

# Canadian Livestock Feed Consumption

**2022 Estimates**



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# Objectives

The objectives of this project are:

- To estimate livestock feed consumption volumes in Canada, on an annual basis, according to species and geography. For each species, consumption estimates are broken down by stage of production when the relevant statistics are available.
- To provide publicly available statistics on Canadian livestock feed consumption to industry stakeholders.
- To compare year over year livestock feed consumption estimates to proactively identify changes that could impact the industry.





# Methodology

To estimate livestock feed consumption, the average feed intake of specific livestock populations was determined and multiplied by the Canadian population.

Calculation of feed consumption for species at specific stage of life/production:

$$\text{average feed intake} \times \text{population} = \text{estimated feed consumption}$$

Average feed intake for each species, adjusting for various life and production stages, was determined by the Feed Statistics Special Purpose Committee of the ANAC Nutrition Committee. Feed intake averages are included in [Appendix A](#).

Population data were taken from official sources including:

- Agriculture and Agri-Food Canada
- Equestrian Canada
- Statistics Canada
- Turkey Farmers of Canada



# Reporting and assumptions

Estimated feed consumption volumes are provided as **complete feed equivalents** on an as fed (AF) basis.

All consumption volumes are reported in metric tonnes.

Monogastric feed consumption volumes represent total diet.

Ruminant feed consumption volumes do not include forages. Forage consumption estimates are provided separately in [Appendix B](#).



# Livestock feed consumption: 2022 overview



# 2022 Highlights



Approximately 29.2 million tonnes of feed was consumed by livestock (not including forages), 1.0% more than in 2021 and 1.6% more than in 2020.



Estimated national duck and goose feed consumption dropped 30% from 2021 to 2022 due to the significant decline in duck populations resulting from Highly Pathogenic Avian Influenza outbreaks.

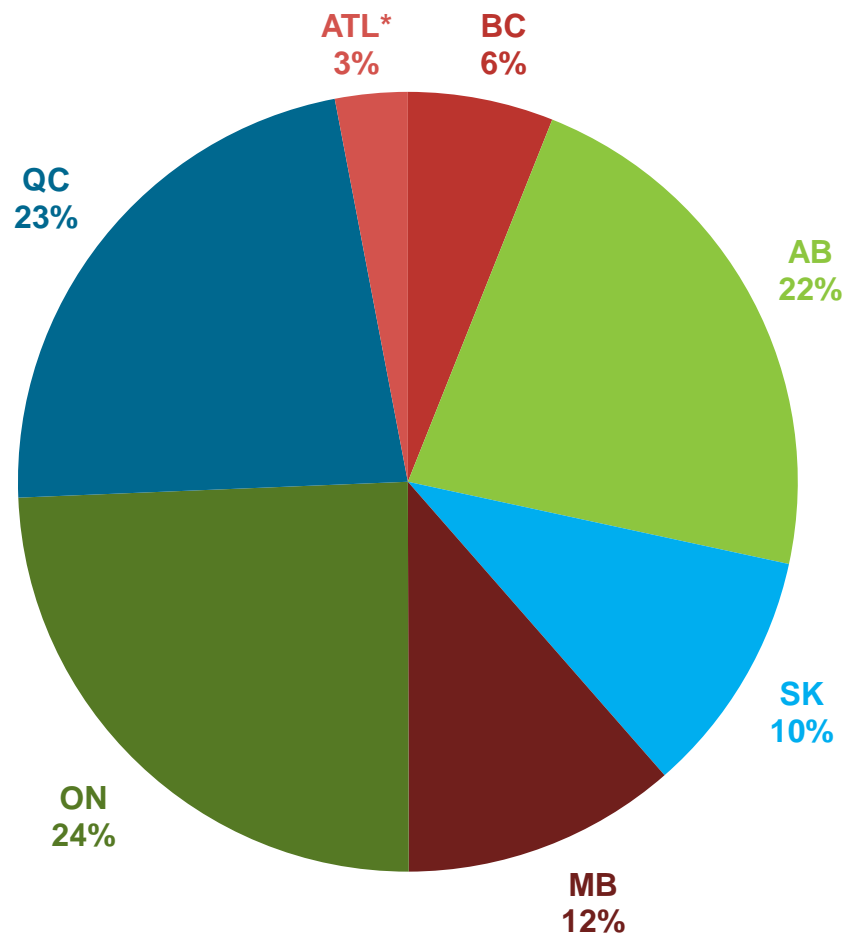


Alberta's estimated beef feed consumption increased 14.6% from 2021 to 2022, contributing to Canada's estimated 4.4% increase in beef feed consumption nationwide.

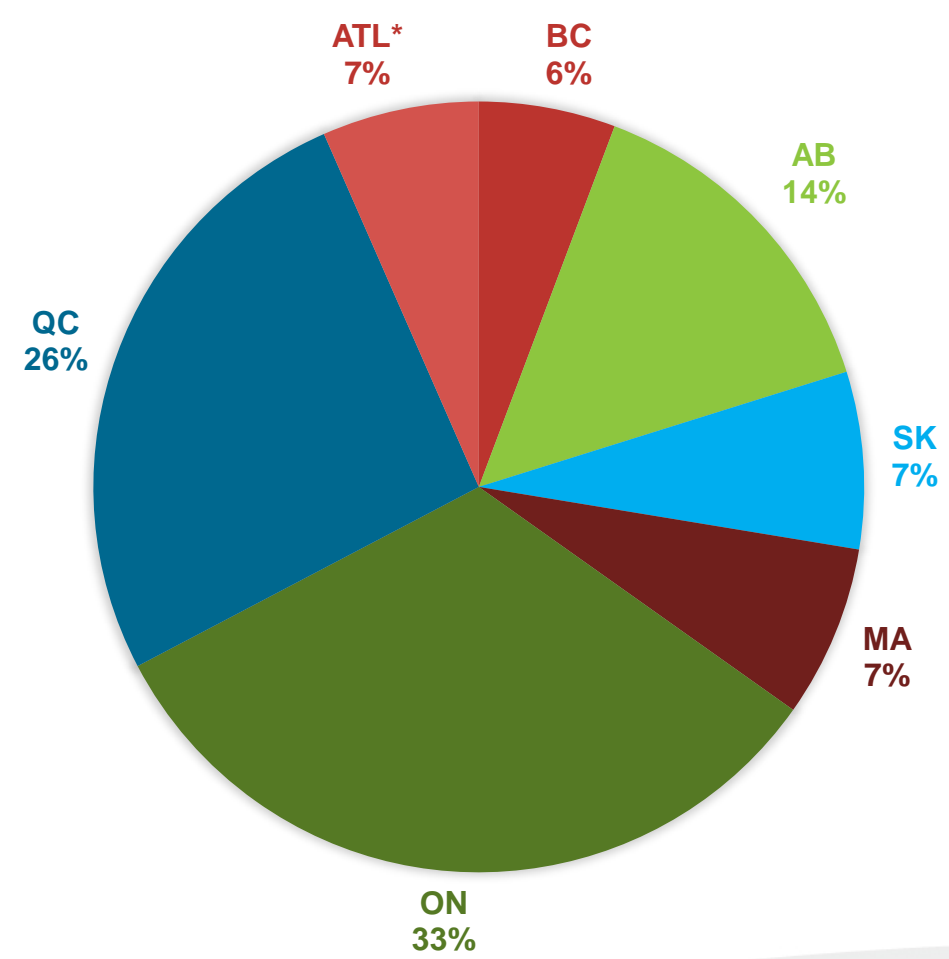


# Distribution of livestock feed consumption and commercial feed mills across Canada in 2022

Livestock feed consumption



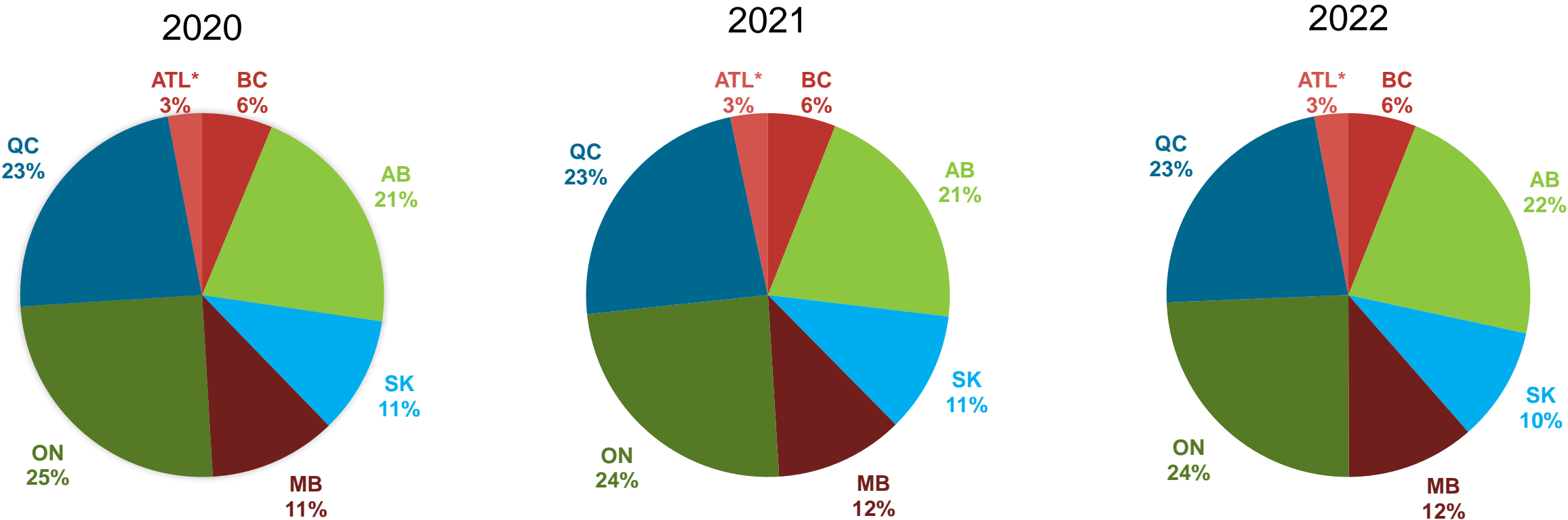
Commercial feed mills



Provincial livestock feed consumption and commercial feed mills data is presented in [Table A1](#). Territories (Terr), including Northwest Territories, Nunavut and Yukon, represent 0.001% of Canadian feed consumption and will be included in graphs where relevant. \*ATL includes the provinces of Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador.

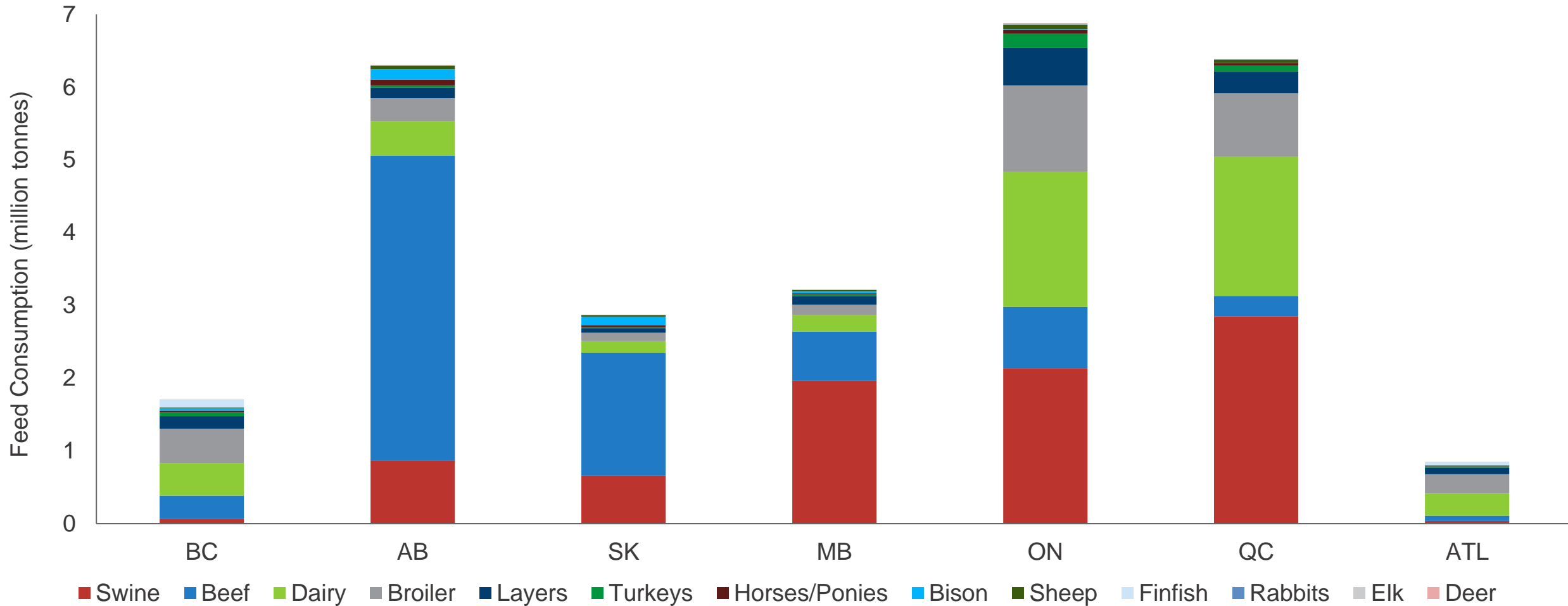


# Comparison of feed consumption distribution across Canada by year



Provincial livestock feed consumption and commercial feed mills data is presented in [Table A1](#). Territories (Terr), including Northwest Territories, Nunavut, and Yukon, represent 0.001% of Canadian feed consumption and will be included in graphs where relevant. \*ATL includes the provinces of Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador.

