17,020 adjusted by the 87.6% of Greenbelt farms in relation to all Golden Horseshoe farms (see Table 2.2) above.

¹⁰ Source: *Evaluating the Economic Benefits of Greenbelt Assets*, occasional paper by Econometric Research Limited for the Friends of the Greenbelt Foundation.

Proximity to the GTA resulted in a disproportionate share of provincial food manufacturing employment in the Golden Horseshoe. As noted in Table 2-11, 60.4% of Ontario's food manufacturing jobs were found in the Golden Horseshoe, with 52,135 employees directly engaged in this sector.¹¹



¹¹ If Toronto is excluded, the employment in the Golden Horseshoe is 33,730, or 39% of the Ontario total.

Greenbelt Farmers' Market Network

When the Friends of the Greenbelt Foundation funded a study about Ontario farmers' markets in 2006, they could have only dreamed that less than a decade later a Greenbelt-wide network of markets would be thriving. Since its establishment in 2009, the Greenbelt Farmers' Market Network has grown to include more than 100 markets, supporting farmers across the region to sell directly to consumers and find new revenue sources.

The Network allows farmers to share experiences and overcome barriers to entry. It offers opportunities to coordinate a range of activities, including publicity, municipal permits and best practice market operating standards, such as vendor policies around local food and encouraging a diversification of available products.

Market managers are vital to the success of a farmers' market, and the network has a strong focus on helping them improve and grow their operations. It hosts an annual Managers' Day, with professional development workshops and guest speakers, as well as the opportunity to meet colleagues from across the Greenbelt.

Additional research has also led to tangible benefits for participating farmers. A 2011 survey of farmers and customers – “Healthy Habits: Farmers' Markets' Impacts on Customers” – led to a micro-grants program to create

value-added or new products. In its first year, the program supported the creation of 66 new products and boosted sales for participating farmers by up to \$10,000 each. One pair of farmers commented on how the micro-grants program has helped them: “Overall [this grant] will help us gain share into a new market as well as extend our product offerings throughout the whole year, which will in turn help generate higher sales.”

In the coming years the Network aims to build on this position of strength, promoting even more innovation among its members, piloting ideas such as on-market ATMs, and attracting new shoppers through its Market Buck coupon giveaways that encourages people to visit their neighbourhood market and support the local economy.



3

How Farmland is Used in the Greenbelt

There are a couple of ways of looking at farmland use in the Greenbelt. The first is to examine the number of acres used for production of specific crops. An alternative is to look at the number of farms engaged in certain types of farming activity. This chapter uses both methods to study farmland use in the Greenbelt and Ontario.

3.1 Farmland Use – Based on Acreage

As illustrated in Figure 3-1, many crops in the Greenbelt boasted a share of Ontario acreage well in excess of the Greenbelt's 6.8% share of the province's total farmland. For example, the Greenbelt accounted for 55.4% of Ontario's land area in fruit production, 37.9% in nursery products, and 12.6% in vegetables.

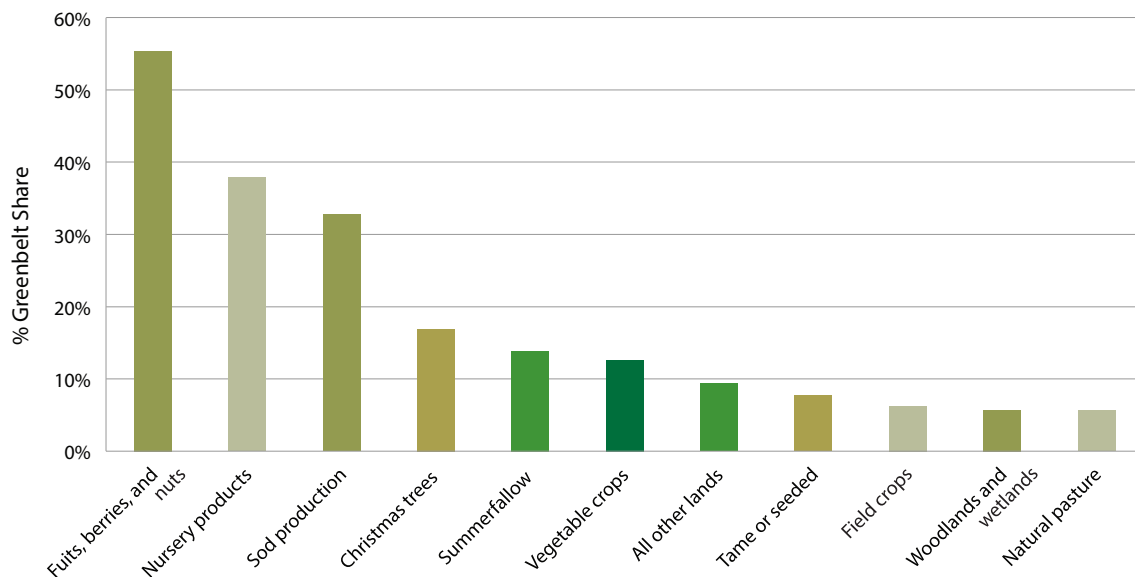


Figure 3-1 Greenbelt share of Ontario area farmed by land use (2011)

These percentages suggest that the Greenbelt has a locational advantage due to its proximity to major urban centres, and a natural advantage due to unique soils, geographies, and climates. Examples of locational advantage include sod farming, tree nursery operations, and Christmas tree production. Examples of natural advantage include vegetable production in the Holland Marsh, as well as grape and wine production in the Niagara region.

Although the Greenbelt had a sizable portion of the province’s land in fruit and vegetable production, the largest use of farmland in the Greenbelt was in field crops,¹² as seen in Table 3-1 and Figure 3-2. Field crops accounted for 63.8% of farmed acreage in the Greenbelt, followed by woodlands and wetlands at 10.6%, and fruits and vegetables at 5.3%.¹³ Similarly, the two major uses of farmland in the rest of Ontario were field crops and then woodlands and wetlands.

¹² Field crops are discussed in chapter 4.0, with grain and oilseed crops accounting for most of the acreage.

¹³ Within the Greenbelt, the distribution of how farmland is used is not materially different when comparing the sub-regions; an exception is fruit production with less than 300 acres in the Oak Ridges Moraine (Appendix Table A4).



Table 3-1 Distribution of area farmed by land use in the Greenbelt and the rest of Ontario (2006 and 2011)

	Greenbelt				Rest of Ontario				Greenbelt Share
	2006		2011		2006		2011		
	Area	%	Area	%	Area	%	Area	%	
	acres	%	acres	%	acres	%	acres	%	%
Area in field crops	555,689	60.7%	546,152	63.8%	8,251,930	66.6%	8,182,584	69.3%	6.3%
Woodlands and wetlands	108,566	11.9%	91,031	10.6%	1,729,806	14.0%	1,506,699	12.8%	5.7%
Area in natural pasture	67,861	7.4%	55,246	6.5%	1,044,807	8.4%	929,562	7.9%	5.6%
Area in tame or seeded pasture	58,201	6.4%	50,106	5.9%	691,518	5.6%	598,652	5.1%	7.7%
All other lands	50,523	5.5%	43,690	5.1%	467,362	3.8%	425,137	3.6%	9.3%
Area in fruits, berries, and nuts	32,148	3.5%	29,205	3.4%	31,556	0.3%	23,535	0.2%	55.4%
Area in vegetable crops	16,506	1.8%	16,376	1.9%	139,088	1.1%	113,219	1.0%	12.6%
Area in nursery products	10,438	1.1%	9,570	1.1%	16,641	0.1%	15,700	0.1%	37.9%
Area in sod production	9,027	1.0%	9,307	1.1%	23,169	0.2%	19,107	0.2%	32.8%
Summerfallow area	3,666	0.4%	3,259	0.4%	25,728	0.2%	20,191	0.2%	13.9%
Area in Christmas tree production	3,217	0.4%	2,489	0.3%	12,578	0.1%	12,226	0.1%	16.9%
Area Farmed	915,821	100%	856,424	100%	12,394,395	100%	11,811,812	100%	6.8%

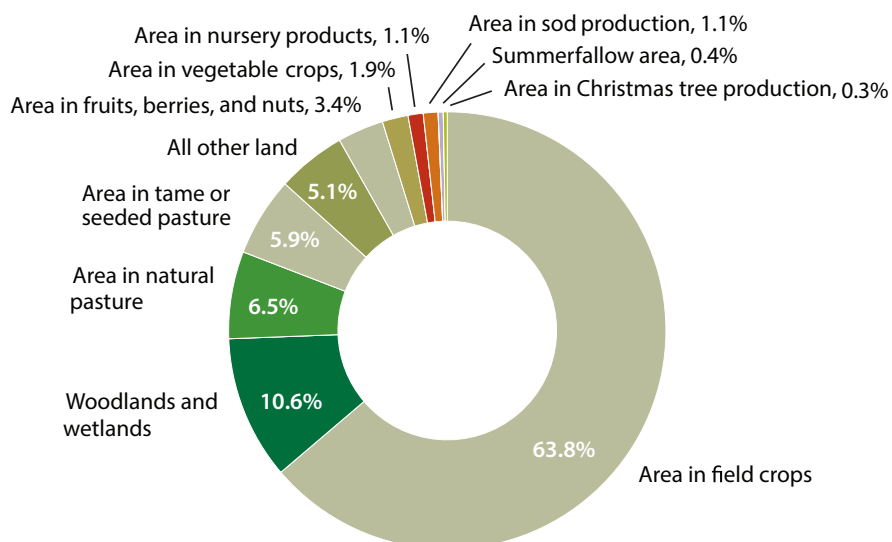


Figure 3-2 Distribution of area farmed by land use in the Greenbelt (2011)

As seen in Figure 3-3 and Table 3-2, acreage in sod production increased between 2006 and 2011 by 3.1%, while it decreased in the rest of the province by almost six times as much. This was the only land use that increased in the Greenbelt during the period, albeit by just 280 acres. Conversely, fruits, nursery products, and Christmas trees exhibited the largest percentage reductions in acreage between 2006 and 2011.¹⁴ In the case of sod, the recent slight increase followed a 25.3% increase in the earlier period between 2001 and 2006. Due to the nature of sod production, once an operation expands there is usually little suitable land left for further expansion.

Natural pasture in the Greenbelt decreased by 18.6% between 2006 and 2011 (and by 40.5% in 2001-2006), while tame or seeded pasture declined by 13.9% and “all other lands” by 13.5%. These decreases may be related to a decline in animal livestock production, considering the larger land base required to produce hay and provide pasture for dairy and beef operations.

In some cases, the reduction in crop-specific acreage was more pronounced in the rest of Ontario than in the Greenbelt. The decline in vegetable crops outside the Greenbelt was almost three times as much over the 10-year period (at 25.6% compared with 9.1% within the Greenbelt). Similar trends existed in fruit crops, with a 9.2% decline in acreage in the Greenbelt compared to 25.4% in the rest of the province between 2006 and 2011.

¹⁴ Trends in land used for crops within the Greenbelt are provided in Appendix Table A5. Land used for fruit production decreased in the Oak Ridges and the Protected Countryside, while it increased in the Niagara Escarpment by 7.7% since 2006. Vegetable crop production increased in the Oak Ridges Moraine by 26% while it decreased in the other two areas. Christmas tree production increased in the Niagara Escarpment (presumably the northern part) while there was a general decrease across the Greenbelt (of 22.6% since 2006).

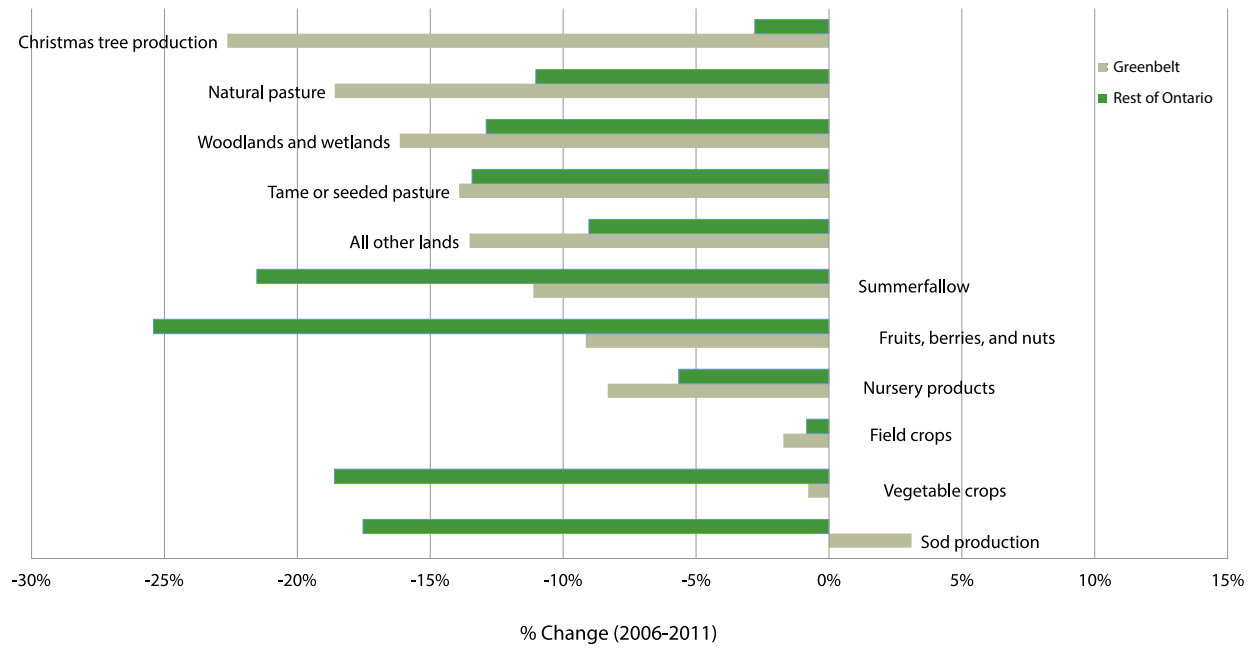


Figure 3-3 Change in land use in the Greenbelt and the rest of Ontario (2006-2011)



**Table 3-2 Change in area farmed by land use in the Greenbelt and the rest of Ontario
(2001-2011 and 2006-2011)¹⁵**

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Area in field crops	acres	576,530	555,689	546,152	8,207,089	8,251,930	8,182,584	6.3%
Change by 2011	acres	-30,378	-9,537		-24,505	-69,346		
Change by 2011	%	-5.3%	-1.7%		-0.3%	-0.8%		
Area in vegetable crops	acres	18,009	16,506	16,376	152,138	139,088	113,219	12.6%
Change by 2011	acres	-1,633	-129		-38,919	-25,870		
Change by 2011	%	-9.1%	-0.8%		-25.6%	-18.6%		
Area in fruits, berries, and nuts	acres	31,195	32,148	29,205	33,881	31,556	23,535	55.4%
Change by 2011	acres	-1,990	-2,943		-10,346	-8,021		
Change by 2011	%	-6.4%	-9.2%		-30.5%	-25.4%		
Area in nursery products	acres	9,645	10,438	9,570	15,843	16,641	15,700	37.9%
Change by 2011	acres	-75	-869		-143	-940		
Change by 2011	%	-0.8%	-8.3%		-0.9%	-5.7%		
Area in sod production	acres	7,428	9,027	9,307	21,246	23,169	19,107	32.8%
Change by 2011	acres	1,880	280		-2,140	-4,062		
Change by 2011	%	25.3%	3.1%		-10.1%	-17.5%		
Area in tame or seeded pasture	acres	57,723	58,201	50,106	715,927	691,518	598,652	7.7%
Change by 2011	acres	-7,617	-8,095		-117,275	-92,866		
Change by 2011	%	-13.2%	-13.9%		-16.4%	-13.4%		
Area in natural pasture	acres	92,815	67,861	55,246	1,221,520	1,044,807	929,562	5.6%
Change by 2011	acres	-37,569	-12,614		-291,958	-115,246		
Change by 2011	%	-40.5%	-18.6%		-23.9%	-11.0%		
Summerfallow area	acres	5,477	3,666	3,259	29,698	25,728	20,191	13.9%
Change by 2011	acres	-2,218	-408		-9,507	-5,536		
Change by 2011	%	-40.5%	-11.1%		-32.0%	-21.5%		
Area in Christmas tree production	acres	4,480	3,217	2,489	17,286	12,578	12,226	16.9%
Change by 2011	acres	-1,991	-728		-5,060	-352		
Change by 2011	%	-44.4%	-22.6%		-29.3%	-2.8%		
Woodlands and wetlands	acres	X	108,566	91,030.90	X	1,729,806	1,506,699	5.7%
Change by 2011	%		-17535			-223107		
Change by 2011	%		-16.2%			-12.9%		
All other lands	acres	152,353	50,523	43,690	2,195,929	467,362	425,137	9.3%
Change by 2011	acres	-108,663	-6,832		-1,770,792	-42,226		
Change by 2011	%	-71.3%	-13.5%		-80.6%	-9.0%		
Total area farmed	acres	955,896	915,821	856,424	12,551,461	12,394,395	11,811,812	6.8%
Change by 2011	acres	-99,473	-59,397		-739,648	-582,583		
Change by 2011	%	-10.4%	-6.5%		-5.9%	-4.7%		

¹⁵ X indicates that the value is unavailable due to suppression to meet the confidentiality requirements of the *Statistics Act*.

