

# *Growing Knowledge*



Ministry of  
Agriculture

## *Agricultural Land Use Inventory*

Reference Number: 800.510-31.2016

## **Kamloops Summer 2011**



**Strengthening Farming Program  
Innovation and Adaptation Services Branch  
BC Ministry of Agriculture**

**August 19, 2016**

## Acknowledgments

The Ministry of Agriculture would like to acknowledge and thank Agriculture and Agri-Food Canada (AAFC) for providing a technician for the four week duration of the survey. The technician was an extremely valuable member of the survey team and was responsible for populating the survey database during the field survey.

The Ministry of Agriculture would also like to acknowledge and thank the many farmers who stopped to talk to the survey crew and answer questions about the parcels they farmed and irrigation use in Kamloops.

Funding for this project has been provided by Governments of Canada and British Columbia through the Canada-BC Agri-Innovation Program under *Growing Forward 2*, a federal-provincial-territorial initiative. The program is delivered by the Investment Agriculture Foundation of BC.



Disclaimer: The Governments of Canada and British Columbia are committed to working with industry partners. Opinions expressed in this document are those of the BC Ministry of Agriculture and not necessarily those of the Government of Canada or the Investment Agriculture Foundation of BC.

## Citation and Contact Information

For further information on the content and development of this report please contact:

Ministry of Agriculture  
Innovation and Adaptation Services Branch  
1767 Angus Campbell Rd.  
Abbotsford, BC V3G 2M3  
(604) 556-3001 or 1-888-221-7141 (toll free)

Citation:

BC Ministry of Agriculture. (2016). Agricultural Land Use Inventory: City of Kamloops, Summer 2011. (Reference No. 800.510-31.2016).

# Table of Contents

|   |     |
|---|-----|
| Acknowledgments.....  | i   |
| Citation and Contact Information .....                              | i   |
| Table of Contents .....   | ii  |
| List of Tables.....   | iii |
| List of Figures .....   | iv  |
| List of Tables – Appendix A .....                                   | vi  |
| List of Figures – Appendix A.....                                   | vi  |
| List of Maps – Appendix B.....                                      | vii |
| Executive Summary.....  | 1   |
| Agrologist Comments.....  | 5   |
| General Community Information.....                                  | 7   |
| Agricultural Land Reserve.....                                      | 8   |
| Inventory Area .....  | 9   |
| Parcel Ownership .....  | 10  |
| Methodology.....  | 11  |
| AgFocus - Agricultural Land Use Inventory System .....              | 11  |
| Description of the Data .....                                       | 12  |
| Presentation of the Data .....                                      | 13  |
| Determination of Parcels within the ALR .....                       | 14  |
| 1. Land Cover and Farmed Area.....                                  | 15  |
| 2. Land Use and Farm Use .....                                      | 18  |
| Privately Owned Parcels.....  | 19  |
| Crown Owned Parcels .....   | 20  |
| 3. Availability of Land for Farming .....                           | 23  |
| Characteristics of Parcels Available For Agriculture Expansion..... | 25  |
| 4. Farming Activities.....  | 28  |
| Cultivated Field Crops.....   | 28  |
| Natural Pasture & Rangeland .....                                   | 35  |
| Greenhouses.....  | 37  |
| Irrigation .....  | 38  |
| Livestock .....   | 40  |
| On-Farm Value-Added.....  | 47  |
| 5. Condition of ALR Lands .....                                     | 49  |
| Parcel Inclusion in the ALR .....                                   | 49  |
| Parcel Size & Farming in the ALR.....                               | 50  |
| Residential Use In the ALR.....                                     | 56  |
| Definitions .....   | 60  |
| Acronyms .....  | 64  |
| Appendix A - Supplementary Tables and Figures .....                 | 65  |
| Appendix B - Maps .....   | 76  |

## List of Tables

|           |   |    |
|-----------|---|----|
| Table 1.  | Land cover and farmed area .....  | 16 |
| Table 2.  | Parcel ownership.....   | 18 |
| Table 3.  | Land use and farming use by parcel – Private ownership .....  | 19 |
| Table 4.  | Parcel use and cover of land in the ALR – Private ownership.....                                      | 20 |
| Table 5.  | Land use and farming use by parcel – Crown ownership .....  | 21 |
| Table 6.  | Parcel use and cover of land in the ALR – Crown ownership .....                                       | 22 |
| Table 7.  | Parcels in the ALR with potential for agriculture expansion.....                                      | 25 |
| Table 8.  | Main field crop types by area .....   | 28 |
| Table 9.  | Forage and pasture crops by area .....  | 30 |
| Table 10. | Vegetable crops by area .....   | 32 |
| Table 11. | Cereals, grain, and oilseeds by area.....   | 33 |
| Table 12. | Top 20 crop types by area.....  | 34 |
| Table 13. | Natural pasture and rangeland vegetation types by area .....  | 35 |
| Table 14. | Greenhouses by area .....   | 37 |
| Table 15. | Main crop types and irrigation.....   | 38 |
| Table 16. | Top 20 field crop types and irrigation.....   | 39 |
| Table 17. | Livestock activities .....  | 41 |
| Table 18. | Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Private ownership .....       | 51 |
| Table 19. | Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Crown ownership .....         | 54 |
| Table 20. | Farming and residences in the ALR.....  | 57 |
| Table 21. | Farming and residence type in the ALR .....   | 57 |
| Table 22. | Main agriculture activity and largest residence on "Used for farming" parcels in the ALR .....        | 59 |
| Table 23. | Main agriculture activity on "Used for farming" parcels with Large or Estate residences in the ALR .. | 59 |

## List of Figures

|            |   |    |
|------------|---|----|
| Figure 1.  | General Location map.....   | 7  |
| Figure 2.  | Agricultural Land Reserve location map.....   | 8  |
| Figure 3.  | Inventory area and Agricultural Land Reserve location map.....  | 9  |
| Figure 4.  | Inventory area and parcel ownership.....  | 10 |
| Figure 5.  | Parcel inclusion in the ALR.....  | 14 |
| Figure 6.  | Land cover and farmed area in the ALR.....  | 17 |
| Figure 7.  | Potential of ALR lands for farming.....   | 24 |
| Figure 8.  | Parcels in the ALR with potential for agriculture expansion – land cover.....   | 26 |
| Figure 9.  | Parcels in the ALR with potential for agriculture expansion by size – Private ownership – Includes land in natural pasture and rangeland.....                                     | 27 |
| Figure 10. | Parcels in the ALR with potential for agriculture expansion by size – Private ownership – Excludes land in natural pasture and rangeland.....                                     | 27 |
| Figure 11. | Main field crop types by percentage.....  | 29 |
| Figure 12. | All crop fields by size.....  | 29 |
| Figure 13. | Forage, pasture, vegetable, and grain fields by size.....   | 29 |
| Figure 14. | Forage and pasture fields by size.....  | 31 |
| Figure 15. | Forage and pasture fields by size.....  | 31 |
| Figure 16. | Vegetable fields by size.....   | 32 |
| Figure 17. | Potato, root vegetable, unknown vegetable, and mixed vegetable fields by size.....  | 33 |
| Figure 18. | Cereal, grain, and oilseed fields by size.....  | 33 |
| Figure 19. | Top 20 crop types by area.....  | 34 |
| Figure 20. | Natural pasture areas by size (excluding rangelands).....   | 36 |
| Figure 21. | Distribution of greenhouses by crop type.....   | 37 |
| Figure 22. | Irrigation systems by percentage of cultivated land.....  | 39 |
| Figure 23. | Livestock type by proportion of estimated animal unit equivalents.....  | 41 |
| Figure 24. | Estimated animal unit equivalents by intensity.....   | 42 |
| Figure 25. | Estimated animal unit equivalents by scale.....   | 42 |
| Figure 26. | Livestock activities by intensity.....  | 43 |
| Figure 27. | Livestock activities by scale.....  | 43 |
| Figure 28. | Livestock activities (excluding equines) by parcel size.....  | 44 |
| Figure 29. | Livestock and equine activities by parcel size.....   | 44 |
| Figure 30. | Average area in forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale).....                     | 45 |
| Figure 31. | Total area forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale).....                          | 45 |
| Figure 32. | Percent of parcel area utilized for forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)..... | 46 |
| Figure 33. | Percentage of parcels used for farming and with value-added activities.....   | 48 |
| Figure 34. | Number of parcels used for farming with value-added activities.....   | 48 |
| Figure 35. | Parcel inclusion in the ALR.....  | 49 |
| Figure 36. | Number of parcels in the ALR by parcel size – Private ownership.....  | 50 |
| Figure 37. | Total area in the ALR by parcel size – Private ownership.....   | 51 |
| Figure 38. | Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Private ownership.....   | 51 |
| Figure 39. | Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size (line chart) – Private ownership.....  | 52 |
| Figure 40. | Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Private ownership.....   | 52 |
| Figure 41. | Proportion of land cover by parcel size in the ALR– Private ownership.....  | 53 |

|  |    |
|--|----|
| Figure 42. Number of parcels in the ALR by parcel size – Crown ownership .....   | 53 |
| Figure 43. Total area in the ALR by parcel size – Crown ownership .....  | 54 |
| Figure 44. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Crown<br>ownership .....     | 54 |
| Figure 45. Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Crown<br>ownership ..... | 55 |
| Figure 46. Proportion of land cover by parcel size in the ALR– Crown ownership.....  | 55 |
| Figure 47. Total area in residential footprint by parcel size .....  | 57 |
| Figure 48. Proportion of parcels with residences by parcel size .....  | 58 |
| Figure 49. Average percent of parcel area in residential footprint by parcel size.....   | 58 |
| Figure 50. Average total area in residential footprint by parcel size.....   | 58 |
| Figure 51. Total and potential area in residential footprint by parcel size.....   | 59 |



## List of Tables – Appendix A

|            |  |    |
|------------|--|----|
| Table A1.  | Distribution of crop field sizes for all cultivated land .....               | 65 |
| Table A2.  | Distribution of forage and pasture field sizes.....                          | 65 |
| Table A3.  | Distribution of vegetable field sizes.....                                   | 66 |
| Table A4.  | Distribution of cereal or grain crop fields .....                            | 66 |
| Table A5.  | Distribution of natural pasture or rangeland areas.....                      | 67 |
| Table A6.  | Distribution of greenhouses by crop type .....                               | 67 |
| Table A7.  | Distribution of livestock operations by type.....                            | 68 |
| Table A8.  | Beef activities.....   | 68 |
| Table A9.  | Distribution of beef activities by parcel size and scale .....               | 69 |
| Table A10. | Dairy activities.....  | 70 |
| Table A11. | Distribution of dairy activities by parcel size and scale .....              | 70 |
| Table A12. | Poultry activities .....   | 71 |
| Table A13. | Distribution of poultry activities by parcel size and scale.....             | 71 |
| Table A14. | Sheep / lamb / goat activities .....   | 72 |
| Table A15. | Distribution of sheep / lamb / goat activities by parcel size and scale..... | 73 |
| Table A16. | Equine activities .....  | 74 |
| Table A17. | Distribution of equine activities by parcel size and scale .....             | 74 |

## List of Figures – Appendix A

|             |  |    |
|-------------|--|----|
| Figure A1.  | Distribution of beef activities by parcel size and scale .....               | 69 |
| Figure A2.  | Land cover on parcels with beef activities.....                              | 69 |
| Figure A3.  | Distribution of dairy activities by parcel size and scale .....              | 70 |
| Figure A4.  | Land cover on parcels with dairy activities.....                             | 71 |
| Figure A5.  | Distribution of poultry activities by parcel size and scale.....             | 72 |
| Figure A6.  | Land cover on parcels with poultry activities .....                          | 72 |
| Figure A7.  | Distribution of sheep / lamb / goat activities by parcel size and scale..... | 73 |
| Figure A8.  | Land cover on parcels with poultry activities .....                          | 73 |
| Figure A9.  | Distribution of equine activities by parcel size and scale .....             | 74 |
| Figure A10. | Land cover on parcels with equine activities.....                            | 75 |

## *List of Maps – Appendix B*

|           |  |
|-----------|--|
| Map B1.   | Land cover and farmed area                                   |
| Map B2.   | Land cover and farmed area - detail                          |
| Map B3.   | Parcel ownership and land use                                |
| Map B4.   | Land use and farming use by parcel – Private Ownership       |
| Map B5.   | Land use and farming use by parcel – Crown Ownership         |
| Map B6.   | Land status with respect to farming                          |
| Map B7.   | Land not farmed but available and with potential for farming |
| Map B8.   | Cultivated field crops                                       |
| Map B9.   | Forage and pasture crops                                     |
| Map B10.  | Vegetable crops  |
| Map B11.  | Cereal, grain, and oilseed crops                             |
| Map B12a. | Rangeland & Natural pasture – Use type                       |
| Map B12b. | Rangeland & Natural pasture – Ownership type                 |
| Map B13.  | Greenhouses  |
| Map B14.  | Irrigation   |
| Map B15.  | Livestock activities – all types including Equines           |
| Map B16.  | Beef, dairy, poultry activities                              |
| Map B17.  | Equine activities  |
| Map B18.  | Parcel size in the ALR – Private ownership                   |
| Map B19.  | Parcel size in the ALR – Crown ownership                     |



## Executive Summary

In the summer of 2011, the BC Ministry of Agriculture conducted an Agricultural Land Use Inventory (ALUI) in the City of Kamloops. In-kind contributions, including a summer student, were provided by Agriculture and Agri-Food Canada.

ALUIs can be used to understand the type and extent of agricultural activities within the Agricultural Land Reserve (ALR). The ALUI data quantifies how much land is currently used for agriculture, how much land is unavailable for agriculture, and how much land may have potential for agricultural development. The data provides baseline information that can be used to track trends in agricultural land use and to measure changes over time. The data also enables the estimation of agricultural water demand with the use of an irrigation water demand model.

### **Area of Interest and Methodology**

The total land area of Kamloops is 28,415 hectares after land under water is excluded; 12,816 hectares or almost 45% is in the ALR. Nine parcels which straddle the municipal boundary were considered to be within the city. These parcels had 425 hectares of ALR (218 ha of ALR inside the municipal boundary and 207 ha of ALR outside), thus increasing the total ALR to 13,023 hectares.

Of this ALR, 98% (12,699 ha) on 719 parcels was included in the inventory. This includes 5,247 hectares of ALR on Crown owned parcels (municipal, provincial or federal). The remaining 2% of the ALR was excluded from the inventory as it was in parcels less than 100 square metres or outside surveyed land parcels in designated rights-of-way or foreshore.

In addition, 66 parcels outside the ALR but classified by BC Assessment as having “Farm” status for tax assessment, and 670 parcels zoned to permit agriculture, greater than 1 acre, and showing signs of agriculture on aerial photography were included in the inventory.

The total inventory encompasses 1,455 parcels with a combined area of 22,833 hectares or over 80% of the land area in Kamloops. Of the 1,455 parcels inventoried, 544 or 37% were Crown owned (municipal, provincial or federal) with a total area of 11,234 hectares or 49% of the inventory area.

The ALUI was conducted using visual interpretation of aerial imagery combined with a drive-by “windshield” survey to capture a snapshot in time of land use and land cover. Land cover is defined as the biophysical material at the surface of the earth while land use represents human use of the land.

### **Farming Activities**

In the ALR by land cover, 12% (1,573 ha) was in cultivated crops or farm infrastructure, while 70% (9,162 ha) was in a natural or semi-natural state and used for grazing. Of the grazed ALR land cover:

- 55% was on privately owned land,
- 26% was on Crown owned land, and
- 19% was in the Lac DuBois Grasslands Park)

Outside the ALR, 241 hectares were in cultivated crops or farm infrastructure, while 7,028 hectares was in a natural or semi-natural state and used for grazing.

There were 1,691 hectares of cultivated field crops in Kamloops (1,481 ha in the ALR and 209 ha outside the ALR). Forage & pasture were the most common crop type accounting for 89% of all cultivated land. Vegetables were the next most common crop with 7% of the cultivated land, followed

by cereals with 2%, and various other crops including Christmas trees and tree fruits making up the remainder.

A total of 1,505 hectares of forage and pasture crops were recorded: 1,021 hectares were used for forage (60% of all cultivated crops), 418 hectares were used for pasture (25% of all cultivated crops), and 66 hectares appeared unused or unmaintained forage or pasture.

Vegetables totalled 111 hectares with 60 hectares in potatoes (4% of all cultivated crops), 46 hectares in other root vegetables (3% of all cultivated crops), and 5 hectares in other vegetable types. Cereal and grain crops totalled 42 hectares and included barley, oats and canola. In addition to the cultivated crops, there were 4 small poly greenhouses.

Irrigation use was captured by crop type and irrigation system type to aid in developing a water demand model for agriculture. In total, 67% of cultivated crops in Kamloops utilize irrigation (1,138 ha). Sprinkler systems such as hand-line and wheel-line, were the most common and were found across all main crop categories. Giant gun was the next most commonly used system and was found mainly on forage and managed pasture. Centre pivot systems were the main system found on potatoes, root vegetables, barley and canola but were also found on forage crops.

About 64% of forage and pasture crops were irrigated, leaving 36% as dryland production. Dryland hay production accounted for 17% of forage and pasture crops and 15% of all cultivated crops and takes place up on the Thompson Plateau where the evapotranspiration is lower and more conducive to dryland farming.

### **Livestock**

Livestock activities were recorded, but were difficult to measure using a windshield survey. The inventory data does not identify animal movement between parcels that make up a farm unit, but reports livestock at the parcel where the animals or related structures were observed. The number of animals was recorded as a scale defined as a range of animal unit equivalents (AUEs). The results below estimate AUEs by using a mid-point on the scale.

Equine are the most common type of livestock in Kamloops with 44% of total estimated AUEs (440 equines) and 74% of the total number of livestock operations (150 equine operations). Although equine operations are common in Kamloops, all are on a very small or small scale.

Beef is the next most common type of livestock operation with 35% of total estimated AUEs (350 cattle) and 11% of the total number of livestock operations (23 beef operations). Beef operations in Kamloops included 2 large scale and 1 medium scale.

Only 1 dairy operation was recorded in Kamloops. Blackwell Dairy located in the Barnhartville area is a large scale operation with 11% of total estimated AUEs in Kamloops. This was the only livestock operation to utilize intensive facilities for confined feeding at higher stocking densities.

Other livestock were present in very low occurrences; chicken, sheep/lamb, llama, turkey, goat, and swine.

### **ALR Utilization**

Parcels were categorized as "Used for farming", "Used for grazing", or "Not used for farming or grazing" based on the percentage of the parcel in cultivated crops, farm infrastructure, natural pasture or rangeland, and/or the scale of livestock production. Refer to the glossary for more complete definitions.

Land ownership can impact the type of agricultural activities that occur on a parcel; therefore ALR utilization is reported separately for private and Crown land. The agricultural activities likely to occur on Crown land may be subject to specific restrictions, depending on the government entity owning it.

#### Private ownership

For privately owned parcels in the ALR, 26% were “Used for farming” (101 parcels), 39% were “Used for grazing” (148 parcels), and 35% of the parcels were “Not used for farming or grazing” (134 parcels).

The “Used for farming” have an average parcel size of 26 hectares and a median size of 12 hectares. “Used for grazing” parcels are larger with an average size of 32 hectares and a median size of 16 hectares. “Not used for farming or grazing” parcels are dramatically smaller with an average parcel size of 7 hectares and a median of 0.5 hectares.

A full 61% of all “Not used for farming or grazing” parcels are less than 1 hectare in size. When examining all privately owned parcels less than 1 hectare, 82% are “Not used for farming or grazing”. Many of these small parcels have a residential use.

#### Crown ownership

For Crown owned parcels in the ALR, 6% were “Used for farming” (8 parcels), 60% were “Used for grazing” (87 parcels), and 34% of the parcels were “Not used for farming or grazing” (50 parcels).

The “Used for farming” parcels have an average parcel size of 36 hectares and a median of 9 hectares. “Used for grazing” parcels are larger with an average size of 61 hectares and a median of 34 hectares. “Not used for farming or grazing” parcels are dramatically smaller with an average size of 24 hectares and a median of 1 hectare. Almost 50% of all Crown owned parcels in the ALR and “Not used for farming or grazing” are less than 1 hectare. The rest are somewhat equally distributed across the other parcel size categories.

#### **ALR Availability**

Of the ALR area (13,023 ha), 12% was actively farmed or supporting farming (e.g. crops, barns, farm houses, farm roads, farm buildings, etc.), 12% was unavailable for farming due to an existing land use or land cover (golf courses, parks including Lac Du Bois Grasslands Park, wetlands, non-farm residences, etc.) and 49% had limited potential for farming due to physical site limitations such as topography, soils or drainage. That leaves 25% of the ALR (3,290 ha) with potential for farming.

Although there were 3,290 hectares of ALR land with potential for farming, 2,409 was currently being used as natural pasture or rangeland (2,042 ha on privately owned parcels and 367 on Crown owned parcels).

The potential for future agriculture expansion is affected by parcel ownership, the proportion of the parcel within the ALR, the size of the area available, the proportion of the parcel available, and the feasibility of irrigation.

Of the 3,290 hectares of ALR land with potential for farming, 281 hectares are on parcels already “Used for farming”, and 373 hectares are on parcels with less than 50% by area with potential for farming. This leaves 2,636 hectares on 83 parcels (65 privately owned and 18 Crown owned) with potential for future agriculture expansion.

Included with the 83 parcels is 2,122 hectares of natural pasture or rangeland (1,781 ha on privately owned parcels and 341 ha on Crown owned parcels). Converting this to farmland would reduce the area of natural pasture or rangeland in the ALR by 22% which may significantly impact the beef industry.

Also included is 18 Crown owned parcels (554 ha) that are not currently being used for natural pasture or rangeland. The potential of a Crown owned parcel is limited and may be subject to specific restrictions, depending on the government entity owning it.

If only privately owned parcels are considered, there are 65 parcels (2,082 ha) that have potential for agriculture expansion. Most of these parcels (86%) are larger than 4 hectares.

Of the 65 privately owned parcels, 50 are currently being used as natural pasture or rangeland. If these parcels are excluded, only 15 privately owned parcels have potential for agriculture expansion. Many of these parcels (73%) are greater than 4 hectares.

The feasibility of irrigation on parcels with potential for agriculture expansion is not explored within this report.

## Agrologist Comments

The Kamloops area has a long & colourful agricultural history dating back to the mid 1800's. From its beginnings with human staples like potatoes & vegetables for the fur traders and cattle drives & ranches for the gold rush miners, agriculture in the region has taken on many forms over the years as needs, tastes and markets have changed. At one time or another Kamloops was renowned for its: beef, sheep & wool, orchards (apples had higher sugar content due to night-time cooling), tomatoes and vegetables (supporting a significant number of canneries), hops, and ginseng. Recently there has been a resurgence of interest in locally and/or organically grown vegetables (with higher fuel/transportation costs and long term drought in California influencing the economics of markets). Nowadays, a thriving Farmer's Market on Wednesdays and Saturdays and a number of grocery outlets offer a wide array of locally grown milk, meats, eggs, vegetables, herbs, fruits, melons, wines and ciders.