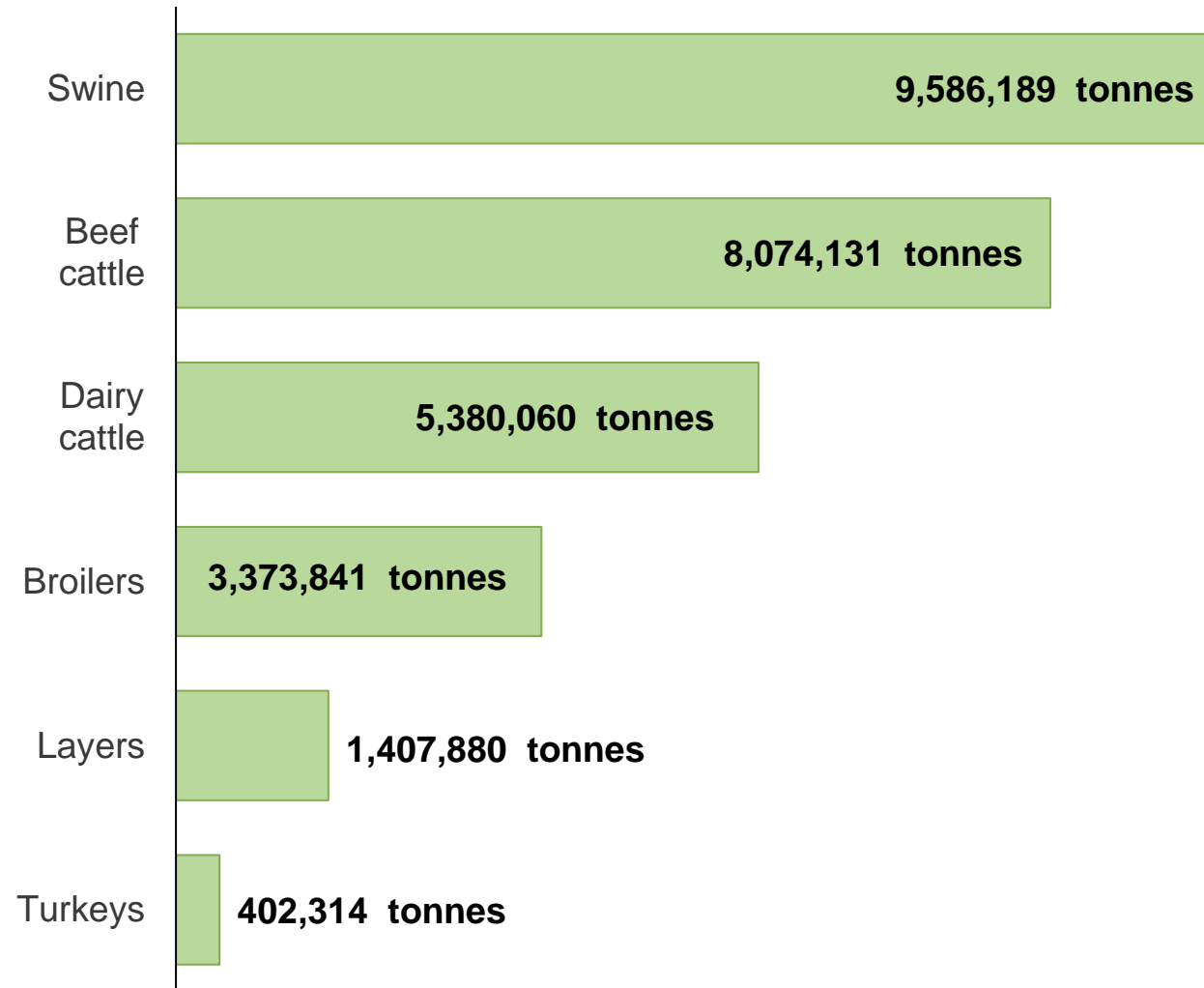
# 2022 Livestock feed consumption by province and species



# Major species



# Overview of major species



Major species consume approximately 28.2 million tonnes of livestock feed, representing 96.6% of total feed consumption in Canada.

- Swine – 32.8%
- Beef cattle – 27.6%
- Dairy cattle – 18.4%
- Poultry – 17.7%
  - Broiler chickens – 11.5%
  - Laying hens – 4.8%
  - Turkeys – 1.4%

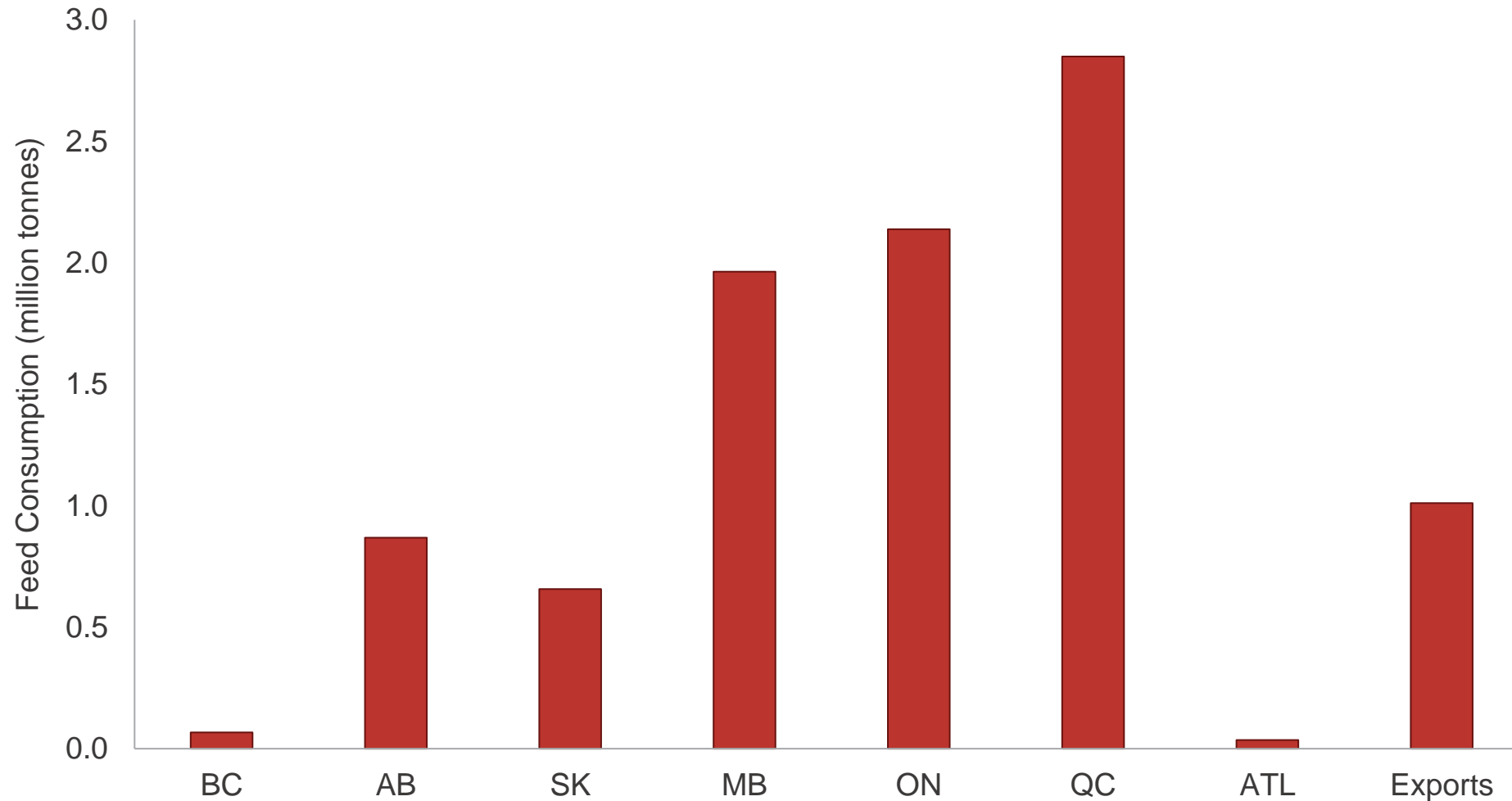
In addition to concentrate, beef and dairy cattle consumed a considerable amount of forage. Data on forage consumption estimates can be found in [Appendix B](#).





# Swine feed consumption by province

Swine consumed a total of 9.6 million tonnes of feed.



Population numbers were based on total number of hogs slaughtered by province in 2022.

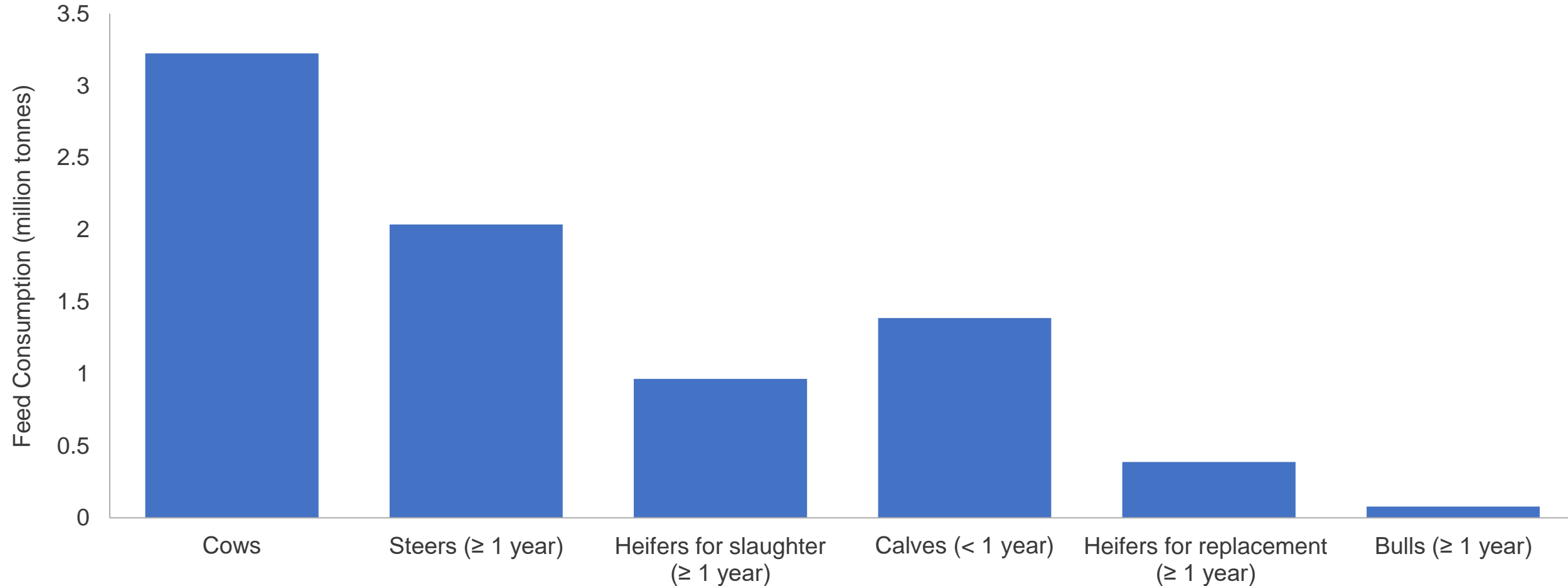
Exports represent all live hogs exported to the United States including feeder pigs, breeding hogs and market hogs.

Parental feed intake was considered in pig feed consumption calculations.

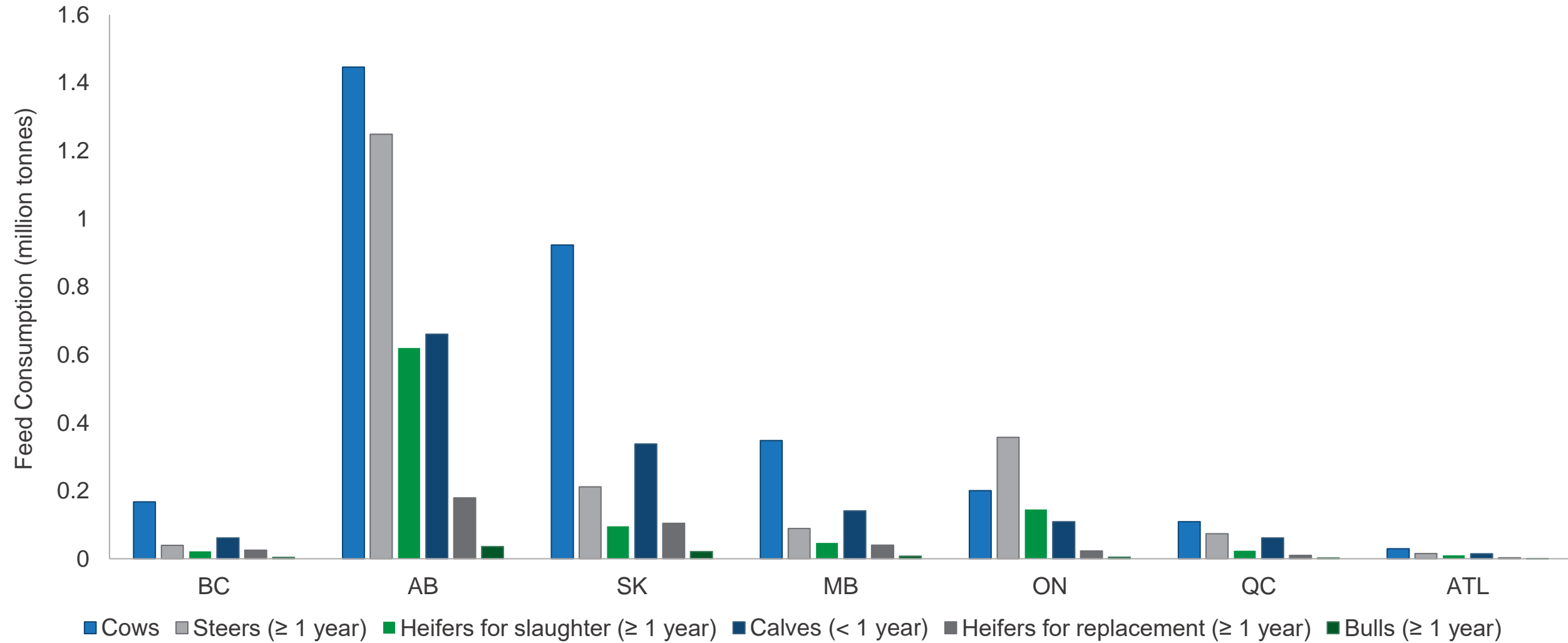


# Beef cattle feed consumption by stage of production

Beef cattle consumed a total of 8.1 million tonnes of feed.