3.2 Farmland Use – Based on Farm Activity

Another way of looking at farming and the use of land is to count the number of farms engaged in certain types of farming activity. As seen in Table 3-3, 60% of the farm operations in the Greenbelt reported acreage in field crops (mostly grains and oilseeds), while farms reporting horses and ponies represented 24% of all farms. The third most frequent farming activity was cow-calf operators, with 18% of farms having beef cows. Sixteen per cent of Greenbelt farms reported some type of fruit production.

Table 3-3 Number of farms by reported activity in the Greenbelt (2001, 2006, and 2011)

Farms Reporting	2001	2006	2011	Percent of Farms
Field crops	3,957	3,676	3,304	60.0%
<i>Change by 2011</i>	<i>-16.5%</i>	<i>-10.1%</i>		
Horses and ponies	1,366	1,479	1,305	24.0%
<i>Change by 2011</i>	<i>-4.5%</i>	<i>-11.7%</i>		
Beef cows	1,397	1,254	963	18.0%
<i>Change by 2011</i>	<i>-31.1%</i>	<i>-23.2%</i>		
Fruits, berries, and nuts	1,138	1,099	901	16.0%
<i>Change by 2011</i>	<i>-20.8%</i>	<i>-18.0%</i>		
Hens and chickens	810	692	660	12.0%
<i>Change by 2011</i>	<i>-18.6%</i>	<i>-4.7%</i>		
Vegetables	579	593	495	9.0%
<i>Change by 2011</i>	<i>-14.5%</i>	<i>-16.5%</i>		
Sheep and lambs	430	356	336	6.0%
<i>Change by 2011</i>	<i>-21.8%</i>	<i>-5.5%</i>		
Greenhouses in use	436	407	329	6.0%
<i>Change by 2011</i>	<i>-24.3%</i>	<i>-19.1%</i>		
Dairy cows	434	320	246	4.0%
<i>Change by 2011</i>	<i>-43.3%</i>	<i>-23.0%</i>		
Goats	246	238	198	4.0%
<i>Change by 2011</i>	<i>-19.7%</i>	<i>-17.1%</i>		
Honeybees	122	146	133	2.0%
<i>Change by 2011</i>	<i>9.7%</i>	<i>-8.7%</i>		
Pigs	244	169	93	2.0%
<i>Change by 2011</i>	<i>-61.8%</i>	<i>-44.6%</i>		
Llamas and alpacas	52	90	91	2.0%
<i>Change by 2011</i>	<i>75.5%</i>	<i>1.1%</i>		
Sod under cultivation	34	36	40	1.0%
<i>Change by 2011</i>	<i>16.8%</i>	<i>9.4%</i>		
Total number of farms	6,380	6,193	5,501	100.0%
<i>Change by 2011</i>	<i>-13.8%</i>	<i>-11.2%</i>		

As seen in Figure 3-4, the number of farms with certain types of production increased in the rest of Ontario, while these activities decreased in the Greenbelt; such was the case for sheep and lambs, goats, honeybees, llamas, and alpacas. Conversely, Greenbelt farms with sod production grew in number despite declines in the rest of Ontario; however, sod cultivation occurred on less than 1% of farms in the Greenbelt. Overall, most declines in specific farming activities in the Greenbelt were paralleled by similar trends in the rest of Ontario.

The most dramatic change in the Greenbelt was the 44.6% fewer farms with pigs in 2011 than in 2006. The number of farms with cattle also decreased, with 23% fewer farms reporting beef cows and dairy cows. Other notable changes after 2006 included an 18% decrease in farms reporting acreage in fruit crops, a 16.5% decrease in farms reporting vegetable crops and a 19.1% decrease in farms with operational greenhouses.

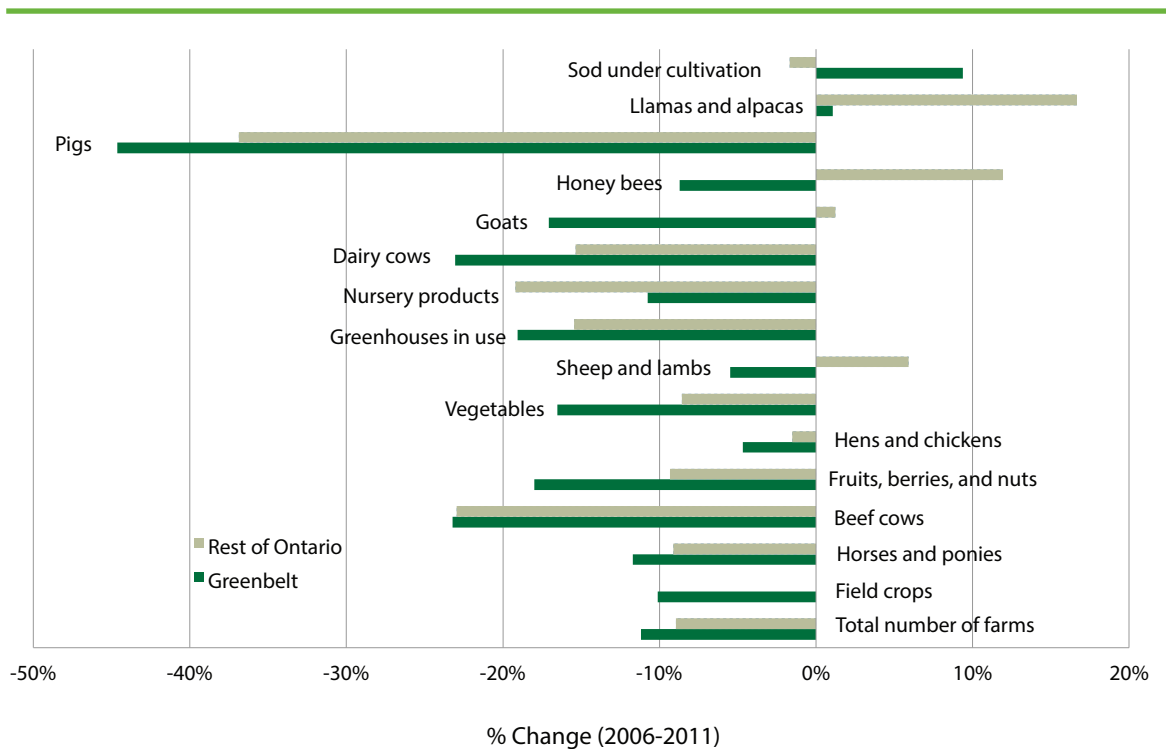


Figure 3-4 Change in number of farms by reported activity in the Greenbelt and the rest of Ontario (2001-2011 and 2006-2011)

A number of reasons explain these changes in farm activity. Some of the declines parallel the decrease in the overall number of farms, as in the case of field crops. Alternatively, the trends may reflect farms becoming more specialized in one commodity, instead of practising mixed farming. Moreover, as in any business, farmers exit certain types of enterprises when returns are lower; this has happened with pigs. As well, running a large-animal operation such as pigs, dairy, or beef requires a large supporting land base, which is more difficult to support and maintain in near-urban areas compared with rural areas.

Plant Agriculture in the Greenbelt

Farmers in the Greenbelt supply a wide array of plant products for consumption and processing, such as fruit and vegetables. This chapter examines fruit, vegetable, greenhouse, mushroom, and field crop production.

4.1 Fruit Products

Within the Greenbelt, 29,205 acres or 3.4% of all farmland was dedicated to fruit production in 2011. This represented 55% of Ontario's land area in fruits (Table 4-1). The Greenbelt accounted for over 80% of the province's acreage in peaches, grapes, cherries, plums (and prunes) and apricots as illustrated in Figure 4-1. The only fruit crops below the 55% average acreage were apples, raspberries, strawberries, blueberries, and Saskatoon berries.

Table 4-1 Distribution of area farmed by fruit crop in the Greenbelt and rest of Ontario (2006 and 2011)

	Greenbelt				Rest of Ontario				Greenbelt Share
	2006		2011		2006		2011		
	Area		Area		Area		Area		
	acres	%	acres	%	acres	%	acres	%	%
Grapes total area	16,510	51.4%	15,572	53.3%	4,085	12.9%	2,811	11.9%	84.7%
Peaches total area	6,244	19.4%	5,642	19.3%	1,650	5.2%	813	3.5%	87.4%
Apples total area	3,048	9.5%	3,201	11.0%	17,121	54.3%	12,629	53.7%	20.2%
Pears total area	1,715	5.3%	897	3.1%	831	2.6%	486	2.1%	64.8%
Plums and prunes total area	1,021	3.2%	890	3.0%	210	0.7%	185	0.8%	82.8%
Cherries (sour) total area	1,050	3.3%	871	3.0%	1,496	4.7%	1,471	6.3%	37.0%
Other fruits, berries, and nuts	661	2.1%	795	2.7%	X		704	3.0%	53.0%
Strawberries total area	798	2.5%	590	2.0%	3,445	10.9%	2,693	11.4%	18.0%
Cherries (sweet) total area	664	2.1%	432	1.5%	286	0.9%	144	0.6%	75.0%
Raspberries total area	255	0.8%	181	0.6%	898	2.8%	721	3.1%	20.0%
Apricots total area	123	0.4%	83	0.3%	23	0.1%	19	0.1%	81.0%
Blueberries total area	52	0.2%	43	0.1%	680	2.2%	749	3.2%	5.0%
Saskatoon berries total area	X		10	0.0%	X		46	0.2%	17.0%
Total area of fruits, berries, and nuts	32,148	100.0%	29,205	100.0%	31,556	100.0%	23,535	100.0%	55.0%

As seen in Table 4-1, the Greenbelt accounted for 85% of Ontario's grape producing area, which also represented 53% of the Greenbelt's acreage in fruit production (Figure 4-2). This grape growing area was mostly in the Protected Countryside, followed by the Niagara Escarpment.¹⁶ Grapes and blueberries were the only fruits in the Greenbelt to increase in acreage over both the 2001-2006 and 2006-2011 periods.

¹⁶ See Appendix Table A7. Most of the fruit production in the Greenbelt occurs in the Protected Countryside followed by the Niagara Escarpment. Only 289 acres of fruit production were reported in the Oak Ridges Moraine in the 2011 Census of Agriculture, mostly grapes and apples.

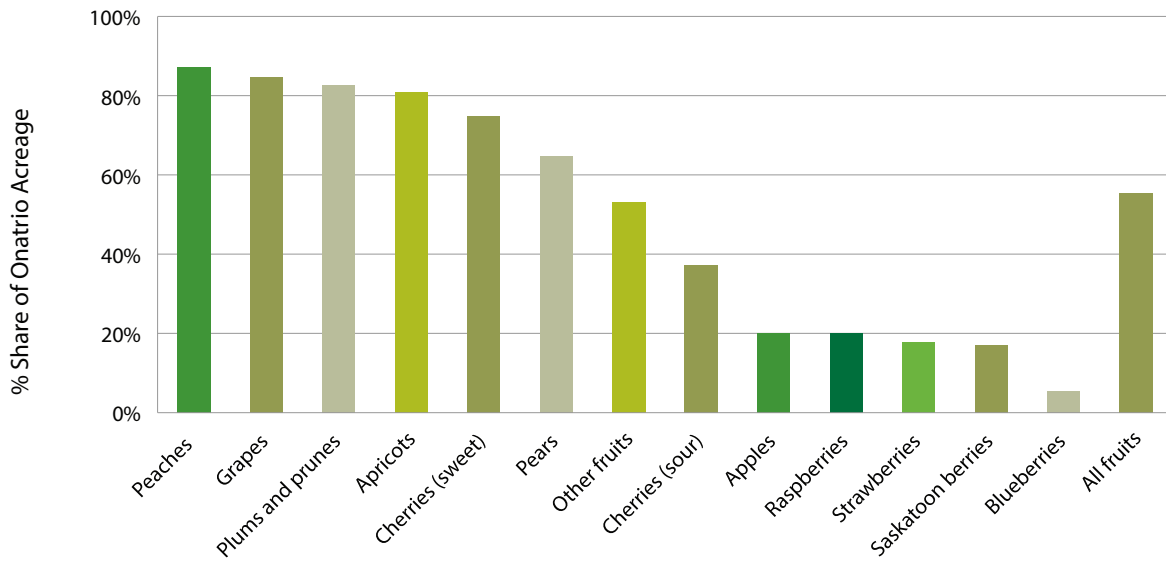


Figure 4-1 Greenbelt share of Ontario area farmed by fruit crop (2011)

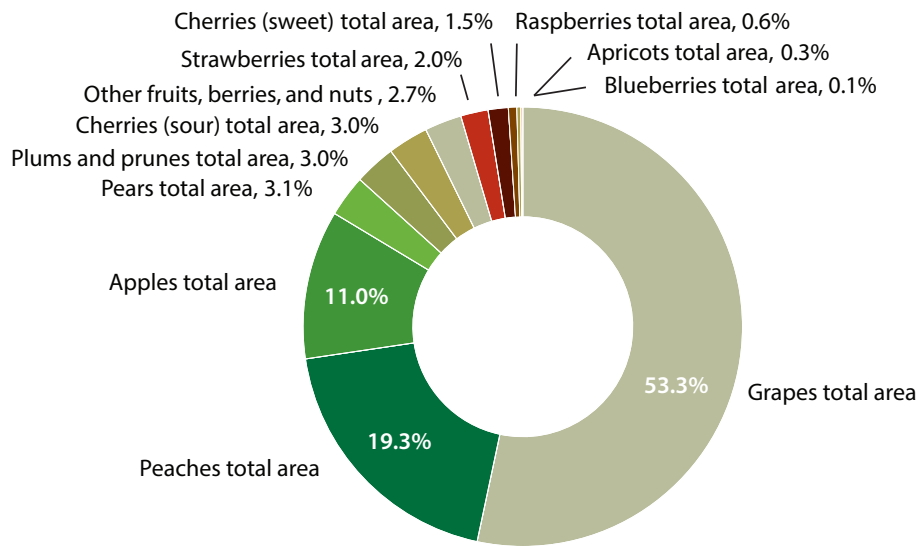


Figure 4-2 Distribution of area farmed by fruit crop in the Greenbelt (2011)



VQA Wines

Canada's wine industry was born in the Greenbelt more than a century ago. The industry managed to survive during the prohibition era that ended when the Liquor Control Board of Ontario was established in 1927. From then until 1974, the industry went through nearly half a century of contraction. Wineries consolidated or went out of business, with their number falling from 52 to eight. In 1975, Inniskillin became the first newly licensed winery in Ontario to manufacture and sell wine since the end of prohibition.