Surrounded by grasslands, Kamloops has become the epicenter for the BC beef industry with the head offices of the BC Cattlemen's Association, BC Livestock Producers Co-operative Association (and sales yard), and Ownership Identification Inc. (OII) located in the Dallas area. Beef production has been a stalwart industry in the area and is integral with the local history and economy. While other agricultural sectors have ebbed & flowed in the region, beef production has marched steadily along.

Forage is the foundation for herbivorous livestock-based agriculture, which includes beef, dairy, sheep, horses, bison, llamas & alpacas. The fact that 60% of all the cultivated land in Kamloops is used to grow forage (hay), and well over one-half of the city's total land base is grazed, is indicative of the importance of forage to those industries. Unfortunately, land in forage is often perceived as "just lying there", however a forage crop creates economic value every year, and contributes to the overall health and vitality of the livestock industries. In turn, these primary agricultural producers purchase goods & services from local businesses (veterinary, irrigation equipment, farm machinery, farm vehicles, fuel, tools, repairs, construction trades, trucking, financial & legal services, etc. in addition to the personal services and groceries that everyone else uses) thereby supporting those business's employees and the community as a whole. The opinion that housing or commercial development should be prioritized over agriculture for economic development is misguided. Doing so will sacrifice the current and long term economic activity as well as agricultural opportunities for future generations.

Urban development contributed to the loss of nearly 6,000 hectares a year of prime agricultural lands in BC during the late 1960's and early 1970's. In Kamloops alone, well over 1000 hectares of Class<sup>1</sup> 1 & 2 lands that were in orchards and farmland in the Brocklehurst and North Kamloops areas were developed for housing & retail; primarily before the Agricultural Land Reserve (ALR) was established in 1973. Another 550 ha of Class 1 & 2 agricultural lands were converted for the pulp mill, airport, petroleum storage and a golf course. The cumulative impact on the local agricultural potential was significant. Given that the ALR accounts for about 12% of the land area in the Thompson Agricultural Reporting Region (TARR, which encompasses the TNRD and adjacent areas from SLRD & CSRD), and the fact that Class 1 & 2 lands only comprise 6% of the ALR land base in the TARR, this urban development of 1,500+ hectares of Class 1 & 2 lands significantly changed the mix and capacity of local/regional agriculture forever.

---

<sup>1</sup> These Classes refer to the BC Land Inventory (BCLI) Agricultural Capability Rating classes. The BCLI relies on soil and climate attributes to categorize land into seven classes with 1 being the best class and 7 being the lowest capability for Agriculture. Soil characteristics affect what management practices are necessary to crop the land while climate determines the range of crops capable of being grown on a site. The BCLI is modification of the nation-wide Canada Land Inventory system and gives a second or "improved" rating in brackets for (irrigated) or [drainage] or sometimes ([both]). The comments and percentages are based on the improved (irrigated) ratings.

Due to the geo-morphology, topography and climates in BC, the land base capable of agricultural production is very limited. These scarce, agriculturally-capable soils developed over 10,000 years since the last ice-age and cannot be easily replaced or replicated. The prime agricultural lands are generally located in the valley bottoms or lower benches with fertile soils and good micro-climates. The ALR encompasses just under 5% of the province, and only about half of that is considered prime agricultural land. Prime agricultural land generally includes classes 1-4 and roughly equates to what is considered “arable” (able to be cultivated on a regular basis). Class 1 lands are the rarest, making up a mere 1% of all the ALR land in BC (2% in the TARR), Class 2 makes up about 6% of the ALR in BC (4% in the TARR), while Class 3 and 4 comprise 15% and 31% respectively of the ALR land in BC (9% & 16% respectively in the TARR). As you can see in the TARR numbers, significantly less land than the provincial ALR average (31% vs. 53%) falls into Classes 1 thru 4 combined, making prime agricultural land much more scarce in the TARR than it is on average in the province. Despite this scarcity, many of the more recent urban developments and largest proposed residential developments involving the ALR in Kamloops have all been targeted on these higher rated and increasingly precious agricultural lands.

The climate in the area is generally semi-arid due to the rain shadow effect of the Coast Mountains. At lower elevations there are sufficient heat units for all but a few of the most heat loving of Canadian crops; however, the evapotranspiration rate increases with those increased heat units and quickly reduces soil moisture below what plants need to actively grow. As a result of this limiting factor, irrigation is generally necessary for the production of agricultural crops, and more water per hectare is needed at lower elevations. According to the 2006 Agricultural Census the TNRD had more land under irrigation than any other Regional District in BC and accounted for 21% of all irrigated land in BC. In terms of trying to intensify production and irrigate more agricultural land, the availability and economics of getting the water on the field currently limit the potential expansion of irrigated agriculture.

Another pressure on the agricultural land base is the argument for subdivision to smaller parcels to reduce the capital outlay to acquire land and start farming. This contradicts the financial realities of the economies of scale of agricultural production. This is confirmed by the fact that only 5% of privately owned ALR parcels less than 1 ha in Kamloops are used for farming. The trend is clear, the percentage of ALR parcels being used for farming or grazing steadily decreases as parcel size decreases. Simply put, larger parcels are more likely to be farmed. This finding is consistent with ALUIs conducted in other areas of BC.

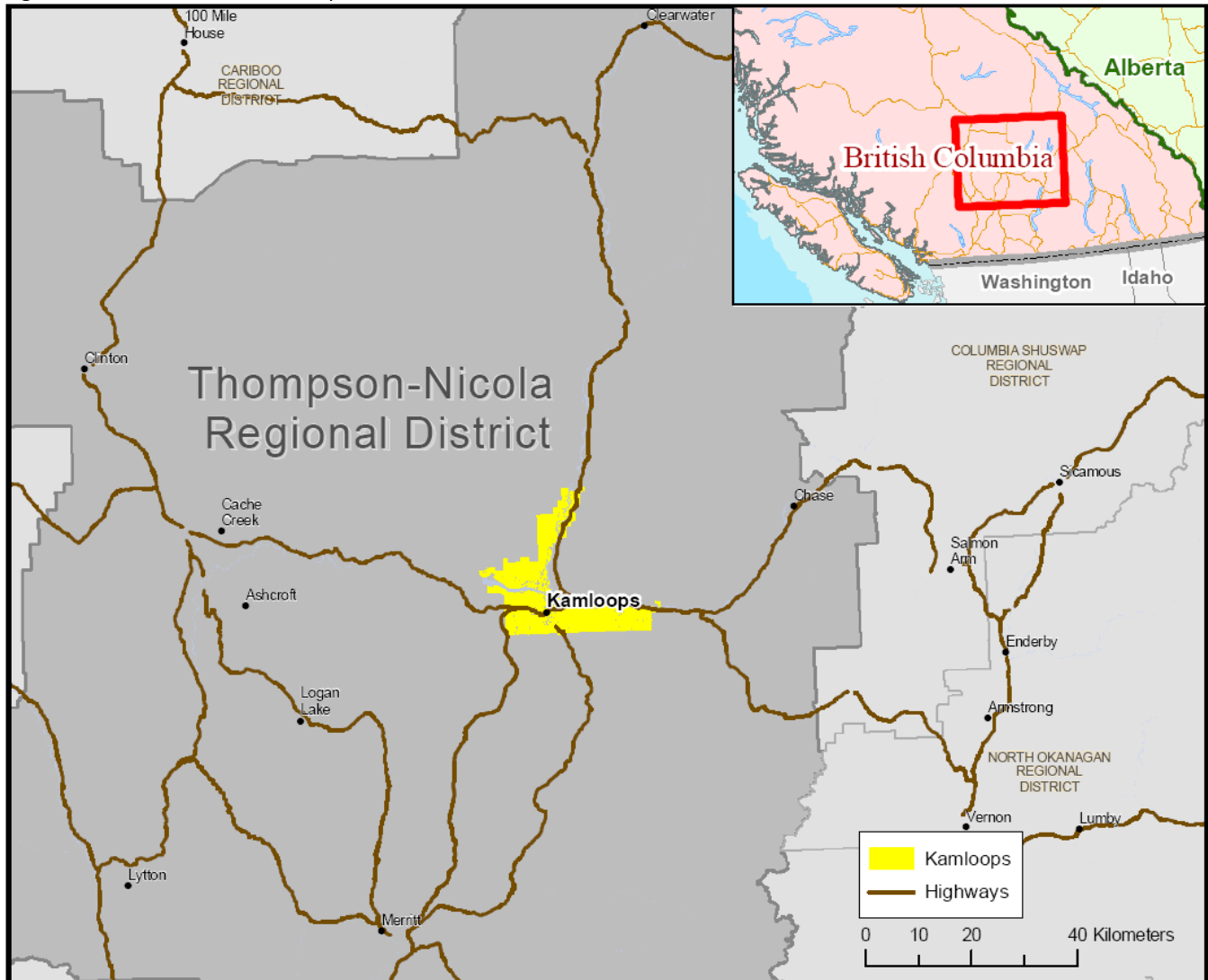
Maintaining opportunities for agriculture to take advantage of new demand trends and grow requires that the agriculture land base (and particularly the prime land) be maintained for agricultural use.



## General Community Information

The City of Kamloops is located along two branches of the Thompson River in the southern interior of British Columbia. Kamloops has a total area including land and water of 31,157 hectares<sup>2</sup>. The nearest major settlements in each cardinal direction include the City of Merritt to the south, the Village of Cache Creek to the west, the District of Clearwater to the north, and the Village of Chase to the east. The City of Kamloops is part of the Thompson-Nicola Regional District.

Figure 1. General Location map



<sup>2</sup> Government of British Columbia; Ministry of Community, Sport & Cultural Development, Local Government Statistics  
[http://www.cscd.gov.bc.ca/lgd/infra/library/regional\\_stats11\\_summary.pdf](http://www.cscd.gov.bc.ca/lgd/infra/library/regional_stats11_summary.pdf)



## AGRICULTURAL LAND RESERVE

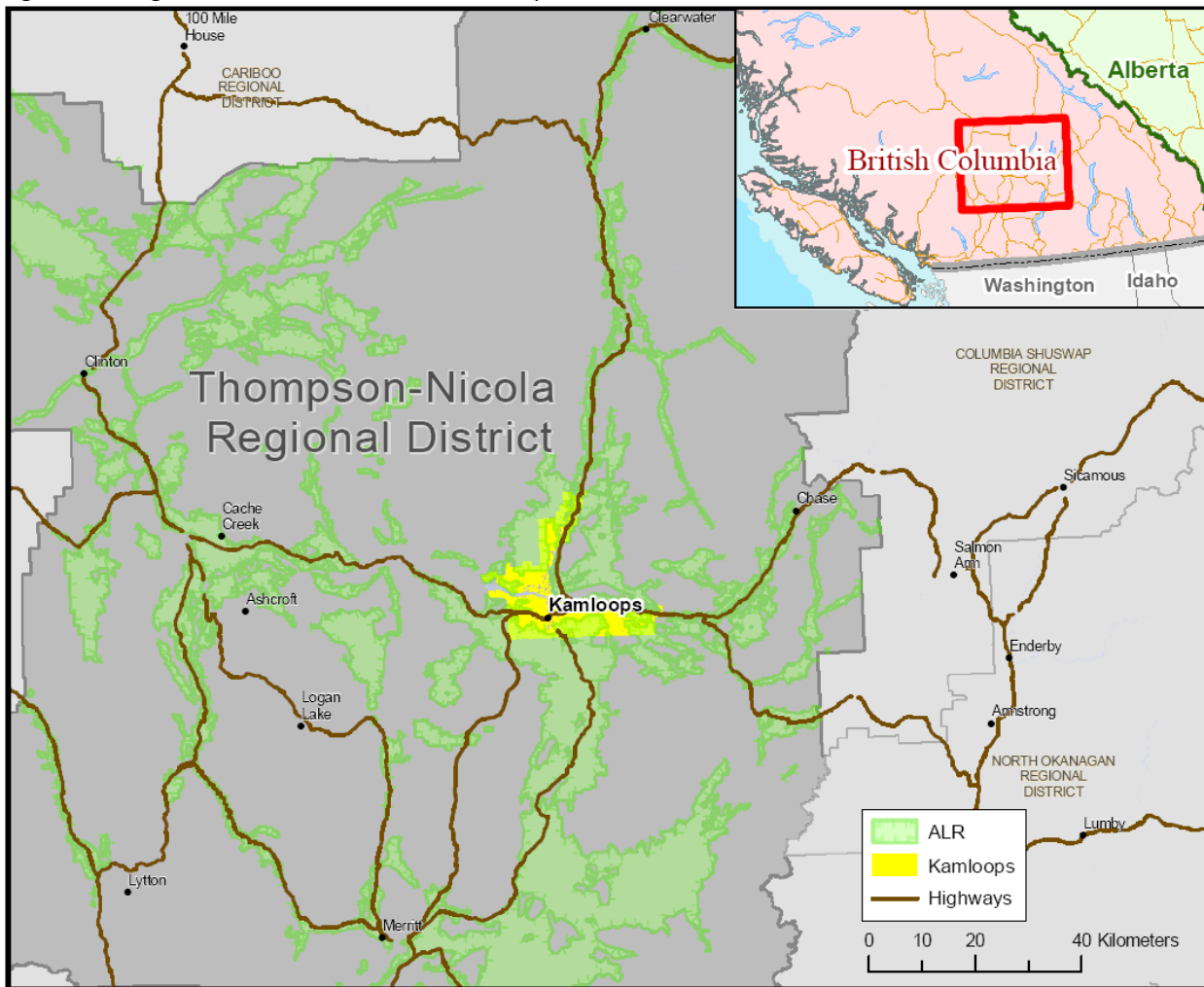
The Agricultural Land Reserve (ALR) is a provincial zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

There are 574,345 hectares<sup>3</sup> of ALR land within the Thompson-Nicola Regional District; 12,816 hectares<sup>4</sup> or 2.2% is within Kamloops.

The land area of Kamloops is 28,415 hectares<sup>5</sup>. Almost 45% of the land area in Kamloops is in the ALR. An additional 207 hectares of ALR on nine parcels which straddle the municipal boundary is included for a total ALR area of 13,023 hectares. This area includes:

- 12,699 hectares in surveyed parcels
- 324 hectares outside surveyed parcels
  - 259 hectares of designated rights-of-way, 65 hectares of foreshore.

Figure 2. Agricultural Land Reserve location map



<sup>3</sup> Provincial Agricultural Land Commission (ALC) Annual Report 2009/10 & 2010/11 Pg 39. [http://www.alc.gov.bc.ca/publications/Annual\\_Report\\_2009-10\\_and\\_2010-11.pdf](http://www.alc.gov.bc.ca/publications/Annual_Report_2009-10_and_2010-11.pdf).

<sup>4</sup> Agricultural Land Commission, ALR mapping, Land and Resource Data Warehouse, 2011-01-31 (area calculated in GIS).

<sup>5</sup> Calculated in GIS.

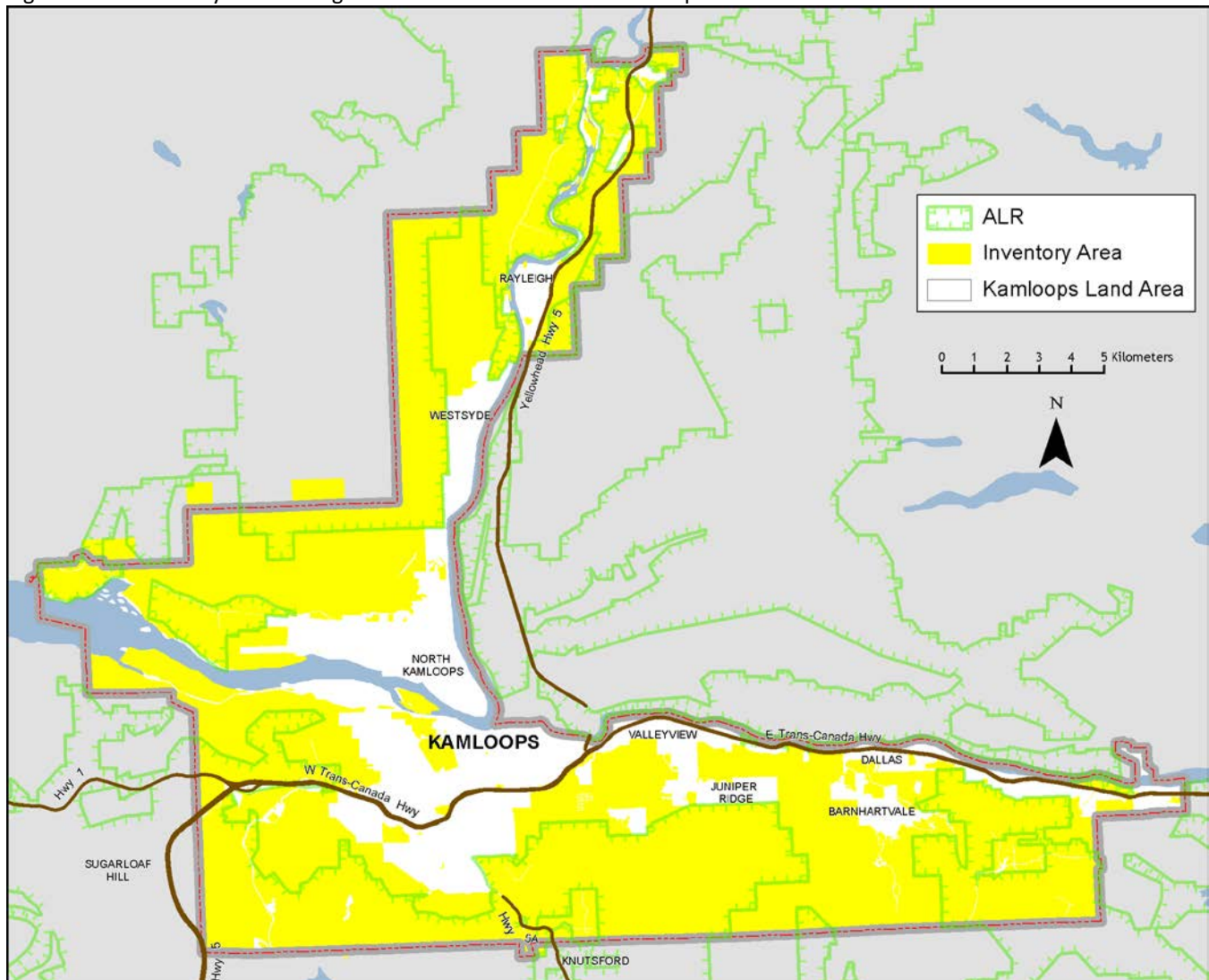
## INVENTORY AREA

The inventory area encompasses 1,455 parcels with a combined area of 22,833 hectares or over 80% of the land area in Kamloops. Included are all parcels within or partially within Kamloops and:

- completely or partially within the Agricultural Land Reserve (719 parcels)
- outside the ALR but classified by BC Assessment as having “Farm” status for property tax assessment (66 parcels)
- outside the ALR but zoned to allow agriculture by local government bylaws (670 parcels).

The amount of ALR land included in the inventory area is 12,699 hectares located on 719 parcels including 9 parcels which straddle the municipal boundary. This area is almost 98% of the ALR within Kamloops. The remaining 2% of the ALR was excluded from the inventory as it is in parcels less than 100 square metres or outside surveyed land parcels in designated rights-of-way or foreshore.

Figure 3. Inventory area and Agricultural Land Reserve location map



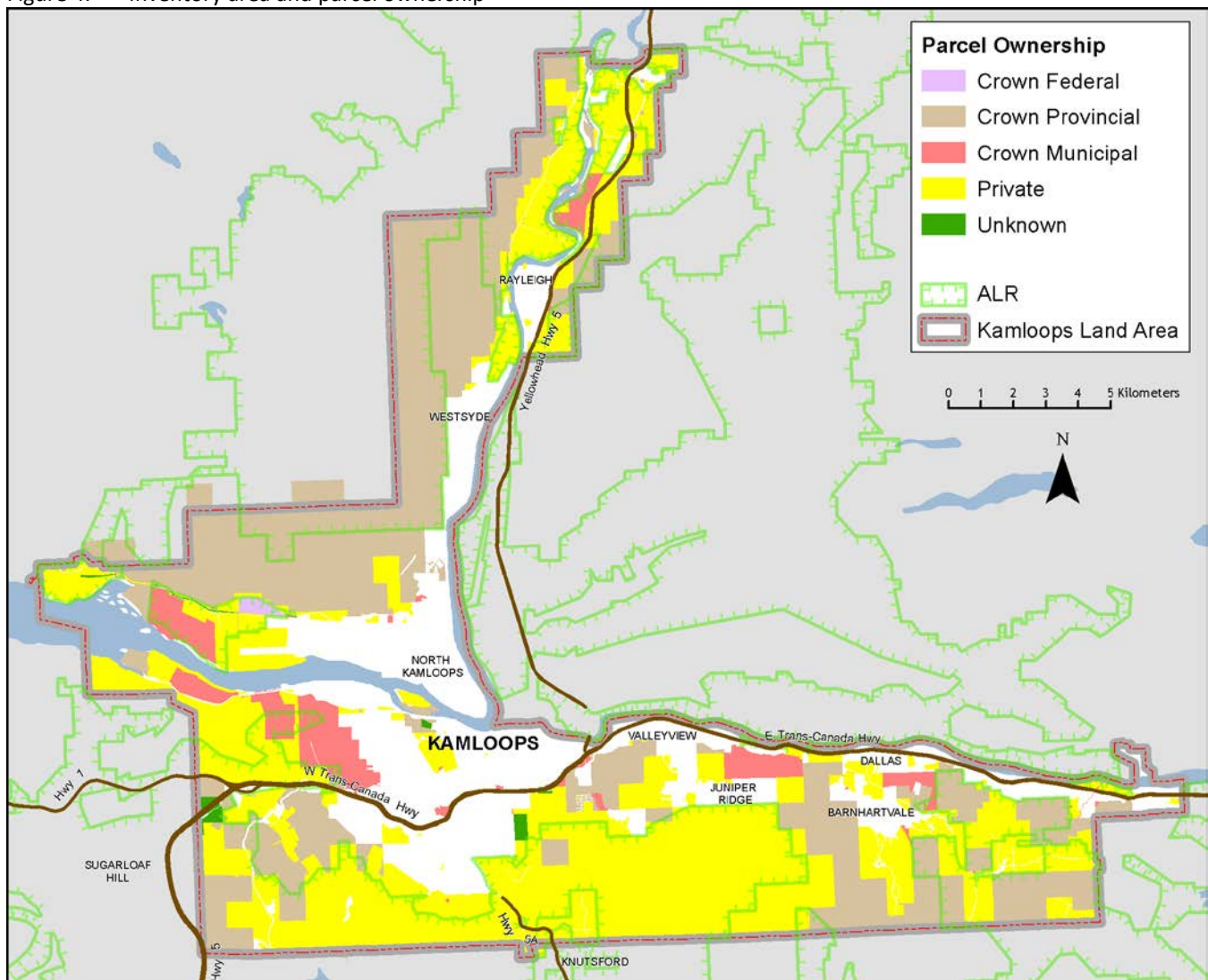
## PARCEL OWNERSHIP

Crown owned land includes parcels which are owned by municipal, provincial or federal governments. This report separates Crown owned land from non-Crown owned land because the agricultural activities likely to occur on Crown owned land are limited and may also be subject to specific restrictions, depending on the government entity owning it.