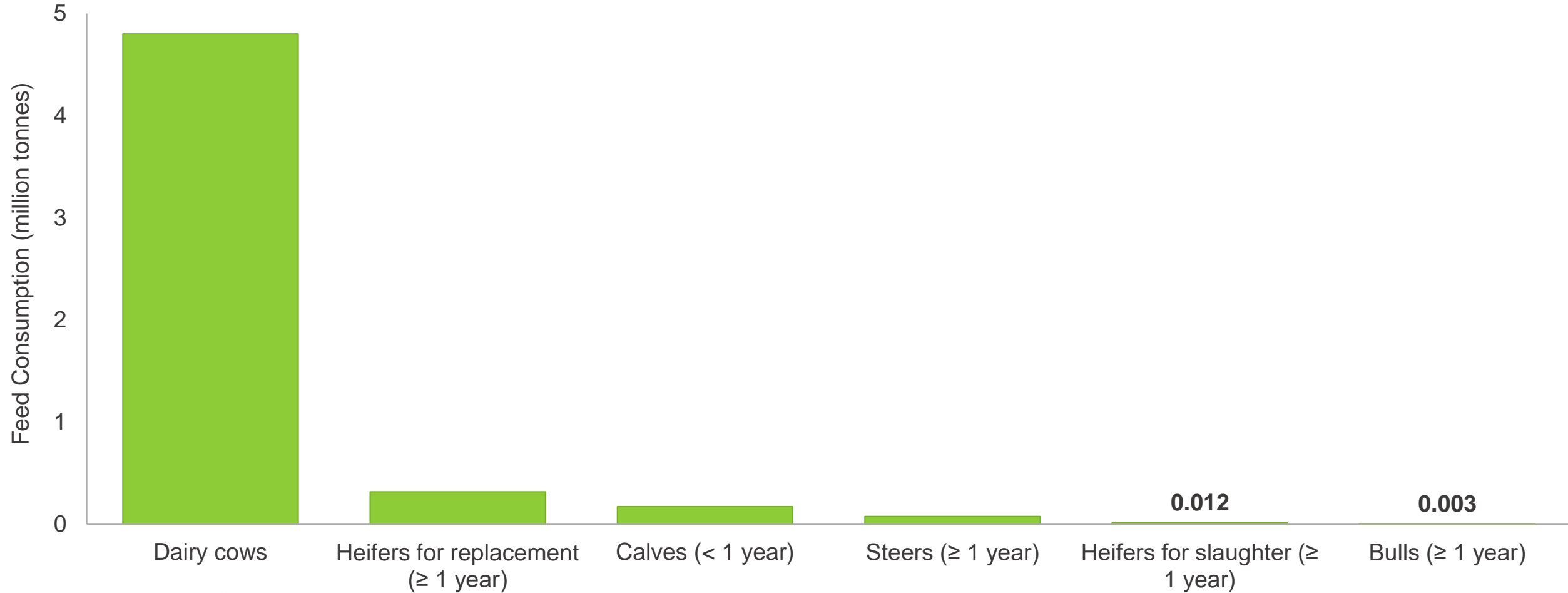


# Beef cattle feed consumption by province and stage of production



# Dairy cattle feed consumption by stage of production

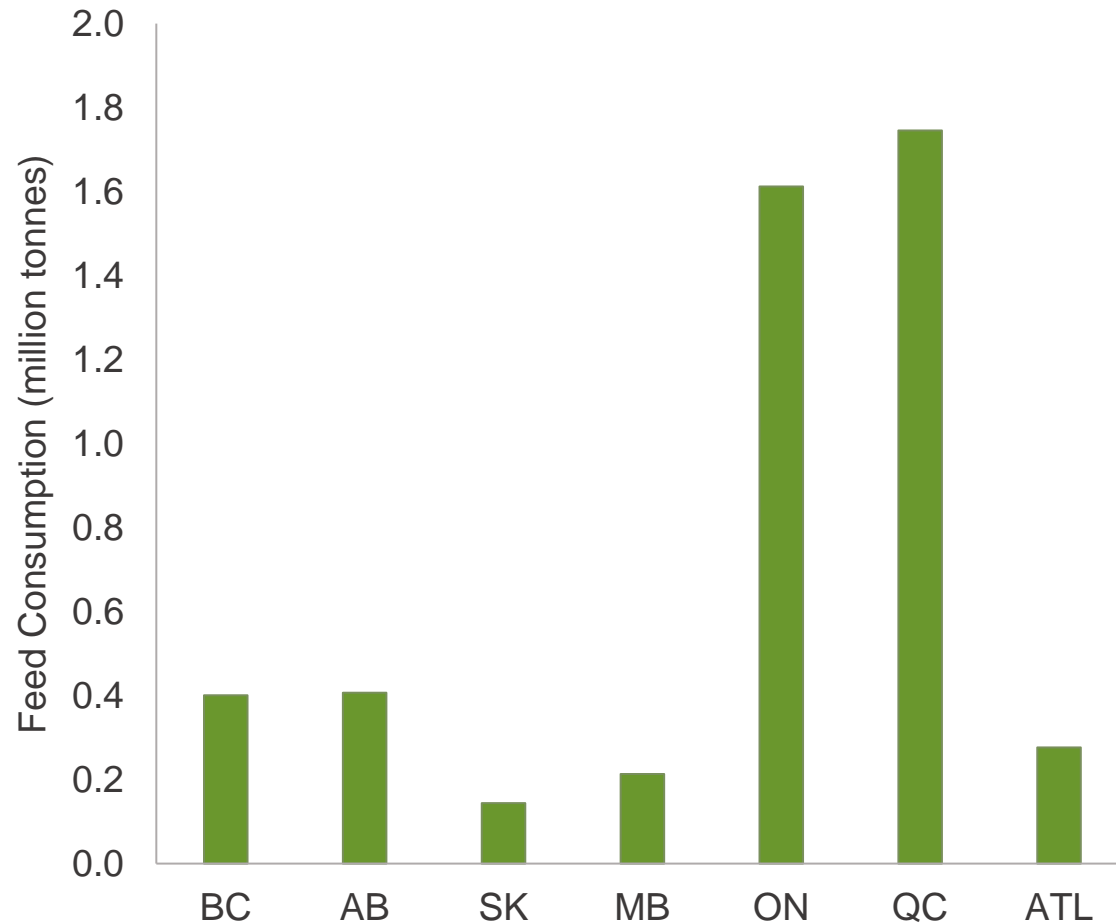
Dairy cattle consumed a total of 5.4 million tonnes of feed.