Ontario's wineries found that they were shut out of European markets during the 1980s. At the time, the Wine Content Act gave wineries permission to blend a percentage of local wines with imported wines and still call it a Product of Canada, which made selling abroad nearly impossible.

"We knew we needed to create our own sense of place, so we looked at what the Europeans had done to ensure the provenance of their wine regions and decided we needed to create our own appellation of origin system: the VQA, Vintners Quality Alliance," recalls Donald Ziraldo of the formative days of the VQA.

Wineries came together to develop an appellation system that would set standards around quality and the place of origin of the grapes used. By forming the VQA in 1989, member wineries established their own standards to compete with imported wines and created a brand for the promotion of Ontario's burgeoning wine industry.

During the first five years, consumer response was favourable and more wineries joined the VQA and agreed to follow the rules. Throughout the 1990s both the VQA brand and Ontario's

wine industry continued to grow. However, the VQA faced the challenge of having no way to prevent the use of the brand by wineries that did not follow the standards. This issue was addressed in 2000 when the Ontario government established the VQA as a regulatory authority, with a mandate to establish, monitor and enforce an appellation system that allows consumers to identify the region, production methods and quality standards for every bottle of VQA-labelled wine.

The Niagara region in the Greenbelt has been the anchor of the VQA and the Ontario wine industry. There are currently 84 VQA wineries (with 1,187 VQA-approved wines) in the region, which account for about 85% of the VQA's annual production. On average, these wineries produce 1,727,901 nine-litre cases of wine a year.

The VQA has played an integral role in the growth of the wine sector in Ontario. In the past five years, sales of VQA wines have increased by \$100 million (60%). Challenges remain, such as achieving continuous improvement in wine quality, competing with the pricing of imported products and ensuring sustainable growth. With the help of the VQA, Ontario's wine-makers will continue to meet these challenges.

Peaches accounted for 19% of the Greenbelt's fruit growing area, with most of this in the Protected Countryside. The third largest share of fruit acreage was in apple production at 11% (with 3,201 acres), which occurred primarily in the Protected Countryside and the Niagara Escarpment. As noted in Table 4-1, pears had the fourth largest acreage at 897 acres, followed by plums and prunes at 890 acres.

Over 80%
of the province's acreage in tender fruit is found in the Greenbelt.

These statistics reflect a unique feature of the Greenbelt: its importance as the major supplier of Ontario-grown fruits. Within the province, the Greenbelt has a natural advantage in most fruit crops. At the same time, this production competes with imports from other countries and other parts of Canada, such as British Columbia.

Overall, land area in fruit production decreased by 6.4% in the Greenbelt, but by five times as much (30.5%) in the rest of Ontario, over 10 years (Table 4-2).

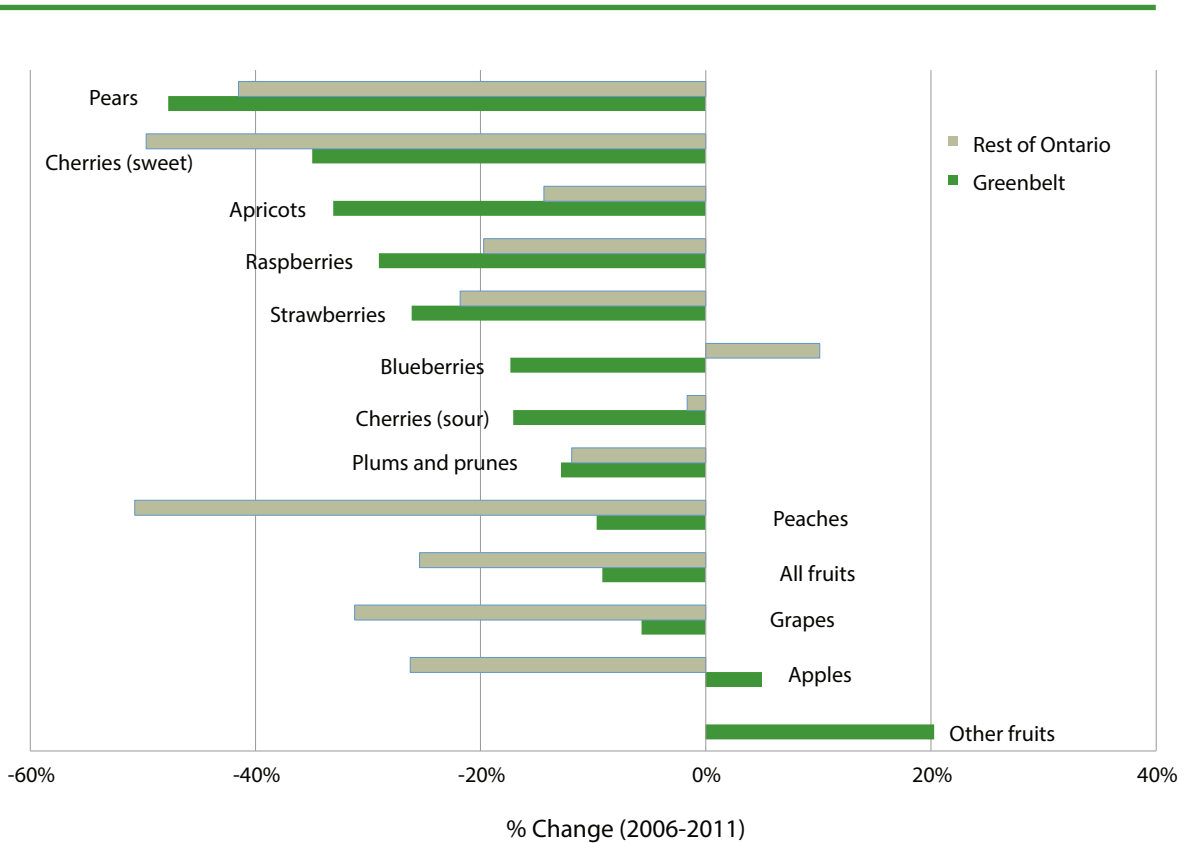


Figure 4-3 Change in area farmed by fruit crop in the Greenbelt and the rest of Ontario (2006-2011)

Table 4-2 Change in area farmed by fruit crop in the Greenbelt and the rest of Ontario from (2001-2011 and 2006-2011)

	Units	Greenbelt			Rest of Ontario		
		2001	2006	2011	2001	2006	2011
Grapes total area	acres	15,439	16,510	15,572	2,767	4,085	2,811
<i>Change by 2011</i>	%	0.9%	-5.7%		1.6%	-31.2%	
Peaches total area	acres	5,697	6,244	5,642	919	1,650	813
<i>Change by 2011</i>	%	-1.0%	-9.6%		-11.6%	-50.7%	
Apples total area	acres	3,361	3,048	3,201	20,890	17,121	12,629
<i>Change by 2011</i>	%	-4.8%	5.0%		-39.5%	-26.2%	
Pears total area	acres	1,808	1,715	897	860	831	486
<i>Change by 2011</i>	%	-50.4%	-47.7%		-43.4%	-41.5%	
Plums and prunes total area	acres	1,072	1,021	890	276	210	185
<i>Change by 2011</i>	%	-17.0%	-12.8%		-32.8%	-11.9%	
Cherries (sour) total area	acres	1,055	1,050	871	1,259	1,496	1,471
<i>Change by 2011</i>	%	-17.4%	-17.1%		16.8%	-1.7%	
Other fruits, berries, and nuts total area	acres	806	661	795	658	X	704
<i>Change by 2011</i>	%	-1.4%	20.3%		7.0%		
Strawberries total area	acres	859	798	590	4,143	3,445	2693.15602
<i>Change by 2011</i>	%	-31.3%	-26.1%		-35.0%	-21.8%	
Cherries (sweet) total area	acres	676	664	432	317	286	144
<i>Change by 2011</i>	%	-36.1%	-34.9%		-54.6%	-49.7%	
Raspberries total area	acres	268	255	181	1,031	898	721
<i>Change by 2011</i>	%	-32.4%	-29.0%		-30.1%	-19.7%	
Apricots total area	acres	107	123	83	25	23	19
<i>Change by 2011</i>	%	-23.0%	-33.0%		-21.5%	-14.4%	
Blueberries total area	acres	41	52	43	563	680	749
<i>Change by 2011</i>	%	3.6%	-17.3%		33.1%	10.1%	
Saskatoon berries total area	acres	X	X	10	X	X	46
Total area of fruits, berries, and nuts	acres	31,195	32,148	29,205	33,881	31,556	23,535
<i>Change by 2011</i>	%	-6.4%	-9.2%		-30.5%	-25.4%	

From 2006 to 2011, the Greenbelt recorded an increase in the acreage for both apples and “other fruit”, by 5% and 20.3 % respectively (Table 4-2). However, the land base for most fruit declined in the Greenbelt during this period—a trend that was even more pronounced across the province.

The area in fruit production declined by 25.4% in the rest of the province and 9.2% in the Greenbelt.¹⁷ As seen in Table 4-2, a 50.7% decline in peach acreage occurred in Ontario relative to a 9.6% decline in the Greenbelt. The area devoted to grapes decreased by 31.2% outside the Greenbelt, but only 5.7% inside it. The area in pear production in the Greenbelt decreased 47.7%, while acreage dropped 34.9% for sweet cherries, 33% for apricots, 29% for raspberries, 17.1% for sour cherries, 12.8% for plums, and 9.6% for peaches.

Some of these declines can be attributed to a loss in processing capacity for these fruits. Overall, acreage devoted to fruit crops decreased in the Greenbelt, but by both a lower rate and a lesser absolute amount than in the rest of the province.



¹⁷ Within the Greenbelt, the Niagara Escarpment increased the area dedicated to fruit crops by 7.7% between 2006 and 2011, while fruit acreage decreased the most in the Protected Countryside (12.1%). Appendix Table A8 provides an overall summary of trends in total acreage used for fruit production within the Greenbelt since 2001.

Tender Fruit in the Niagara Peninsula

One of the only two designated specialty crop areas in Ontario, the Niagara Peninsula Tender Fruit and Grape Area is a unique area that is no longer threatened with development because of the Greenbelt Plan.

There are approximately 1.9 million tender fruit trees in production across Ontario, and the Niagara Region and Hamilton in the Greenbelt account for over 1.5 million of the total, making the southern strip of Lake Ontario between Hamilton and the border the most productive tender fruit area in the province.

This wasn't always the case. In the beginning of the 19th century, grain and livestock dominated agriculture in the region. Farmers then began to notice that the soils and temperature were better suited to fruit and vegetables and made the switch, growing produce for local markets and export. When British Columbia and Nova Scotia started selling apples overseas, Niagara and Hamilton area farmers began replacing their apple trees with peach trees, along with pear, plum and sweet and sour cherry orchards and grape vineyards. The trend toward fruit specialization became more pronounced in Niagara during the 1930s.

Most recently, the tender fruit industry has been going through a period of transition. With the closing of the Cangro fruit processing plant in St. David's in 2008 and the Cadbury Schweppes grape juice plant in 2007, producers of processing peaches, pears and juice grapes lost their major buyers. Between 2009 and 2012, the number of processing peach trees

declined by 46.4%, while pear trees dropped by 17.4%. Producers responded by replacing their processing peach trees, pear trees and juice grape vines with fresh-to-market varieties of tender fruit growing trees or other crops, such as wine grape vineyards

Tender fruit farmers are faced with rising labour costs that cut into farm revenues. One possible response to this challenge is the introduction of new technologies and production methods. Farmers are also considering higher density planting, which could help them increase yields and introduce labour-saving technologies. Between 2009 and 2012, a modest increase has been recorded across the province in average trees per acre, from 183 to 189. There are also different types of equipment that may help farmers in the planting, spraying, picking, transporting and packaging of tender fruit. So far the benefits of these technologies are largely hypothetical as it will take time to test and introduce them.

Overall, tender fruit farmers "remain positive about the future of the industry – we are still maintaining the same production levels – less growers with larger more efficient operations that are looking at newer varieties and import replacement," says Sarah Marshall of the Ontario Tender Fruit Producers Marketing Board.

4.2 Field Vegetable Crops

As seen in Table 4-3, the Greenbelt produced many of the vegetables consumed by residents of both the GTA and the rest of Ontario over the last two census periods. This specialization can be attributed to locational advantage based on proximity to urban areas, and to natural advantage associated with soil quality that is conducive to the production of muck crops (e.g. celery, carrots, onions). Field vegetable crops were grown on 16,376 acres in the Greenbelt in 2011, which represented 1.9% of the Greenbelt's farmland base. The Greenbelt accounted for 12.6% of total provincial land area in vegetable production. As seen in Figure 4-4, the only vegetable crops below this average were cabbage, sweet corn, beans, peppers, cucumbers, tomatoes, and green peas.

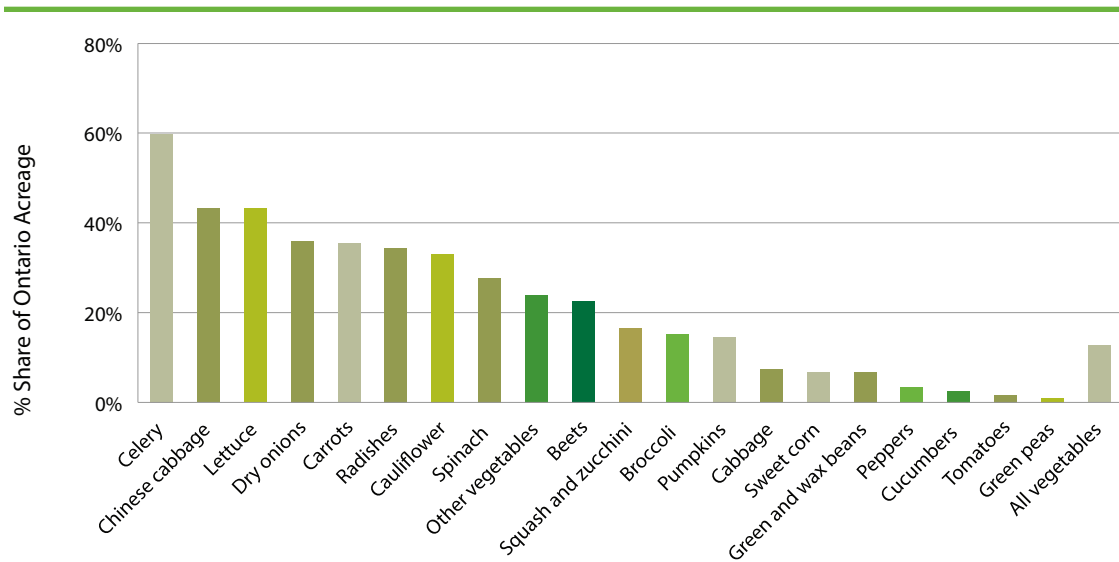


Figure 4-4 Greenbelt share of Ontario area farmed by vegetable crop (2011)

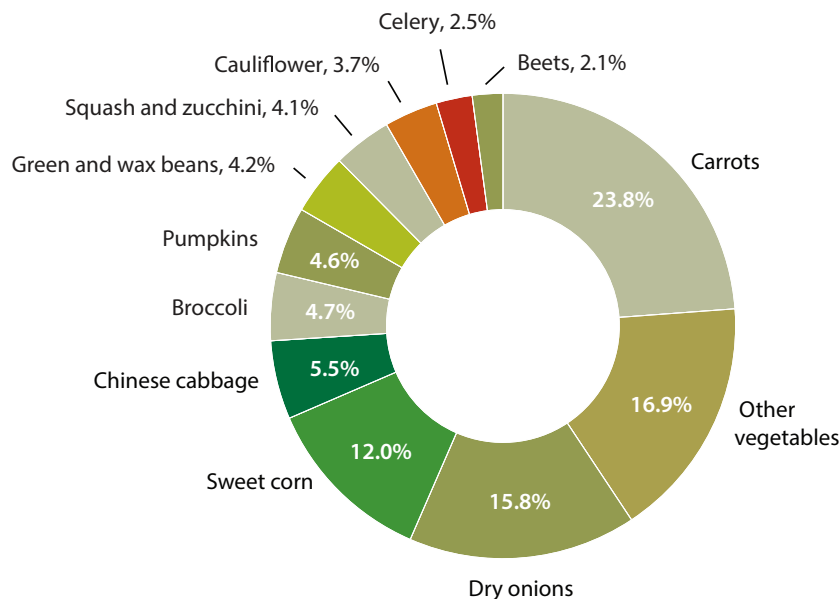


Figure 4-5 Distribution of area farmed by vegetable crop in the Greenbelt (2011)

12.6% of the province's land area in vegetable production is in the Greenbelt.