Of the 1455 parcels included in this inventory, 544 or 37% are Crown owned with a total area of 11,234 hectares or 49% of the survey area. This includes 5,247 hectares or 40% of the ALR on 190 parcels.

- 9 parcels are federally owned (Agriculture and Agri-Food Canada's research station in the Brocklehurst neighbourhood). All 9 parcels contain some ALR land.
  - 56 hectares or < 1 % of the survey area; 56 hectares or < 1% of the ALR
- 467 parcels are provincially owned; 150 parcels contain some ALR land.
  - 9,823 hectares or 43 % of the survey area; 4730 hectares or 36% of the ALR
- 68 parcels are municipally owned (several parks and Cinnamon Ridge Compost Facility); 31 parcels contain some ALR land
  - 1,355 hectares or almost 6 % of the survey area; 461 hectares or almost 4% of the ALR

Figure 4. Inventory area and parcel ownership





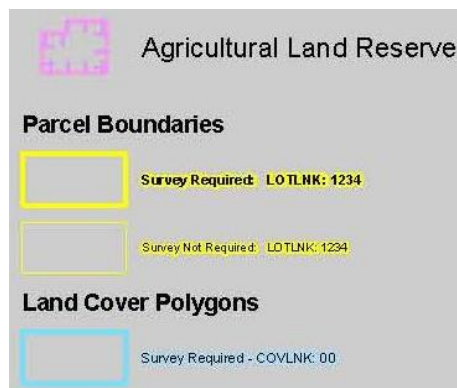
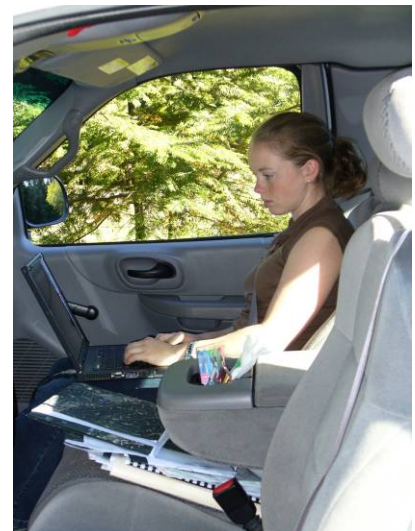
## Methodology

### AGFOCUS - AGRICULTURAL LAND USE INVENTORY SYSTEM

AgFocus is an Agricultural Land Use Inventory System developed by BC Ministry of Agriculture's Strengthening Farming Program. AgFocus employs a "windshield" survey method designed to capture a snapshot in time of land use and land cover on legal parcels. For more information on AgFocus, please refer to these documents available from the Strengthening Farming Program:

- AgFocus – A Surveyor's Guide to Conducting an Agricultural Land Use Inventory
- AgFocus – Field Guide to Conducting an Agricultural Land Use Inventory
- AgFocus – A GIS Analyst's Guide to Agricultural Land Use Inventory Data.

The Kamloops agricultural land use inventory was conducted in the summer of 2011 by BC Ministry of Agriculture staff agrologists assisted by a field technician provided by Agriculture and Agri-Food Canada. The survey crew visited each property and observed land use, land cover, and agriculture activity from the road. Where visibility was limited, data was interpreted from aerial photography in combination with local knowledge. The technician entered the survey data into a database on a laptop computer.



Field survey maps provided the basis for the survey and included:

- The legal parcel boundaries (cadastre)<sup>6</sup>
- Unique identifier for each legal parcel
- The preliminary land cover polygon boundaries (digitized prior to field survey using aerial photography)
- Unique identifier for each preliminary land cover polygon
- The boundary of the Agricultural Land Reserve (ALR)
- Base features such as streets, street names, watercourses and contours
- Aerial photography.



<sup>6</sup> Cadastre mapping (2011) was provided by the Integrated Cadastral Information Society.

## DESCRIPTION OF THE DATA

For each property in the study area, data was collected on general land use and land cover. For properties with agriculture present, data was collected on agricultural practices, irrigation, crop production methods, livestock, agricultural support (storage, compost, waste), and activities which add value to raw agricultural products.

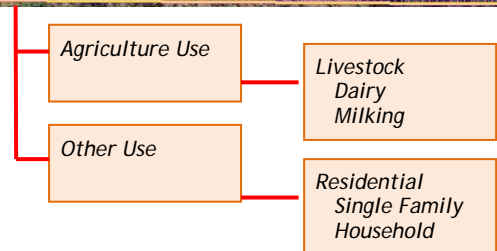
Once acquired through the survey, the data was brought into a Geographic Information System (GIS) to facilitate analysis and mapping. Digital data, in the form of a tabular database and GIS spatial layers (for maps), may be available with certain restrictions through a terms of use agreement.

### *General land use:*

Up to two general land uses (e.g. residential, commercial) were recorded for each property based on an assessment of overall economic importance, the property's tax status, and/or the extent of the land use. The survey for general land use focuses solely on human use and considers:

- The actual human use of land and related structures and modifications to the landscape
- Use-related land cover (where land cover implies a use or is important to interpreting patterns of use)
- Declared interests in the land (which may limit use) such as parks.

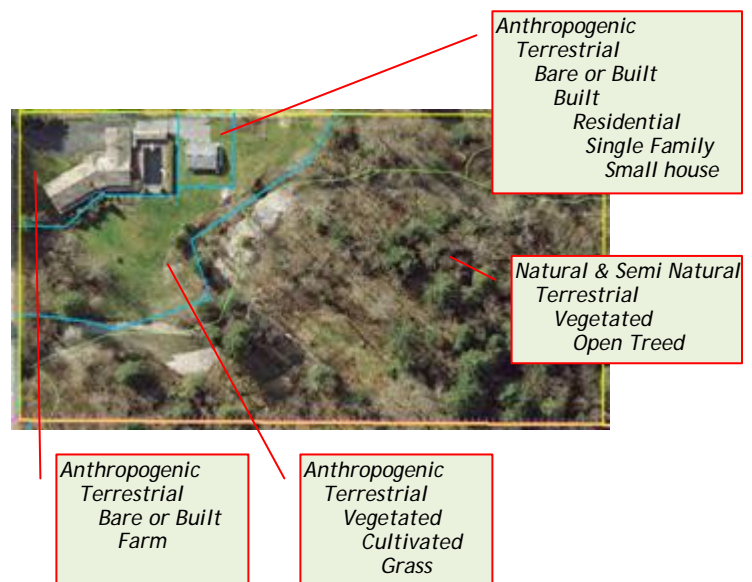
In addition, the availability of non-farm use properties for future farming was assessed based on the amount of potential land for farming on the property and the compatibility of existing non-farm use with future farming activities.



### *Land cover:*

Land cover refers to the biophysical features of the land (eg. crops, buildings, forested areas (woodlots), streams). Land cover was surveyed by separating the parcel into homogeneous components and assigning each a description. Prior to field survey, polygons were delineated in the office using ortho photography. Further delineation occurred during the field survey until one of the following was achieved:

- Minimum polygon size (500 sq m ~5400 sq ft) or minimum polygon width (10 m ~33 ft)
- Polygon is homogeneous in physical cover and homogeneous in irrigation method
- Maximum level of detail required was reached.



In most cases, more than one land cover was recorded for each parcel surveyed.

*Agricultural practices:* Surveyors recorded agricultural practices associated with crops or livestock activities. For example, if a forage crop was being harvested for hay, it was recorded. Irrigation was also recorded, including the type of system used.

*Agricultural crop production:* Crop production and crop protection methods observed on the parcel were recorded such as wildlife scare devices, temperature or light control, or organic production. Organic production is not always visible and may have been recorded based on local knowledge or farmer interviews.

*Livestock:* Livestock operations and confinement methods along with the scale of the activity were estimated and recorded. Livestock not visible at the time of survey may have been inferred based on grazed pastures, manure storage, size of barn and other evidence.

*Agricultural support:* Ancillary agricultural activities, such as storage, compost or waste, supporting the production of a raw commodity on a farm unit were recorded.

*Agricultural value added:* Activities that add value to a raw commodity where at least 50% of the raw commodity is produced on the farm unit were recorded. This value-added activity included processing, direct sales and agri-tourism activities.

## ***PRESENTATION OF THE DATA***

---

The data in this report is presented in the form of summarized tables and charts. In the final formatting of the tables and charts, data values are rounded to the nearest whole number. As a result, the data may not appear to add up correctly.



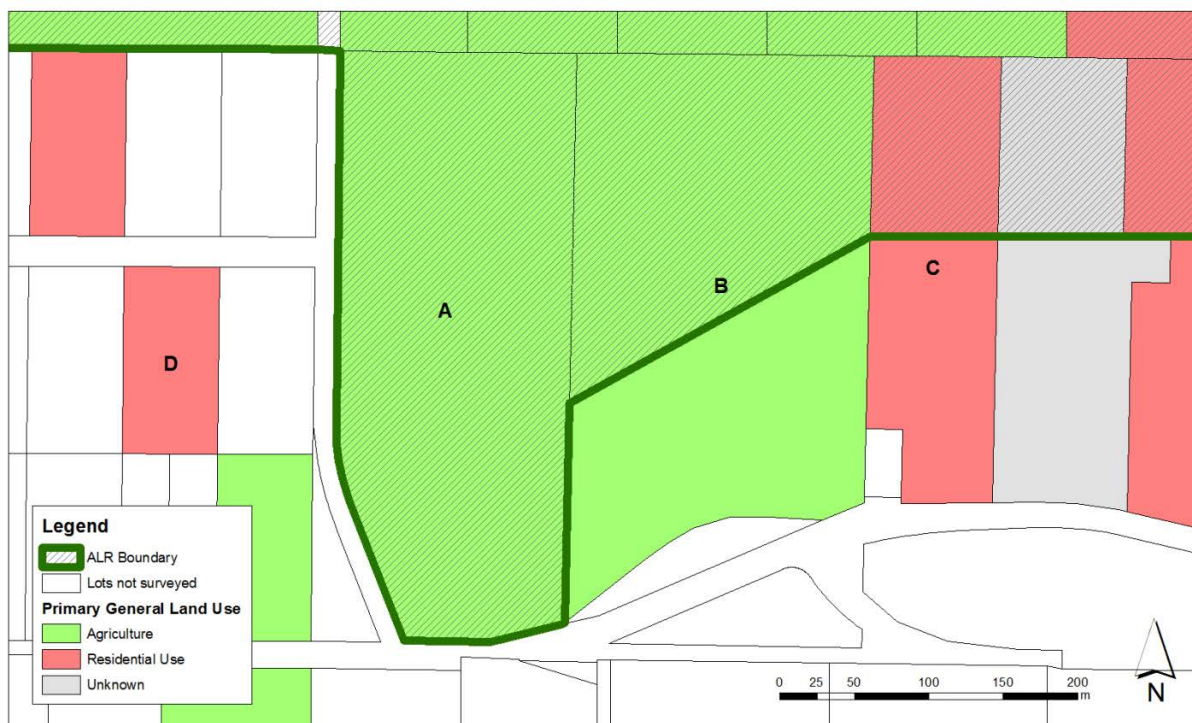
## DETERMINATION OF PARCELS WITHIN THE ALR

Since much of the following analysis is parcel based, it is important to note that the ALR boundaries do not always align with parcel boundaries. As a result, many parcels have only a portion of their area in the ALR.

Figure 5 illustrates the frequent misalignment between parcel boundaries and the ALR boundary. Given that the dark green line represents the ALR boundary, Lot A is completely in the ALR and Lots B and C have a portion of their area in the ALR. Lot D is completely outside the ALR.

Many of the results presented in this report include 3 separate totals: the total parcel area, the portion of the parcel inside the ALR, and the portion of the parcel outside the ALR.

Figure 5. Parcel inclusion in the ALR





## 1. Land Cover and Farmed Area

For the purposes of this document, land cover describes the biophysical material at the surface of the earth and is distinct from land use which describes how people utilize the land.

Land cover is surveyed by separating the parcel into homogeneous components and assigning each a description such as landscape lawn, natural open treed, anthropogenic wetland, blueberries, road, and small single family house. Most surveyed parcels have numerous different land cover types with each describing a different area of the parcel. Land cover more closely approximates the actual area of land in agricultural production or “Farmed” than land use.

Three land cover types are considered “Farmed”:

- Cultivated Field Crops: vegetation under cultivation for harvest or pasture including land temporarily set aside from farming and perennial crops that were not harvested or grazed in the current growing season
- Farm Infrastructure: built structures associated with farming such as barns, stables, corrals, riding rings, and their associated yards
- Greenhouses: permanent enclosed glass or poly structures with or without climate control facilities for growing plants and vegetation under controlled environments.

Forage and pasture field crops which have not been cut or grazed during the current growing season (unused), unmaintained field crops, and unmaintained greenhouses are considered “Farmed” land covers but are considered inactive.

Natural pasture and rangeland are fenced areas with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock. These areas are considered “Natural and Semi-natural” and not “Farmed” although usually these areas are extensions of more intensive farming areas.

Land cover types which may support farming, such as farm residences, vegetative buffers and farm road access, are not considered “Farmed”.

Table 1. Land cover and farmed area

| Land cover                 |                              | ALR           |             |                             | Outside ALR (ha) | Total area (ha) | % of inventory area | % of inventory area in Crown ownership |
|----------------------------|------------------------------|---------------|-------------|-----------------------------|------------------|-----------------|---------------------|--|
|                            |                              | In ALR (ha)   | % of ALR    | % of ALR in Crown ownership |                  |                 |                     |  |
| Actively farmed            | Cultivated field crops       | 1,430         | 11%         | 2%                          | 193              | 1,623           | 7%                  | < 1%                                   |
|                            | Farm Infrastructure          | 91            | < 1%        | < 1%                        | 32               | 123             | < 1%                | < 1%                                   |
|                            | Greenhouses                  | <1            | < 1%        | -                           | <1               | <1              | < 1%                | -                                      |
| Inactively farmed          | Unused forage or pasture     | 31            | < 1%        | -                           | 7                | 39              | < 1%                | -                                      |
|                            | Unmaintained field crops     | 20            | < 1%        | -                           | 9                | 29              | < 1%                | -                                      |
|                            | Unmaintained greenhouses     | -             | -           | -                           | <1               | <1              | < 1%                | -                                      |
| <b>FARMED SUBTOTAL</b>     |                              | <b>1,573</b>  | <b>12%</b>  | <b>2%</b>                   | <b>241</b>       | <b>1,814</b>    | <b>8%</b>           | <b>&lt; 1%</b>                         |
| Anthropogenic (not farmed) | Managed vegetation           | 164           | 1%          | < 1%                        | 67               | 231             | 1%                  | < 1%                                   |
|                            | Non Built or Bare            | 124           | < 1%        | < 1%                        | 148              | 272             | 1%                  | < 1%                                   |
|                            | Residential footprint        | 66            | < 1%        | < 1%                        | 93               | 159             | < 1%                | < 1%                                   |
|                            | Settlement                   | 29            | < 1%        | < 1%                        | 163              | 192             | < 1%                | < 1%                                   |
|                            | Transportation               | 69            | < 1%        | < 1%                        | 190              | 259             | 1%                  | < 1%                                   |
|                            | Utilities                    | <1            | < 1%        | < 1%                        | 6                | 6               | < 1%                | < 1%                                   |
|                            | Built up - Other             | 24            | < 1%        | < 1%                        | 2                | 26              | < 1%                | < 1%                                   |
|                            | Waterbodies                  | 4             | < 1%        | < 1%                        | 2                | 6               | < 1%                | < 1%                                   |
| <b>SUBTOTAL</b>            |                              | <b>480</b>    | <b>4%</b>   | <b>1%</b>                   | <b>671</b>       | <b>1,151</b>    | <b>5%</b>           | <b>1%</b>                              |
| Natural and Semi natural   | Natural pasture or rangeland | 9,162         | 70%         | 32%                         | 7,028            | 16,190          | 71%                 | 38%                                    |
|                            | Vegetated                    | 1,394         | 11%         | 5%                          | 1,894            | 3,288           | 14%                 | 8%                                     |
|                            | Wetlands                     | 41            | < 1%        | < 1%                        | 148              | 189             | < 1%                | < 1%                                   |
|                            | Natural bare areas           | <1            | < 1%        | -                           | 2                | 2               | < 1%                | -                                      |
|                            | Waterbodies                  | 49            | < 1%        | < 1%                        | 149              | 198             | < 1%                | < 1%                                   |
| <b>SUBTOTAL</b>            |                              | <b>10,646</b> | <b>82%</b>  | <b>37%</b>                  | <b>9,221</b>     | <b>19,868</b>   | <b>87%</b>          | <b>47%</b>                             |
| <b>TOTAL</b>               |                              | <b>12,699</b> | <b>98%</b>  | <b>40%</b>                  | <b>10,134</b>    | <b>22,833</b>   | <b>100%</b>         | <b>49%</b>                             |
| Not surveyed               | Foreshore                    | 65            | < 1%        |                             |                  |                 |                     |  |
|                            | Rights-of-way                | 259           | 2%          |                             |                  |                 |                     |  |
|                            | Areas < 100 sq.m             | <1            | < 1%        |                             |                  |                 |                     |  |
| <b>SUBTOTAL</b>            |                              | <b>324</b>    | <b>2%</b>   |                             |                  |                 |                     |  |
| <b>TOTAL</b>               |                              | <b>13,023</b> | <b>100%</b> |                             |                  |                 |                     |  |

Table 1 shows the extent of different land cover types across the entire inventory area.

In Kamloops, 1,814 hectares of land is in "Farmed" land cover although 68 of those hectares is "Inactively farmed"; in unused forage, unused pasture, unmaintained field crops or greenhouses.

40% of the ALR is under Crown ownership and is mostly in natural and semi-natural land cover used as natural pasture or rangeland.

When considering both Crown and privately owned land, 82% of the ALR is in natural and semi-natural land cover. Most of this is being used as natural pasture or rangeland.

Refer to Maps B1 and B2 in Appendix B for more information.

Figure 6. Land cover and farmed area in the ALR

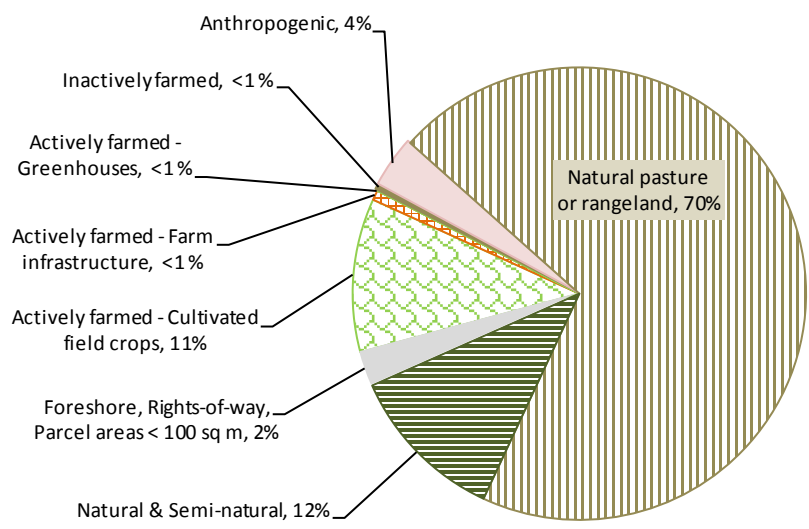


Figure 6 shows the proportions of the different land cover types across the ALR in Kamloops.

Of the ALR land in Kamloops, 11% is “Actively Farmed” in cultivated field crops while 70% is in natural pasture or rangeland.

Land used in support of farming such as farm residences, vegetative buffers or roadways is not included as “Farmed”.

## 2. Land Use and Farm Use

For the purposes of this document, land use focuses solely on human use and describes the economic function or type of establishment using the parcel. A parcel can have a variety of activities on the land, yet serve a single use. For example, two parcels are said to be “Used for farming”, even if one is a dairy farm and the other is in blueberries. Another example is commercial land use; if one parcel is a hotel, another is a retail store, and a third is a gas station, all are considered to have a commercial land use.

Up to two general land uses (e.g. residential, commercial) are recorded for each parcel with each considered an equally important function of the parcel. Evaluation of land uses are based on overall economic importance, the property’s tax status, and/or the extent of the land use.

Parcels where the majority of the parcel area is utilized for farming or parcels which exhibit significant evidence of intensive farming are considered “Used for farming”. For a complete definition of “Used for farming”, refer to the Definitions section of this report.

Parcels considered “Not used for farming” with a significant portion of their area in natural pasture or rangeland and evidence of active grazing domestic livestock are considered “Used for grazing”.

Many parcels “Used for farming” or “Used for grazing” are also used for other purposes such as “Residential” or “Industrial”. This report does not attempt to determine which use is primary.

Privately-owned land is reported separately from Crown land in this section of the report because the agricultural activities likely to occur on Crown land are limited and may also be subject to specific restrictions, depending on the government entity owning it.

Table 2. Parcel ownership

| Parcel land use            |                         | ALR         |               | Outside ALR (ha) | Total area (ha) | % of inventory area | Number of parcels | % of parcels | Average parcel size (ha) |
|----------------------------|-------------------------|-------------|---------------|------------------|-----------------|---------------------|-------------------|--------------|--------------------------|
|                            |                         | In ALR (ha) | % of ALR area |                  |                 |                     |                   |              |                          |
| PRIVATE OWNERSHIP SUBTOTAL |                         | 7,452       | 57 %          | 4,147            | 11,599          | 51 %                | 911               | 63 %         | 30                       |
| CROWN OWNERSHIP SUBTOTAL   |                         | 5,247       | 40 %          | 5,987            | 11,234          | 49 %                | 544               | 37 %         | 44                       |
| Not surveyed               | Foreshore               | 65          | <1 %          |                  |                 |                     |                   |              |                          |
|                            | Rights-of-way           | 259         | 2 %           |                  |                 |                     |                   |              |                          |
|                            | Parcel areas < 100 sq m | < 1         | <1 %          |                  |                 |                     |                   |              |                          |
|                            | NOT SURVEYED SUBTOTAL   | 324         | 2 %           |                  |                 |                     |                   |              |                          |
| TOTAL                      |                         | 13,023      | 100 %         | 10,134           | 22,833          | 100 %               | 1,455             | 100 %        |                          |

Table 2 shows that 57% of Kamloops’s ALR area is on privately owned parcels while 40% is on Crown (municipal, provincial, or federal) owned parcels.

Refer to Map B3 in Appendix B for more information.