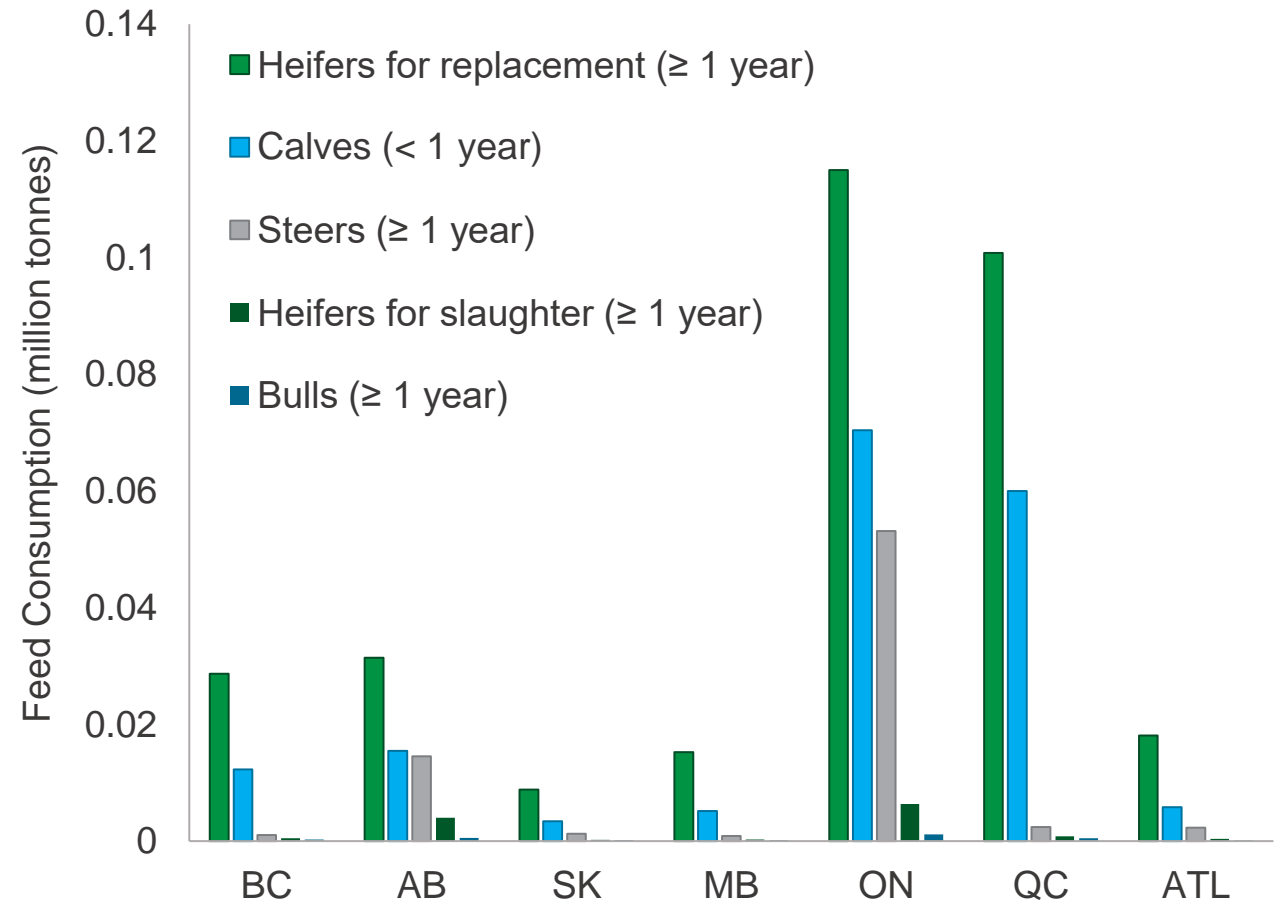


# Dairy cattle feed consumption by province and stage of production

Dairy cows

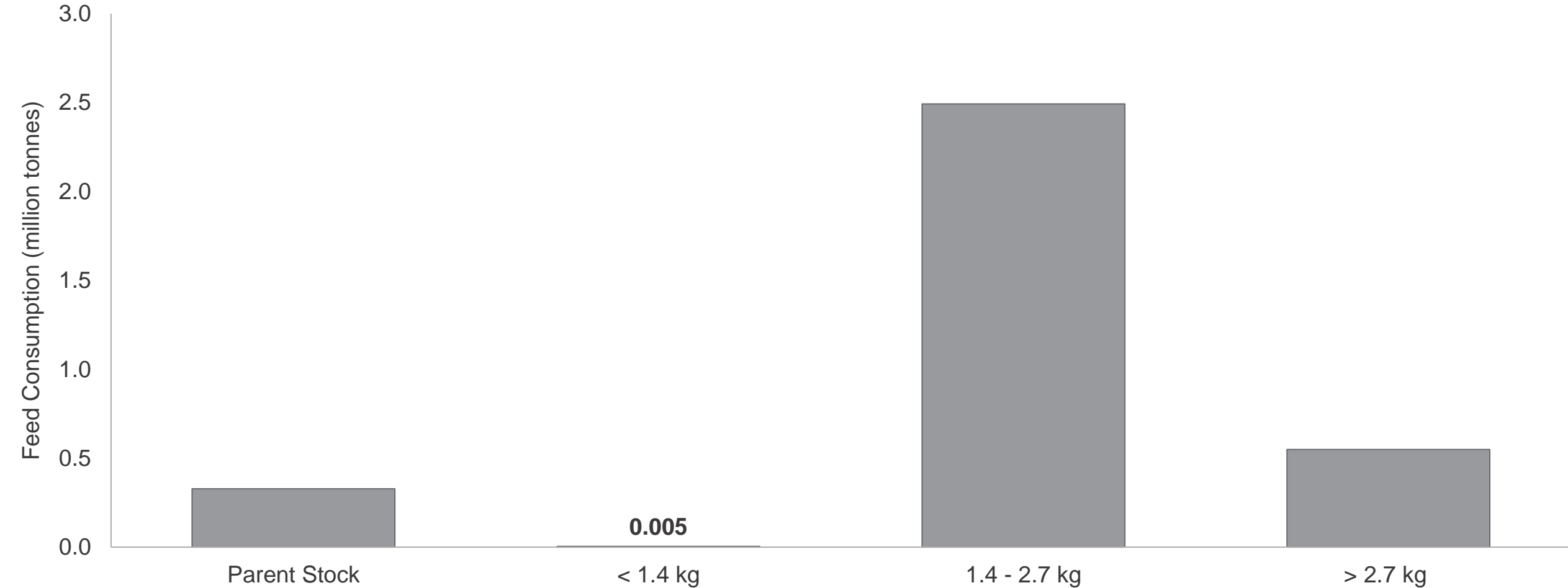


Dairy heifers, calves, steers and bulls

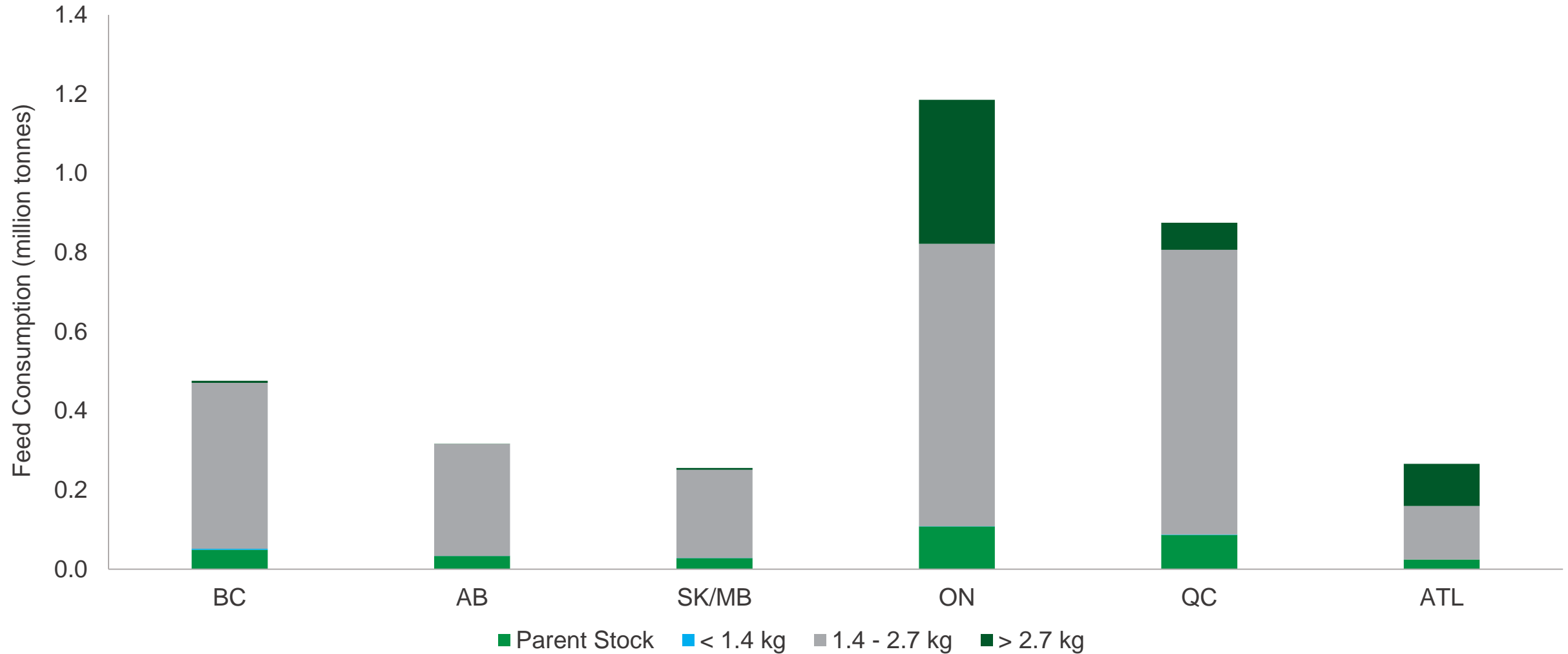


# Broiler feed consumption by stage of production

Broilers consumed a total of 3.4 million tonnes of feed.

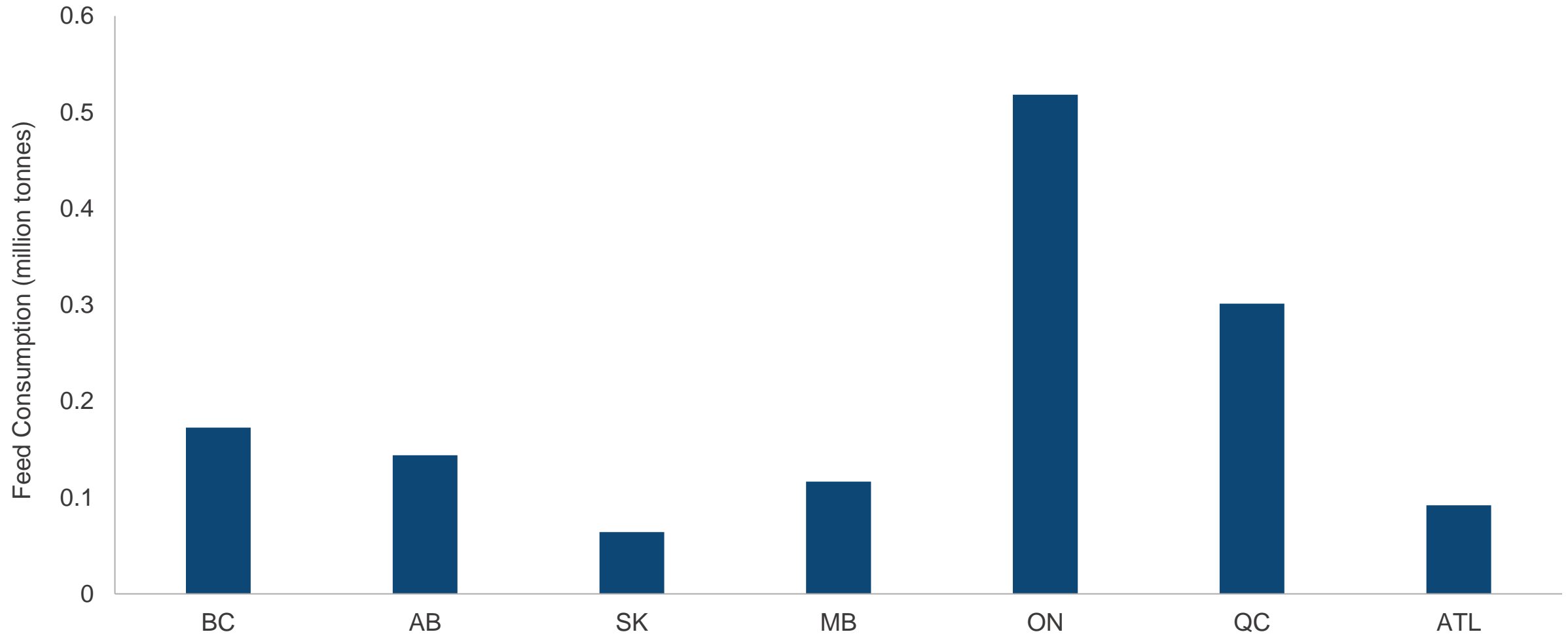


# Broiler feed consumption by province and stage of production



# Layer feed consumption by province

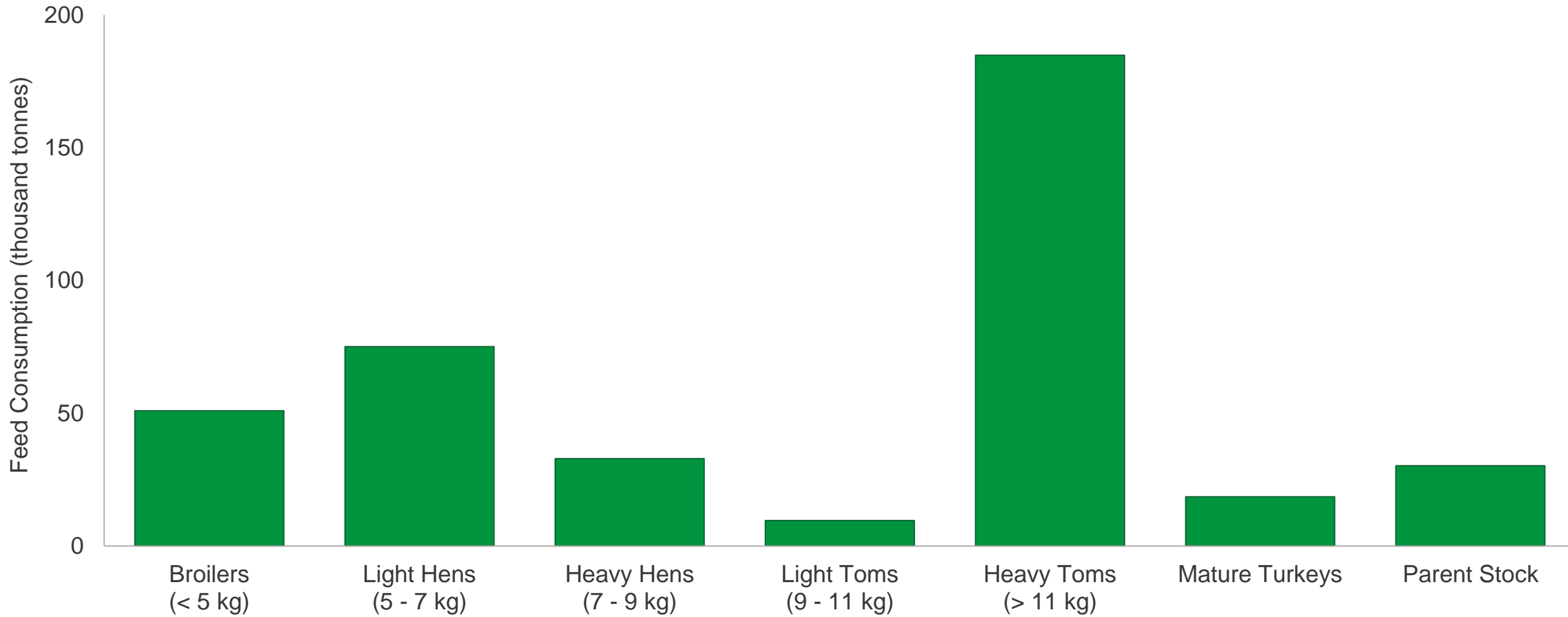
Layers consumed a total of 1.4 million tonnes of feed.





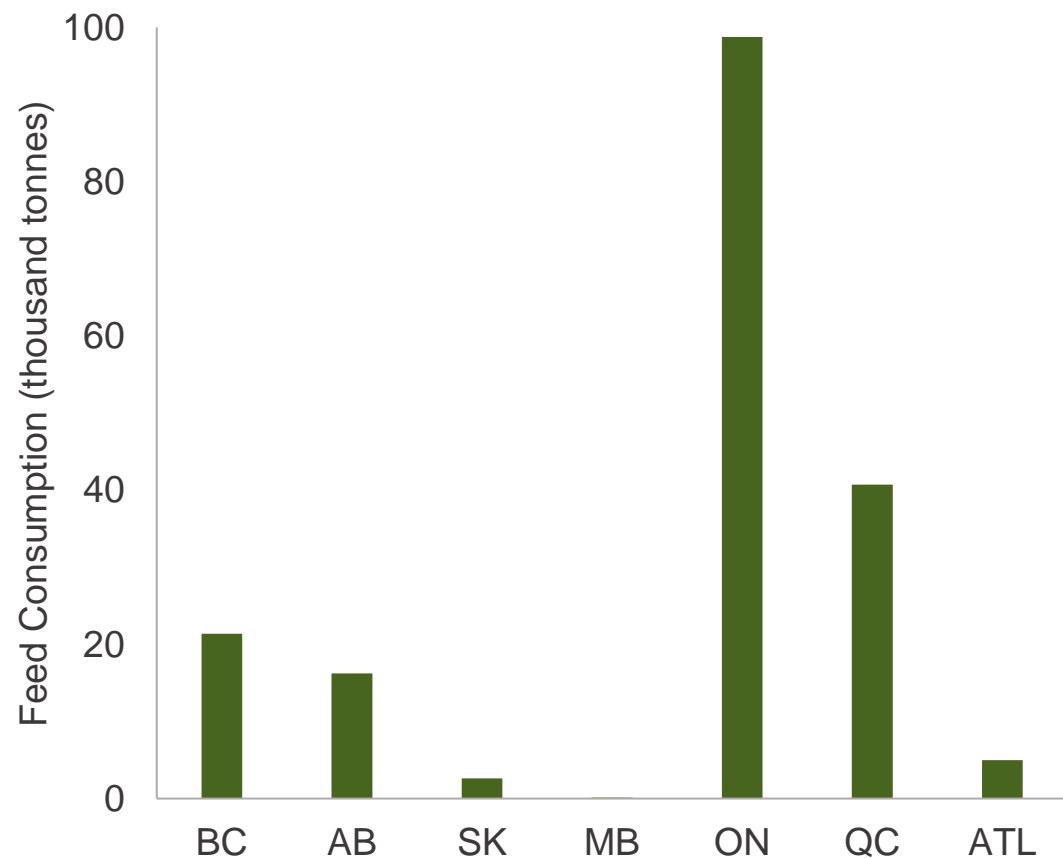
# Turkey feed consumption by stage of production

Turkeys consumed a total of 402 thousand tonnes of feed.