Within the Greenbelt, vegetable crops were grown primarily in the Protected Countryside, many in the Holland Marsh. As seen in Figure 4-5, carrots and dry onions were the two most prominent vegetable crops in the Greenbelt at 21.3% and 14.2% of acreage, respectively.¹⁸ Sweet corn and "other vegetables" also represented large portions of the Greenbelt's area in vegetable production. "Other vegetables" was defined

as herbs, rhubarb, melons, garlic, and gourds, but this category also may have reflected farmers cultivating more diverse crops to appeal to niche markets to keep up with food trends and access the growing market for locally produced world crops.

Table 4-3 Distribution of area farmed by vegetable crop in the Greenbelt and the rest of Ontario (2006 and 2011)

	Greenbelt				Rest of Ontario				Greenbelt Share
	2006		2011		2006		2011		
	Area acres	%	Area acres	%	Area acres	%	Area acres	%	
Carrots	3,364	20.4%	3,491	21.3%	6,629	4.8%	6,364	5.6%	35.4%
Other vegetables	877	5.3%	2,470	15.1%	X		7,868	6.9%	23.9%
Dry onions	2,117	12.8%	2,322	14.2%	4,813	3.5%	4,134	3.7%	36.0%
Sweet corn	1,443	8.7%	1,758	10.7%	37,174	26.7%	23,782	21.0%	6.9%
Chinese cabbage	1,006	6.1%	801	4.9%	851	0.6%	1,054	0.9%	43.2%
Broccoli	965	5.8%	690	4.2%	2,747	2.0%	3,816	3.4%	15.3%
Pumpkins	1,101	6.7%	681	4.2%	4,329	3.1%	3,977	3.5%	14.6%
Green and wax beans	983	6.0%	621	3.8%	10,896	7.8%	8,565	7.6%	6.8%
Squash and zucchini	713	4.3%	597	3.6%	3,154	2.3%	2,993	2.6%	16.6%
Cauliflower	854	5.2%	545	3.3%	1,171	0.8%	1,104	1.0%	33.1%
Celery	381	2.3%	367	2.2%	269	0.2%	247	0.2%	59.8%
Beets	102	0.6%	310	1.9%	986	0.7%	1,061	0.9%	22.6%
Tomatoes	587	3.6%	271	1.7%	19,608	14.1%	16,287	14.4%	1.6%
Lettuce	304	1.8%	266	1.6%	651	0.5%	351	0.3%	43.2%
Cabbage	405	2.5%	246	1.5%	3,302	2.4%	3,108	2.7%	7.3%
Spinach	168	1.0%	219	1.3%	831	0.6%	571	0.5%	27.7%
Green peas	248	1.5%	153	0.9%	21,234	15.3%	14,968	13.2%	1.0%
Peppers	199	1.2%	133	0.8%	3,816	2.7%	3,759	3.3%	3.4%
Radishes	258	1.6%	121	0.7%	134	0.1%	231	0.2%	34.4%
Cucumbers	178	1.1%	88	0.5%	3,968	2.9%	3,396	3.0%	2.5%
Total vegetables	16,506	100%	16,376	100%	139,088	100%	113,219	100%	12.6%

In the period between 2006 and 2011, acreage devoted to field vegetables in the Greenbelt remained relatively constant, with only a small 0.8% decrease compared to the 18.6% decline in the rest of the province (Table 4-4).

¹⁸ As reported in Appendix table A9, over 78% of vegetable production occurs in the Protected Countryside with 12,808 acres, 17% occurs in the Oak Ridges with 2,789 acres, and 770 acres (5%) in the Niagara Escarpment. Vegetable production areas such as the Bradford Marsh and the Holland Marsh are located in the Protected Countryside geography.



The Holland Marsh

The Holland Marsh is the second of the two specialty crop areas in the province and, like the Niagara Peninsula and Tender Fruit and Grape Area, is also protected by the Greenbelt. In the late 1920s, University of Guelph professor Dr. William Day applied techniques from the Netherlands to transform a swamp north of Toronto into what would become some of the most productive agricultural land in North America: the Holland Marsh.

This area is home to a small number of family-owned and operated farms, with an average size of approximately 120 acres. These farms have turned the 12,500 acres of black, organic-based soils from a swamp into some of Canada's most productive farmland. Today, the Holland Marsh accounts for 15% of Ontario's annual vegetable production, and has been labelled "Ontario's Soup and Salad Bowl".

Because of a mixture of organic-based black soil, with its high heat retention, and the micro-climate caused by the bowl-shaped valley it sits in, the Holland Marsh enables farmers to work the land earlier and harvest later. The nutrient-rich soil has helped create a higher than average productivity rate that means farmers can produce more than 65 different crop types and hundreds of differing varieties. The bulk of vegetable production is made up of carrots and onions, which are about 70% of the crops grown and harvested in the Marsh. In addition, a substantial amount of mixed variety lettuce and a multitude of other crop types – such as mixed flowers, garlic, parsnips, turnips, beets, celery root, bok choy,

potatoes, tomatoes and sprouts – are all grown in the Marsh.

Farmers in the area, affectionately known as "Marsh Muckers", have always been an innovative group, adapting to the unique conditions of farming in the muck soils as well as to changing markets. For example, farmers developed specialized harvesting equipment that has been manufactured and sold to farmers around the world. Holland Marsh farmers have also been in step with emerging trends by expanding their role to include both packing and shipping, in order to capture more of the value of their crops. They have also shifted their production profile to meet the increasing consumer demand for world crops.

As Alex Makarenko of the Holland Marsh Growers' Association puts it: "The Holland Marsh is a cherished iconic landmark and it needs to be remembered that in this era of globalized food production, the Holland Marsh is capable of addressing domestic demand now and in the future."

**Table 4-4 Change in area farmed by vegetable crop in the Greenbelt and the rest of Ontario
(2001-2011 and 2006-2011)**

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Carrots	acres	2,895	3,364	3,491	5,977	6,629	6,364	35.4%
<i>Change by 2011</i>	%	20.6%	3.8%		6.5%	-4.0%		
Other vegetables	acres	926	877	2,470	4,790	X	7,868	23.9%
<i>Change by 2011</i>	%	166.6%	181.5%		64.3%			
Dry onions, yellow, Spanish, cooking, etc.	acres	2,239	2,117	2,322	4,385	4,813	4,134	36.0%
<i>Change by 2011</i>	%	3.7%	9.7%		-5.7%	-14.1%		
Sweet corn	acres	2,094	1,443	1,758	46,925	37,174	23,782	6.9%
<i>Change by 2011</i>	%	-16.1%	21.8%		-49.3%	-36.0%		
Chinese cabbage	acres	999	1,006	801	835	851	1,054	43.2%
<i>Change by 2011</i>	%	-19.8%	-20.3%		26.1%	23.7%		
Broccoli	acres	1,287	965	690	1,573	2,747	3,816	15.3%
<i>Change by 2011</i>	%	-46.4%	-28.4%		142.6%	38.9%		
Pumpkins	acres	X	1,101	681	X	4,329	3,977	14.6%
<i>Change by 2011</i>	%		-38.2%			-8.1%		
Green and wax beans	acres	593	983	621	12,442	10,896	8,565	6.8%
<i>Change by 2011</i>	%	4.7%	-36.8%		-31.2%	-21.4%		
Squash and zucchini	acres	X	713	597	X	3,154	2,993	16.6%
<i>Change by 2011</i>	%		-16.2%			-5.1%		
Cauliflower	acres	1,468	854	545	1,727	1,171	1,104	33.1%
<i>Change by 2011</i>	%	-62.9%	-36.2%		-36.1%	-5.7%		
Celery	acres	476	381	367	303	269	247	59.8%
<i>Change by 2011</i>	%	-22.9%	-3.6%		-18.6%	-8.2%		
Beets	acres	113	102	310	748	986	1,061	22.6%
<i>Change by 2011</i>	%	174.4%	203.7%		41.8%	7.6%		
Tomatoes	acres	504	587	271	20,697	19,608	16,287	1.6%
<i>Change by 2011</i>	%	-46.1%	-53.8%		-21.3%	-16.9%		
Lettuce	acres	504	304	266	529	651	351	43.2%
<i>Change by 2011</i>	%	-47.2%	-12.5%		-33.7%	-46.1%		
Cabbage	acres	870	405	246	3,267	3,302	3,108	7.3%
<i>Change by 2011</i>	%	-71.7%	-39.1%		-4.9%	-5.9%		
Spinach	acres	84	168	219	814	831	571	27.7%
<i>Change by 2011</i>	%	161.8%	30.6%		-29.9%	-31.3%		
Green peas	acres	211	248	153	23,097	21,234	14,968	1.0%
<i>Change by 2011</i>	%	-27.4%	-38.3%		-35.2%	-29.5%		
Peppers	acres	209	199	133	3,903	3,816	3,759	3.4%
<i>Change by 2011</i>	%	-36.6%	-33.4%		-3.7%	-1.5%		
Radishes	acres	238	258	121	387	134	231	34.4%
<i>Change by 2011</i>	%	-49.1%	-53.0%		-40.3%	72.2%		
Cucumbers	acres	171	178	88	8,203	3,968	3,396	2.5%
<i>Change by 2011</i>	%	-48.3%	-50.4%		-58.6%	-14.4%		
Total vegetables	acres	18,009	16,506	16,376	152,138	139,088	113,219	12.6%
<i>Change by 2011</i>	%	-9.1%	-0.8%		-25.6%	-18.6%		

Crop-specific trends in the Greenbelt varied. Though most vegetables decreased in production, these declines were offset by large increases in acreage devoted to beets and “other vegetables”.

As illustrated in Figure 4-6, the acreage for some vegetable crops increased between 2006 and 2011 in the Greenbelt, while declining in the rest of Ontario.¹⁹ For example, spinach acreage increased by 30.6% in the Greenbelt, but fell 31.3% in the rest of Ontario. Sweet corn acreage increased by 21.8% in the Greenbelt, but declined 36% in the rest of Ontario. Similar patterns existed for dry onions and carrots.

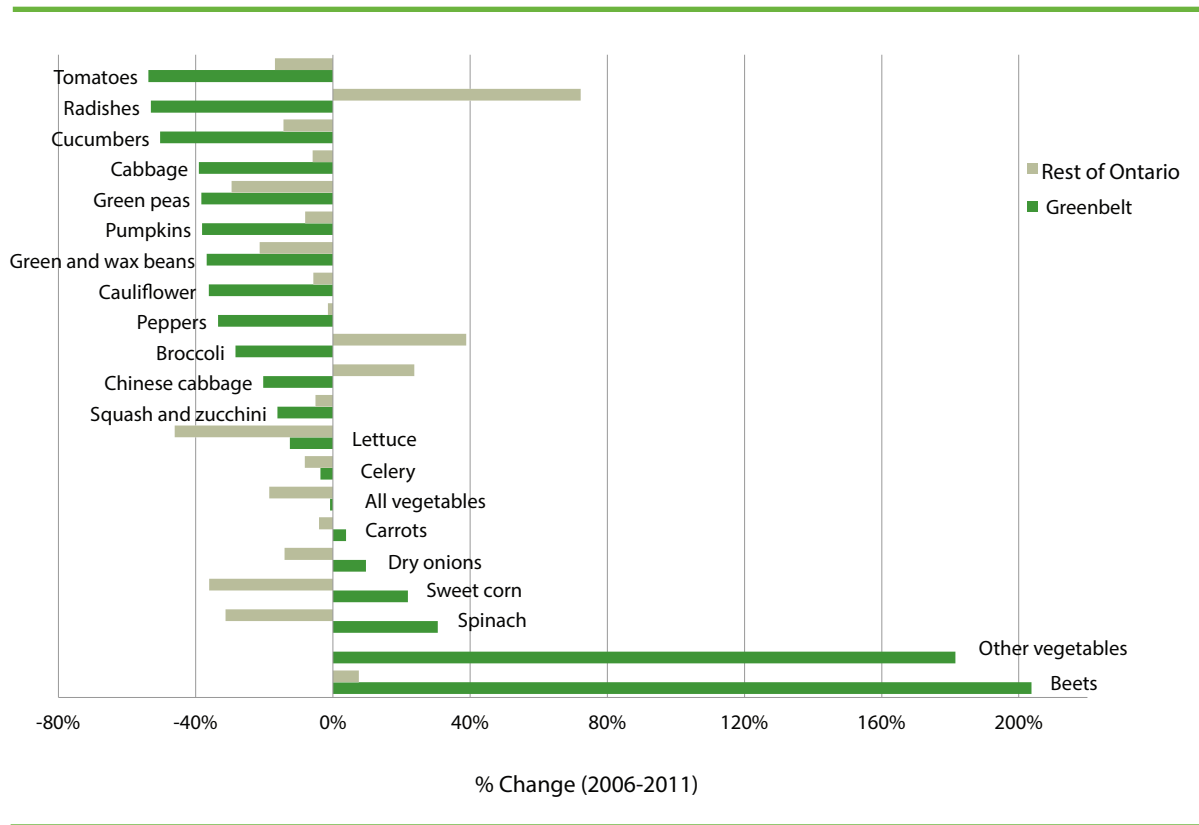


Figure 4-6 Change in area farmed by vegetable crop in the Greenbelt and the rest of Ontario (2006-2011)

On the other hand, some vegetable crops decreased in production within the Greenbelt, but increased in the rest of Ontario. As shown in Figure 4-6, these included Chinese cabbage, broccoli, and radishes. However, with Chinese cabbage, although the Greenbelt acreage declined, more farmers invested in it, with 35 farms reporting Chinese cabbage production in 2011, up from 28 in 2001.

¹⁹ As shown in Appendix table A10, overall acreage in vegetable crops in the Protected Country side decreased by 13.9% over 10 years, and by 3.6% since 2006. Acreage devoted to field vegetables increased in the Oak Ridges Moraine (by 26.0% since 2006).

World Crops

Across the Greenbelt, the taste for more exotic foods on restaurant menus and on the kitchen table of home cooks alike has been creating new markets for vegetables such as okra, chu-chu eggplants, and yard long beans. In response, Greenbelt farmers have been looking to seize the opportunity to farm these less traditional types of vegetables and to reach new customers.

The market for vegetable world crops has been estimated by a University of Guelph study to be \$720 million annually in the Greater Toronto Area alone, which is currently met almost entirely through imports. Several farmers and non-profit organizations have been working to catalyze a Greenbelt-grown alternative.