## PRIVATELY OWNED PARCELS

Table 3. Land use and farming use by parcel – Private ownership

| Privately owned parcels<br>Land use          |                                  | ALR            |  | Outside<br>ALR (ha) | Total<br>area (ha) | % of<br>privately<br>owned<br>inventory<br>area | Number<br>of<br>parcels | % of<br>privately<br>owned<br>parcels | Average<br>parcel size<br>(ha) |
|--|----------------------------------|----------------|--|---------------------|--------------------|---|-------------------------|---------------------------------------|--------------------------------|
|  |                                  | In ALR<br>(ha) | % of<br>privately<br>owned<br>ALR area |                     |                    |   |                         |                                       |                                |
| Used only for farming - no other use         |                                  | 834            | 11 %                                   | 81                  | 915                | 8 %   | 43                      | 5 %                                   | 21                             |
| Used for<br>farming -<br>Mixed use           | Residential                      | 1,393          | 19 %                                   | 185                 | 1,579              | 14 %  | 144                     | 16 %                                  | 11                             |
|  | Gravel extraction                | 63             | <1 %                                   | < 1                 | 63                 | <1 %  | 2                       | <1 %                                  | 32                             |
|  | Transportation - airport         | 28             | <1 %                                   | 198                 | 226                | 2 %   | 1                       | <1 %                                  | 226                            |
|  | Industrial                       | 18             | <1 %                                   | -                   | 18                 | <1 %  | 1                       | <1 %                                  | 18                             |
| <b>USED FOR FARMING SUBTOTAL</b>             |                                  | <b>2,337</b>   | <b>31 %</b>                            | <b>464</b>          | <b>2,801</b>       | <b>24 %</b>                                     | <b>191</b>              | <b>21 %</b>                           |                                |
| Used only for grazing - no other use         |                                  | 3,471          | 47 %                                   | 1,648               | 5,118              | 44 %  | 181                     | 20 %                                  | 28                             |
| Used for<br>grazing -<br>Mixed use           | Residential                      | 680            | 9 %                                    | 470                 | 1,151              | 10 %  | 135                     | 15 %                                  | 9                              |
|  | Transportation                   | 70             | <1 %                                   | 1                   | 71                 | <1 %  | 1                       | <1 %                                  | 71                             |
|  | Communications                   | 41             | <1 %                                   | < 1                 | 41                 | <1 %  | 2                       | <1 %                                  | 20                             |
|  | Utilities                        | 10             | <1 %                                   | -                   | 10                 | <1 %  | 1                       | <1 %                                  | 10                             |
|  | Gravel extraction                | 2              | <1 %                                   | 63                  | 64                 | <1 %  | 2                       | <1 %                                  | 32                             |
|  | Recreation & leisure - extensive | < 1            | <1 %                                   | 136                 | 136                | 1 %   | 6                       | <1 %                                  | 23                             |
|  | Garbage dumps                    | -              | -                                      | 42                  | 42                 | <1 %  | 1                       | <1 %                                  | 42                             |
| <b>USED FOR GRAZING SUBTOTAL</b>             |                                  | <b>4,275</b>   | <b>57 %</b>                            | <b>2,359</b>        | <b>6,635</b>       | <b>57 %</b>                                     | <b>329</b>              | <b>36 %</b>                           |                                |
| Not used for<br>farming or<br>grazing        | No apparent use                  | 263            | 4 %                                    | 265                 | 528                | 5 %   | 100                     | 11 %                                  | 5                              |
|  | Residential                      | 179            | 2 %                                    | 370                 | 549                | 5 %   | 217                     | 24 %                                  | 3                              |
|  | Recreation & leisure - golf      | 152            | 2 %                                    | 74                  | 226                | 2 %   | 8                       | <1 %                                  | 28                             |
|  | Industrial                       | 93             | 1 %                                    | 52                  | 145                | 1 %   | 13                      | 1 %                                   | 11                             |
|  | Recreation & leisure - extensive | 65             | <1 %                                   | -                   | 65                 | <1 %  | 1                       | <1 %                                  | 65                             |
|  | Gravel extraction                | 44             | <1 %                                   | 23                  | 67                 | <1 %  | 7                       | <1 %                                  | 10                             |
|  | Transportation                   | 34             | <1 %                                   | 14                  | 48                 | <1 %  | 24                      | 3 %                                   | 2                              |
|  | Protected area / park / reserve  | 8              | <1 %                                   | -                   | 8                  | <1 %  | 1                       | <1 %                                  | 8                              |
|  | Institutional, community         | 1              | <1 %                                   | 89                  | 90                 | <1 %  | 3                       | <1 %                                  | 30                             |
|  | Utilities                        | < 1            | <1 %                                   | 70                  | 71                 | <1 %  | 6                       | <1 %                                  | 12                             |
|  | Commercial & service             | < 1            | <1 %                                   | 15                  | 15                 | <1 %  | 3                       | <1 %                                  | 5                              |
|  | Dumps & deposits                 | -              | -                                      | 4                   | 4                  | <1 %  | 1                       | <1 %                                  | 4                              |
|  | Garbage dumps                    | -              | -                                      | 263                 | 263                | 2 %   | 2                       | <1 %                                  | 132                            |
|  | Heritage - armoury               | -              | -                                      | < 1                 | < 1                | <1 %  | 1                       | <1 %                                  | < 1                            |
|  | Recreation & leisure - intensive | -              | -                                      | 83                  | 83                 | <1 %  | 3                       | <1 %                                  | 28                             |
|  | Communications                   | -              | -                                      | < 1                 | < 1                | <1 %  | 1                       | <1 %                                  | < 1                            |
| <b>NOT USED FOR FARMING/GRAZING SUBTOTAL</b> |                                  | <b>840</b>     | <b>11 %</b>                            | <b>1,323</b>        | <b>2,163</b>       | <b>19 %</b>                                     | <b>391</b>              | <b>43 %</b>                           |                                |
| <b>TOTAL</b>                                 |                                  | <b>7,452</b>   | <b>100 %</b>                           | <b>4,147</b>        | <b>11,599</b>      | <b>100 %</b>                                    | <b>911</b>              | <b>100 %</b>                          |                                |

Table 3 shows that 2,337 hectares or 31% of Kamloops's privately owned ALR is on parcels "Used for farming".

Most "Used for farming" parcels are also used for other purposes with only 43 parcels or 11% of the privately owned ALR area used only for farming.

4,275 hectares or 57% of Kamloops's privately owned ALR is on parcels "Not used for farming" but "Used for grazing".

A total of 6,612 or 89% of privately owned land in the ALR is used for farming or grazing.

Refer to Maps B3 and B4 in Appendix B for more information.

Table 4. Parcel use and cover of land in the ALR – Private ownership

| Private ownership parcels<br>Land use |                                  | Land Cover Category |                               |                            |                               |                          |                               | Total       |                               |
|---------------------------------------|----------------------------------|---------------------|-------------------------------|----------------------------|-------------------------------|--------------------------|-------------------------------|-------------|-------------------------------|
|                                       |                                  | Farmed *            |                               | Anthropogenic (not farmed) |                               | Natural & Semi - natural |                               |             |                               |
|                                       |                                  | In ALR (ha)         | % of privately owned ALR area | In ALR (ha)                | % of privately owned ALR area | In ALR (ha)              | % of privately owned ALR area | In ALR (ha) | % of privately owned ALR area |
| Used only for farming - no other use  |                                  | 509                 | 7 %                           | 15                         | <1 %                          | 310                      | 4 %                           | 834         | 11 %                          |
| Used for farming - Mixed use          | Residential                      | 721                 | 10 %                          | 29                         | <1 %                          | 643                      | 9 %                           | 1,393       | 19 %                          |
|                                       | Gravel extraction                | 18                  | <1 %                          | 8                          | <1 %                          | 37                       | <1 %                          | 63          | <1 %                          |
|                                       | Transportation - airport         | 9                   | <1 %                          | < 1                        | <1 %                          | 19                       | <1 %                          | 28          | <1 %                          |
|                                       | Industrial                       | 15                  | <1 %                          | 1                          | <1 %                          | 2                        | <1 %                          | 18          | <1 %                          |
| USED FOR FARMING SUBTOTAL             |                                  | 1,272               | 17 %                          | 53                         | <1 %                          | 1,012                    | 14 %                          | 2,337       | 31 %                          |
| Used only for grazing - no other use  |                                  | 15                  | <1 %                          | < 1                        | <1 %                          | 3,455                    | 46 %                          | 3,471       | 47 %                          |
| Used for grazing - Mixed use          | Residential                      | 18                  | <1 %                          | 18                         | <1 %                          | 645                      | 9 %                           | 680         | 9 %                           |
|                                       | Transportation                   | -                   | -                             | -                          | -                             | 70                       | <1 %                          | 70          | <1 %                          |
|                                       | Communications                   | -                   | -                             | < 1                        | <1 %                          | 41                       | <1 %                          | 41          | <1 %                          |
|                                       | Utilities                        | 7                   | <1 %                          | -                          | -                             | 3                        | <1 %                          | 10          | <1 %                          |
|                                       | Gravel extraction                | -                   | -                             | 2                          | <1 %                          | -                        | -                             | 2           | <1 %                          |
|                                       | Recreation & leisure - extensive | -                   | -                             | -                          | -                             | < 1                      | <1 %                          | < 1         | <1 %                          |
| USED FOR GRAZING SUBTOTAL             |                                  | 40                  | <1 %                          | 21                         | <1 %                          | 4,215                    | 57 %                          | 4,275       | 57 %                          |
| USED FOR FARMING OR GRAZING SUBTOTAL  |                                  | 1,312               | 18 %                          | 74                         | <1 %                          | 5,227                    | 70 %                          | 6,612       | 89 %                          |
| Not used for farming or grazing       |                                  | 39                  | <1 %                          | 259                        | 3 %                           | 541                      | 7 %                           | 840         | 11 %                          |
| TOTAL PRIVATELY OWNED ALR             |                                  |                     |                               |                            |                               |                          |                               | 7,452       | 100 %                         |

\* Some parcels that are not farmed have "Farmed" land cover however the extent or intensity is insufficient for the parcel to be considered "Used for farming". For a complete definition of "Used for farming", refer to the Definition section of this report.

Table 4 combines land use and land cover on privately owned ALR land in Kamloops. For example, parcels with the mixed use "Used for farming" and "Residential" have a total of 721 hectares in "Farmed" land cover, 29 hectares in Anthropogenic (not farmed) land cover, and 643 hectares in Natural & Semi-natural land cover.

Although 2,337 hectares or 31% of the privately owned ALR in Kamloops is on parcels "Used for farming" (Refer to Table 3 above), only 1,272 hectares or 17% of the ALR is actually in "Farmed" land cover as many "Used for farming" parcels are also used for other purposes. In fact, the majority of the "Farmed" land cover is on parcels also used for "Residential" purposes.

## CROWN OWNED PARCELS

Table 5. Land use and farming use by parcel – Crown ownership

| Crown owned parcels<br>Land use              |                                  | ALR            |                                    | Outside<br>ALR (ha) | Total<br>area (ha) | % of<br>crown<br>owned<br>inventory<br>area | Number<br>of<br>parcels | % of<br>crown<br>owned<br>parcels | Average<br>parcel<br>size (ha) |
|--|----------------------------------|----------------|------------------------------------|---------------------|--------------------|---|-------------------------|-----------------------------------|--------------------------------|
|  |                                  | In ALR<br>(ha) | % of<br>crown<br>owned<br>ALR area |                     |                    |   |                         |                                   |                                |
| Used only for farming - no other use         |                                  | < 1            | <1 %                               | -                   | < 1                | <1 %  | 1                       | <1 %                              | < 1                            |
| Used for<br>farming -                        | Compost facilities               | 223            | 4 %                                | 21                  | 244                | 2 %   | 1                       | <1 %                              | 244                            |
|  | Resource protection & research   | 47             | <1 %                               | < 1                 | 47                 | <1 %  | 6                       | 1 %                               | 8                              |
| <b>USED FOR FARMING SUBTOTAL</b>             |                                  | <b>271</b>     | <b>5 %</b>                         | <b>21</b>           | <b>291</b>         | <b>3 %</b>                                  | <b>8</b>                | <b>1 %</b>                        |                                |
| Used only for grazing - no other use         |                                  | 1,455          | 28 %                               | 2,208               | 3,663              | 33 %  | 114                     | 21 %                              | 32                             |
| Used for<br>grazing -<br>Mixed use           | Protected area / park / reserve  | 1,714          | 33 %                               | 1,801               | 3,515              | 31 %  | 36                      | 7 %                               | 98                             |
|  | Gravel extraction                | 478            | 9 %                                | 168                 | 646                | 6 %   | 6                       | 1 %                               | 108                            |
|  | Recreation & leisure - extensive | 436            | 8 %                                | 62                  | 498                | 4 %   | 7                       | 1 %                               | 71                             |
|  | Garbage dumps                    | 65             | 1 %                                | 32                  | 97                 | <1 %  | 1                       | <1 %                              | 97                             |
|  | Mineral, Petroleum extraction    | 45             | <1 %                               | -                   | 45                 | <1 %  | 2                       | <1 %                              | 23                             |
|  | Utilities                        | < 1            | <1 %                               | 24                  | 24                 | <1 %  | 3                       | <1 %                              | 8                              |
|  | Communications                   | < 1            | <1 %                               | 264                 | 264                | 2 %   | 1                       | <1 %                              | 264                            |
|  | Residential                      | < 1            | <1 %                               | 5                   | 5                  | <1 %  | 1                       | <1 %                              | 5                              |
|  | Transportation                   | -              | -                                  | 19                  | 19                 | <1 %  | 2                       | <1 %                              | 9                              |
| <b>USED FOR GRAZING SUBTOTAL</b>             |                                  | <b>4,194</b>   | <b>80 %</b>                        | <b>4,583</b>        | <b>8,777</b>       | <b>78 %</b>                                 | <b>173</b>              | <b>32 %</b>                       |                                |
| Not used for<br>farming or<br>grazing        | No apparent use                  | 314            | 6 %                                | 458                 | 772                | 7 %   | 302                     | 56 %                              | 3                              |
|  | Protected area / park / reserve  | 231            | 4 %                                | 486                 | 717                | 6 %   | 11                      | 2 %                               | 65                             |
|  | Transportation                   | 210            | 4 %                                | 12                  | 222                | 2 %   | 12                      | 2 %                               | 18                             |
|  | Resource protection & research   | 9              | <1 %                               | < 1                 | 9                  | <1 %  | 1                       | <1 %                              | 9                              |
|  | Gravel extraction                | 6              | <1 %                               | 20                  | 26                 | <1 %  | 5                       | <1 %                              | 5                              |
|  | Institutional, community         | 6              | <1 %                               | 9                   | 15                 | <1 %  | 1                       | <1 %                              | 15                             |
|  | Utilities                        | 6              | <1 %                               | 287                 | 292                | 3 %   | 19                      | 3 %                               | 15                             |
|  | Communications                   | < 1            | <1 %                               | -                   | < 1                | <1 %  | 1                       | <1 %                              | < 1                            |
|  | Recreation & leisure - intensive | < 1            | <1 %                               | 62                  | 62                 | <1 %  | 5                       | <1 %                              | 12                             |
|  | Water management                 | -              | -                                  | 15                  | 15                 | <1 %  | 2                       | <1 %                              | 8                              |
|  | Garbage dumps                    | -              | -                                  | 34                  | 34                 | <1 %  | 2                       | <1 %                              | 17                             |
|  | Industrial                       | -              | -                                  | 1                   | 1                  | <1 %  | 1                       | <1 %                              | 1                              |
|  | Residential                      | -              | -                                  | < 1                 | < 1                | <1 %  | 1                       | <1 %                              | < 1                            |
| <b>NOT USED FOR FARMING/GRAZING SUBTOTAL</b> |                                  | <b>782</b>     | <b>15 %</b>                        | <b>1,384</b>        | <b>2,166</b>       | <b>19 %</b>                                 | <b>363</b>              | <b>67 %</b>                       |                                |
| <b>TOTAL</b>                                 |                                  | <b>5,247</b>   | <b>100 %</b>                       | <b>5,987</b>        | <b>11,234</b>      | <b>100 %</b>                                | <b>544</b>              | <b>100 %</b>                      |                                |

Table 5 shows that only 271 hectares or 5% of Kamloops's Crown owned ALR is on parcels "Used for farming". The municipally owned Cinnamon Ridge Compost Facility accounts for 223 hectares while the federally owned Agriculture and Agri-Food Canada Research Station accounts for 47 hectares. The <1 hectare parcel used only for farming is municipally owned and appears to be an unused right-of-way.

4,194 or 80% of the Crown owned ALR is on parcels "Used for grazing" which includes 1,714 hectares in the Lac Du Bois Grasslands Protected Area. In total, 1,945 hectares of Crown owned ALR land is in Lac Du Bois Grasslands Protected Area. This is 37% of the Crown owned ALR land and almost 15% of all ALR land in Kamloops.

Refer to Maps B3 and B5 in Appendix B for more information.



Table 6. Parcel use and cover of land in the ALR – Crown ownership

| Crown ownership parcels<br>Land use  |                                  | Land Cover Category |                                    |                               |                                    |                             |                                    | Total          |                                    |
|--------------------------------------|----------------------------------|---------------------|------------------------------------|-------------------------------|------------------------------------|-----------------------------|------------------------------------|----------------|------------------------------------|
|                                      |                                  | Farmed *            |                                    | Anthropogenic<br>(not farmed) |                                    | Natural & Semi -<br>natural |                                    |                |                                    |
|                                      |                                  | In ALR<br>(ha)      | % of<br>crown<br>owned<br>ALR area | In ALR<br>(ha)                | % of<br>crown<br>owned<br>ALR area | In ALR<br>(ha)              | % of<br>crown<br>owned<br>ALR area | In ALR<br>(ha) | % of<br>crown<br>owned<br>ALR area |
| Used only for farming - no other use |                                  | < 1                 | <1 %                               | -                             | -                                  | -                           | -                                  | < 1            | <1 %                               |
| Used for farming<br>- Mixed use      | Compost facilities               | 180                 | 3 %                                | 14                            | <1 %                               | 29                          | <1 %                               | 223            | 4 %                                |
|                                      | Resource protection & research   | 36                  | <1 %                               | 10                            | <1 %                               | < 1                         | <1 %                               | 47             | <1 %                               |
| USED FOR FARMING SUBTOTAL            |                                  | 217                 | 4 %                                | 25                            | <1 %                               | 29                          | <1 %                               | 271            | 5 %                                |
| Used only for grazing - no other use |                                  | < 1                 | <1 %                               | -                             | -                                  | 1,455                       | 28 %                               | 1,455          | 28 %                               |
| Used for grazing -<br>Mixed use      | Protected area / park / reserve  | -                   | -                                  | 6                             | <1 %                               | 1,708                       | 33 %                               | 1,714          | 33 %                               |
|                                      | Gravel extraction                | -                   | -                                  | 10                            | <1 %                               | 469                         | 9 %                                | 478            | 9 %                                |
|                                      | Recreation & leisure - extensive | 2                   | <1 %                               | -                             | -                                  | 434                         | 8 %                                | 436            | 8 %                                |
|                                      | Garbage dumps                    | -                   | -                                  | < 1                           | <1 %                               | 65                          | 1 %                                | 65             | 1 %                                |
|                                      | Mineral, Petroleum extraction    | -                   | -                                  | 4                             | <1 %                               | 41                          | <1 %                               | 45             | <1 %                               |
|                                      | Utilities                        | -                   | -                                  | -                             | -                                  | < 1                         | <1 %                               | < 1            | <1 %                               |
|                                      | Communications                   | -                   | -                                  | -                             | -                                  | < 1                         | <1 %                               | < 1            | <1 %                               |
| Residential                          | -                                | -                   | -                                  | -                             | < 1                                | <1 %                        | < 1                                | <1 %           |                                    |
| USED FOR GRAZING SUBTOTAL            |                                  | 3                   | <1 %                               | 19                            | <1 %                               | 4,172                       | 80 %                               | 4,194          | 80 %                               |
| USED FOR FARMING OR GRAZING SUBTOTAL |                                  | 219                 | 4 %                                | 44                            | <1 %                               | 4,201                       | 80 %                               | 4,465          | 85 %                               |
| Not used for farming or grazing      |                                  | 3                   | <1 %                               | 102                           | 2 %                                | 677                         | 13 %                               | 782            | 15 %                               |
| TOTAL CROWN OWNED ALR                |                                  |                     |                                    |                               |                                    |                             |                                    | 5,247          | 100 %                              |

\* Some parcels that are not farmed have "Farmed" land cover however the extent or intensity is insufficient for the parcel to be considered "Used for farming". For a complete definition of "Used for farming", refer to the Definition section of this report.

Table 6 combines land use and land cover on Crown owned ALR land in Kamloops. For example, parcels with mixed use; "Used for farming" and "Compost Facilities"; have a total of 180 hectares in "Farmed" land cover, 14 hectares in Anthropogenic (not farmed) land cover, and 29 hectares in Natural & Semi-natural land cover.

Table 5 (above) shows that 4,194 hectares or 80% of the Crown owned ALR in Kamloops is on parcels "Used for grazing". Table 6 shows that there is very little "Farmed" or Anthropogenic land cover on these parcels.

### 3. Availability of Land for Farming

There is a strong demand for agricultural products produced in British Columbia. This demand is expected to increase with population growth<sup>7</sup>. Agricultural growth may have to take place on a fixed land base as lands that are suitable to increase output may not be available. Agricultural sectors that require large land bases, such as dairy or berry, may find it difficult to access land for farm expansion or for starting new operations. Future agriculture growth may come from new commodity types and intensifying land use rather than finding new land for development.

The analysis in this section examines the amount of ALR land with potential for farming and parcels that have potential for agricultural expansion.

Properties currently “Not used for farming” but with an existing land use compatible with agriculture, such as residential, are considered available for farming. It is assumed that any existing non-farm land uses will be maintained and will not be displaced by agriculture expansion.

*In Kamloops, properties in the ALR and “Used for farming” have an average assessed value of \$46,825 / hectare while properties in the ALR but unavailable for farming have an average assessed value of \$505,905 / hectare.*

(Calculated using 2011 BC Assessment database – total property value)

Properties that are currently “Not used for farming” and with an established non-farm use that is incompatible with agriculture (e.g. a golf course, a school, a park, or small lot residential) are considered to be unavailable for farming.

These properties may be altered in a way that is incompatible with agriculture, may have little land available, and/or tend to have very high land values. It is usually uneconomical for a farmer to lease or to acquire and convert these properties to farmland given the limited potential for farming.

Land cover considered to have potential for farming includes:

- natural and semi-natural vegetation,
- areas in managed vegetation (managed for landscaping, dust or soil control), and
- non-built or bare areas

Land cover considered to have potential for farming does not include built structures, fill piles, waterbodies, and wetlands. It is assumed these areas would not likely be removed or filled in to create land with cultivation potential. In addition, areas with steep slopes, rocky soils or operational constraints such as a very small size are considered to have limited potential for farming and are excluded.

In order for a parcel to be considered for agricultural expansion, it must be available, have at least 50% by area within the ALR, and have at least 0.4 ha and at least 50% of the parcel area in land cover with potential for farming.

---

<sup>7</sup> In BC, the regulated marketing system requires that over 95% of our milk, eggs, chicken and turkey be produced in BC. The need to produce these products increases in direct proportion to the population growth.