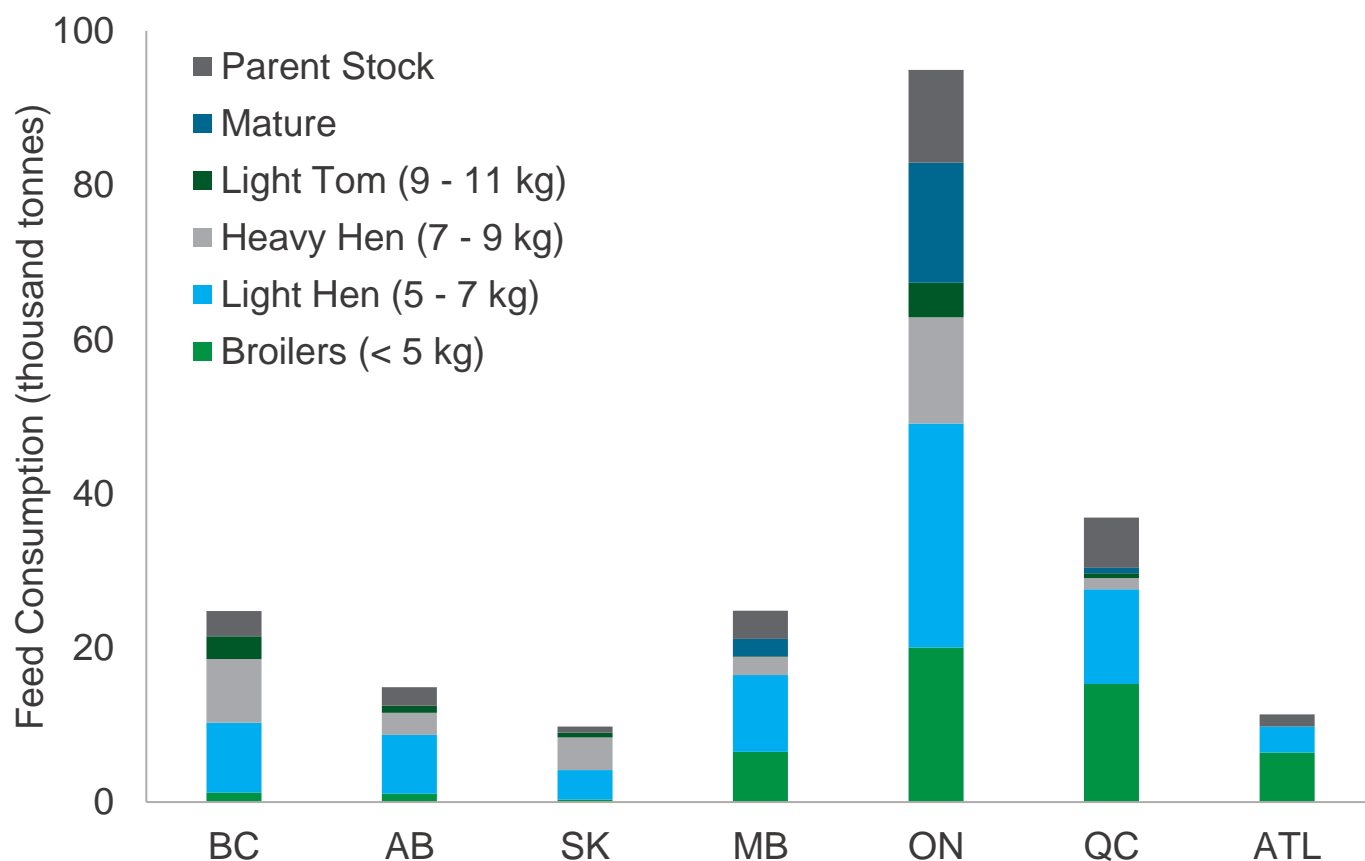


# Turkey feed consumption by province and stage of production

Heavy toms



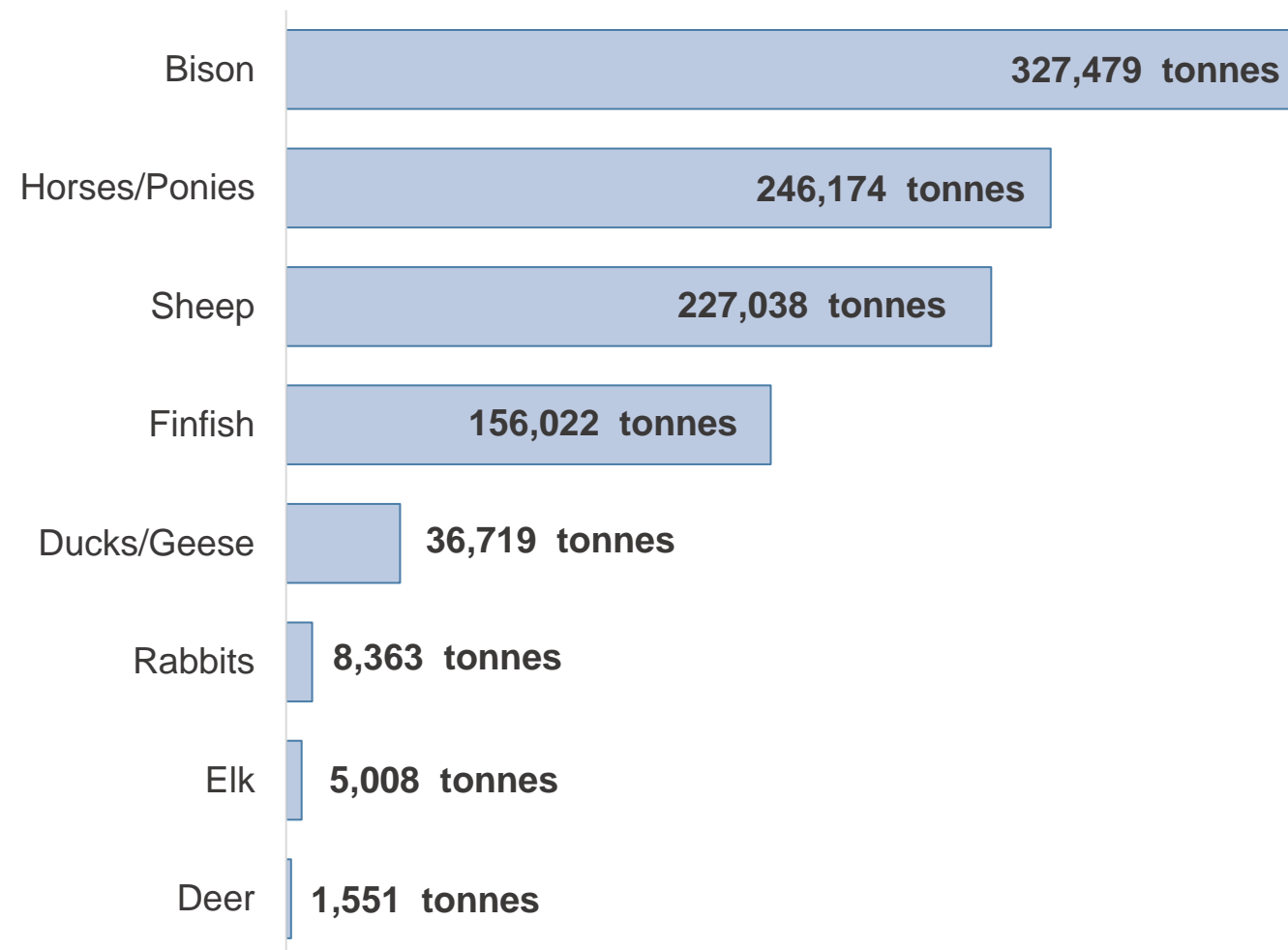
Broilers, light hens, heavy hens, light toms, mature turkeys and parent stock



# Minor species



# Overview of minor species



Minor species consume approximately 1 million tonnes of livestock feed, representing 3.5% of total feed consumption in Canada.

- Bison – 1.12%
- Horses/Ponies – 0.84%
- Sheep – 0.78%
- Finfish – 0.53%
- Ducks/Geese\* – 0.13%
- Rabbits, Elk, Deer – 0.05%

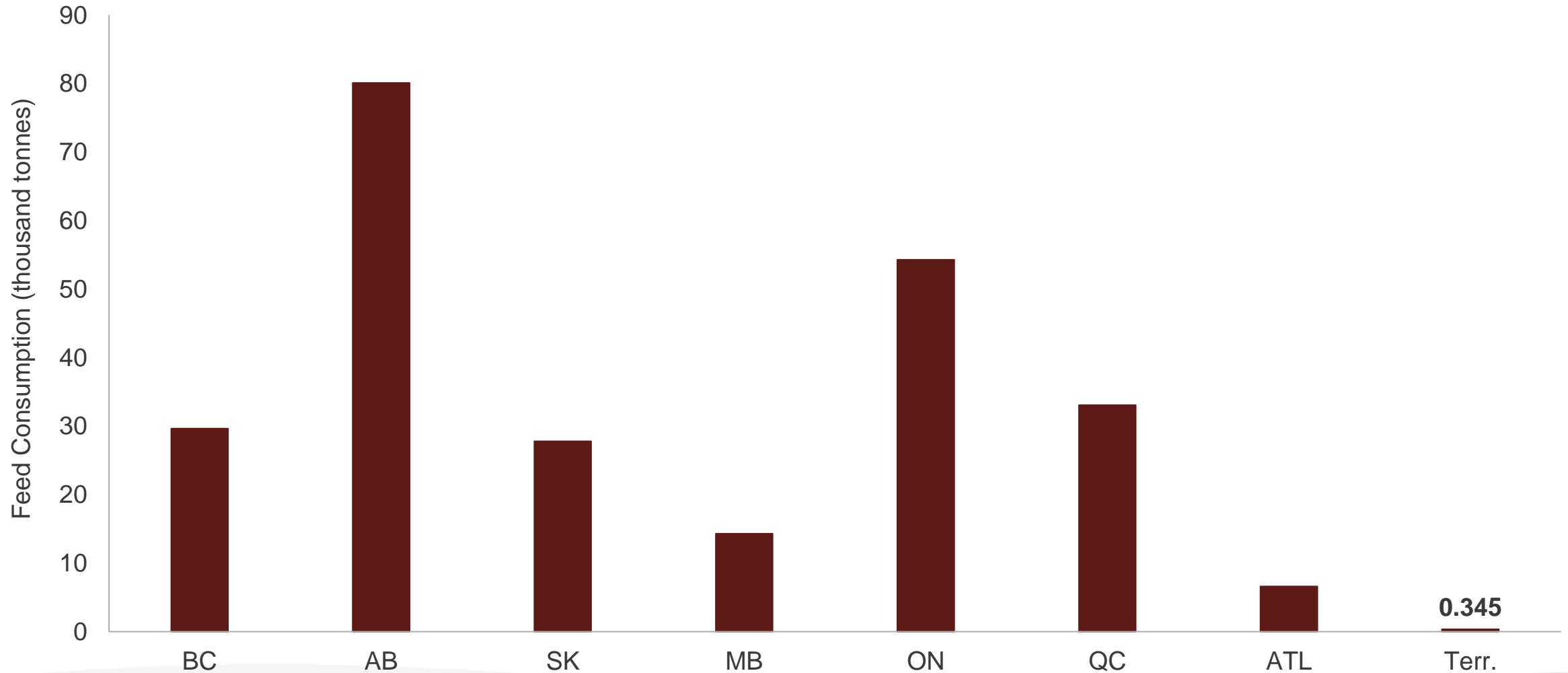
Goats are a minor species but have not been included in this report due to insufficient data to estimate their feed consumption.

\*Data for ducks/geese were only available at the national level; no further graphs will be provided.



# Horse/Pony feed consumption by province

Horses/Ponies consumed a total of 246 thousand tonnes of feed.



Presented data reflects population data from 2010.

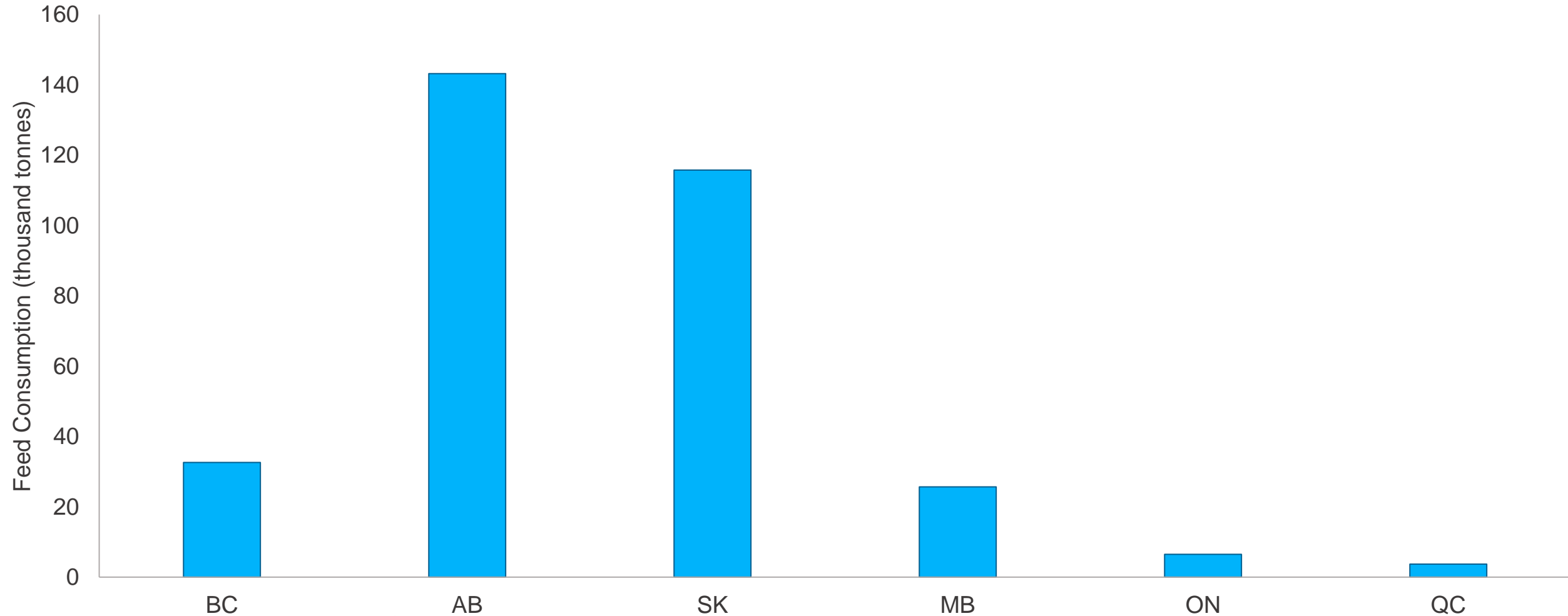
Horses/ponies feed consumption data as well as intake estimates used for consumption calculations can be found in [Table A13](#).





# Bison feed consumption by province

Bison consumed a total of 327 thousand tonnes of feed.



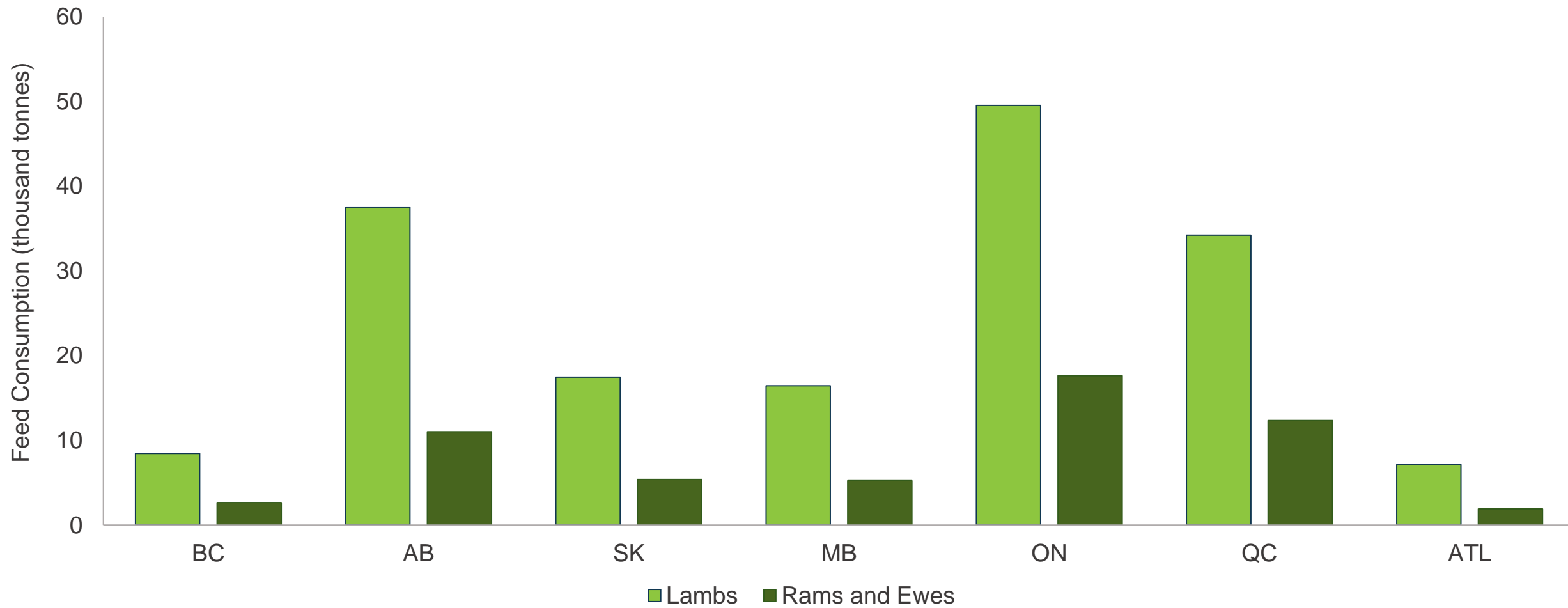
Presented data reflects population data from 2021.