Ted Eng, an organic farmer in Durham, has been at the forefront of this movement. He grows baby bok choy and offers seasonal direct deliveries through his Farm Share program. He observes, “The demand for world crops is growing. Americans are the biggest competition, but we pick our produce, cut it and ship it. It’s only 12 hours old when you buy it. People are beginning to use them in different dishes and so demand will continue to grow.”

It remains a challenge to find world crop varieties that grow well in Ontario’s climate

and soils, appeal to discerning consumer tastes and can compete with less expensive imports. These and other issues are being tackled by such organizations as Vineland Research and Innovation Centre, the Ontario Fruit and Vegetable Growers’ Association, The University of Guelph, Farm Start, and the Friends of the Greenbelt Foundation.

Over the past eight years the seeds of a local world crop movement have been planted. In 2013, Ontario had around 200 acres of commercially grown world crops, but farmers are aiming to increase this number to around 350 acres for 2014. There is plenty of room to continue growing as it is estimated the market can support 5,000 acres. Reaching this market gives farmers the opportunity to make the global local and tap into the growing demand.



4.3 Enclosed Crop Production – Greenhouse Crops and Mushrooms

As seen in Table 4-5, the Greenbelt included almost one fifth of the province's total greenhouse production area in 2011. Much of this supported the floriculture industry, located mostly in the Protected Countryside. The Greenbelt accounted for 42.9% of Ontario's greenhouse flower production area and 7.3% of the province's greenhouse vegetable area.

“Floriculture accounted for 22% of Gross Farm Revenues in the Golden Horseshoe, representing 60% of the province's floriculture production value.

Floriculture production accounted for 22% of reported gross farm revenues in the Golden Horseshoe (at \$375 million), and the Golden Horseshoe accounted for 60% of the value of all floriculture production in the province in 2010. As well, greenhouse vegetable operators in the Golden Horseshoe, with \$49 million in sales, accounted for 8.4% of Ontario's output value in that sector.

Table 4-5 Change in area farmed by enclosed crop in the Greenbelt and rest of Ontario (2001, 2006, and 2011)

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Greenhouse flowers	sq. ft.	17,954,724	20,801,534	18,289,691	25,708,198	28,612,570	24,304,834	42.9%
<i>Change by 2011</i>	%	1.9%	-12.1%		-5.5%	-15.1%		
Greenhouse vegetables	sq. ft.	3,309,566	2,979,752	6,312,883	44,417,940	66,829,119	79,896,841	7.3%
<i>Change by 2011</i>	%	90.7%	111.9%		79.9%	19.6%		
Other greenhouse products	sq. ft.	593,985	1,022,956	463,469	4,560,310	X	4,252,823	9.8%
<i>Change by 2011</i>	%	-22.0%	-54.7%		-6.7%			
Total greenhouse	sq. ft.	21,858,275	24,804,242	25,066,043	74,686,448	100,337,087	108,454,498	18.8%
<i>Change by 2011</i>	%	14.7%	1.1%		45.2%	8.1%		
Mushrooms	sq. ft.	961,047	1,413,656	960,936	2,054,973	2,034,083	2,500,906	27.8%
<i>Change by 2011</i>	%	0.0%	-32.0%		21.7%	23.0%		

Over 10 years, the overall greenhouse production area in the Greenbelt grew by 14.7%, largely due to the 90.7% increase in area devoted to greenhouse vegetables. Though these trends paralleled similar shifts in the rest of the province, the rate of increase was much greater in the Greenbelt than elsewhere in Ontario.

As illustrated in Table 4-5, in 2011 the Greenbelt accounted for 27.8% of Ontario's mushroom production area. Over the period between 2006 and 2011, the area devoted to mushrooms decreased by a third within the Greenbelt, but increased by a fifth in the rest of Ontario. This decline likely represented the closing of only one production facility. It may also have reflected challenges with near-urban production, such as odour.



4.4 Field Crops

Field crops accounted for the largest use of Greenbelt farmland, with the 546,152 acres representing 63.8% of all Greenbelt farmland in 2011. Grains and oilseeds—mainly corn, soybeans and wheat—were the primary field crops in the Greenbelt, with 365,000 acres representing 65% of all field crop acreage. Hay, fodder crops, and alfalfa was the next most prominent category, with 168,000 acres accounting for 31% of the total field crop area. As shown in Table 4-6, soybeans accounted for a quarter of field crop acreage. The majority of field crops were grown in the Protected Countryside.²⁰

Table 4-6 Distribution of area farmed by field crop in the Greenbelt and rest of Ontario (2001, 2006, and 2011)

	Greenbelt				Rest of Ontario				Greenbelt Share
	2006		2011		2006		2011		
	Area acres	%	Area acres	%	Area acres	%	Area acres	%	
Soybeans	110,385	19.9%	134,195	24.6%	2,045,499	24.8%	2,330,675	28.5%	5.4%
Alfalfa and alfalfa mixtures	152,239	27.4%	129,572	23.7%	1,510,131	18.3%	1,216,638	14.9%	9.6%
Corn for grain	104,470	18.8%	123,624	22.6%	1,473,392	17.9%	1,908,732	23.3%	6.1%
Winter wheat	53,599	9.6%	61,870	11.3%	974,877	11.8%	1,038,133	12.7%	5.6%
All other tame hay and fodder crops	49,052	8.8%	38,314	7.0%	851,215	10.3%	693,387	8.5%	5.2%
Corn for silage	16,523	3.0%	12,205	2.2%	304,236	3.7%	259,496	3.2%	4.5%
Barley	19,283	3.5%	11,309	2.1%	201,746	2.4%	115,572	1.4%	8.9%
Mixed grains	14,535	2.6%	8,202	1.5%	158,919	1.9%	97,960	1.2%	7.7%
Canola (rapeseed)	3,004	0.5%	7,873	1.4%	15,571	0.2%	80,406	1.0%	8.9%
Spring wheat (excluding durum)	9,777	1.8%	4,829	0.9%	193,125	2.3%	109,814	1.3%	4.2%
Potatoes	3,101	0.6%	4,374	0.8%	35,054	0.4%	33,010	0.4%	11.7%
Oats	10,652	1.9%	4,081	0.7%	121,300	1.5%	66,959	0.8%	5.7%
Other dry beans	1,248	0.2%	1,402	0.3%	69,958	0.8%	50,970	0.6%	2.7%
Other fieldcrops	814	0.1%	1,248	0.2%	X		27,046	0.3%	4.4%
Total field crops	555,689	100%	546,152	100%	8,251,930	100%	8,182,584	100%	6.3%

20 The distribution of field crops varies somewhat within the Greenbelt with Appendix Table A12 reporting on acreage by region within the Greenbelt. The area dedicated to alfalfa and hay/fodder crops is higher in the Niagara Escarpment area compared to the Protected Countryside (30.5% vs. 21.7% for alfalfa) and 10.4% vs. (6.5% for tame hay/fodder crops). This most likely reflects the capability of the land base and the livestock economy that this acreage supports. Corn and soybean acreage is 32.3% of all field crop acreage in the Niagara Escarpment compared to 50.8% in the Protected Countryside and 47.9% in the Oak Ridges Moraine.

As seen in Table 4-7, the general trends in field crop production within the Greenbelt were comparable to those in the rest of the province. These parallel trends suggest that in most field crops, the Greenbelt does not have a locational or natural advantage. However, the Greenbelt accounted for considerably more production of alfalfa, barley, mixed grains, canola, and potatoes than its 6.8% share of Ontario farmland.

“ **Grains and oilseeds —mainly corn, soybeans and wheat—represented 65% of all field crop acreage.** ”

Between 2006 and 2011, total acreage in field crops decreased by 1.7% in the Greenbelt, while overall acreage in farming decreased by 6.5%. This change was more complex when broken down by crop type. As illustrated in Figure 4-7, acreage planted in canola increased by

162%, with potatoes, corn, soybeans, and wheat also increasing substantially. This was offset by decreases in crops that support large animal agriculture, such as hay, barley, oats, and mixed grains.

For grain and oilseed crops, relative profitability is a major driver of what crops are planted in any given year.²¹ As well, advances in genetics have allowed soybean production to become a larger share of the cropping base across Ontario.

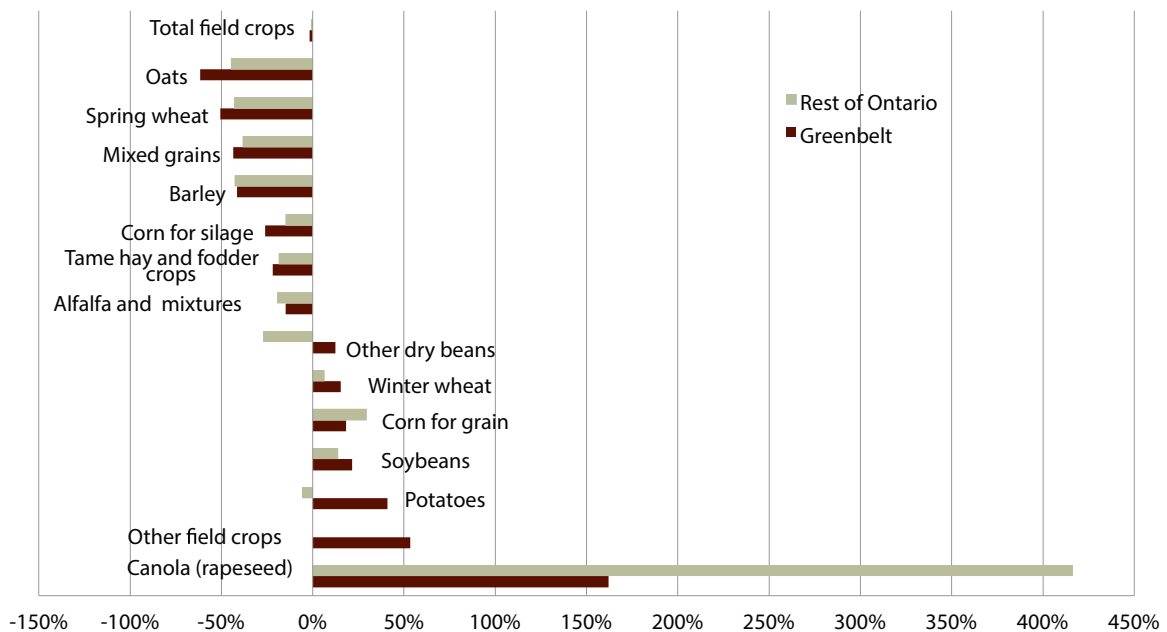


Figure 4-7 Change in area farmed by field crop in the Greenbelt and the rest of Ontario (2006-2011)

21 Appendix Table A13 illustrates the trends that occurred within the Greenbelt for soybeans, alfalfa, and corn, the three most prominent field crops grown in the Greenbelt. The same general trends occurred within each of the regions across the Greenbelt.

**Table 4-7 Change in area farmed by field crop in the Greenbelt and the rest of Ontario
(2001-2011 and 2006-2011)**

	Units	Greenbelt			Rest of Ontario		
		2001	2006	2011	2001	2006	2011
Soybeans	acres	120,862	110,385	134,195	2,127,604	2,045,499	2,330,675
<i>Change by 2011</i>	%	11.0%	21.6%		9.5%	13.9%	
Alfalfa and alfalfa mixtures	acres	147,934	152,239	129,572	1,462,875	1,510,131	1,216,638
<i>Change by 2011</i>	%	-12.4%	-14.9%		-16.8%	-19.4%	
Corn for grain	acres	127,361	104,470	123,624	1,875,664	1,473,392	1,908,732
<i>Change by 2011</i>	%	-2.9%	18.3%		1.8%	29.5%	
Winter wheat	acres	37,060	53,599	61,870	508,320	974,877	1,038,133
<i>Change by 2011</i>	%	66.9%	15.4%		104.2%	6.5%	
All other tame hay and fodder crops	acres	50,290	49,052	38,314	842,927	851,215	693,387
<i>Change by 2011</i>	%	-23.8%	-21.9%		-17.7%	-18.5%	
Corn for silage	acres	18,140	16,523	12,205	301,224	304,236	259,496
<i>Change by 2011</i>	%	-32.7%	-26.1%		-13.9%	-14.7%	
Barley	acres	24,987	19,283	11,309	283,741	201,746	115,572
<i>Change by 2011</i>	%	-54.7%	-41.4%		-59.3%	-42.7%	
Mixed grains	acres	18,923	14,535	8,202	199,342	158,919	97,960
<i>Change by 2011</i>	%	-56.7%	-43.6%		-50.9%	-38.4%	
Canola (rapeseed)	acres	4,567	3,004	7,873	31,872	15,571	80,406
<i>Change by 2011</i>	%	72.4%	162.0%		152.3%	416.4%	
Spring wheat (excluding durum)	acres	7,277	9,777	4,829	118,200	193,125	109,814
<i>Change by 2011</i>	%	-33.6%	-50.6%		-7.1%	-43.1%	
Potatoes	acres	5,231	3,101	4,374	38,165	35,054	33,010
<i>Change by 2011</i>	%	-16.4%	41.1%		-13.5%	-5.8%	
Oats	acres	7,678	10,652	4,081	93,992	121,300	66,959
<i>Change by 2011</i>	%	-46.9%	-61.7%		-28.8%	-44.8%	
Other dry beans	acres	283	1,248	1,402	62,778	69,958	50,970
<i>Change by 2011</i>	%	395.5%	12.4%		-18.8%	-27.1%	
Other field crops	acres	655	814	1,248	10,749	X	27,046
<i>Change by 2011</i>	%	90.5%	53.4%		151.6%		
Total field crops	acres	576,530	555,689	546,152	8,207,089	8,251,930	8,182,584
<i>Change by 2011</i>	%	-5.3%	-1.7%		-0.3%	-0.8%	

5

Animal Agriculture in the Greenbelt

The Greenbelt was home to about one sixth of Ontario's horses and ponies in 2011. Yet its near-urban location was less conducive to other types of large animal agriculture, such as beef feedlots, major dairy operations and swine operations (Figure 5-1). This chapter examines the components of the livestock sector.

The majority of Greenbelt horses, ponies, pigs, sheep, and lambs were located in the Protected Countryside. This would be expected, based on its much larger land base with 62% of Greenbelt farmland and 66% of farms.

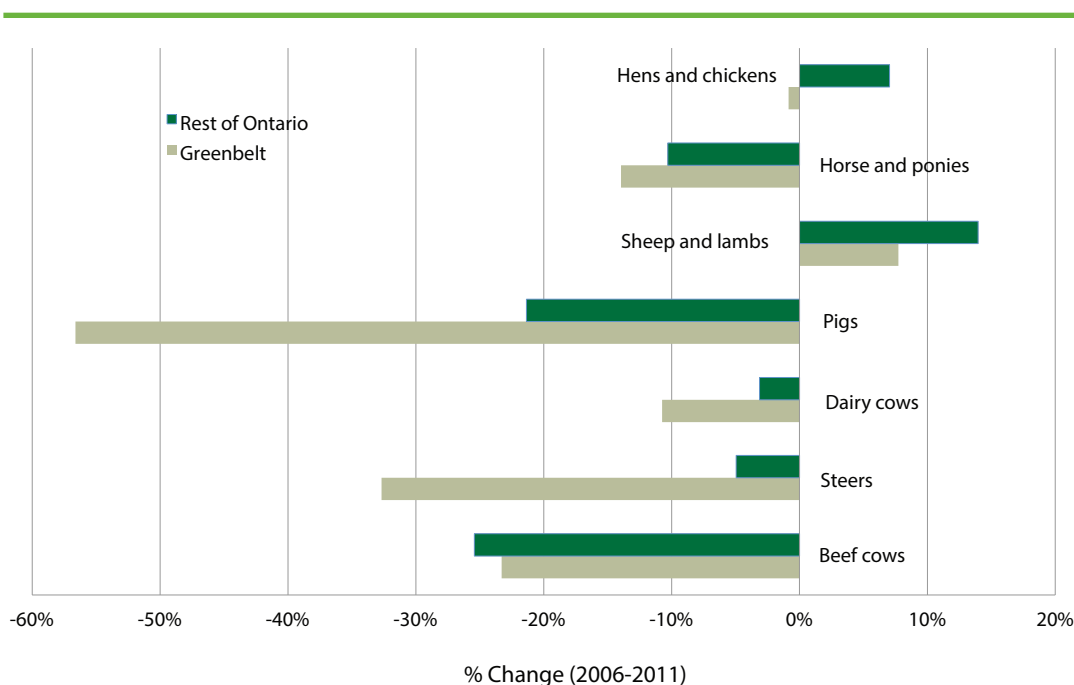


Figure 5-1 Change in number of animals by livestock type in the Greenbelt and in the rest of Ontario (2006-2011)

5.1 Cattle and Calves

The Greenbelt accounted for 5% of Ontario’s cattle and calves in 2011. This was slightly higher for beef cows and beef heifers retained for breeding, at 8%. By way of comparison, the Greenbelt was home to 10.6% of Ontario’s farms and 6.8% of the farmland.