Figure 7. Potential of ALR lands for farming

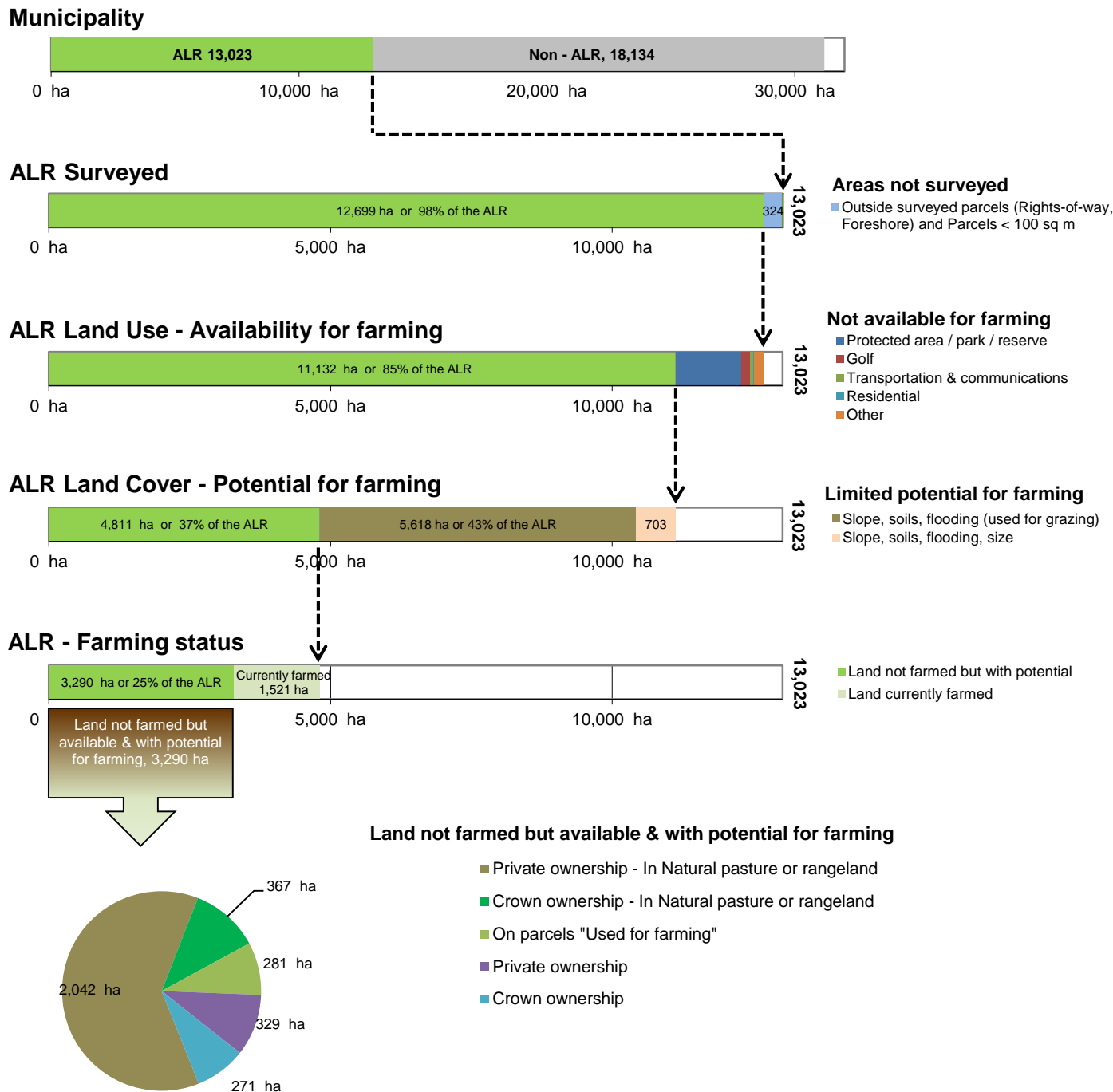


Figure 7 demonstrates that 11,132 ha or 85% of the ALR is available for farming once road rights-of-way, protected areas, parks (including Lac Du Bois Grasslands Park), golf courses, residential footprints, other land uses incompatible with agriculture are removed.

This area is further reduced to 4,811 ha or 37% of the ALR once physical constraints such as slope, soils, flooding or small parcel size are removed. Much of this limited potential land is used for grazing livestock.

Of those 4,811 hectares, 1,521 are already actively farmed and 3,290 hectares have potential for farming.

Of the 3,290 hectares with potential for farming, 281 are on parcels already "Used for farming", and 2,409 are currently being used as natural pasture or rangeland (2,042 ha on privately owned parcels and 367 on Crown owned parcels).

Refer to Maps B6 and B7 in Appendix B for more information.

## CHARACTERISTICS OF PARCELS AVAILABLE FOR AGRICULTURE EXPANSION

The potential of a parcel of land for future agriculture expansion is affected by land ownership, the proportion of the parcel within the ALR, the size of the area available, and the proportion of the parcel available.

Although there is 3,290 hectares of ALR land with potential for farming, 281 hectares are on parcels already “Used for farming”, and 373 hectares are on parcels with less than 50% by area with potential for farming. This leaves 2,636 hectares on 83 parcels (65 privately owned and 18 Crown owned) with potential for future agriculture expansion.

Table 7. Parcels in the ALR with potential for agriculture expansion

| Parcel Ownership          | Parcel Land use                      |                                  | Number of parcels | Land not farmed but with potential for farming ALR (ha) | % potential increase to total ALR farmed area |
|---------------------------|--------------------------------------|----------------------------------|-------------------|---|---|
| Private                   | Used for grazing only - no other use |                                  | 31                | 1,414   | 93 %  |
|                           | Used for grazing - Mixed use         | Residential                      | 16                | 268   | 18 %  |
|                           |                                      | Transportation                   | 1                 | 36  | 2 %   |
|                           |                                      | Communications                   | 1                 | 33  | 2 %   |
|                           |                                      | Utilities                        | 1                 | 10  | <1 %  |
|                           | SUBTOTAL                             |                                  | 50                | 1,761   | 116 %   |
|                           |                                      | No apparent use                  | 5                 | 139   | 9 %   |
|                           |                                      | Industrial                       | 3                 | 82  | 5 %   |
|                           |                                      | Residential                      | 6                 | 61  | 4 %   |
|                           |                                      | Recreation & leisure - extensive | 1                 | 38  | 2 %   |
|                           | SUBTOTAL                             |                                  | 15                | 320   | 21 %  |
| TOTAL PRIVATELY OWNED ALR |                                      | 65                               | 2,082             | 137 %   |   |
| Crown                     | Used for grazing only - no other use |                                  | 12                | 188   | 12 %  |
|                           | Mixed use                            | Gravel extraction                | 1                 | 152   | 10 %  |
|                           | SUBTOTAL                             |                                  | 13                | 341   | 22 %  |
|                           |                                      | Transportation                   | 1                 | 176   | 12 %  |
|                           |                                      | No apparent use                  | 3                 | 29  | 2 %   |
|                           |                                      | Resource protection & research   | 1                 | 9   | <1 %  |
|                           | SUBTOTAL                             |                                  | 5                 | 214   | 14 %  |
| TOTAL CROWN OWNED ALR     |                                      | 18                               | 554               | 36 %  |   |
| TOTAL                     |                                      | 83                               | 2,636             | 173 %   |   |

Table 7 illustrates that the greatest potential for agriculture expansion would come from privately owned parcels that are currently used for grazing.

It is important to note that all potential agriculture expansion would require sufficient water to be available for irrigation. Actual water availability is beyond the scope of this report.

Table 7 above includes land currently in natural pasture or rangeland which is utilized primarily by the beef industry. Figure 8 below shows the amount of natural pasture or rangeland on parcels with potential for agriculture expansion. If this land was converted, the amount of natural pasture or rangeland in Kamloops would be reduced by over 22% which may significantly impact the beef industry.

Figure 8. Parcels in the ALR with potential for agriculture expansion – land cover

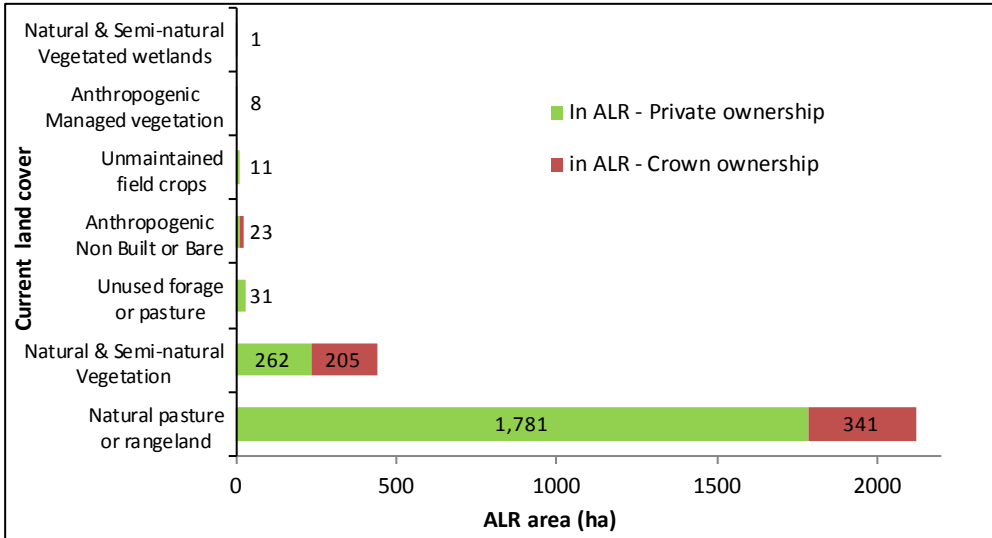


Figure 8 indicates that developing privately owned parcels currently used for natural pasture or rangeland would provide the greatest gains in farmed land. However, these gains would reduce the area of natural pasture or rangeland by over 22%. Converting non grazed “Natural & Semi-natural Vegetation” to farming may be better supported by the ranchers in the area.

The potential for future agriculture expansion is affected by the size of the parcel. Small parcels can effectively be used for some intensive agricultural operations such as mushrooms, floriculture, greenhouses, poultry, and container nurseries. Small parcels are also suitable for start-up farmers, horse enthusiasts, farmers testing new technologies, or established farmers wanting to expand through leases. Despite these opportunities, small parcels provide fewer farming choices than large parcels. They specifically exclude dairy, hogs, and vegetable greenhouses. For example, a dairy cow produces sufficient manure per year to fertilize 0.4 hectares of forage production which means a dairy operation consisting of 50 cows would require access to 20 hectares of land. Without sufficient land area to utilize the manure as a fertilizer, the dairy operation would have to find other, more expensive, methods to handle the manure produced on the farm.

Figure 9. Parcels in the ALR with potential for agriculture expansion by size – Private ownership – Includes land in natural pasture and rangeland

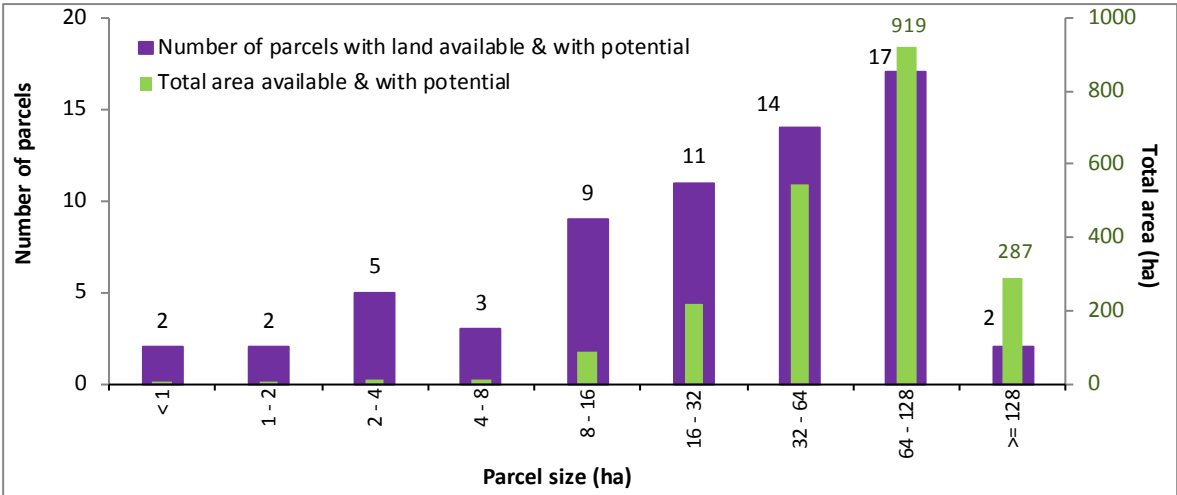


Figure 9 presents privately owned parcels with potential for agriculture expansion when natural pasture and rangeland is included. In total, there are 65 parcels with a combined area of almost 2,100 hectares that meet these criteria. Many of these areas are currently in rangeland (See Figure 10 below).

Most of these parcels (86%) are greater than 4 hectares. Larger areas provide the widest range of options for bringing the area into farming production.

Figure 10. Parcels in the ALR with potential for agriculture expansion by size – Private ownership – Excludes land in natural pasture and rangeland

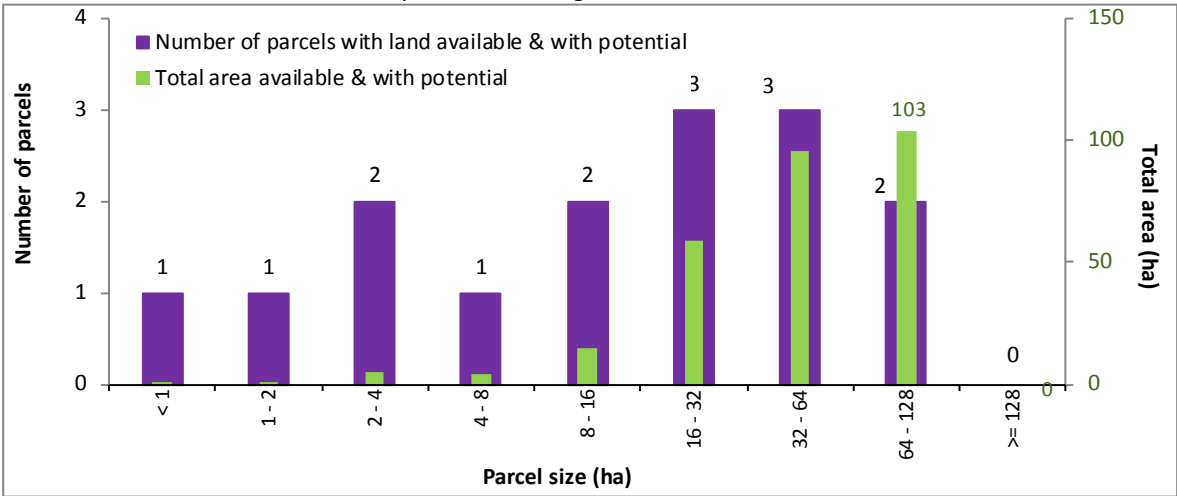


Figure 10 presents privately owned parcels with potential for agriculture expansion when natural pasture and rangeland is excluded. In total, there are only 15 parcels with a combined area of 283 hectares that meet these criteria.

Many of these parcels (73%) are greater than 4 hectares. Larger areas provide the widest range of options for bringing the area into farming production.

## 4. Farming Activities

### CULTIVATED FIELD CROPS

Cultivated field crops are captured in a geographical information system at the field or land cover polygon level by crop type (vegetables, forage or pasture, berries, etc.). Each crop type is then summarized to total land area and evaluated for field size characteristics.

Included with cultivated field crops is fallow farm land, inactively farmed land (i.e. forage or pasture crops which have not been harvested or grazed this season) and land temporarily set aside for wildlife or other purposes. Also included is bare cultivated land or land under preparation for planting as it is assumed these lands will be planted in the survey season. Excluded are crops grown in crop cover structures such as greenhouses or mushroom barns.

Cultivated field crops in Kamloops are described by six crop groupings:

- **Forage, pasture:** grass, legumes, forage corn
- **Vegetables:** potatoes, root vegetables, mixed vegetables
- **Grains, cereals, oilseeds:** barley, oats, canola
- **Christmas trees**
- **Crop transition:** transitioning from one type of crop to another
- **Tree fruits:** apples, apricots

Table 8. Main field crop types by area

| Type                      | ALR          |            |                             | Outside ALR (ha) | Total area (ha) | % of cultivated land | % of cultivated land in Crown ownership |
|---------------------------|--------------|------------|-----------------------------|------------------|-----------------|----------------------|---|
|                           | In ALR (ha)  | % of ALR   | % of ALR in Crown ownership |                  |                 |                      |   |
| Forage, pasture           | 1,301        | 10%        | 2%                          | 204              | 1,505           | 89%                  | 12%                                     |
| Vegetables                | 110          | < 1%       | -                           | < 1              | 111             | 7%                   | -                                       |
| Grains, cereals, oilseeds | 40           | < 1%       | -                           | 2                | 42              | 2%                   | -                                       |
| Christmas trees           | 15           | < 1%       | -                           | -                | 15              | < 1%                 | -                                       |
| Crop transition           | 14           | < 1%       | < 1%                        | < 1              | 14              | < 1%                 | < 1%                                    |
| Tree fruits               | 1            | < 1%       | -                           | 3                | 4               | < 1%                 | -                                       |
| <b>TOTAL</b>              | <b>1,481</b> | <b>11%</b> | <b>2%</b>                   | <b>209</b>       | <b>1,691</b>    | <b>100%</b>          | <b>12%</b>                              |

Table 8 shows the 6 main field crop types produced on the 1,481 hectares of cultivated land in Kamloops.

Forage and pasture is the most common crop type accounting for 89% of all cultivated land and 10% of the ALR in Kamloops. Forage and pasture is also the most common crop type on Crown owned land.

Field vegetables are the second most common crop type, accounting for 7% of all cultivated land in Kamloops.

Refer to Map B8 in Appendix B for more information.



Figure 11. Main field crop types by percentage

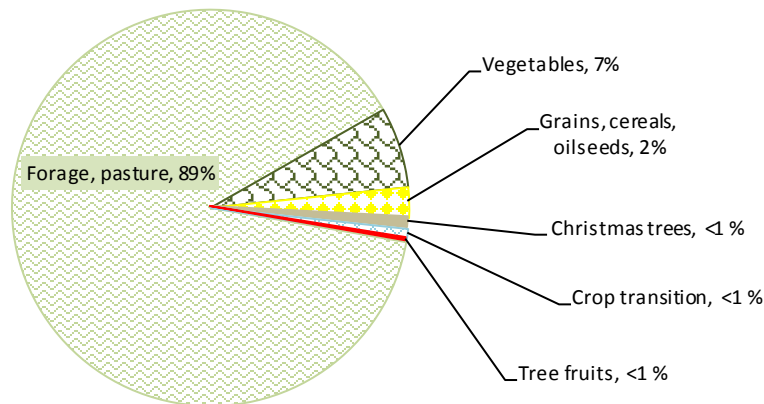


Figure 11 shows the proportion of main field crop types across all cultivated land in Kamloops. “Forage, pasture” combined with “Vegetables” comprise 96% of all cultivated land.

Figure 12. All crop fields by size

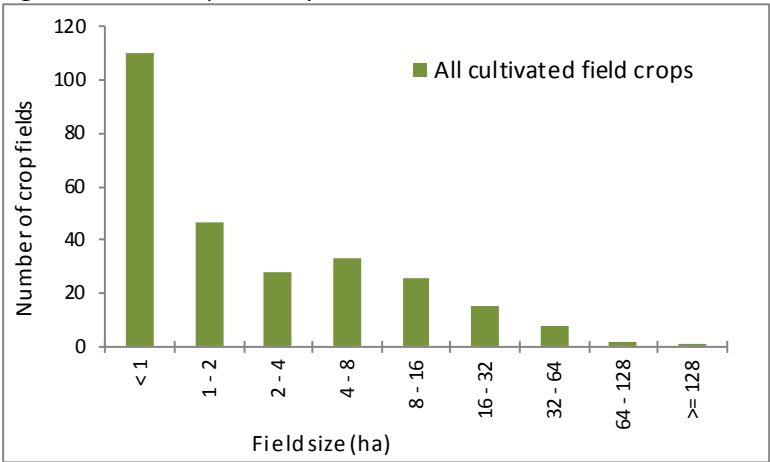


Figure 12 illustrates the number and size distribution of fields used for cultivated field crops. In Kamloops, cultivated fields are most likely to be < 1 hectare in size. There are 270 individual crop fields with an average area of 6 hectares and median area of 1 hectare. The average size of parcels where field crops occur is 15 hectares. Refer to Table A1 in Appendix A for more information.

Figure 13. Forage, pasture, vegetable, and grain fields by size

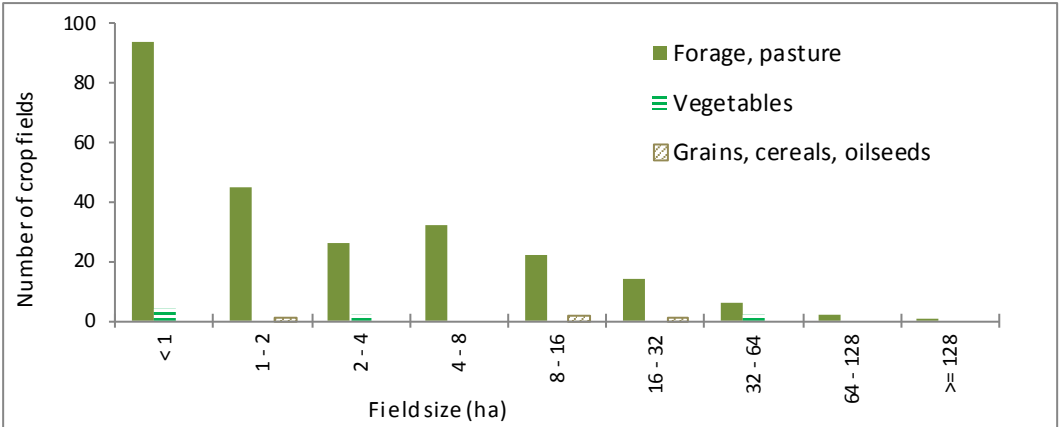


Figure 13 compares the top three main crop types by field size. “Forage, pasture” fields dominate all field size categories. Refer to Table A1 in Appendix A for more information.

## Forage & pasture crops

Forage is a cultivated crop that is cut and made into silage or hay for livestock feed. Two levels of forage management are described:

- **Forage (managed):** Management includes weed control & fertilizer / manure applications and crop is cut several times per year. Often there is no fencing and crop growth is generally healthy and even.
- **Forage (unmanaged):** Weed management & fertilizer / manure applications are minimal. Crop is cut only once per year. Crop growth is uneven with weeds.

Pasture is a cultivated crop that is used for grazing only and is not cut. Two levels of management are described:

- **Pasture (managed):** Management includes weed control & fertilizer / manure applications. Usually fields are large to accommodate equipment. Fencing is in good condition and crop growth is vigorous with few weeds.
- **Pasture (unmanaged):** Weed management & fertilizer / manure applications are minimal. Fencing is in good condition. Crop is varied (some weeds) and growth is uneven with signs of animal dung.