Bison feed consumption data as well as intake estimates used for consumption calculations can be found in [Table A14](#).



# Sheep feed consumption by province and stage of production

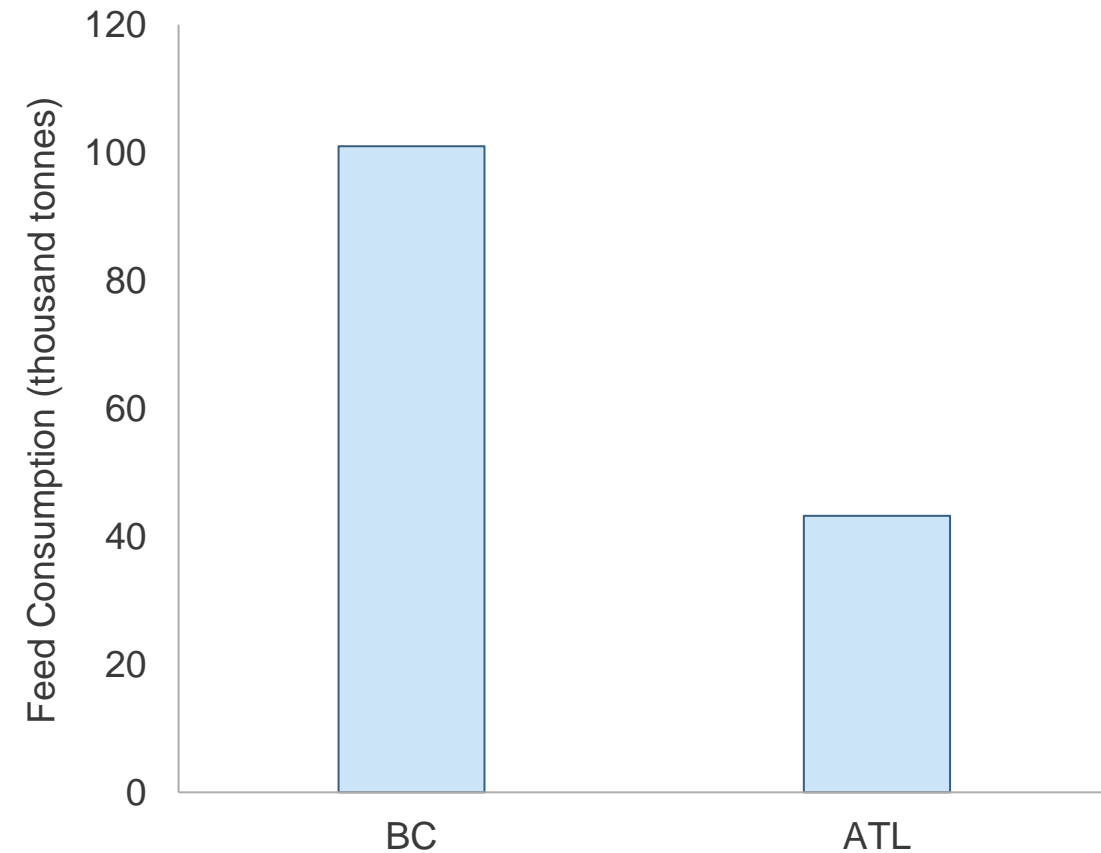
Sheep consumed a total of 227 thousand tonnes of feed.



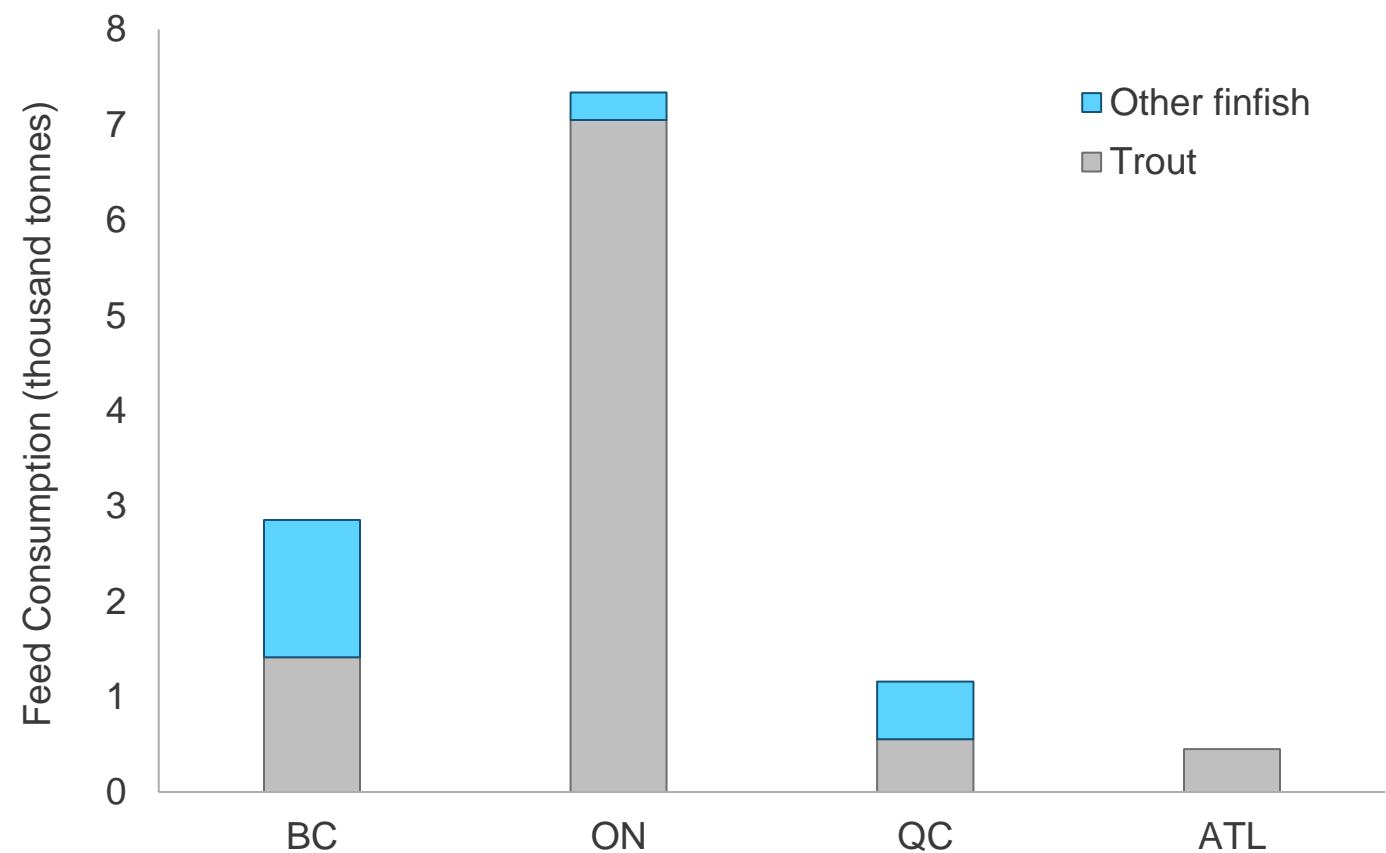
# Finfish feed consumption by province

Finfish consumed 156 thousand tonnes of feed.

Salmon

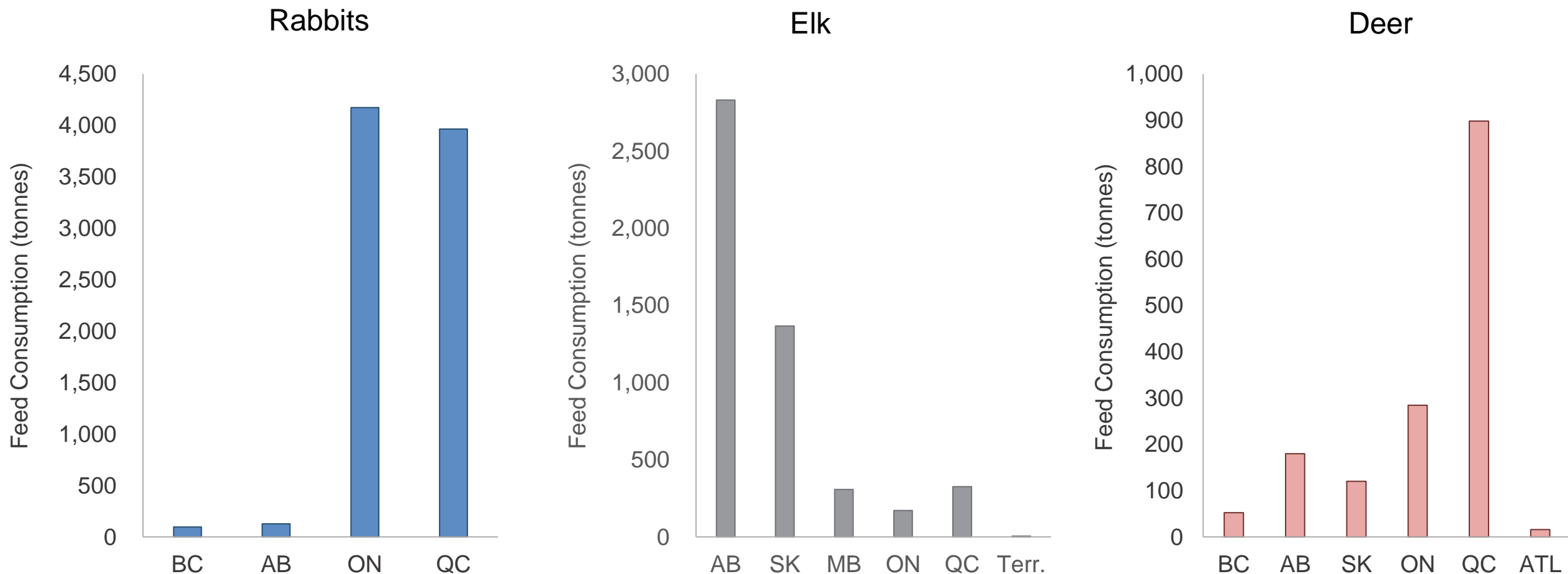


Trout and other finfish



# Rabbits, elk and deer feed consumption

Rabbits consumed 8,363 tonnes of feed while elk consumed 5,008 tonnes and deer 1,551 tonnes.



Presented data reflects population data from 2021.

Feed consumption data and intake estimates used for feed consumption calculations can be found in [Tables A18 and A19](#) for rabbits, elk and deer.



# **Appendix A: Feed consumption data tables**



**Table A1. Total feed consumption (tonnes) and number of commercial feed mills across Canada**

Province	Total Feed Consumption 2020	Total Feed Consumption 2021	Total Feed Consumption 2022	Number of Commercial Feed Mills <sup>1</sup>
BC	1,754,315	1,787,516	1,702,265	27
AB	5,951,823	5,807,759	6,298,049	68
SK	2,932,542	2,975,511	2,868,517	35
MB	3,168,660	3,194,067	3,213,441	34
ON	6,961,596	6,776,408	6,873,804	153
QC	6,445,774	6,471,840	6,382,499	123
ATL	842,764	850,980	846,784	31
Terr	382	351	351	0
<b>Canadian Total</b>	<b>28,778,408<sup>2</sup></b>	<b>28,949,896<sup>3</sup></b>	<b>29,232,769<sup>4</sup></b>	<b>471</b>

<sup>1</sup>Commercial feed mills are defined by the CFIA as businesses that manufacture mixed feeds for sale and distribution in the Canadian marketplace or for export (CFIA, 2020).

<sup>2</sup>Canadian total feed consumption includes listed provincial values plus national feed consumption values for swine exports (671,595 tonnes) and ducks/geese (48,958 tonnes).

<sup>3</sup>Canadian total feed consumption includes listed provincial values plus national feed consumption values for swine exports (1,033,011 tonnes) and ducks/geese (52,453 tonnes).

<sup>4</sup>Canadian total feed consumption includes listed provincial values plus national feed consumption values for swine exports (1,010,340 tonnes) and ducks/geese (36,719 tonnes).