“ Changes in beef cows and heifers for herd replacement were comparable to province-wide trends, while dairy cows decreased almost three times more in the Greenbelt.

As seen in Table 5-1, the cattle and calves population decreased 1.5 times as rapidly in the Greenbelt as in the rest of Ontario over both the 2001-2006 and 2006-2011 periods. Though dairy cows decreased almost three times as much in the Greenbelt, the changes in beef cows and beef heifers for herd replacement were comparable to province-wide trends. As illustrated in Figure 5-2, total Greenbelt cattle and calves decreased by 18.9% in the 2006-2011 period, compared to 12.2% in the rest of Ontario.²²

²² In 2011, 58% of cattle and calves were located in the Protected Countryside when it had 61% of the farmland, while the Niagara Escarpment with 18% of the farmland had 22% of the cattle and calves. (See Appendix Table A14). The general decrease in cattle and calves observed for the Greenbelt is also occurring within each of the three regional designations within the Greenbelt, as noted in Appendix Table A15.



Table 5-1 Change in number of cattle by operation type in the Greenbelt and in the rest of Ontario (2001-2011 and 2006-2011)

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Beef cows	no.	28,409	28,073	21,536	347,611	349,281	260,526	7.6%
<i>Change by 2011</i>	%	-24.2%	-23.3%		-25.1%	-25.4%		
Heifers for beef herd replacement	no.	5,978	3,987	3,389	75,945	44,769	38,597	8.1%
<i>Change by 2011</i>	%	-43.3%	-15.0%		-49.2%	-13.8%		
Steers, 1 year and over	no.	20,187	18,937	12,749	312,028	293,052	278,514	4.4%
<i>Change by 2011</i>	%	-36.8%	-32.7%		-10.7%	-5.0%		
Dairy cows	no.	21,006	16,487	14,715	342,538	313,250	303,443	4.6%
<i>Change by 2011</i>	%	-29.9%	-10.7%		-11.4%	-3.1%		
Heifers for dairy herd replacement	no.	11,291	9,546	8,648	185,301	177,455	164,497	5.0%
<i>Change by 2011</i>	%	-23.4%	-9.4%		-11.2%	-7.3%		
Total cattle and calves	no.	136,852	117,183	95,040	2,140,731	1,982,651	1,741,381	5.2%
<i>Change by 2011</i>	%	-30.6%	-18.9%		-18.7%	-12.2%		

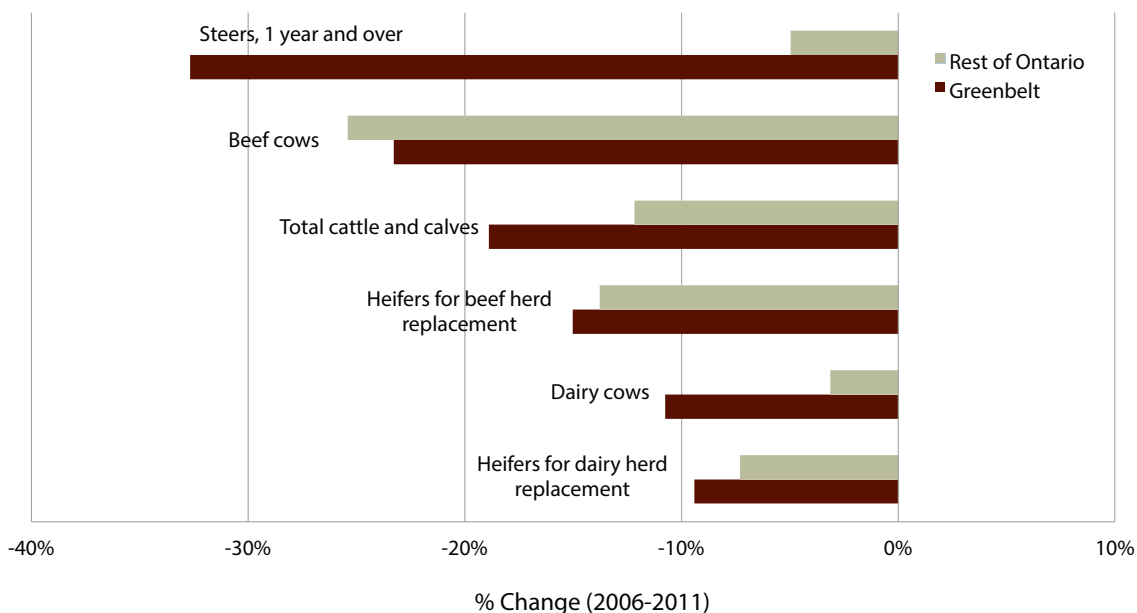


Figure 5-2 Change in number of cattle by livestock type in the Greenbelt and in the rest of Ontario (2006-2011)

Several external factors beyond cattle farmers’ control drove these changes. The cow-calf segment of beef cattle farming is carried out mainly by small producers with herds of less than 30 beef cows on average. Their primary source of farm income is derived from other commodities, and many cow-calf operations depend on off-farm income sources.

Moreover, the BSE crisis in 2003 severely stressed operating margins of cow-calf producers for a number of years. Operating returns did not return to pre-BSE levels until after 2010.²³ These low returns contributed to the reduction in beef cows and replacement heifers across the province.

Cattle and calves agriculture—both beef and dairy—was somewhat constrained by the availability of supporting infrastructure and land for expansion, as well as nutrient management requirements, minimum acreage requirements and minimum distance separation (MDS) regulations. Nutrient management programs require livestock operations to have a certain land base that allows proper disposal of manure, with larger operations requiring more land. MDS regulations require a certain set-back of facilities from roadways and neighbours, which can limit expansion of livestock operations.

On the other hand, new opportunities have emerged for cattle producers within the Greenbelt, such as a focus on local market demands and niche consumers. One trend that is helping cattle farmers rebound is the growing local food movement. There are currently more than 100 branded beef products in the province, with even more farmers marketing through farmers’ markets and their own on-farm sales. This growth has been so impressive that some retailers are working to set up value chains so they will have a consistent supply of local beef.

²³ Bovine spongiform encephalopathy, or mad cow disease, is a neurodegenerative infection carried by cows but that is easily transmitted to humans through ingestion. It has continued to impact the beef industry throughout North America since 1993.

5.2 Pigs and Sheep

Between 2001 and 2011, the pig population declined approximately seven times as rapidly in the Greenbelt as in the rest of the province. However, as shown in Table 5-2, hog farming was not a dominant feature of Greenbelt agriculture; pigs in the Greenbelt represented only 1% of Ontario totals. In contrast, Greenbelt sheep and lamb represented 9% of Ontario totals.

Table 5-2 Change in number of pigs, sheep and lambs in the Greenbelt and in the rest of Ontario (2001-2011 and 2006-2011)

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Total pigs	no.	70,761	52,874	22,943	3,386,585	3,897,718	3,065,703	0.7%
Change by 2011	%	-67.6%	-56.6%		-9.5%	-21.3%		
Total sheep and lambs	no.	33,646	29,388	31,658	303,979	281,774	321,149	9.0%
Change by 2011	%	-5.9%	7.7%		5.6%	14.0%		

As with beef and dairy cows, the large reduction in pigs within the Greenbelt can be attributed to the challenges of operating near urban locations. Nutrient management, minimum distance requirements, concerns about odours, and ability to expand operations all affect longer-term investment decisions by farmers. These factors were compounded by industry-wide changes – such as the need to follow through from start to finish, instead of participating only in one segment of pig production.

“Hog farming was not a dominant feature of Greenbelt agriculture; pigs in the Greenbelt represented only 1% of Ontario totals.”

These issues seem to have applied less to sheep and lambs; as shown in Figure 5-1, sheep and lambs were the only animal agriculture group to exhibit an increase in the period between 2006 and 2011, in both the

Greenbelt and all of Ontario. More specifically, the sheep and lamb populations increased in the Protected Country side by 19.2%, while they declined in both the Niagara Escarpment and the Oak Ridges Moraine.

5.3 Poultry

As shown in Table 5-3, in 2011 the Greenbelt accounted for 8.2% of Ontario poultry, including 10.8% of the chicken (broilers) inventory. The Greenbelt was also responsible for 9.5% of chicken production. These shares were consistent with the Greenbelt representing 10.6% of Ontario farms. The majority of this poultry activity occurred in the Protected Countryside (at 82.7% of inventory), followed by the Niagara Escarpment.²⁴

²⁴ Poultry numbers by Greenbelt area are reported in Appendix Table A18 for 2011.

Table 5-3 Change in amount of product by poultry operation type in the Greenbelt and in the rest of Ontario (2001-2011 and 2006-2011)

	Units	Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
<i>Change by 2011</i>	%	-22.9%	-0.9%		11.4%	7.0%		
Laying hens and broiler breeders	birds	439,920	468,182	366,274	9,863,336	9,672,910	9,860,915	3.6%
<i>Change by 2011</i>	%	-16.7%	-21.8%		0.0%	1.9%		
Broilers, roasters, and Cornish	birds	4,352,215	3,261,748	3,444,025	23,579,107	25,889,694	28,457,283	10.8%
<i>Change by 2011</i>	%	-20.9%	5.6%		20.7%	9.9%		
Turkeys	birds	264,509	133,091	146,905	3,138,188	3,423,159	3,336,923	4.2%
<i>Change by 2011</i>	%	-44.5%	10.4%		6.3%	-2.5%		
Broilers, roasters, and Cornish production	kgs	58,275,552	43,072,405	41,639,726	289,882,416	342,570,008	395,141,816	9.5%
<i>Change by 2011</i>	%	-28.5%	-3.3%		36.3%	15.3%		
Turkey production	kgs	5,467,677	2,401,345	4,053,171	68,221,430	80,030,407	83,125,569	4.6%
<i>Change by 2011</i>	%	-25.9%	68.8%		21.8%	3.9%		
Table eggs	dozen	X	X	6,779,230	X	X	207,712,859	3.2%
Hatching eggs	dozen	X	X	1,108,503	X	X	23,481,651	4.5%
Total hens and chickens	birds	4,967,387	3,864,222	3,831,283	38,657,309	40,237,330	43,071,033	8.2%

9.5%
of the province's chicken production is from the Greenbelt.

As reported in Table 5-3, between 2006 and 2011, total hens and chickens in the Greenbelt declined slightly, while they increased by 7% in the rest of the province. Over 10 years, total poultry numbers increased by 11.4% across the rest of Ontario but decreased by twice as much in the Greenbelt.²⁵ Chicken (broiler) production and turkey production followed similar trends. However, poultry in the Greenbelt did not decline as sharply as other livestock, such as pigs, dairy, or beef.



²⁵ The largest percentage decrease in poultry production has occurred in the Niagara Escarpment, followed by the Oak Ridges Moraine since 2001, with the smallest change occurring in the Protected Countryside (see Appendix Table A19).

5.4 Horses and Ponies on Farms

Compared to the acreage base and number of farms as a share of Ontario's, the Greenbelt had proportionally more horses and ponies on farms, accounting for 17% of Ontario's total in 2011. These numbers included horses and ponies held on farms counted in the census²⁶, but not those found on other types of rural properties. As reported in Table 5-4, over the 2001-2011 period, the equine population increased in the rest of the province by 5.7% but decreased in the Greenbelt by 3.8%.

Between 2006 and 2011, the percentage decrease in horses and ponies was much larger in the Niagara Escarpment at 30.9% compared with the Protected Countryside at 9.1%.

Table 5-4 Change in horse and ponies on census farms in the Greenbelt and in the rest of Ontario (2001-2011 and 2006-2011)

		Greenbelt			Rest of Ontario			Greenbelt Share
		2001	2006	2011	2001	2006	2011	
Horses and ponies	no.	15,265	17,073	14,690	68,072	80,212	71,952	17.0%
<i>Change by 2011</i>	%	-3.8%	-14.0%		5.7%	-10.3%		

²⁶ The census surveyed farms or other operations producing agricultural products intended for sale.

The Equine Industry in the Greenbelt

The equine industry thrives at the boundary between rural and urban landscapes, depending on large tracts of land for support and access to city-dwellers as spectators and participants. It is not surprising, therefore, that the Greenbelt plays an important role in providing the necessary conditions for the equine industry to operate successfully. “It is essential for the long-term sustainability of the equine industry to be in a protected agricultural area. It needs to be in close proximity to the urban boundary in order for it to be economically viable,” says Vel Evans of Strategic Equine Inc.

Equine operations in Ontario generated \$99.5 million gross farm revenue a year in 2011. The industry encompasses activities such as horse racing, equestrian sports such as dressage and show jumping, as well as trail riding and on-farm work. It relies on breeding farms, training facilities, riding schools, boarding stables and ranches, as well as a variety of suppliers such as tack shops, feed dealers, veterinarians, farriers and farmers who grow forages and grains for the horses. Farmers use some of the same suppliers, notably veterinarians and feed dealers, for their own operations.

Within the Greenbelt, the Caledon area is one of the most concentrated and important equestrian centres in the province. Most telling of Caledon’s role in the horse industry is its role as home of the Caledon Equestrian Park. This features equestrian competitions that bring in

athletes and their horses from around the world and will host the equestrian component of the 2015 Pan American Games.

Like the equestrian sector as a whole, the horse racing industry has a strong presence in and around the Greenbelt. When the industry faced the challenge of restructuring itself with the end of the Slots at Racetracks Program, the Greenbelt became the home of the province’s only two premier race tracks – Woodbine Racetrack in Toronto and Mohawk Racetrack in Halton Region, close to the greatest concentration of spectators. These race tracks will be supported by many of the same businesses and essential infrastructure that also provide services to the different players of the equine and agriculture industries in the Greenbelt.



Conclusion

The Greenbelt encompassed 856,424 acres of farmland in 2011 according to the Census of Agriculture, representing 7% of all farmland in Ontario. The 5,501 farms in the Greenbelt accounted for 11% of Ontario farms.

Agriculture an Integral Part of the Greenbelt

Forty-three per cent of total Greenbelt area is currently used for agricultural purposes. The Greenbelt includes the Niagara Escarpment, Oak Ridges Moraine and what is referred to as the Protected Countryside. In 2011, the Niagara Escarpment had 150,692 acres of farmed land or 31% of the total Escarpment area of 480,500 acres. In the Oak Ridges Moraine 178,127 acres were farmed, which is 38% of the 469,500 acres in the Moraine. The remainder, the Protected Countryside, has a total area of 1,040,800 acres, with 527,605 acres farmed or 51% the total.