Some areas are used for both forage & pasture:

- **Forage & pasture (managed):** Crop is cut 1 to 3 times per year and made into silage or haylage. The crop is also used for grazing for 1 to 3 months per season. Fencing is in good condition and crop growth is reasonably even with few weeds. Usually associated with dairy operations.

**Unused** refers to forage or pasture which has not been cut or grazed during the current growing season.

**Unmaintained** refers to forage or pasture which has not been cut or grazed during the current growing season, has not been maintained for several years, and probably would not warrant harvest.

Table 9. Forage and pasture crops by area

| Forage and pasture crops |                      | ALR         |          | Outside ALR (ha) | Total area (ha) | % of cultivated land |
|--------------------------|----------------------|-------------|----------|------------------|-----------------|----------------------|
|                          |                      | In ALR (ha) | % of ALR |                  |                 |                      |
| Forage ^                 | Grass                | 77          | < 1%     | 13               | 89              | 5%                   |
| Forage ^                 | Legume               | 39          | < 1%     | -                | 39              | 2%                   |
| Forage ^                 | Alfalfa              | 42          | < 1%     | 18               | 60              | 4%                   |
| Forage ^                 | Mixed grass / legume | 620         | 5%       | 41               | 661             | 39%                  |
| Forage (managed)         | Grass                | 94          | < 1%     | 9                | 103             | 6%                   |
| Forage (managed)         | Alfalfa              | 6           | < 1%     | -                | 6               | < 1%                 |
| Forage (managed)         | Mixed grass / legume | 44          | < 1%     | 2                | 46              | 3%                   |
| Forage (managed)         | Forage corn          | 9           | < 1%     | -                | 9               | < 1%                 |
| Forage (unmanaged)       | Mixed grass / legume | 7           | < 1%     | < 1              | 7               | < 1%                 |
| Subtotal                 |                      | 937         | 7%       | 83               | 1,021           | 60%                  |
| Pasture ^                | Grass                | 128         | < 1%     | 68               | 196             | 12%                  |
| Pasture ^                | Alfalfa              | < 1         | < 1%     | 1                | 2               | < 1%                 |
| Pasture ^                | Mixed grass / legume | 32          | < 1%     | 12               | 43              | 3%                   |
| Pasture (managed)        | Grass                | 15          | < 1%     | 8                | 23              | 1%                   |
| Pasture (unmanaged)      | Grass                | 137         | 1%       | 16               | 153             | 9%                   |
| Pasture (unmanaged)      | Mixed grass / legume | -           | -        | < 1              | < 1             | < 1%                 |
| Subtotal                 |                      | 312         | 2%       | 106              | 418             | 25%                  |
| Unused                   | Grass                | 20          | < 1%     | 6                | 26              | 2%                   |
| Unused                   | Mixed grass / legume | 11          | < 1%     | 2                | 13              | < 1%                 |
| Unmaintained             | Grass                | 9           | < 1%     | 7                | 16              | < 1%                 |
| Unmaintained             | Mixed grass / legume | 11          | < 1%     | -                | 11              | < 1%                 |
| Subtotal                 |                      | 52          | < 1%     | 14               | 66              | 4%                   |
| TOTAL                    |                      | 1,301       | 10%      | 204              | 1,505           | 89%                  |

Table 9 shows there is significantly more forage than pasture in Kamloops. Grass, legume and mixed grass / legume are the main forage crop types. There is very little forage corn in Kamloops. Refer to Map B9 in Appendix B for more information.

^ Forage or pasture where the level of management could not be determined.

Figure 14. Forage and pasture fields by size

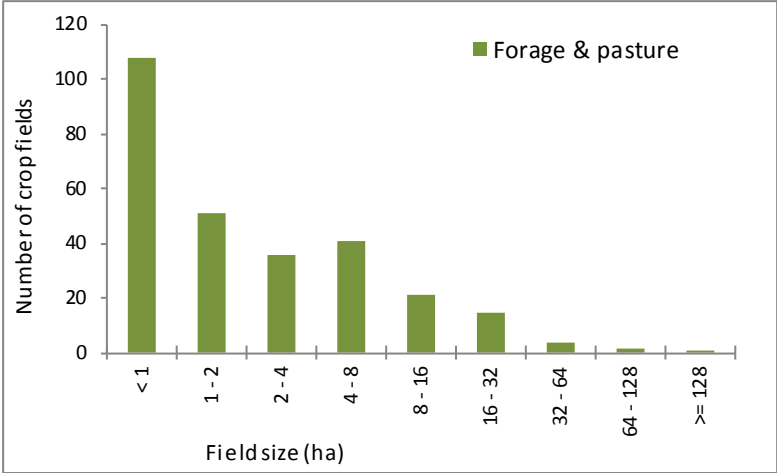


Figure 14 shows that “Forage, pasture” fields are most likely to be < 1 hectare.

In Kamloops, there are 279 individual “Forage, pasture” fields with an average area of 5 hectares and median area of 2 hectares.

The average size of parcels where “Forage, pasture” occurs is 16 hectares.

Refer to Table A2 in Appendix A for more information.

Figure 15. Forage and pasture fields by size

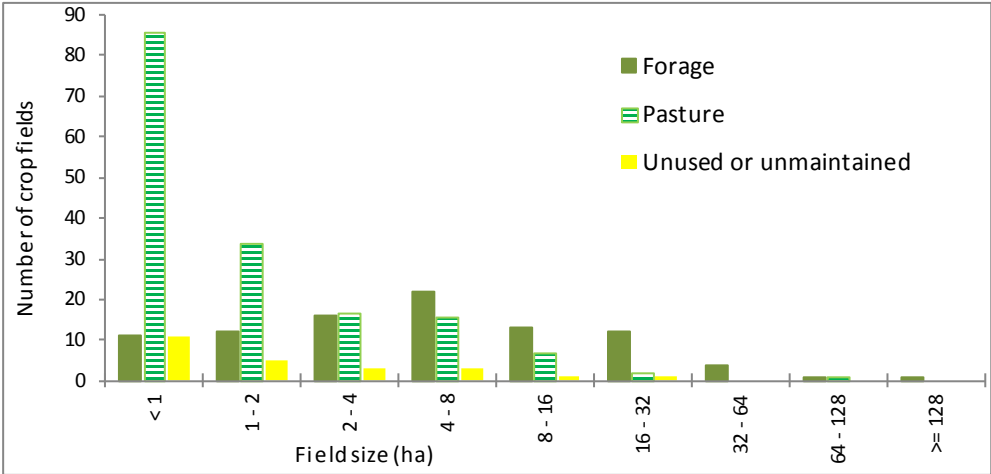


Figure 15 illustrates the variation in field sizes between pasture, forage and unused / unmaintained pasture or forage.

Forage fields are generally larger than pasture fields mainly due to harvesting equipment requirements and fencing costs.

Refer to Table A2 in Appendix A for more information.

## Vegetable crops

Vegetable crops are either annual, such as potatoes or lettuce, or perennial such as rhubarb and asparagus. Annual vegetable crops are usually rotated or grown on different land each year to minimize build-up of crop-specific pest and disease problems and avoid exhausting the soil of nutrients. Since this inventory is a snapshot in time, the annual vegetable crops seen during the survey year will probably not be present in the same location the following year.

Vegetables in Kamloops are described by four crop groupings:

- **Potatoes**
- **Root vegetables:** may include carrots, garlic, dry onions, rutabagas, turnips, beets, radishes
- **Unknown:** vegetables of unknown type
- **Mixed vegetables:** a variety of vegetable types

Table 10. Vegetable crops by area

| Vegetable crops    | ALR         |                | Outside ALR (ha) | Total area (ha) | % of cultivated land |
|--------------------|-------------|----------------|------------------|-----------------|----------------------|
|                    | In ALR (ha) | % of ALR       |                  |                 |                      |
| Potatoes           | 60          | < 1%           | < 1              | 60              | 4%                   |
| Root vegetables    | 46          | < 1%           | < 1              | 46              | 3%                   |
| Unknown vegetables | 2           | < 1%           | < 1              | 3               | < 1%                 |
| Mixed vegetables   | 2           | < 1%           | < 1              | 2               | < 1%                 |
| <b>TOTAL</b>       | <b>110</b>  | <b>&lt; 1%</b> | <b>&lt; 1</b>    | <b>111</b>      | <b>7%</b>            |

Table 10 presents the different vegetable crops in Kamloops.

Potatoes are the most common vegetable crop with 60 hectares or 4% of all cultivated land.

There are no vegetables on Crown owned land in Kamloops

Refer to Map B10 in Appendix B for more information.

Figure 16. Vegetable fields by size

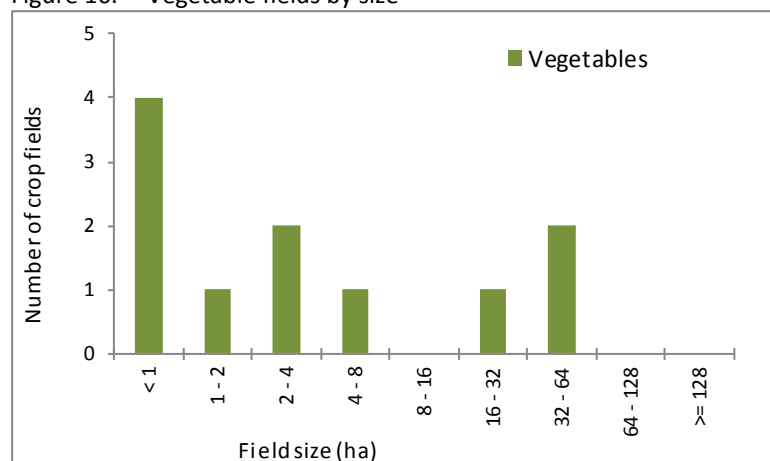


Figure 16 shows that vegetable fields are most likely to occur on parcels less than 8 hectares.

In Kamloops, there are 11 individual vegetable crop fields with an average area of 10 hectares and median area of 2 hectares.

The average size of parcels where vegetable field crops occur is 22 hectares.

Refer to Table A3 in Appendix A for more information.

Figure 17. Potato, root vegetable, unknown vegetable, and mixed vegetable fields by size

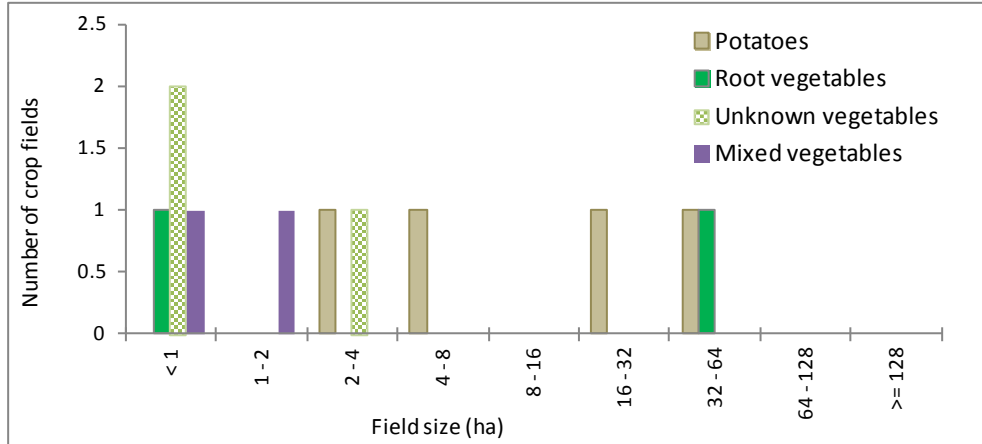


Figure 17 shows that potato fields and other root vegetable fields are generally larger than mixed vegetable fields.

In Kamloops, there are 4 individual potato fields with an average area of 15 hectares and median area of 12 hectares.

The average size of parcels where potato crops occur is 36 hectares.

Refer to Table A3 in Appendix A for more information.

## Cereal and grain crops

Table 11. Cereals, grain, and oilseeds by area

| Cereal, grain and oilseeds | ALR         |                | Outside ALR (ha) | Total area (ha) | % of cultivated land |
|----------------------------|-------------|----------------|------------------|-----------------|----------------------|
|                            | In ALR (ha) | % of ALR       |                  |                 |                      |
| Barley                     | 24          | < 1%           | < 1              | 24              | 1%                   |
| Oats                       | 13          | < 1%           | 2                | 15              | < 1%                 |
| Canola                     | 3           | < 1%           | -                | 3               | < 1%                 |
| <b>TOTAL</b>               | <b>40</b>   | <b>&lt; 1%</b> | <b>2</b>         | <b>42</b>       | <b>2%</b>            |

Table 11 shows that Kamloops has a total of 42 hectares in cereal, grain, and oilseed crops.

Refer to Map B11 in Appendix B for more information.

Figure 18. Cereal, grain, and oilseed fields by size

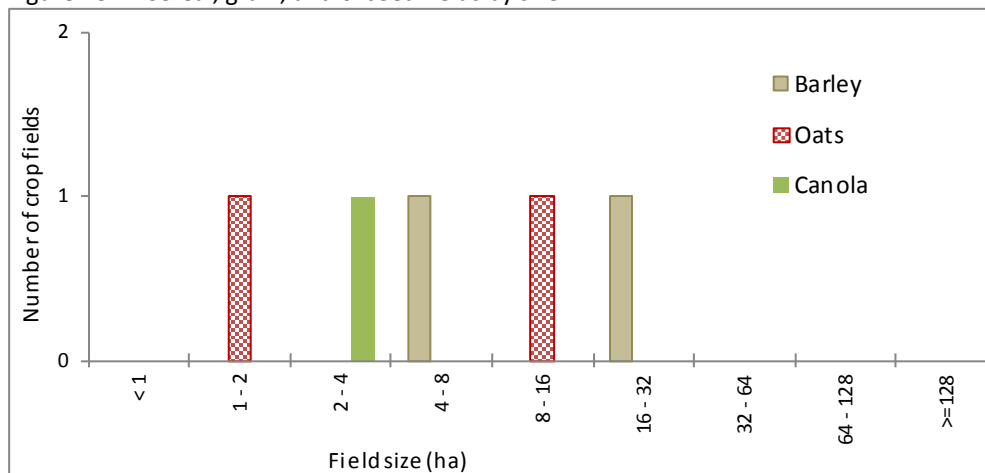


Figure 18 shows that there are 5 individual cereal, grain or oilseed fields with an average area of 8 hectares and median area of 6 hectares.

The average size of parcels where cereal or grain occurs is 27 hectares.

Refer to Table A4 in Appendix A for more information.

## Top 20 Individual Crops

Table 12. Top 20 crop types by area

| Cultivated field crop        | ALR          |            | Outside ALR (ha) | Total area (ha) | % of cultivated land |
|------------------------------|--------------|------------|------------------|-----------------|----------------------|
|                              | In ALR (ha)  | % of ALR   |                  |                 |                      |
| Forage (management unknown)  | 778          | 6%         | 72               | 850             | 50%                  |
| Pasture (management unknown) | 160          | 1%         | 81               | 241             | 14%                  |
| Forage (managed)             | 153          | 1%         | 11               | 164             | 10%                  |
| Pasture (unmanaged)          | 137          | 1%         | 17               | 153             | 9%                   |
| Potatoes                     | 60           | < 1%       | < 1              | 60              | 4%                   |
| Root vegetables              | 46           | < 1%       | < 1              | 46              | 3%                   |
| Unused forage/pasture        | 31           | < 1%       | 7                | 39              | 2%                   |
| Unmaintained forage/pasture  | 20           | < 1%       | 7                | 27              | 2%                   |
| Barley                       | 24           | < 1%       | < 1              | 24              | 1%                   |
| Pasture (managed)            | 15           | < 1%       | 8                | 23              | 1%                   |
| Christmas trees              | 15           | < 1%       | -                | 15              | < 1%                 |
| Oats                         | 13           | < 1%       | 2                | 15              | < 1%                 |
| Crop transition              | 14           | < 1%       | < 1              | 14              | < 1%                 |
| Forage (unmanaged)           | 7            | < 1%       | < 1              | 7               | < 1%                 |
| Canola                       | 3            | < 1%       | -                | 3               | < 1%                 |
| Vegetables (unknown type)    | 2            | < 1%       | < 1              | 3               | < 1%                 |
| Mixed vegetables             | 2            | < 1%       | -                | 2               | < 1%                 |
| Apples (unmaintained)        | -            | -          | 2                | 2               | < 1%                 |
| Tree fruits                  | < 1          | < 1%       | < 1              | 1               | < 1%                 |
| Apples                       | < 1          | < 1%       | < 1              | 1               | < 1%                 |
| <b>TOTAL</b>                 | <b>1,481</b> | <b>11%</b> | <b>209</b>       | <b>1,691</b>    | <b>100%</b>          |

Table 12 shows the 20 individual crops that account for all cultivated land in Kamloops.

Figure 19. Top 20 crop types by area

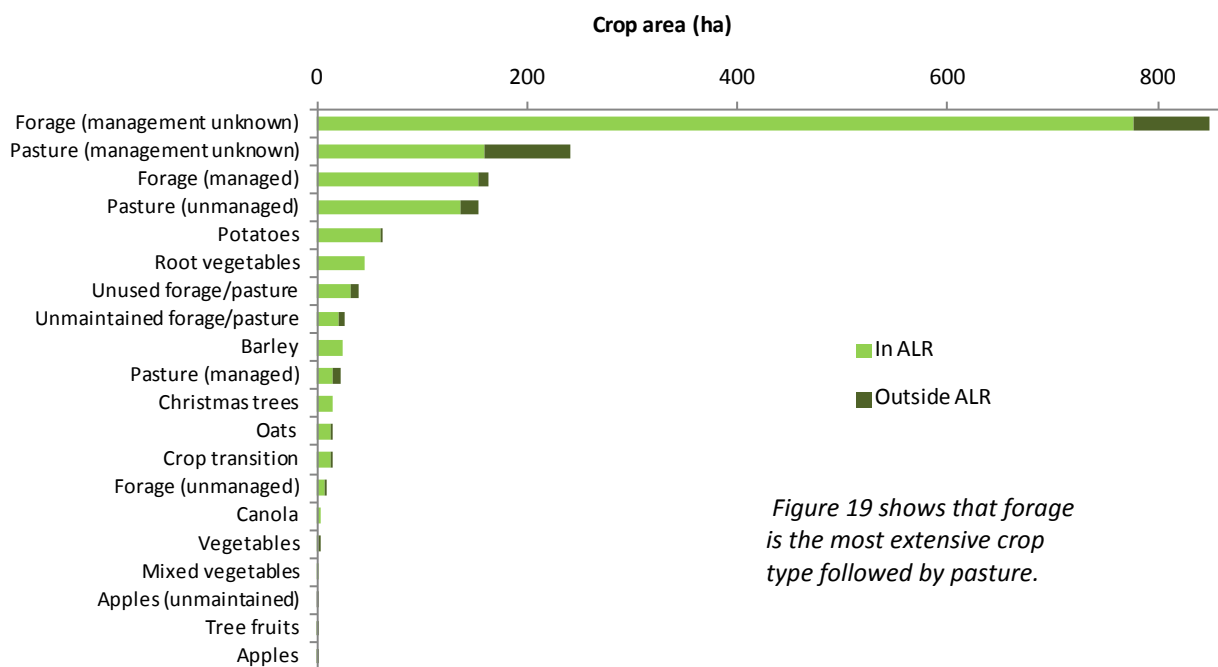


Figure 19 shows that forage is the most extensive crop type followed by pasture.

## NATURAL PASTURE & RANGELAND

Natural pastures and rangelands are fenced areas with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock such as cattle, sheep or equine. Natural pastures are smaller fenced areas usually occurring on private land while rangeland refers to larger blocks of land (extensive areas from hundreds to thousands of acres in size) with perimeter fencing that may encompass many parcels or district lots. Rangeland tends to be on provincial crown land.

Natural pastures are usually on land unsuited for cultivation due to poor soils (stoniness), seasonal flooding, or slope. In many cases, these areas are remote from the infrastructure necessary to facilitate agriculture improvements such as irrigation. Although some of these natural areas could be used for hay, most are grazed since the quality of hay is usually not worth the harvesting costs.

Most natural pastures and rangelands are influenced by humans to some degree. Fire may be used to control woody plants and remove over mature herbage. Introduction of livestock has an effect on natural vegetation and can lead to changes in vegetation composition. Bush-clearing, fencing, drainage, application of fertilizers and trace elements are more intensive methods which may influence natural pastures. The introduction of grasses and legumes, without cultivation, is yet a further stage in influencing a natural area.

Natural pastures and rangelands are captured in a geographical information system at the field or land cover polygon level by the natural vegetation type that dominates the upper canopy (grassland, open treed, etc.). Each vegetation type is then summarized to total land area and evaluated for field size characteristics.

Table 13. Natural pasture and rangeland vegetation types by area

| Natural pasture and rangeland |                | ALR          |            |                             | Outside ALR (ha) | Total area (ha) | % of surveyed area | % of inventory area in Crown ownership | % of natural pasture and rangeland |
|-------------------------------|----------------|--------------|------------|-----------------------------|------------------|-----------------|--------------------|--|------------------------------------|
|                               |                | In ALR (ha)  | % of ALR   | % of ALR in Crown ownership |                  |                 |                    |  |                                    |
| Rangeland (natural)           | Grassland      | 3,674        | 28%        | 13%                         | 2,933            | 6,607           | 29%                | 17%                                    | 41%                                |
|                               | Treed - open   | 3,444        | 26%        | 13%                         | 2,305            | 5,749           | 25%                | 13%                                    | 36%                                |
|                               | Treed - closed | 825          | 6%         | 5%                          | 772              | 1,597           | 7%                 | 5%                                     | 10%                                |
|                               | Shrubland      | 446          | 3%         | < 1%                        | 691              | 1,137           | 5%                 | 2%                                     | 7%                                 |
|                               | Herbaceous     | 1            | < 1%       | < 1%                        | 2                | 3               | < 1%               | < 1%                                   | < 1%                               |
| Subtotal                      |                | <b>8,390</b> | <b>64%</b> | <b>32%</b>                  | <b>6,704</b>     | <b>15,094</b>   | <b>66%</b>         | <b>38%</b>                             | <b>93%</b>                         |
| Pasture (natural)             | Treed - open   | 382          | 3%         | < 1%                        | 149              | 531             | 2%                 | < 1%                                   | 3%                                 |
|                               | Grassland      | 287          | 2%         | -                           | 60               | 346             | 2%                 | -                                      | 2%                                 |
|                               | Treed - closed | 65           | < 1%       | < 1%                        | 108              | 173             | < 1%               | < 1%                                   | 1%                                 |
|                               | Shrubland      | 36           | < 1%       | -                           | 6                | 42              | < 1%               | < 1%                                   | < 1%                               |
|                               | Herbaceous     | 3            | < 1%       | < 1%                        | 2                | 5               | < 1%               | < 1%                                   | < 1%                               |
| Subtotal                      |                | <b>772</b>   | <b>6%</b>  | <b>&lt; 1%</b>              | <b>325</b>       | <b>1,097</b>    | <b>5%</b>          | <b>&lt; 1%</b>                         | <b>7%</b>                          |
| <b>TOTAL</b>                  |                | <b>9,162</b> | <b>70%</b> | <b>32%</b>                  | <b>7,028</b>     | <b>16,190</b>   | <b>71%</b>         | <b>38%</b>                             | <b>100%</b>                        |

Table 13 shows that natural pasture and rangeland takes many forms in Kamloops. Grassland is the most common type accounting for 43%, however Treed – open and Treed – closed together account for 46%. Most natural pasture is on privately owned land while only about 40% of the rangeland is on privately owned land.