**Table A2. Swine feed consumption (tonnes)**

Province	Feed consumption
BC	66,307
AB	868,437
SK	656,974
MB	1,962,753
ON	2,138,133
QC	2,848,268
ATL	34,976
Exports	1,010,340
<b>Canadian total</b>	<b>9,586,189</b>

**Table A3. Estimated intake of swine by stage of production**

Stage of production	Estimated intake (kg/hog)
Domestic hogs	396
Breeding and market hogs exports	396
Feeder exports	75



**Table A4. Beef cattle feed consumption (tonnes)**

Province	Cows	Steers (≥ 1 year)	Heifers for slaughter (≥ 1 year)	Calves (< 1 year)	Heifers for replacement (≥ 1 year)	Bulls (≥ 1 year)	Provincial Total
BC	167,493	39,494	22,270	61,245	25,564	4,461	320,527
AB	1,446,012	1,248,900	619,781	660,707	179,529	36,060	4,190,989
SK	922,680	211,637	95,453	337,613	104,543	21,483	1,693,409
MB	348,068	89,118	46,812	141,053	40,278	7,839	673,169
ON	200,289	357,279	145,356	109,175	23,343	4,704	840,145
QC	109,232	73,996	23,595	61,286	10,206	2,576	280,891
ATL	29,679	15,563	10,410	15,153	3,413	784	75,001
<b>Canadian Total</b>	<b>3,223,453</b>	<b>2,035,986</b>	<b>963,676</b>	<b>1,386,233</b>	<b>386,876</b>	<b>77,907</b>	<b>8,074,131</b>

**Table A5. Estimated daily intake of beef cattle by stage of production**

Stage of production	Estimated average BW (kg)	Estimated DMI <sup>1</sup> (kg/hd/d)	Forage intake (% of diet)	Estimated feed intake on AF basis (kg/hd/d) <sup>2</sup>
Cows	650	14.50	85.4	2.41
Steers (≥ 1 year)	414	10.35	65.8	4.02
Heifers for slaughter (≥ 1 year)	396	9.11	66.6	3.46
Calves (< 1 year)	128	3.33	70.0	1.13
Heifers for replacement (≥ 1 year)	450	10.35	85.0	1.76
Bulls (≥ 1 year)	900	18.00	95.0	1.02

<sup>1</sup>DMI = dry matter intake<sup>2</sup>AF intake estimates were calculated based on the assumption that dry matter (DM) content of feed was 88%.

Population source: Statistics Canada. Table 32-10-0130-01 Number of cattle, by class and farm type (x 1,000)



**Table A6. Dairy cattle feed consumption (tonnes)**

Province	Cows	Heifers for replacement (≥ 1 year)	Calves (< 1 year)	Steers (≥ 1 year)	Heifers for slaughter (≥ 1 year)	Bulls (≥ 1 year)	Provincial Total
BC	400,787	28,657	12,274	1,028	505	261	443,511
AB	406,463	31,405	15,459	14,535	3,975	523	472,359
SK	143,878	8,815	3,370	1,248	189	168	157,668
MB	212,980	15,225	5,146	881	252	149	234,634
ON	1,612,278	114,973	70,414	53,148	6,372	1,139	1,858,324
QC	1,745,791	100,778	59,999	2,422	820	467	1,910,278
ATL	276,651	18,087	5,800	2,276	379	93	303,286
<b>Canadian Total</b>	<b>4,798,827</b>	<b>317,942</b>	<b>172,462</b>	<b>75,537</b>	<b>12,492</b>	<b>2,800</b>	<b>5,380,060</b>

**Table A7. Estimated daily intake of dairy cattle by stage of production**

Stage of production	Estimated Average BW (kg)	Estimated DMI <sup>1</sup> (kg/hd/d)	Forage Intake (% of diet)	Estimated feed intake on AF basis (kg/hd/d) <sup>2</sup>
Cows	700	23.80	50.0	13.52
Heifers for replacement (≥ 1 year)	400	9.20	80.0	2.09
Calves (<1 year)	128	3.33	70.0	1.13
Steers (≥ 1 year)	414	10.35	65.8	4.02
Heifers for slaughter (≥ 1 year)	396	9.11	66.6	3.46
Bulls (≥1 year)	900	18.00	95.0	1.02

<sup>1</sup>DMI = dry matter intake<sup>2</sup>AF intake estimates were calculated based on the assumption that dry matter (DM) content of feed was 88%.

Population source: Statistics Canada. Table 32-10-0130-01 Number of cattle, by class and farm type (x 1,000)



## Table A8. Broiler feed consumption (tonnes)

Province	Parent Stock	Broilers < 1.4 kg	Broilers 1.4 – 2.7 kg	Broilers > 2.7 kg	Provincial Total
BC	48,650	3,024	418,963	5,270	475,906
AB	33,221	116	282,840	171	316,348
SK/MB	27,785	32	222,793	5,033	255,643
ON	107,973	390	713,299	363,686	1,185,348
QC	86,436	1,262	718,943	67,968	874,609
ATL	24,115	0	135,260	106,612	265,987
<b>Canadian Total</b>	<b>328,180</b>	<b>4,824</b>	<b>2,492,097</b>	<b>548,740</b>	<b>3,373,841</b>

## Table A9. Estimated intake of commercial and parent stock of broilers

	Stage of production	Estimated Intake	Intake Units
Parent Stock	Broiler stock cockerels	0.032	kg/ chick
	Broiler stock pullets	0.370	kg/ chick
	Broiler chicks placed	0.402	kg/ chick
Commercial Stock	< 1.4 kg	1.389	kg/kg live weight (assume 70% dress)
	1.4 – 2.7 kg	1.647	kg/kg live weight (assume 70% dress)
	> 2.7 kg	1.847	kg/kg live weight (assume 70% dress)



**Table A10. Layer feed consumption (tonnes)**

Province	Feed consumption
BC	172,480
AB	143,760
SK	64,120
MB	116,360
ON	518,200
QC	301,160
ATL	91,800
<b>Canadian Total</b>	<b>1,407,880</b>

Estimated intake used for feed consumption calculation was 40 kg/hen/year.

**Table A11. Turkey feed consumption (tonnes)**

Province	Broilers (< 5 kg)	Light Hens (5–7 kg)	Heavy Hens (7–9 kg)	Light Toms (9 – 11 kg)	Heavy Toms (> 11 kg)	Mature Turkeys	Parent Stock	Provincial Total
BC	1,242	9,026	8,268	2,968	21,392	0	3,278	46,174
AB	1,053	7,635	2,894	902	16,233	0	2,402	31,119
SK	336	3,815	4,224	604	2,609	0	796	12,384
MB	6,497	9,982	2,340	84	142	2,250	3,670	24,965
ON	20,045	29,030	13,780	4,485	98,749	15,563	12,050	193,702
QC	15,322	12,270	1,447	613	40,728	736	6,489	77,605
ATL	6,440	3,342	0	0	4,984	0	1,598	16,364
<b>Canadian Total</b>	<b>50,935</b>	<b>75,101</b>	<b>32,953</b>	<b>9,655</b>	<b>184,837</b>	<b>18,549</b>	<b>30,284</b>	<b>402,314</b>

**Table A12. Estimated intake of commercial and parent stock of turkeys**

	Stage of production	Estimated Intake	Intake Units
Commercial Stock	Broilers < 5 kg	1.52	kg/ kg live weight
	Light Hens (5 – 7 kg)	1.93	kg/ kg live weight
	Heavy Hens (7 – 9 kg)	2.13	kg/ kg live weight
	Light Toms (9 – 11 kg)	1.83	kg/ kg live weight
	Heavy Toms (> 11 kg)	2.23	kg/ kg live weight
	Mature Turkeys	2.99	kg/ kg live weight
Parent Stock	Poults	1.30	kg/poult



**Table A13. Horse/Pony feed consumption (tonnes)**

Province	Feed consumption
BC	29,638
AB	80,099
SK	27,798
MB	14,308
ON	54,294
QC	33,087
ATL	6,605
Terr.	345
<b>Canadian Total</b>	<b>246,174</b>

Estimated intake used for feed consumption calculation was 0.7 kg/hd/day.

**Table A14. Bison feed consumption (tonnes)**

Province	Feed consumption
BC	32,605
AB	143,237
SK	115,763
MB	25,678
ON	6,513
QC	3,684
ATL	0
<b>Canadian Total</b>	<b>327,479</b>

Estimated intake used for feed consumption calculation was 6 kg/hd/day.





**Table A15. Sheep feed consumption (tonnes)**

Province	Lambs (< 1 year)	Rams and Ewes (≥ 1 year)	Provincial Total
BC	8,450	2,660	11,110
AB	37,534	11,028	48,561
SK	17,463	5,392	22,855
MB	16,441	5,242	21,682
ON	49,551	17,628	67,179
QC	34,237	12,334	46,572
ATL	7,156	1,924	9,080
<b>Canadian Total</b>	<b>170,831</b>	<b>56,207</b>	<b>227,038</b>

**Table A16. Estimated daily intake of sheep by stage of production**

Stage of production	Estimated DMI <sup>1</sup> (kg/hd/d)	Forage Intake (% of diet)	Estimated feed intake on AF basis (kg/hd/d) <sup>2</sup>
Lambs (< 1 year)	1.36	10	1.39
Rams and Ewes (≥ 1 year)	2.50	90	0.28

<sup>1</sup>DMI = dry matter intake

<sup>2</sup>AF intake estimates were calculated based on the assumption that dry matter (DM) content of feed was 88%.

Population source: Statistics Canada. Table 32-10-0129-01 Number of sheep and lambs on farms (x 1,000)



**Table A17. Finfish feed consumption (tonnes)**

Province	Salmon	Trout	Other Finfish	Provincial Total
BC	101,005	1,412	1,440	103,858
ON	0	7,048	290	7,338
QC	0	556	601	1,157
ATL	43,218	451	0	43,669
Canadian Total	144,223	9,467	2,332	156,022

For all finfish, feed conversion rate was 1.2 kg/kg live wt.

**Table A18. Feed consumption (tonnes) of rabbits, elk and deer**

Province	Rabbit	Elk	Deer
BC	97	0	52
AB	128	2,831	180
SK	0	1,367	120
MB	0	307	0
ON	4,173	171	284
QC	3,965	325	898
ATL	0	0	16
Terr.	0	6	0
<b>Canadian Total</b>	<b>8,363</b>	<b>5,008</b>	<b>1,551</b>

**Table A19. Estimated daily feed intake of rabbits, elk and deer**

Species	Estimated Intake (kg/hd/d)
Rabbits	0.15
Elk	0.68
Deer	0.45



# **Appendix B:**

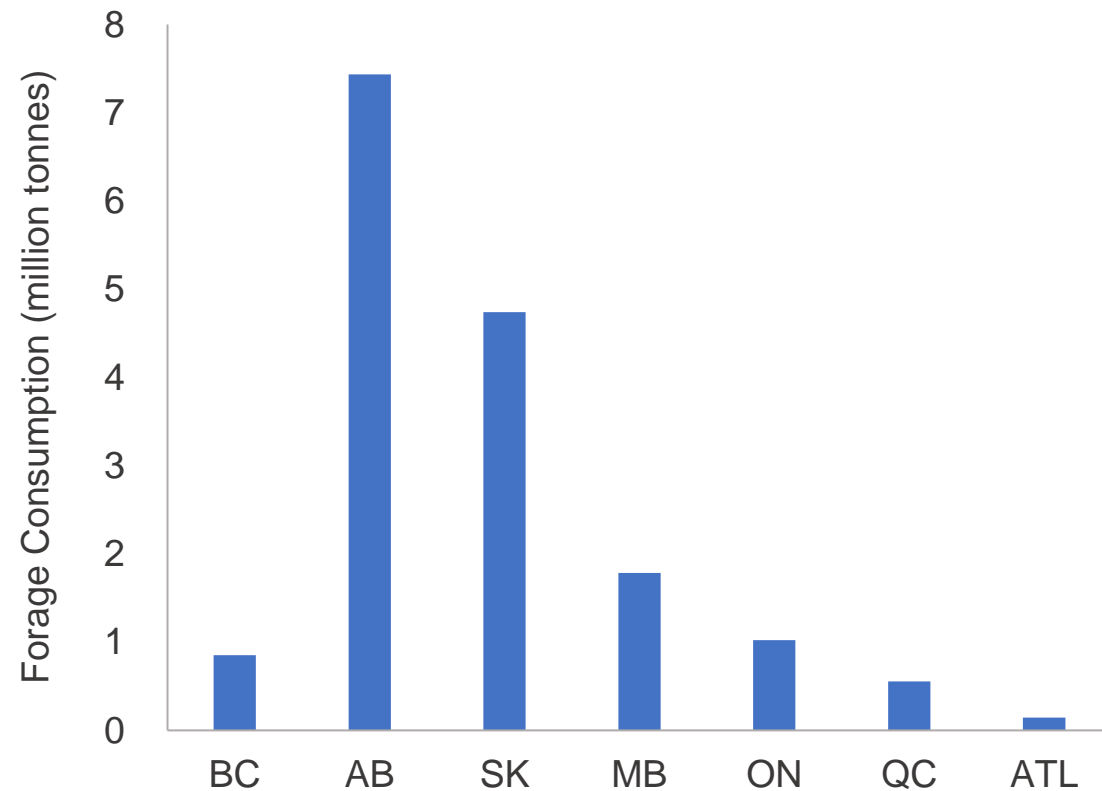
# **Ruminant forage consumption data**



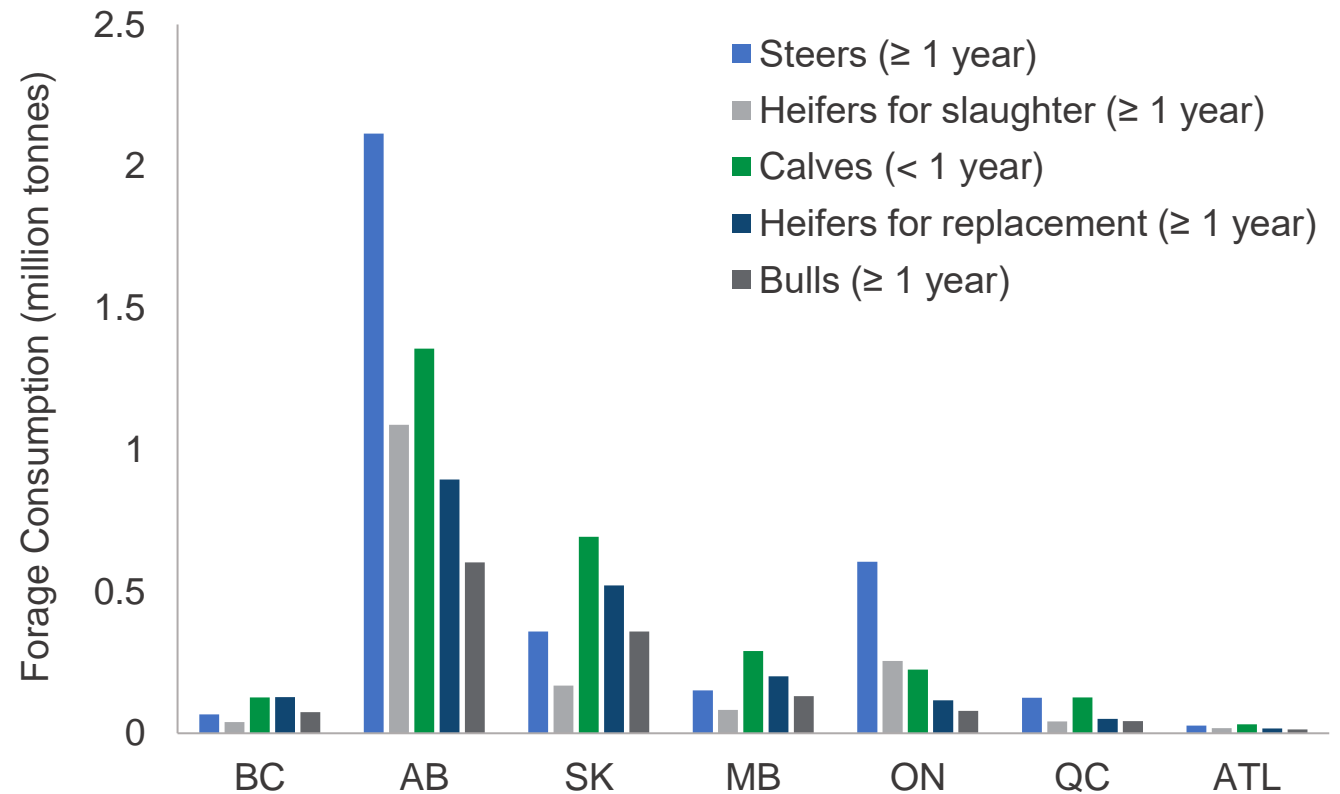
# Beef cattle forage consumption by province and stage of production

In addition to prepared feed, beef cattle consumed a total of 28 million tonnes of forage (DM basis).