The largest use of farm land in the Greenbelt is in field crops, with just over 60% of the farmed area in crops such as grains and oilseeds. This represents only about 6% of the field crop acreage across the province. Horticulture presents a much different picture. The Greenbelt accounts for 55% of all Ontario land in fruit production, 38% of Ontario land is devoted to nursery crops, 33% of the land area in sod production and 13% of Ontario's land area in vegetable crops. These horticulture levels are striking, given that farmed acreage in the Greenbelt is only 7% of Ontario farmed acreage.

Some farmland is used intensively, with high revenues per acre. Floriculture through greenhouse production accounts for an estimated 22% of Greenbelt farm revenues but only 1% of acreage,

“ **The Golden Horseshoe accounts for 60% of Ontario’s post-farm-gate employment in food processing and manufacturing.**

followed by nursery products at 11% of revenues and 5% of acreage, fruit production at 9% of revenues and 5% of acreage, and chicken broiler farming at 7% of revenues and 1% of acreage. On the other hand, grains and oilseeds make up only 14% of Greenbelt farm revenues despite their much larger acreage.

On average, Greenbelt farms employ more workers than those in the rest of the province, due primarily to the importance of horticulture in the Greenbelt. Agriculture in the Greenbelt and nearby—namely, in the Golden Horseshoe—employs 20% of Ontario’s farm workforce but has only 12% of the province’s farms. The difference reflects the higher labour requirements in the horticulture sector. Greenbelt agriculture is also well situated in relation to the next stage in the value chain—food processing. The Golden Horseshoe accounts for 60% of Ontario’s post-farm-gate employment in food processing and manufacturing.

Greenbelt agriculture is unique, comprising different products than farming in the rest of Ontario. This uniqueness arises from two kinds of inherent advantage enjoyed by Greenbelt agriculture.

Greenbelt Agriculture’s Natural Advantages

“ **Agriculture within the Greenbelt has natural advantages when compared with agriculture in the rest of the province, including climate, soil types, and geography.**

Agriculture within the Greenbelt has natural advantages when compared with agriculture in the rest of the province, including climate, soil types, and geography. These factors enable some Greenbelt farmers to specialize in horticultural crops. One area of specialization is floriculture (mostly greenhouse flowers) in the Niagara region, with the Greenbelt accounting for 42% of Ontario’s greenhouse flower production capacity. Similarly, the Greenbelt accounts for 55% of Ontario’s acreage in fruit production (and over 80% in grape, peaches,

plums, apricots, and cherries), with much of this in Niagara.

Another specialization due to natural advantage is vegetable production in the Holland Marsh area north of the Greater Toronto Area (GTA). Greenbelt farmers account for 60% of Ontario’s celery acreage and 35% of carrot and dry onion acreage.

Greenbelt Agriculture’s Locational Advantages

“ **Another unique feature of Greenbelt agriculture is its location, essentially surrounding the GTA, where the majority of Ontarians reside.**

Another unique feature of Greenbelt agriculture is its location, essentially surrounding the GTA, where the majority of Ontarians reside. This locational advantage creates a strong market for various types of agriculture. Examples include sod production (with the Greenbelt making up 33% of Ontario’s acreage), nursery products (38% of Ontario’s production capacity), Christmas tree operations (17% of Ontario acreage), and many fruit and vegetable operations that support local food supply chains. As well, 17% of Ontario’s horses and

ponies that are on farms (as reported by the Census of Agriculture) reside in the Greenbelt.

Challenges and Opportunities

This unique combination of natural and locational advantages is expected to remain a dominant feature of Greenbelt agriculture. However, Greenbelt farmers will continue to compete with farm products produced elsewhere in North America and the world. Moreover, the face of Greenbelt agriculture will evolve if the supporting infrastructure erodes. For example, a reduction in processing capacity could force farmers to discontinue production of some fruit crops that require processing.

At the same time, ongoing changes are underway in the Greenbelt in farms specializing in large-animal agriculture—mainly beef, dairy, and hog operations. The rate of decline in the number of farms that have such livestock, and as well the trend toward fewer animals, is more pronounced in the Greenbelt than in the rest of Ontario. For example, since 2001 the number of farms with dairy cows decreased 43%, those with beef cows declined 31%, and those with pigs fell 62%—decreases that were more than elsewhere in Ontario. The decline in the number of pigs on farms was even sharper at 68%, compared with 10% in the rest of the province. For dairy cows, the number on farms within the Greenbelt decreased by 30%, while the decline was only 11% in the rest of the province.

“ This unique combination of natural and locational advantages is expected to remain a dominant feature of Greenbelt agriculture.

These trends in large animal agriculture are primarily the result of this type of farm operating at a disadvantage in near-urban areas such as the Greenbelt. These farms face such issues as: proximity of supporting infrastructure; nutrient management regulations and associated acreage requirements; complaints about odours; minimum distance separation

regulations that can limit expansion; and access to additional lands for expansion. These issues are a few of the reasons why large animal agriculture is migrating out of the Greenbelt.

The net result of these forces and other factors is that the area farmed in the Greenbelt decreased by 7% between 2006 and 2011, a reduction of just under 60,000 acres. Across the rest of the province, farmland decreased by 5%. The number of Greenbelt farms dropped by 11%, a larger percentage than the acreage decline, reflecting the general trend toward larger farm operations. In the rest of Ontario the number of farms declined by 9%.

This profile of agriculture in the Greenbelt indicates that the changes underway are due mainly to its location close to large urban centres. The urban influence is moving out to farming areas, with a resulting impact on agriculture. Farming on the urban-rural fringe poses challenges. But it also presents opportunities—opportunities based on making the best use of land given the Greenbelt’s unique natural and locational advantages.

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Appendix – Tables on Agriculture in the Component Plan Areas of the Greenbelt

Table A1 Distribution of area farmed, number of farms, as well as average farm size in the component plan areas of the Greenbelt (2001, 2006, and 2011)

	Units	2001	2006	2011	Distribution
Area farmed					
Greenbelt total	acres	955,896	915,821	856,424	100.0%
Change by 2011	%	-10.4%	-6.5%		
Niagara Escarpment	acres	170,110	169,147	150,692	17.6%
<i>Change by 2011</i>	<i>%</i>	<i>-11.4%</i>	<i>-10.9%</i>		
Oak Ridges Moraine	acres	203,234	182,043	178,127	20.8%
<i>Change by 2011</i>	<i>%</i>	<i>-12.4%</i>	<i>-2.2%</i>		
Protected Countryside	acres	582,552	564,631	527,605	61.6%
<i>Change by 2011</i>	<i>%</i>	<i>-9.4%</i>	<i>-6.6%</i>		
Farms					
Greenbelt total	no.	6,380	6,193	5,501	100.0%
Change by 2011	%	-13.8%	-11.2%		
Niagara Escarpment	no.	1,048	959	845	15.4%
<i>Change by 2011</i>	<i>%</i>	<i>-19.3%</i>	<i>-11.8%</i>		
Oak Ridges Moraine	no.	1,177	1,134	1,008	18.3%
<i>Change by 2011</i>	<i>%</i>	<i>-14.4%</i>	<i>-11.1%</i>		
Protected Countryside	no.	4,155	4,100	3,648	66.3%
<i>Change by 2011</i>	<i>%</i>	<i>-12.2%</i>	<i>-11.0%</i>		

Table A2 Distribution and share of both farms renting and rented land in the component plan areas of the Greenbelt (2001, 2006 and 2011)

Item	Units	2001	2006	2011	Distribution
Farms renting & sharecropping					
Greenbelt total	no.	2,350	2,280	2,203	100.0%
Change by 2011	%	-6.2%	-3.4%		
Niagara Escarpment	no.	401	373	342	15.5%
Change by 2011	%	-14.7%	-8.3%		
Oak Ridges Moraine	no.	482	459	468	21.2%
Change by 2011	%	-3.0%	2.0%		
Protected Countryside	no.	1,467	1,448	1,394	63.2%
Change by 2011	%	-5.0%	-3.8%		
Percent of farms renting/ sharecropping					
Greenbelt total	%	36.8%	36.8%	40.1%	
Change by 2011	%	8.7%	8.8%		
Niagara Escarpment	%	38.3%	38.9%	40.5%	
Change by 2011	%	5.7%	4.0%		
Oak Ridges Moraine	%	41.0%	40.5%	46.4%	
Change by 2011	%	13.3%	14.8%		
Protected Countryside	%	35.3%	35.3%	38.2%	
Change by 2011	%	8.2%	8.1%		
Area rented & sharecropped					
Greenbelt total	acres	396,796	386,492	394,682	100.0%
Change by 2011	%	-0.5%	2.1%		
Niagara Escarpment	acres	64,702	73,701	69,898	17.7%
Change by 2011	%	8.0%	-5.2%		
Oak Ridges Moraine	acres	93,604	77,661	88,571	22.4%
Change by 2011	%	-5.4%	14.0%		
Protected Countryside	acres	238,490	235,131	236,213	59.8%
Change by 2011	%	-1.0%	0.5%		
Percent of land rented/ sharecropped					
Greenbelt total	%	41.5%	42.2%	46.1%	
Change by 2011	%	11.0%	9.2%		
Niagara Escarpment	%	38.0%	43.6%	46.4%	
Change by 2011	%	22.0%	6.5%		
Oak Ridges Moraine	%	46.1%	42.7%	49.7%	
Change by 2011	%	8.0%	16.6%		
Protected Countryside	%	40.9%	41.6%	44.8%	
Change by 2011	%	9.4%	7.5%		

Table A3 Size distribution of farms in the component plan areas of the Greenbelt (2001, 2006, and 2011)

	Greenbelt		Niagara Escarpment		Oak Ridges		Protected Countryside	
	no.	%	no.	%	no.	%	no.	%
< 10 acres	544	9.9%	69	8.2%	55	5.5%	420	11.5%
10 to 69 acres	2,237	40.7%	322	38.1%	395	39.2%	1,520	41.7%
70 to 129 acres	1,094	19.9%	171	20.2%	209	20.7%	714	19.6%
130 to 399 acres	1,113	20.2%	181	21.5%	241	23.9%	691	18.9%
400 to 1,119 acres	428	7.8%	85	10.1%	92	9.1%	251	6.9%
> 1,120 acres	86	1.6%	17	2.0%	17	1.7%	52	1.4%

Table A4 Distribution of area farmed by land use in the component plan areas of the Greenbelt (2001, 2006, and 2011)

	Greenbelt		Niagara Escarpment		Oak Ridges		Protected Countryside	
	acres	%	acres	%	acres	%	acres	%
Area in field crops	546,152	63.8%	89,385	59.3%	116,793	65.6%	339,974	64.4%
Woodlands and wetlands	91,031	10.6%	18,665	12.4%	18,037	10.1%	54,329	10.3%
Area in natural pasture	55,246	6.5%	11,939	7.9%	14,719	8.3%	28,588	5.4%
Area in tame or seeded pasture	50,106	5.9%	14,670	9.7%	10,898	6.1%	24,539	4.7%
All other lands	43,690	5.1%	7,948	5.3%	9,163	5.1%	26,579	5.0%
Area in fruits, berries, and nuts	29,205	3.4%	5,679	3.8%	289	0.2%	23,237	4.4%
Area in vegetable crops	16,376	1.9%	779	0.5%	2,789	1.6%	12,808	2.4%
Area in nursery products	9,570	1.1%	749	0.5%	1,784	1.0%	7,037	1.3%
Area in sod production	9,307	1.1%	42	0.0%	2,142	1.2%	7,123	1.4%
Summerfallow area	3,259	0.4%	359	0.2%	804	0.5%	2,095	0.4%
Area in Christmas tree production	2,489	0.3%	478	0.3%	717	0.4%	1,294	0.2%
Area farmed	856,424	100.0%	150,692	100.0%	178,127	100.0%	527,605	100.0%

**Table A5 Change in area farmed by land use in the component plan areas of the Greenbelt
(2001, 2006, and 2011) (I)**

	Units	2001	2006	2011	Distribution
Area in field crops					
Greenbelt total	acres	576,530	555,689	546,152	100.0%
Change by 2011	%	-5.3%	-1.7%		
Niagara Escarpment	acres	90,642	92,896	89,385	16.4%
Change by 2011	%	-1.4%	-3.8%		
Oak Ridges Moraine	acres	127,108	115,255	116,793	21.4%
Change by 2011	%	-8.1%	1.3%		
Protected Countryside	acres	358,781	347,538	339,974	62.2%
Change by 2011	%	-5.2%	-2.2%		
Area in fruits, berries, and nuts					
Greenbelt total	acres	31,195	32,148	29,205	100.0%
Change by 2011	%	-6.4%	-9.2%		
Niagara Escarpment	acres	5,687	5,271	5,679	19.4%
Change by 2011	%	-0.2%	7.7%		
Oak Ridges Moraine	acres	346	435	289	1.0%
Change by 2011	%	-16.4%	-33.6%		
Protected Countryside	acres	25,162	26,442	23,237	79.6%
Change by 2011	%	-7.7%	-12.1%		
Area in vegetable crops					
Greenbelt total	acres	18,009	16,506	16,376	100.0%
Change by 2011	%	-9.1%	-0.8%		
Niagara Escarpment	acres	899	1,003	779	4.8%
Change by 2011	%	-13.3%	-22.3%		
Oak Ridges Moraine	acres	2,230	2,213	2,789	17.0%
Change by 2011	%	25.1%	26.0%		
Protected Countryside	acres	14,880	13,289	12,808	78.2%
Change by 2011	%	-13.9%	-3.6%		
Area in nursery products					
Greenbelt total	acres	9,645	10,438	9,570	100.0%
Change by 2011	%	-0.8%	-8.3%		
Niagara Escarpment	acres	X	X	749	7.8%
Oak Ridges Moraine	acres	X	X	1,784	18.6%
Protected Countryside	acres	6,880	8,019	7,037	71.3%
Change by 2011	%	2.3%	-12.3%		
Area in sod production					
Greenbelt total	acres	7,428	9,027	9,307	100.0%
Change by 2011	%	25.3%	3.1%		
Niagara Escarpment	acres	X	X	42	0.4%
Oak Ridges Moraine	acres	X	X	2,142	23.0%
Protected Countryside	acres	6,463	8,167	7,123	76.5%
Change by 2011	%	10.2%	-12.8%		

Table A6 Change in area farmed by land use in the component plan areas of the Greenbelt (2001, 2006, and 2011) (II)