Refer to Maps B12a and B12b in Appendix B for more information.



Figure 20. Natural pasture areas by size (excluding rangelands)

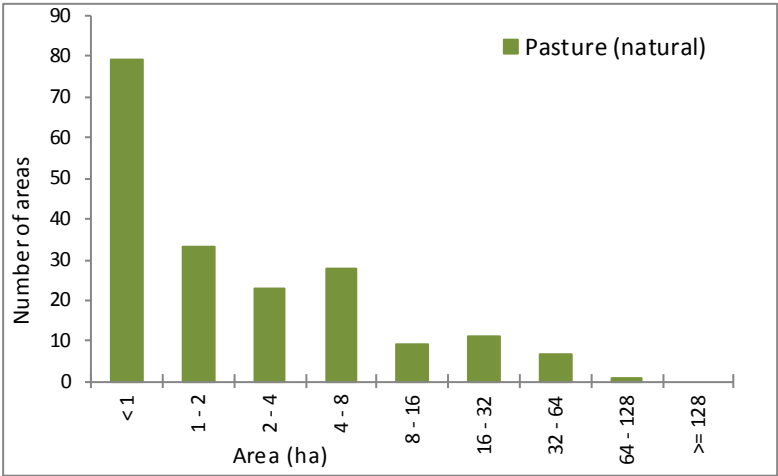


Figure 20 shows that natural pastures are most likely to be <1 hectare in size.

In Kamloops, there are 191 individual natural pastures with an average area of 6 hectares and median area of 2 hectares.

The average size of parcels where natural pasture occurs is 31 hectares.

Rangelands occur on 385 parcels with an average parcel size of 42 hectares. The number, average and median size of rangelands is not known since one rangeland may encompass many parcels.

Refer to Table A5 in Appendix A for more information.

## GREENHOUSES

Greenhouses are structures covered with translucent material and of sufficient size for a person to work inside<sup>8</sup>. They are permanent enclosed glass or polyethylene (poly) structures with or without climate control facilities for growing plants under controlled environments. Non permanent structures such as hoop covers are considered an agricultural practice and are not included here.

Table 14. Greenhouses by area<sup>9</sup>

| Greenhouses     |                        | ALR         |          | Outside ALR (ha) | Total area (ha) | % of greenhouse area |
|-----------------|------------------------|-------------|----------|------------------|-----------------|----------------------|
|                 |                        | In ALR (ha) | % of ALR |                  |                 |                      |
| Poly greenhouse | Vegetables             | < 1         | < 1%     | -                | < 1             | 23%                  |
| Poly greenhouse | Floriculture           | -           | -        | < 1              | < 1             | 54%                  |
| Poly greenhouse | Unknown                | -           | -        | < 1              | < 1             | 3%                   |
| Poly greenhouse | Unknown (unmaintained) | -           | -        | < 1              | < 1             | 20%                  |
| Subtotal        |                        | < 1         | < 1%     | < 1              | < 1             | 100%                 |
| TOTAL           |                        | < 1         | < 1%     | < 1              | < 1             | 100%                 |

Table 14 shows that < 1 hectare of ALR land is covered by poly greenhouses.

There are no glass greenhouses or crop barns (e.g. for mushroom production) reported in Kamloops.

Refer to Map B13 in Appendix B for more information.

Figure 21. Distribution of greenhouses by crop type

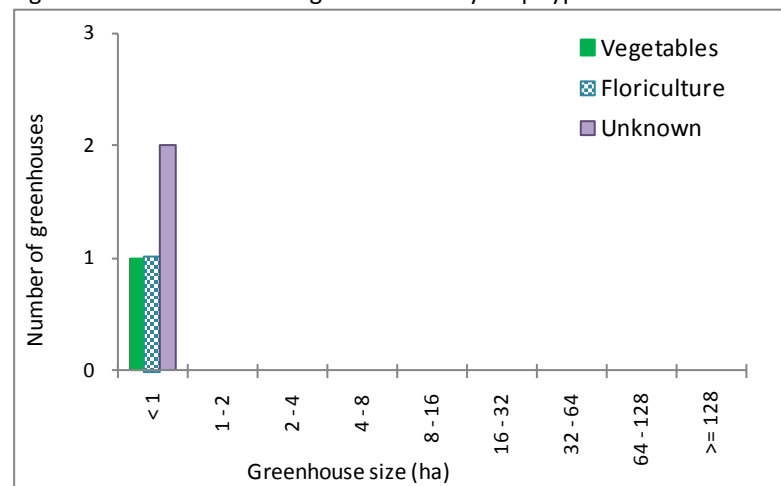


Figure 21 shows that all greenhouses in Kamloops are small.

Refer to Table A6 in Appendix A for more information.

<sup>8</sup> Source: *Guide for Bylaw Development*, 1998 Issue (Working Copy) by Ministry of Agriculture and Food.

<sup>9</sup> The areas reported in this table exclude external greenhouse yards, parking, warehouses and other infrastructure related to the greenhouse operation. Poly refers to polyethylene.

## IRRIGATION

Irrigation is the artificial application of water to the land or soil and may be used to assist in the growing of agricultural crops, maintenance of managed vegetation, and control of soil erosion or dust. The potential to irrigate is often limited by the quality and quantity of available irrigation water. Insufficient water sources or water delivery infrastructure may limit the potential to increase agricultural production through irrigation.

Irrigation is captured at the field or land cover level by system type (sub-surface, sprinkler, giant gun, trickle) and then summarized by crop type to the total land area under irrigation. Irrigated land includes all irrigated field crops and may also include irrigated fallow farm land, land set temporarily set aside for wildlife or other purposes, and land under preparation for planting. Also included are crops grown in greenhouses. In addition, the top 20 cultivated field crops are evaluated for percent of crop area under irrigation.

Table 15. Main crop types and irrigation

| Cultivated field crop      | Irrigation system in use (ha)       |            |            |              |                  | Total area irrigated (ha) | % of crop area irrigated |
|----------------------------|-------------------------------------|------------|------------|--------------|------------------|---------------------------|--------------------------|
|                            | Sub-surface                         | Sprinkler  | Giant gun  | Centre pivot | Landscape / turf |                           |                          |
| Forage, pasture            | 6                                   | 559        | 355        | 35           | < 1              | 956                       | 64%                      |
| Vegetables                 | -                                   | 26         | -          | 86           | < 1              | 111                       | 100%                     |
| Grains, cereals, oilseeds  | -                                   | 15         | 2          | 25           | -                | 42                        | 100%                     |
| Christmas trees            | -                                   | -          | 15         | -            | -                | 15                        | 100%                     |
| Crop transition            | -                                   | 13         | -          | -            | -                | 13                        | 96%                      |
| Tree fruits                | -                                   | 2          | -          | -            | -                | 2                         | 40%                      |
| <b>CROP AREA IRRIGATED</b> | <b>6</b>                            | <b>615</b> | <b>372</b> | <b>146</b>   | <b>&lt; 1</b>    | <b>1,140</b>              | <b>67%</b>               |
| Greenhouses                | Mix of flood and trickle irrigation |            |            |              |                  | < 1                       | 100%                     |

*Table 15 illustrates that all vegetable, grain, cereal, oilseed and tree plantation crops are irrigated as well as the majority of forage, pasture crops.*

*Refer to Map B14 in Appendix B for more information.*

Figure 22. Irrigation systems by percentage of cultivated land

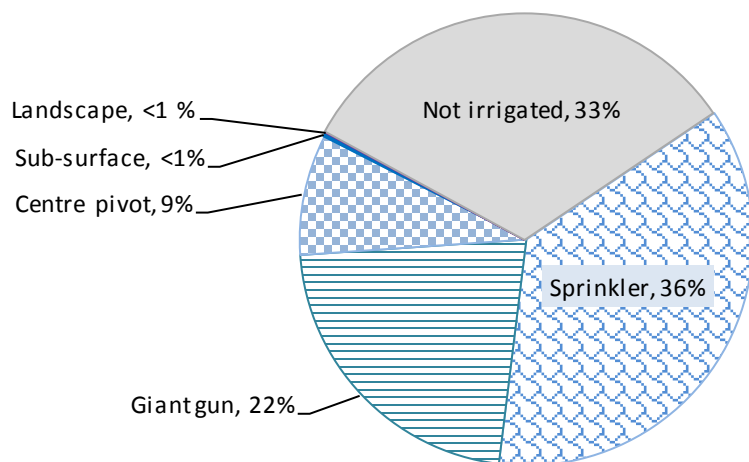


Figure 22 shows that sprinkler irrigation is the most widely used system in Kamloops, occurring on 36% of the cultivated land. Giant gun systems occurred on 22% of the cultivated land, followed by center pivot systems on 9% of the cultivated land.

Table 16. Top 20 field crop types and irrigation

| Cultivated field crop        | Irrigation system in use (ha) |            |            |              |                  | Total area irrigated (ha) | % crop area irrigated |
|------------------------------|-------------------------------|------------|------------|--------------|------------------|---------------------------|-----------------------|
|                              | Sub-surface                   | Sprinkler  | Giant gun  | Centre pivot | Landscape / turf |                           |                       |
| Forage (management unknown)  | -                             | 393        | 268        | 35           | -                | 696                       | 82%                   |
| Pasture (management unknown) | -                             | 103        | 52         | -            | < 1              | 156                       | 65%                   |
| Forage (managed)             | -                             | 44         | 21         | -            | -                | 64                        | 39%                   |
| Pasture (unmanaged)          | -                             | < 1        | -          | -            | -                | < 1                       | < 1%                  |
| Potatoes                     | -                             | 18         | -          | 42           | -                | 60                        | 100%                  |
| Root vegetables              | -                             | 2          | -          | 44           | -                | 46                        | 100%                  |
| Unused forage/pasture        | -                             | 13         | 4          | -            | -                | 16                        | 42%                   |
| Unmaintained forage/pasture  | 6                             | -          | -          | -            | -                | 6                         | 23%                   |
| Barley                       | -                             | 2          | < 1        | 21           | -                | 24                        | 100%                  |
| Pasture (managed)            | -                             | 6          | 11         | -            | < 1              | 16                        | 71%                   |
| Christmas trees              | -                             | -          | 15         | -            | -                | 15                        | 100%                  |
| Oats                         | -                             | 13         | 2          | -            | -                | 15                        | 100%                  |
| Crop transition              | -                             | 13         | -          | -            | -                | 13                        | 96%                   |
| Forage (unmanaged)           | -                             | -          | -          | -            | -                | -                         | -                     |
| Canola                       | -                             | -          | -          | 3            | -                | 3                         | 100%                  |
| Vegetables (unknown type)    | -                             | 3          | -          | -            | < 1              | 3                         | 100%                  |
| Mixed vegetables             | -                             | 2          | -          | -            | -                | 2                         | 100%                  |
| Apples (unmaintained)        | -                             | -          | -          | -            | -                | -                         | -                     |
| Tree fruits (unknown type)   | -                             | < 1        | -          | -            | -                | < 1                       | 50%                   |
| Apples                       | -                             | 1          | -          | -            | -                | 1                         | 86%                   |
| <b>TOTAL</b>                 | <b>6</b>                      | <b>615</b> | <b>372</b> | <b>146</b>   | <b>&lt; 1</b>    | <b>1,139</b>              |                       |

Table 16 outlines the irrigation system types used on the top 20 field crops in Kamloops. Centre pivot systems are most commonly used on potatoes, root vegetables, barley and forage. Christmas trees are irrigated entirely with giant gun systems. Some forage, pasture, barley and oats are also irrigated with giant gun systems.

## LIVESTOCK

---

Livestock activities are difficult to measure using a windshield survey. Livestock are often confined to structures making it difficult for the surveyor to see the animals. Local knowledge and other indicators such as animal confinement type (barn type), feeder system type, manure handling system type, and other visible elements may be used to infer the type of livestock and scale of activity that exist on a parcel. In addition, livestock are mobile and may utilize more than one land parcel. Livestock visible on a certain parcel one day may be visible on a different parcel the next day. This inventory does not attempt to identify animal movement between parcels that make up a farm unit but reports livestock at the parcel where the animals or related structures were observed.

Each livestock type on a parcel is counted as one livestock activity, regardless of the scale of the operation. For example, both a small mixed farm with 1-2 cows and a large commercial milking operation with over 100 cows are each considered as one activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at higher stocking densities. "Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

"Unknown livestock" refers to activities where non specialized livestock related structures were present but the livestock were not visible and therefore the specific type of livestock could not be determined.

The scale system used to describe livestock operations relies on animal unit equivalents (AUEs) which is a standard measure used to compare different livestock types. One animal unit equivalent is approximately equal to one adult cow or horse. The scale system includes 4 levels:

- **"Very Small"** Approximately 1 cow or horse or bison, 3 hogs, 5 goats or deer, 10 sheep, 50 turkeys, 100 chickens (1 animal unit equivalent)
- **"Small"** LESS THAN 25 cows or horses or bison, 75 hogs, 125 goats or deer, 250 sheep, 1250 turkeys, 2500 chickens (2 - 25 animal unit equivalents)
- **"Medium"** LESS THAN 100 cows or horses or bison, 300 hogs, 500 goats or deer, 1000 sheep, 5,000 turkeys, 10,000 chickens (25 - 100 animal unit equivalents)
- **"Large"** MORE THAN 100 cows or horses or bison, 300 hogs, 500 goats or deer, 1000 sheep, 5,000 turkeys, 10,000 chickens (over 100 animal unit equivalents).

Estimated animal unit equivalents (AUEs) are calculated using a midpoint of each above described scale range. This number can be used to rank the relative importance and impact of each type of livestock. This may overestimate the actual number of livestock especially for small scale operations.

Table 17. Livestock activities

| Livestock group     | Estimated animal unit equivalents | Count of activities |
|---------------------|-----------------------------------|---------------------|
| Equine              | 440                               | 150                 |
| Beef                | 350                               | 23                  |
| Dairy               | 110                               | 1                   |
| Poultry             | 40                                | 10                  |
| Sheep / lamb / goat | 30                                | 10                  |
| Llama / alpaca      | 20                                | 6                   |
| Unknown livestock   | 10                                | 2                   |
| Swine               | -                                 | 1                   |
| <b>TOTAL</b>        | <b>1,000</b>                      | <b>203</b>          |

Table 17 details the number of estimated AUEs and number of livestock activities by livestock type.

Equine is the most common type of livestock activity in Kamloops with the greatest number of estimated AUEs and greatest number of activities.

Blackwell Dairy, (a large scale operation located in the Barnhartville area) is the only dairy activity reported in Kamloops.

Figure 23. Livestock type by proportion of estimated animal unit equivalents

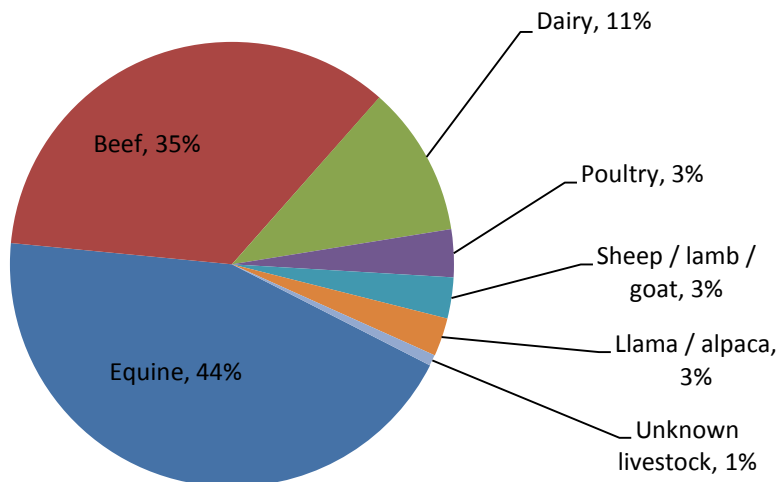


Figure 24 illustrates the proportion of livestock types by AUEs.

Equine accounts for 44% of all AUEs and beef accounts for 35%.

Figure 24. Estimated animal unit equivalents by intensity

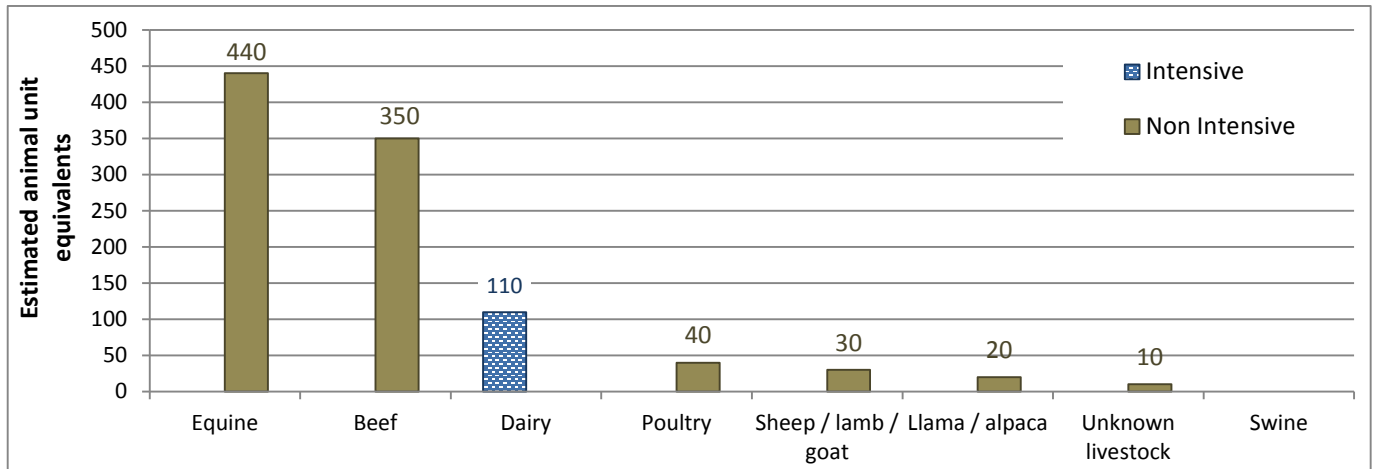


Figure 24 illustrates the number of estimated animal unit equivalents by type and intensity in Kamloops. Dairy is the only livestock type with “intensive” facilities designed for confined feeding at higher stocking densities (Blackwell Dairy).

All other livestock types occur in “non-intensive” facilities.

Figure 25. Estimated animal unit equivalents by scale

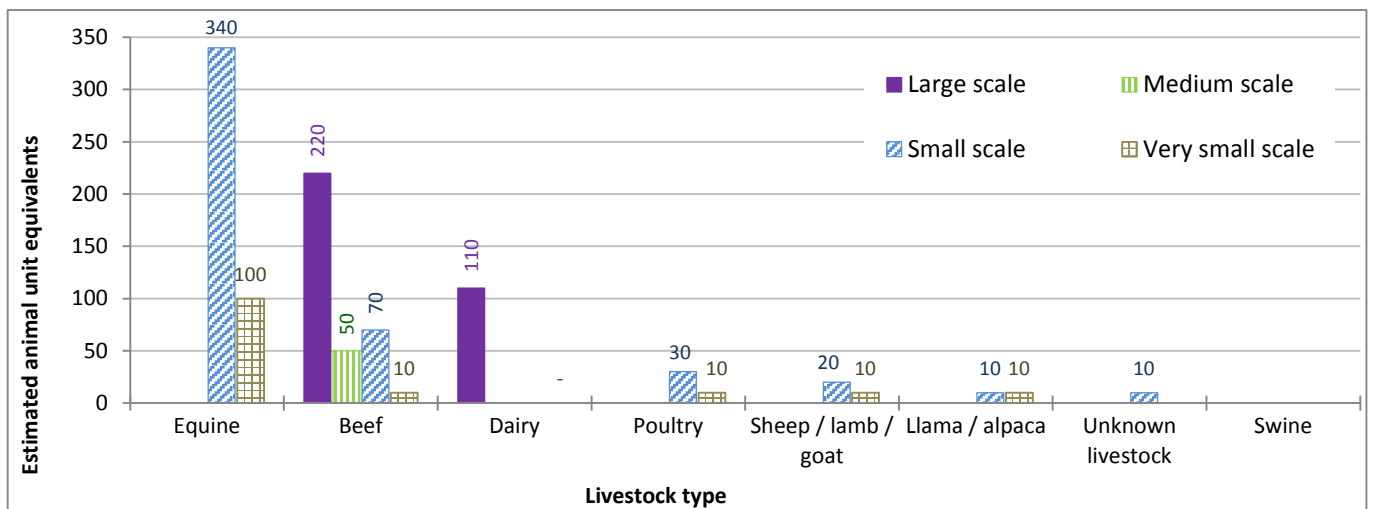


Figure 25 illustrates the number of estimated animal unit equivalents by scale and livestock type in Kamloops.

Beef and dairy are the only livestock types to occur on a “large” scale (>100 AUE). There are 220 AUEs associated with large scale beef operations and 110 AUEs associated with large scale dairy operations (Blackwell Dairy).

Beef is the only livestock type to occur on a “medium” scale (25 – 100 AUE). All other livestock types occur on a “small” or “very small” scale.



Figure 26. Livestock activities by intensity

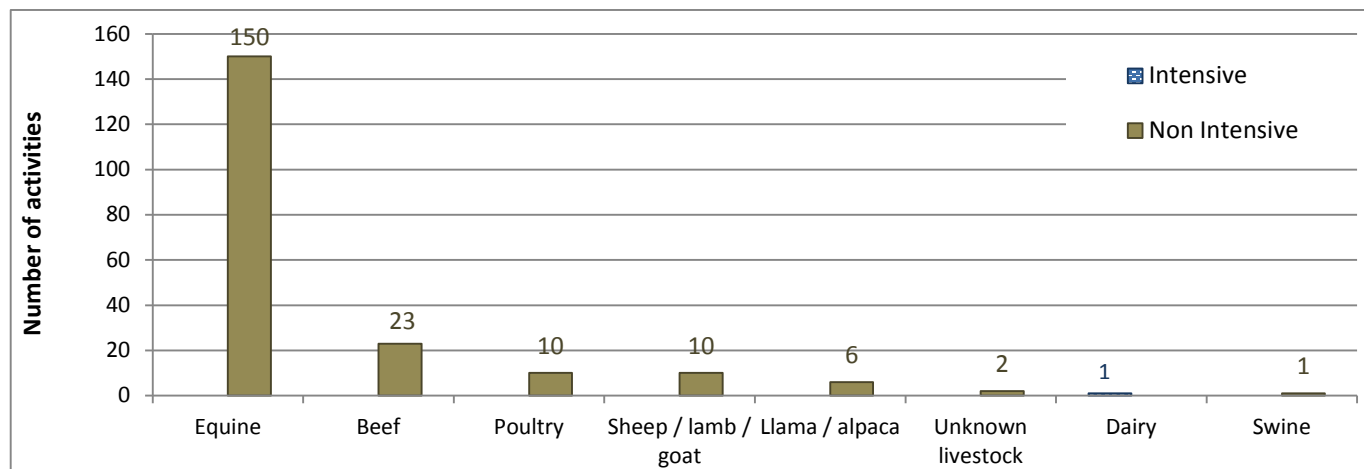


Figure 26 illustrates the number of livestock activities by intensity. Only 1 “intensive” livestock facility was recorded in Kamloops; this was Blackwell Dairy located in the Barnhartville area.