Beef cows



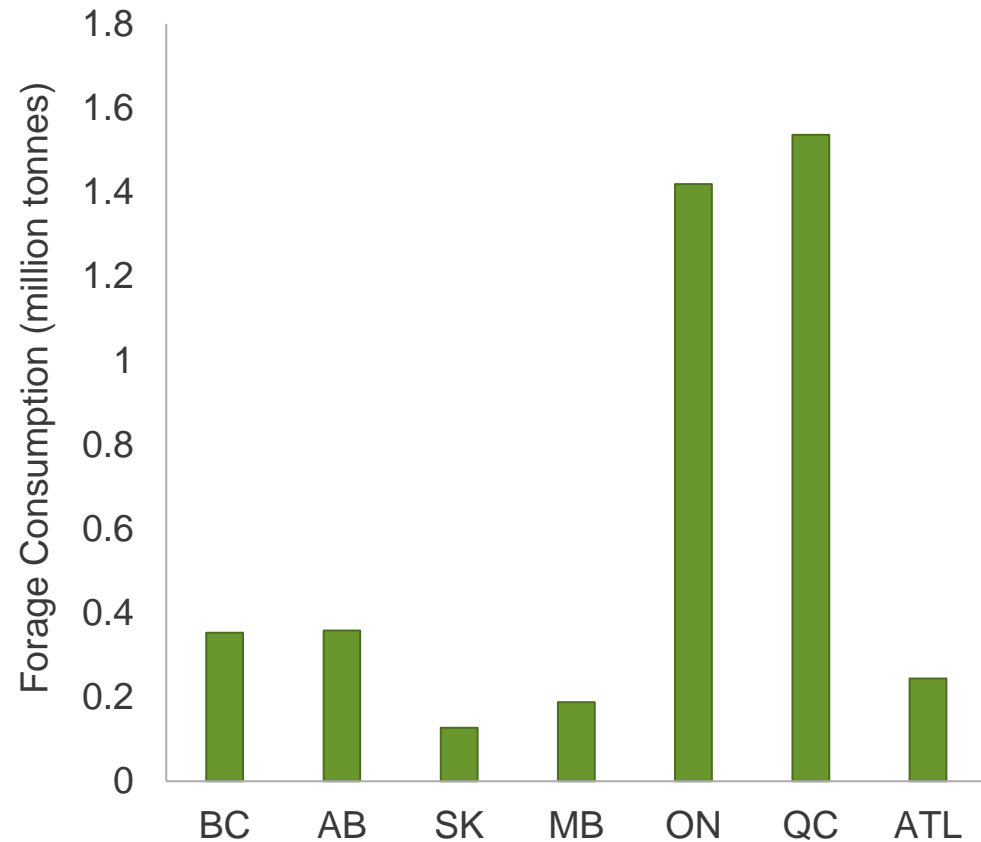
Beef steers, heifers, calves and bulls



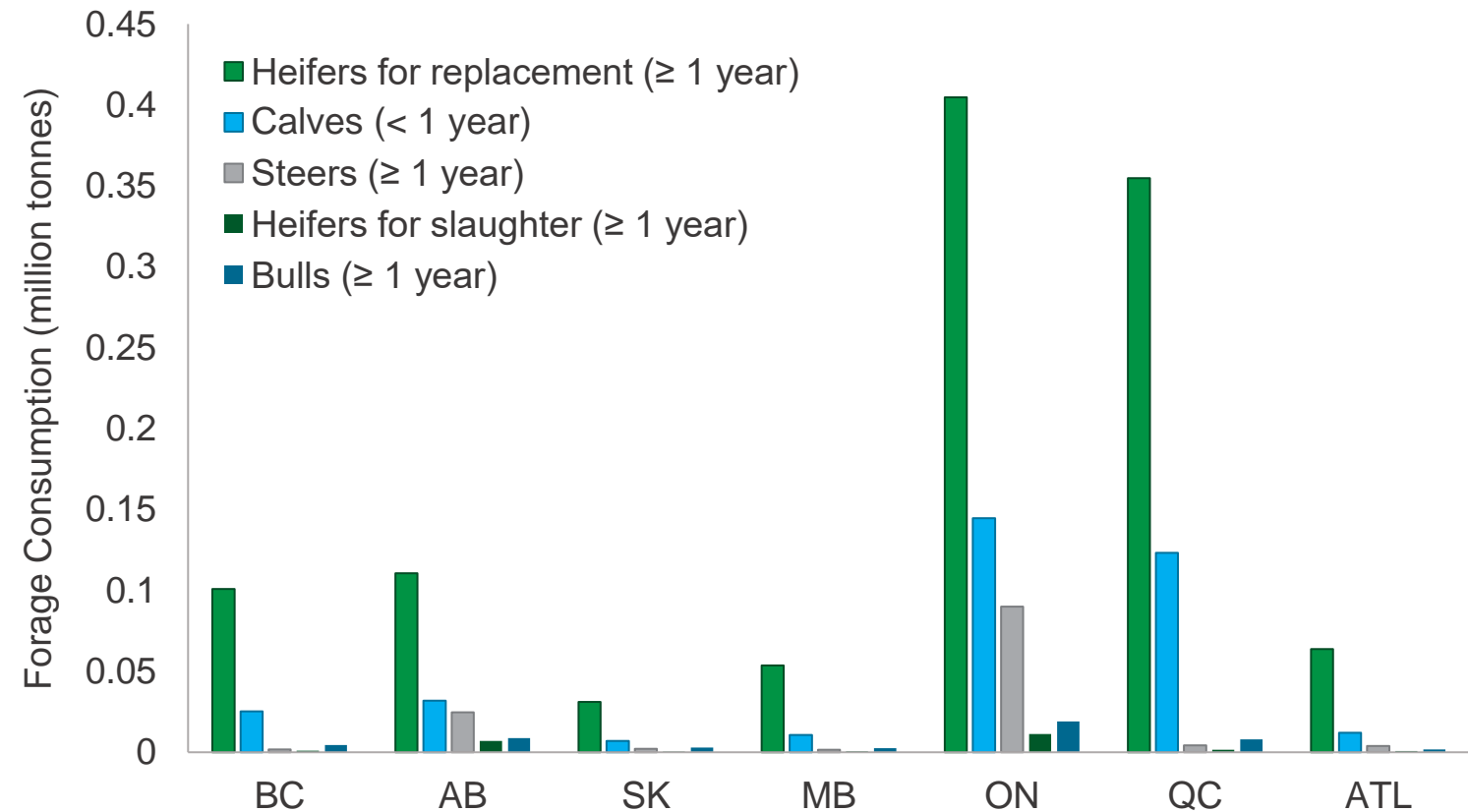
# Dairy cattle forage consumption by province and stage of production

In addition to prepared feed, dairy cattle consumed a total of 6 million tonnes of forage (DM basis).

Dairy cows



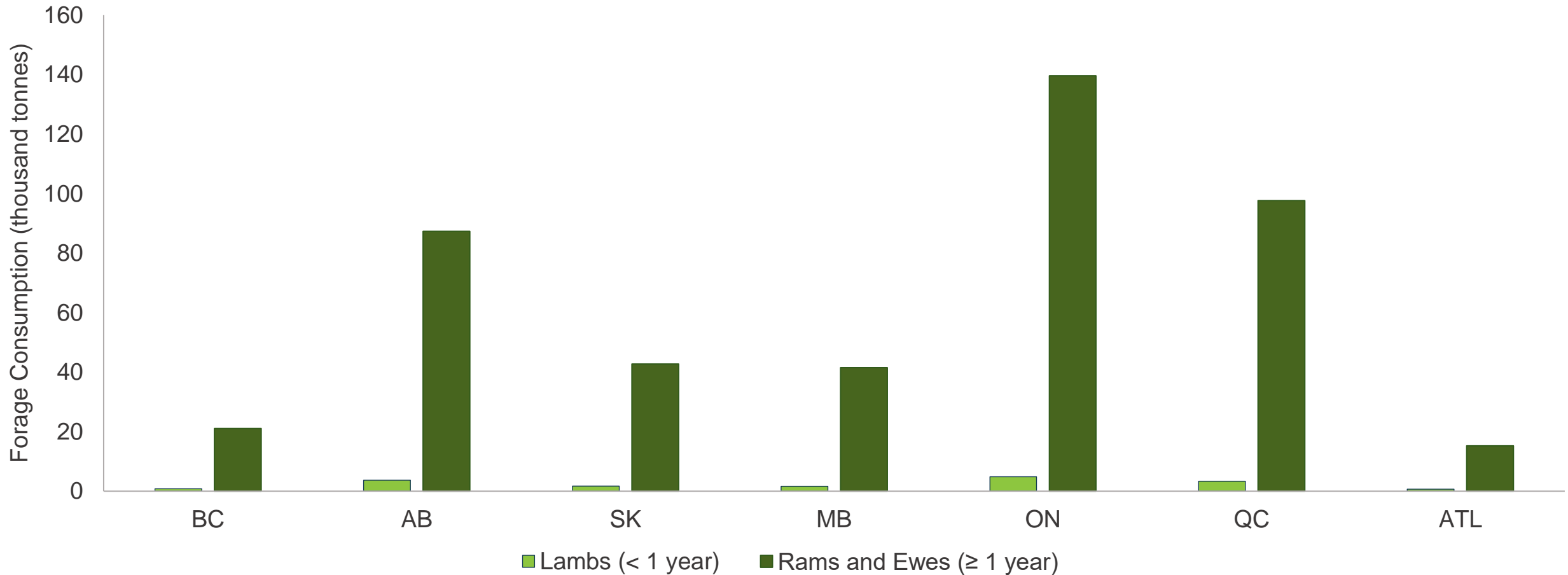
Dairy heifers, calves, steers and bulls





# Sheep forage consumption by province and stage of production

In addition to prepared feed, sheep consumed a total of 462 thousand tonnes of forage (DM basis).



**Table B1. Beef cattle forage consumption (tonnes of DM)**

Province	Cows	Steers (≥ 1 year)	Heifers for slaughter (≥ 1 year)	Calves (< 1 year)	Heifers for replacement (≥ 1 year)	Bulls (≥ 1 year)	Provincial Total
BC	862,151	66,867	39,078	125,756	127,480	74,586	1,295,919
AB	7,443,198	2,114,511	1,087,548	1,356,652	895,251	602,929	13,500,090
SK	4,749,401	358,322	167,494	693,233	521,320	359,198	6,848,968
MB	1,791,647	150,886	82,142	289,630	200,854	131,072	2,646,229
ON	1,030,965	604,910	255,060	224,173	116,402	78,643	2,310,153
QC	562,262	125,282	41,403	125,840	50,896	43,066	948,750
ATL	152,769	26,349	18,266	31,114	17,019	13,107	258,624
<b>Canadian Total</b>	<b>16,592,393</b>	<b>3,447,127</b>	<b>1,690,991</b>	<b>2,846,398</b>	<b>1,929,221</b>	<b>1,302,601</b>	<b>27,808,732</b>

**Table B2. Dairy cattle forage consumption (tonnes of DM)**

Province	Cows	Heifers for replacement (≥ 1 year)	Calves (< 1 year)	Steers (≥ 1 year)	Heifers for slaughter (≥ 1 year)	Bulls (≥ 1 year)	Provincial Total
BC	352,692	100,874	25,202	1,740	886	4,369	485,763
AB	357,687	110,545	31,743	24,609	6,974	8,738	540,297
SK	126,613	31,028	6,919	2,113	332	2,809	169,814
MB	187,422	53,594	10,567	1,491	443	2,497	256,014
ON	1,418,804	404,706	144,584	89,984	11,181	19,037	2,088,297
QC	1,536,296	354,739	123,199	4,102	1,439	7,802	2,027,576
ATL	243,453	63,668	11,909	3,853	664	1,560	325,107
<b>Canadian Total</b>	<b>4,222,968</b>	<b>1,119,154</b>	<b>354,122</b>	<b>127,892</b>	<b>21,919</b>	<b>46,811</b>	<b>5,892,867</b>

**Table B3. Sheep forage consumption (tonnes of DM)**

Province	Lambs (< 1 year)	Rams and Ewes (≥ 1 year)	Provincial Total
BC	826	21,065	21,891
AB	3,670	87,340	91,010
SK	1,707	42,705	44,412
MB	1,608	41,514	43,122
ON	4,845	139,613	144,458
QC	3,348	97,688	101,035
ATL	700	15,234	15,934
<b>Canadian Total</b>	<b>16,704</b>	<b>445,159</b>	<b>461,862</b>