	Units	2001	2006	2011	Distribution
Summerfallow area					
Greenbelt total	acres	5,477	3,666	3,259	100.0%
Change by 2011	%	-40.5%	-11.1%		
Niagara Escarpment	acres	830	519	359	11.0%
Change by 2011	%	-56.7%	-30.7%		
Oak Ridges Moraine	acres	1,114	558	804	24.7%
Change by 2011	%	-27.8%	44.2%		
Protected Countryside	acres	3,533	2,589	2,095	64.3%
Change by 2011	%	-40.7%	-19.1%		
Area in Christmas tree production					
Greenbelt total	acres	4,480	3,217	2,489	100.0%
Change by 2011	%	-44.4%	-22.6%		
Niagara Escarpment	acres	755	418	478	19.2%
Change by 2011	%	-36.7%	14.4%		
Oak Ridges Moraine	acres	1,422	1,179	717	28.8%
Change by 2011	%	-49.6%	-39.2%		
Protected Countryside	acres	2,303	1,620	1,294	52.0%
Change by 2011	%	-43.8%	-20.1%		
Woodlands and wetlands					
Greenbelt total	acres	NR	108,566	91,031	100.0%
Change by 2011	%		-16.2%		
Niagara Escarpment	acres	NR	24,347	18,665	20.5%
Change by 2011	%		-23.3%		
Oak Ridges Moraine	acres	NR	21,184	18,037	19.8%
Change by 2011	%		-14.9%		
Protected Countryside	acres	NR	63,035	54,329	59.7%
Change by 2011	%		-13.8%		
Area in natural pasture					
Greenbelt total	acres	92,815	67,861	55,246	100.0%
Change by 2011	%	-40.5%	-18.6%		
Niagara Escarpment	acres	18,132	16,102	11,939	21.6%
Change by 2011	%	-34.2%	-25.9%		
Oak Ridges Moraine	acres	23,782	17,213	14,719	26.6%
Change by 2011	%	-38.1%	-14.5%		
Protected Countryside	acres	50,902	34,546	28,588	51.7%
Change by 2011	%	-43.8%	-17.2%		
Area in tame or seeded pasture					
Greenbelt total	acres	57,723	58,201	50,106	100.0%
Change by 2011	%	-13.2%	-13.9%		
Niagara Escarpment	acres	16,053	16,643	14,670	29.3%
Change by 2011	%	-8.6%	-11.9%		
Oak Ridges Moraine	acres	11,863	12,118	10,898	21.7%
Change by 2011	%	-8.1%	-10.1%		
Protected Countryside	acres	29,807	29,440	24,539	49.0%
Change by 2011	%	-17.7%	-16.6%		
All other lands					
Greenbelt total	acres	152,353	50,523	43,690	100.0%
Change by 2011	%	-71.3%	-13.5%		
Niagara Escarpment	acres	36,034	10,758	7,948	18.2%
Change by 2011	%	-77.9%	-26.1%		
Oak Ridges Moraine	acres	32,569	9,813	9,163	21.0%
Change by 2011	%	-71.9%	-6.6%		
Protected Countryside	acres	83,750	29,952	26,579	60.8%
Change by 2011	%	-68.3%	-11.3%		

Table A7 Distribution of area farmed by fruit crop in the component plan areas of the Greenbelt (2011)

	Greenbelt		Niagara Escarpment		Oak Ridges		Protected Countryside	
	acres	%	acres	%	acres	%	acres	%
Grapes total area	15,572	53.3%	3,401	59.9%	112	38.6%	12,059	51.9%
Peaches total area	5,642	19.3%	X		X		5,350	23.0%
Apples total area	3,201	11.0%	1,319	23.2%	127	43.9%	1,755	7.6%
Pears total area	897	3.1%	160	2.8%	2	0.6%	735	3.2%
Plums and prunes total area	890	3.0%	63	1.1%	3	0.9%	824	3.5%
Cherries (sour) total area	871	3.0%	X		X		729	3.1%
Other fruits, berries, and nuts total area	795	2.7%	85	1.5%	10	3.3%	701	3.0%
Strawberries total area	590	2.0%	93	1.6%	25	8.6%	472	2.0%
Cherries (sweet) total area	432	1.5%	X		X		358	1.5%
Raspberries total area	181	0.6%	29	0.5%	8	2.7%	144	0.6%
Apricots total area	83	0.3%	3	0.0%	-	0.0%	80	0.3%
Blueberries total area	43	0.1%	X		X		23	0.1%
Saskatoon berries total area	10	0.0%	X		X		7	0.0%
Total area of fruits, berries, and nuts	29,205	100.0%	5,679	100.0%	289	100.0%	23,237	100.0%

Table A8 Change in area farmed of fruits, berries and nuts in the component plan areas of the Greenbelt (2001-2011 and 2006-2011)

	Units	2001	2006	2011	Distribution
Greenbelt total	acres	31,195	32,148	29,205	
Change by 2011	%	-6.4%	-9.2%		
Niagara Escarpment	acres	5,687	5,271	5,679	19.4%
Change by 2011	%	-0.2%	7.7%		
Oak Ridges Moraine	acres	346	435	289	1.0%
Change by 2011	%	-16.4%	-33.6%		
Protected Countryside	acres	25,162	26,442	23,237	79.6%
Change by 2011	%	-7.7%	-12.1%		

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

Table A9 Distribution of area farmed by vegetable crop in the component plan areas of the Greenbelt (2011)

	Greenbelt		Niagara Escarpment		Oak Ridges		Protected Countryside	
	acres	%	acres	%	acres	%	acres	%
Carrots	3,491	21.3%	1	0.1%	574	20.6%	2,916	22.8%
Other vegetables	2,470	15.1%	42	5.5%	639	22.9%	1,788	14.0%
Dry onions, yellow, Spanish, cooking, etc.	2,322	14.2%	2	0.2%	425	15.2%	1,895	14.8%
Sweet corn	1,758	10.7%	156	20.1%	547	19.6%	1,054	8.2%
Chinese cabbage	801	4.9%	X		X		642	5.0%
Broccoli	690	4.2%	57	7.3%	63	2.2%	571	4.5%
Pumpkins	681	4.2%	87	11.1%	61	2.2%	533	4.2%
Green and wax beans	621	3.8%	X		X		422	3.3%
Squash and zucchini	597	3.6%	29	3.8%	29	1.0%	539	4.2%
Cauliflower	545	3.3%	41	5.2%	60	2.2%	444	3.5%
Celery	367	2.2%	X		X		326	2.5%
Beets	310	1.9%	3	0.3%	29	1.0%	279	2.2%
Tomatoes	271	1.7%	29	3.7%	53	1.9%	189	1.5%
Lettuce	266	1.6%	9	1.1%	6	0.2%	251	2.0%
Cabbage	246	1.5%	X		X		215	1.7%
Spinach	219	1.3%	12	1.6%	3	0.1%	204	1.6%
Green peas	153	0.9%	65	8.4%	6	0.2%	82	0.6%
Peppers	133	0.8%	12	1.6%	10	0.3%	111	0.9%
Radishes	121	0.7%	X		X		111	0.9%
Cucumbers	88	0.5%	8	1.1%	21	0.7%	59	0.5%
Total vegetables	16,376	100%	779	100%	2,789	100%	12,808	100%

Table A10 Change in area farmed for vegetable crops in the component plan areas of the Greenbelt (2001-2011 and 2006-2011)

	Units	2001	2006	2011	Distribution
Greenbelt total	acres	18,009	16,506	16,376	100.0%
Change by 2011	%	-9.1%	-0.8%		
Niagara Escarpment	acres	899	1,003	779	4.8%
Change by 2011	%	-13.3%	-22.3%		
Oak Ridges Moraine	acres	2,230	2,213	2,789	17.0%
Change by 2011	%	25.1%	26.0%		
Protected Countryside	acres	14,880	13,289	12,808	78.2%
Change by 2011	%	-13.9%	-3.6%		

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture.

Table A11 Area farmed by enclosed crop in the component plan areas of the Greenbelt (2011)

	Units	Greenbelt	Niagara Escarpment	Oak Ridges	Protected Countryside	Greenbelt Share
Greenhouse flowers	sq . ft.	18,289,691	1,085,390	382,737	16,821,564	52.1%
Greenhouse vegetables	sq . ft.	6,312,883	174,029	255,980	5,882,875	51.8%
Other greenhouse products	sq . ft.	463,469	49,308	132,855	281,305	62.2%
Mushrooms	sq . ft.	960,936	512,108	83,328	365,501	72.4%
Total greenhouse	sq . ft.	25,066,043	1,308,727	771,572	22,985,745	52.2%

Table A12 Distribution of area farmed by field crop in the component plan areas of the Greenbelt (2011)

	Greenbelt		Niagara Escarpment		Oak Ridges		Protected Countryside	
	acres	%	acres	%	acres	%	acres	%
Soybeans	134,195	24.6%	16,925	18.9%	28,437	24.3%	88,833	26.1%
Alfalfa and alfalfa mixtures	129,572	23.7%	27,303	30.5%	28,651	24.5%	73,618	21.7%
Corn for grain	123,624	22.6%	11,984	13.4%	27,598	23.6%	84,042	24.7%
Winter wheat	61,870	11.3%	9,489	10.6%	13,867	11.9%	38,514	11.3%
All other tame hay and fodder crops	38,314	7.0%	9,314	10.4%	6,972	6.0%	22,028	6.5%
Corn for silage	12,205	2.2%	1,845	2.1%	2,099	1.8%	8,261	2.4%
Barley	11,309	2.1%	3,351	3.7%	1,941	1.7%	6,017	1.8%
Mixed grains	8,202	1.5%	1,725	1.9%	1,850	1.6%	4,628	1.4%
Canola (rapeseed)	7,873	1.4%	3,159	3.5%	1,405	1.2%	3,309	1.0%
Spring wheat (excluding durum)	4,829	0.9%	1,750	2.0%	683	0.6%	2,396	0.7%
Potatoes	4,374	0.8%	1,166	1.3%	680	0.6%	2,528	0.7%
Oats	4,081	0.7%	822	0.9%	888	0.8%	2,370	0.7%
Other dry beans	1,248	0.2%	218	0.2%	345	0.3%	685	0.2%
Other field crops	1,248	0.2%	218	0.2%	345	0.3%	685	0.2%
Total field crops	546,152	100.0%	89,385	100.0%	116,793	100.0%	339,974	100.0%

Table A13 Change in area farmed by field crop in the component plan areas of the Greenbelt (2001-2011 and 2006-2011)

	Units	2001	2006	2011	Distribution
Soybeans					
Greenbelt total	acres	120,862	110,385	134,195	100.0%
Change by 2011	%	11.0%	21.6%		
Niagara Escarpment	acres	14,755	14,100	16,925	12.6%
Change by 2011	%	14.7%	20.0%		
Oak Ridges Moraine	acres	27,799	22,190	28,437	21.2%
Change by 2011	%	2.3%	28.1%		
Protected Countryside	acres	78,308	74,094	88,833	66.2%
Change by 2011	%	13.4%	19.9%		
Alfalfa and alfalfa mixtures					
Greenbelt total	acres	147,934	152,239	129,572	100.0%
Change by 2011	%	-12.4%	-14.9%		
Niagara Escarpment	acres	29,602	29,843	27,303	21.1%
Change by 2011	%	-7.8%	-8.5%		
Oak Ridges Moraine	acres	31,557	33,301	28,651	22.1%
Change by 2011	%	-9.2%	-14.0%		
Protected Countryside	acres	86,775	89,095	73,618	56.8%
Change by 2011	%	-15.2%	-17.4%		
Corn for grain					
Greenbelt total	acres	127,361	104,470	123,624	100.0%
Change by 2011	%	-2.9%	18.3%		
Niagara Escarpment	acres	11,444	10,778	11,984	9.7%
Change by 2011	%	4.7%	11.2%		
Oak Ridges Moraine	acres	29,315	21,029	27,598	22.3%
Change by 2011	%	-5.9%	31.2%		
Protected Countryside	acres	86,602	72,662	84,042	68.0%
Change by 2011	%	-3.0%	15.7%		

Table A14 Number of cattle by operation type in the component plan areas of the Greenbelt (2011)

	Units	Greenbelt	Niagara Escarpment	Oak Ridges	Protected Countryside
Beef cows	no.	21,536	5,626	4,532	11,379
Heifers for beef herd replacement	no.	3,389	784	679	1,926
Steers, 1 year and over	no.	12,749	3,913	3,453	5,382
Dairy cows	no.	14,715	1,290	2,549	10,877
Heifers for dairy herd replacement	no.	8,648	786	1,582	6,280
Total cattle and calves	no.	95,040	20,455	19,612	54,973

Table A15 Change in number of cattle by operation type in the component plan areas of the Greenbelt (2001-2006 and 2006-2011)

Item	Units	2001	2006	2011	Distribution
Greenbelt total	no.	136,852	117,183	95,040	100.0%
Change by 2011	%	-30.6%	-18.9%		
Niagara Escarpment	no.	27,643	25,992	20,455	21.5%
Change by 2011	%	-26.0%	-21.3%		
Oak Ridges Moraine	no.	28,065	24,785	19,612	20.6%
Change by 2011	%	-30.1%	-20.9%		
Protected Countryside	no.	81,144	66,406	54,973	57.8%
Change by 2011	%	-32.3%	-17.2%		

Table A16 Number of pigs, sheep and lambs in the component plan areas of the Greenbelt (2011)

	Units	Greenbelt	Niagara Escarpment	Oak Ridges	Protected Countryside
Pigs	no.	22,943	2,128	2,797	18,018
Sheep and lambs	no.	31,658	4,392	5,245	22,021

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

Table A17 Change in number of pigs, sheep and lambs in the component plan areas of the Greenbelt (2001-2006 and 2006-2011)

	Units	2001	2006	2011	Distribution
Total pigs					
Greenbelt total	no.	70,761	52,874	22,943	100.0%
Change by 2011	%	-67.6%	-56.6%		
Niagara Escarpment	no.	13,450	5,451	2,128	9.3%
Change by 2011	%	-84.2%	-61.0%		
Oak Ridges Moraine	no.	9,499	8,528	2,797	12.2%
Change by 2011	%	-70.6%	-67.2%		
Protected Countryside	no.	47,812	38,895	18,018	78.5%
Change by 2011	%	-62.3%	-53.7%		
Total sheep and lambs					
Greenbelt total	no.	33,646	29,388	31,658	100.0%
Change by 2011	%	-5.9%	7.7%		
Niagara Escarpment	no.	7,745	5,311	4,392	13.9%
Change by 2011	%	-43.3%	-17.3%		
Oak Ridges Moraine	no.	5,721	5,597	5,245	16.6%
Change by 2011	%	-8.3%	-6.3%		
Protected Countryside	no.	20,180	18,479	22,021	69.6%
Change by 2011	%	9.1%	19.2%		

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

Table A18 Number of poultry products in the component plan areas of the Greenbelt (2011)

	Units	Greenbelt	Niagara Escarpment	Oak Ridges	Protected Countryside
Laying hens and broiler breeders	birds	253,308	65,557	42,228	145,523
Broiler breeders	birds	112,966	X	X	72,177
Broilers, roasters and Cornish	birds	3,444,025	287,383	213,419	2,943,223
Turkeys	birds	146,905	X	X	92,755
Broilers, roasters and Cornish production	kgs	41,639,726	5,140,154	2,574,875	33,924,696
Turkey production	kgs	4,053,171	X	X	2,707,155
Table eggs	dozen	6,779,230	1,695,624	1,212,858	3,870,747
Hatching eggs	dozen	1,108,503	X	181,461	778,165
Total hens and chickens	birds	3,831,283	384,100	278,680	3,168,503

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

Table A19 Change in amount of product by poultry operation type in the component plan areas of the Greenbelt (2001-2011 and 2006-2011)

	Units	2001	2006	2011	Distribution
Greenbelt total	birds	4,967,387	3,864,222	3,831,283	100.0%
Change by 2011	%	-22.9%	-0.9%		
Niagara Escarpment	birds	803,236	408,878	384,100	10.0%
Change by 2011	%	-52.2%	-6.1%		
Oak Ridges Moraine	birds	413,813	318,351	278,680	7.3%
Change by 2011	%	-32.7%	-12.5%		
Protected Countryside	birds	3,750,338	3,136,993	3,168,503	82.7%
Change by 2011	%	-15.5%	1.0%		

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

Table A20 Change in horse and ponies on census farms in the component plan areas of the Greenbelt (2001-2011 and 2006-2011)

	Units	2001	2006	2011	Distribution
Greenbelt Total	no.	15,265	17,073	14,690	100.0%
Change by 2011	%	-3.8%	-14.0%		
Niagara Escarpment	no.	2,418	2,628	1,816	12.4%
Change by 2011	%	-24.9%	-30.9%		
Oak Ridges Moraine	no.	3,950	4,941	4,235	28.8%
Change by 2011	%	7.2%	-14.3%		
Protected Countryside	no.	8,897	9,503	8,638	58.8%
Change by 2011	%	-2.9%	-9.1%		

Source: Computations based on Statistics Canada custom analysis of the 2011, 2006, and 2001 Census of Agriculture