All other livestock types occur in “non-intensive” facilities.

Figure 27. Livestock activities by scale

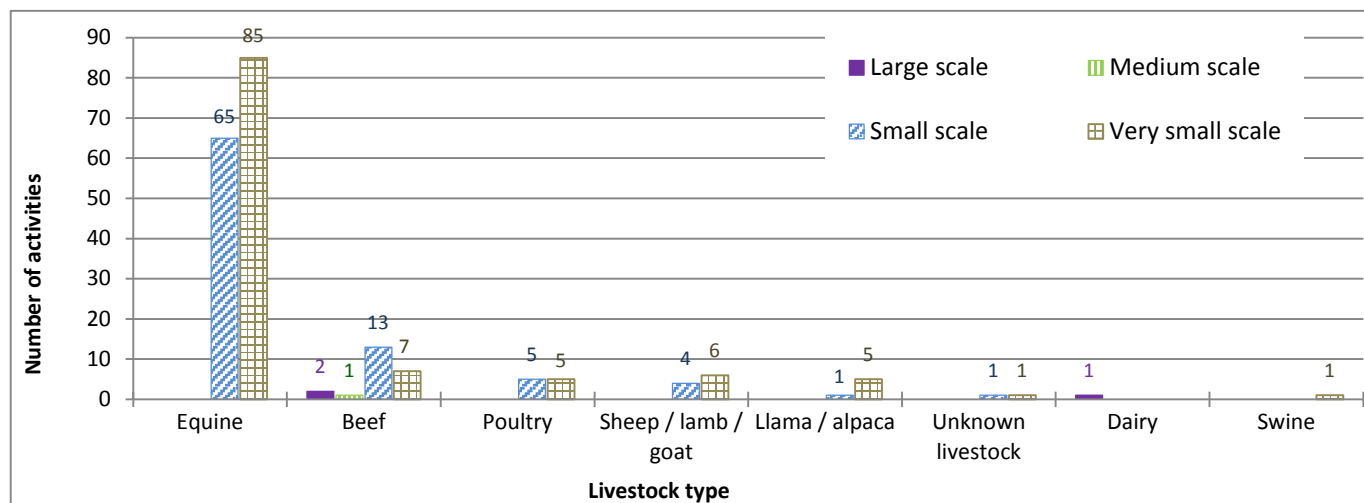


Figure 26 illustrates the number of livestock activities by scale and livestock type in Kamloops. The majority of all activities are “small” or “very small” scale. Only 2 beef activities and one dairy activity are “large” scale (>100 AUE).

Figure 28. Livestock activities (excluding equines) by parcel size

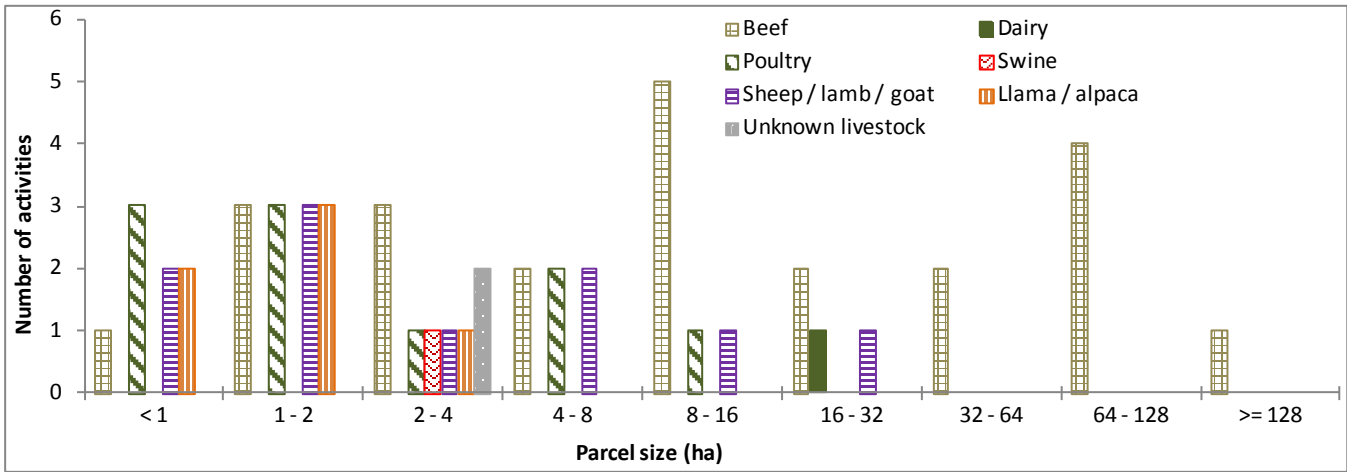


Figure 28 compares the distribution of different livestock types across parcel size categories. Beef activities occur across all parcel sizes but parcels greater than 32 hectares only have beef activities.

Refer to Table A7 in Appendix A for more information.

Figure 29. Livestock and equine activities by parcel size

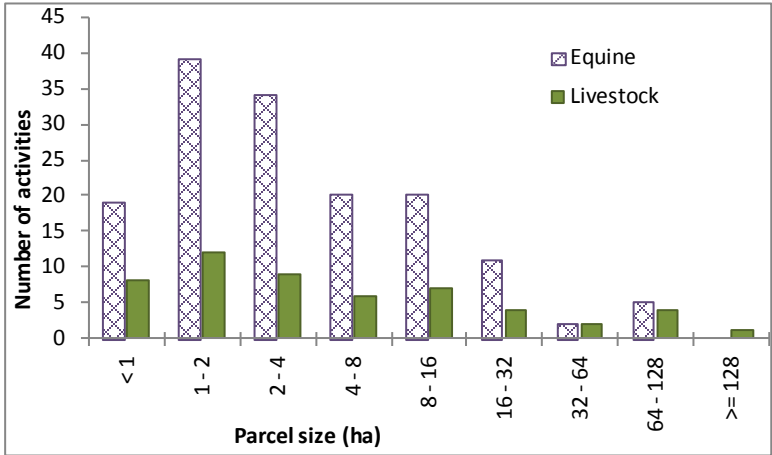


Figure 29 compares the distribution of equine and livestock across parcel size categories.

Equine activities are generally on smaller parcels than other livestock activities.

Both livestock and equine activities occur on parcels < 1 hectare.

Refer to Table A7 in Appendix A for more information.

Figure 30. Average area in forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)

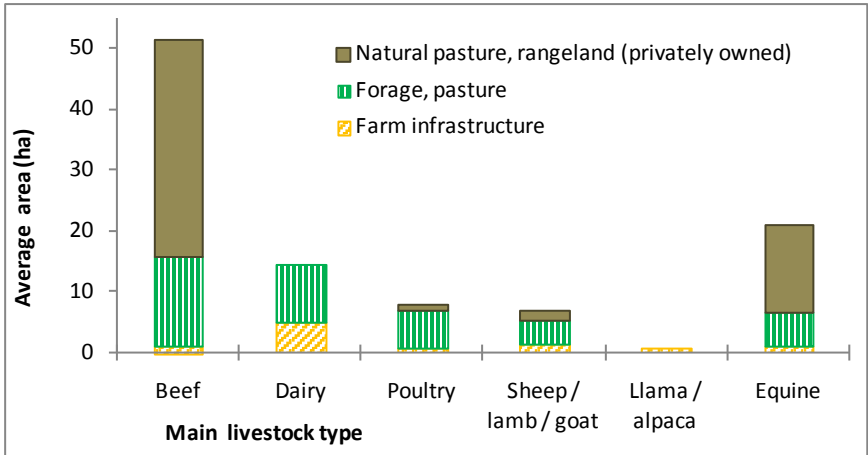
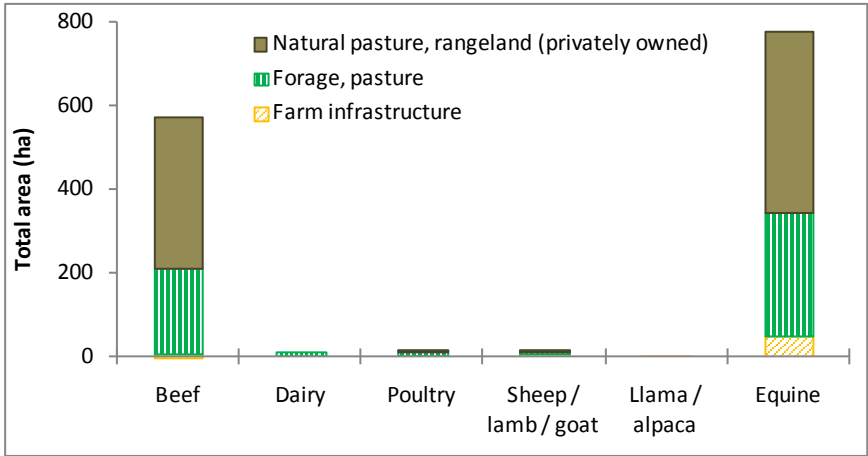


Figure 30 shows that on average, a beef activity is associated with 15 hectares of forage and pasture land and almost 36 hectares of natural pasture and rangeland, more than any other type of livestock activity.

Figure 31. Total area forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)



Even though each beef activity on average uses more forage, pasture, natural pasture and rangeland than each equine activity (see Figure 30 above), Figure 31 shows that equine activities use more total area.

The actual forage area for dairy is underestimated since not all dairy forage fields will be located on the same parcel as the livestock. This is usually not the case for other livestock and equine.

Refer to Figures A2, A4, A6, A8, and A10 in Appendix A for more information.

Figure 32. Percent of parcel area utilized for forage, pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)

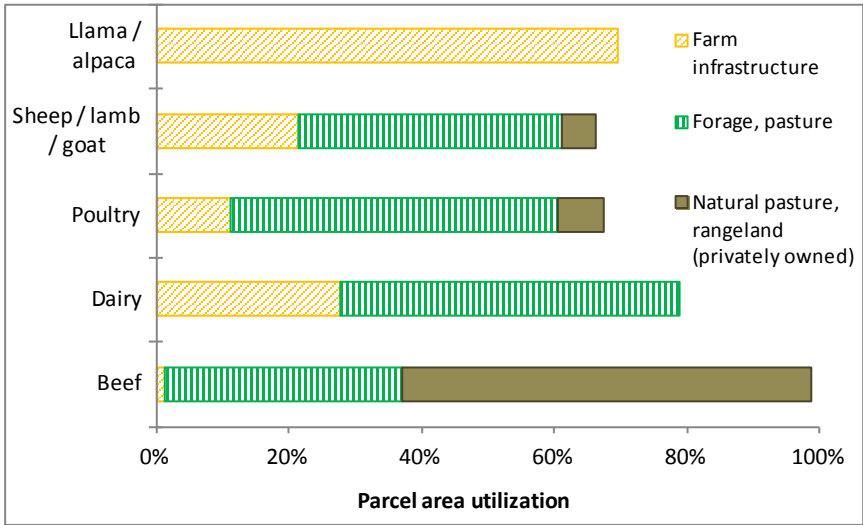


Figure 32 shows that on average, a beef activity in Kamloops utilizes almost 100% of its parcel area for forage, pasture and farm infrastructure while a llama / alpaca activity utilizes 70%.

## ON-FARM VALUE-ADDED

---

Activities which add value to raw commodities produced on the farm are reported in this section. At least 50% of the commodity utilized must be produced on farm<sup>10</sup> or the activity is considered non-agricultural. In many cases, local knowledge in combination with the field survey is used to determine if an activity meets the criteria to be considered on-farm value-added. The three main categories of value-added are: processing, direct sales, and agri-tourism.

Processing is an activity that maintains or raises the quality or alters the physical or chemical characteristics of a raw farm commodity, or adds value to it in any way. Processing includes grain mill or oilseed crushing, meat processing, wine or cider, kitchen / bakery, and canning. This category does not include crop washing and packaging.

Direct sales to the public occur through permanent stores, temporary stores such as fruit stands, U-pick, or restaurant / take out service located on the farm. Direct farm marketing sites are considered ambassadors of agriculture. Direct farm marketing engages the public's interest in food production and increases awareness of the benefits of local agriculture.

Agri-tourism promotes visits to the operation for the purpose of recreation, education or active involvement in the operation - a tourism experience. Agri-tourism must be in a farm setting and secondary to primary agricultural operation to be considered value-added. Included are corn mazes, petting zoos, bed & breakfasts, campsites, winery or orchard tours, guest ranches offering equestrian related activities, horse or donkey rental for trail riding / outfitting, and seasonal events such as farm festivals or pumpkin patches.

The scale system used to describe value-added activities reflects the human effort need to support the activity. The scale system includes 3 levels:

- **“Small”** scale represents a predominantly single household endeavour with management requiring less than one full time worker. Examples of small scale include temporary roadside fruit stand, small field u-pick, or egg sales from backyard flock.
- **“Medium”** scale is sufficient to add value to on-farm products for sale to small local markets or serve a moderate number of people. Usually includes designated parking for customers and requires at least one full-time worker to manage. An example is 3-10 tourist accommodation spots.
- **“Large”** scale is intended to add value to large amounts of on-farm generated products or serve large numbers of people. Requires multiple workers to operate value-added component of farm operation. An example is more than 10 tourist accommodation spots.

---

<sup>10</sup> On-farm refers to the farm unit which includes all the property belonging to the farm and may incorporate more than one parcel.

Figure 33. Percentage of parcels used for farming and with value-added activities

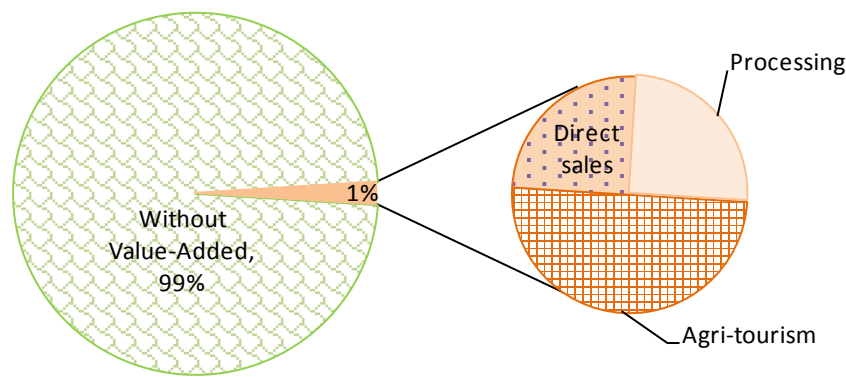


Figure 33 show that only 1% of all parcels used for farming are also being used for value-added activities. Given the close proximity to a relatively large urban population, there is opportunity to increase activities such as agri-tourism and direct sales.

Figure 34. Number of parcels used for farming with value-added activities

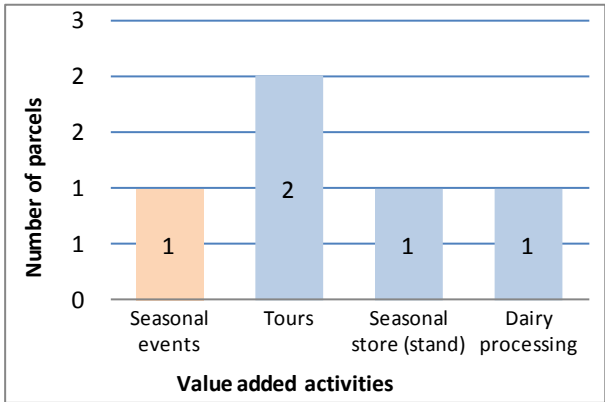


Figure 34 shows there are only 5 value-added activities located on 2 parcels in Kamloops. Blackwell Dairy, located in Barnhartville, offers farm tours and processes their own dairy products. They also process dairy products from other farms in the region. Thistle Farms, located in Westsyde, has seasonal events, farm tours and runs a home delivery service for boxes of fresh produce.



## 5. Condition of ALR Lands

This section presents a parcel based analysis of parcel size and residential uses in the ALR on private and crown owned land.

### PARCEL INCLUSION IN THE ALR

The inventory area included 12,699 hectares of ALR on 719 parcels which is 98% of the ALR within Kamloops. The remaining 2% of the ALR was excluded from the inventory as it is in parcels less than 100 square metres in size or outside surveyed land parcels; designated rights-of-way or foreshore.

ALR boundaries do not always align with parcel boundaries which results in many parcels having only a portion of their area in the ALR. To achieve an accurate picture of ALR within Kamloops, only parcels that meet the following criteria are included in this section of the report:

- parcels > 0.05 hectares in size with at least half their area ( $\geq 50\%$ ) in the ALR, or
- parcels with at least 10 hectares ( $\geq 10$  hectares) of ALR land.

In total, 528 parcels with 12,607 hectares or 97% of the ALR in Kamloops meet the above criteria and are included in the following section. This includes 18 parcels that have less than 50% of their area in the ALR ( $<50\%$ ) but contain more than 10 hectares of ALR land.

Of these 528 parcels, only 383 (with 7,410 hectares) are privately owned.

Figure 35. Parcel inclusion in the ALR



Figure 35 illustrates the distinction between parcels considered to be within or outside the ALR:

**Considered to be within the ALR:**

- lot A is completely in the ALR
- lot B has 50% or more of its area in the ALR.

**Considered to be outside the ALR:**

- lot C has less than 50% of its area and less than 10 hectares in the ALR
- lot D is completely outside the ALR.

## PARCEL SIZE & FARMING IN THE ALR

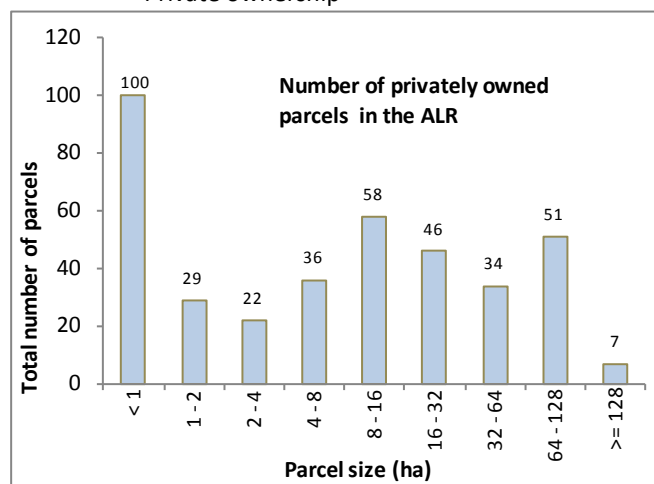
Parcel size must be considered when determining the agricultural potential of a land parcel. Larger parcels usually allow farmers greater flexibility to expand or change their type of operation as the economy and markets change. Although some types of agriculture can be successful on small parcels, such as intensive organic market gardens, greenhouse operations and nurseries, generally the smaller the parcel is, the fewer viable options there are for farming.

A farming operation may utilize more than one parcel as a farm unit<sup>11</sup>, however it is generally more efficient to run a farm on fewer larger parcels than many smaller parcels. Larger parcels accommodate equipment more efficiently and reduce the need to move farm equipment on public roads. Smaller parcels are more impacted by bylaws designed to reduce potential land use conflicts, such as setbacks from lot lines and road allowances, and may encourage alternative land uses such as residential.

Land ownership can also impact the type of agricultural activities that occur on a parcel. Therefore, privately-owned land is reported separately from Crown land in this section of the report. The agricultural activities likely to occur on Crown land are limited and may also be subject to specific restrictions, depending on the government entity owning it.

### Privately Owned Parcels

Figure 36. Number of parcels in the ALR by parcel size – Private ownership



Approximately one quarter of the privately owned ALR parcels in Kamloops are less than one hectare, however, the average parcel size is 21.5 hectares.

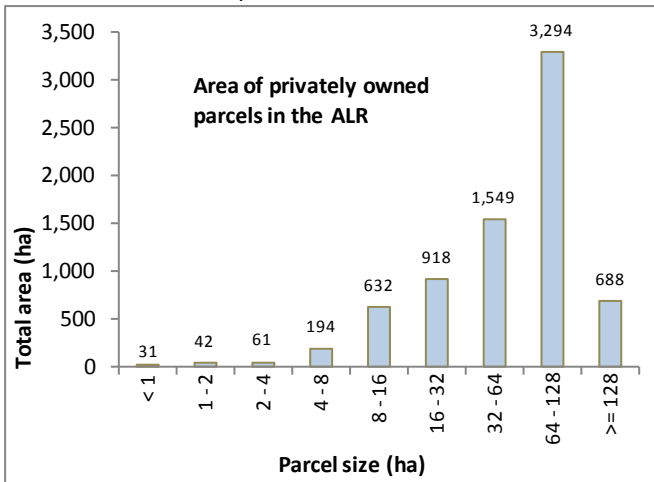
Figure 36 illustrates that of the 383 privately owned parcels in the ALR:

- 26% (100 parcels) are less than 1 hectare.
- 39% (151 parcels) are less than 4 hectares.
- 9% (36 parcels) are between 4 and 8 hectares.
- 15% (58 parcels) are between 8 and 16 hectares.
- 36% (138 parcels) are greater than 16 hectares.

Refer to Map B18 in Appendix B for more information.

<sup>11</sup> Farm Unit – An area of land used for a farm operation consisting of one or more contiguous or non-contiguous parcels, that may be owned, rented or leased, which form and are managed as a single farm.

Figure 37. Total area in the ALR by parcel size – Private ownership



Even though Kamloops is a metropolitan area and has a large number of small parcels, most of its ALR area is in larger parcels.

Figure 37 illustrates that of the 7,410 hectares on privately owned parcels in the ALR:

- <1% (31 hectares) is on parcels less than 1 hectare.
- 2% (134 hectares) is on parcels less than 4 hectares.
- 3% (194 hectares) is on parcels between 4 and 8 hectares.
- 8% (632 hectares) is on parcels between 8 and 16 hectares.
- 87% (6,449 hectares) is on parcels greater than 16 hectares.

Table 18. Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Private ownership

| Parcel status with respect to farming | Number of parcels | % of parcels in the ALR |
|---------------------------------------|-------------------|-------------------------|
| Used for farming                      | 101               | 26 %                    |
| Used for grazing                      | 148               | 39 %                    |
| Not used for farming or grazing       | 134               | 35 %                    |
| <b>TOTAL</b>                          | <b>383</b>        | <b>100 %</b>            |

Table 18 demonstrates that of the 383 privately owned parcels in the ALR, only 101 or 26% are “Used for farming”.

Figure 38. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Private ownership

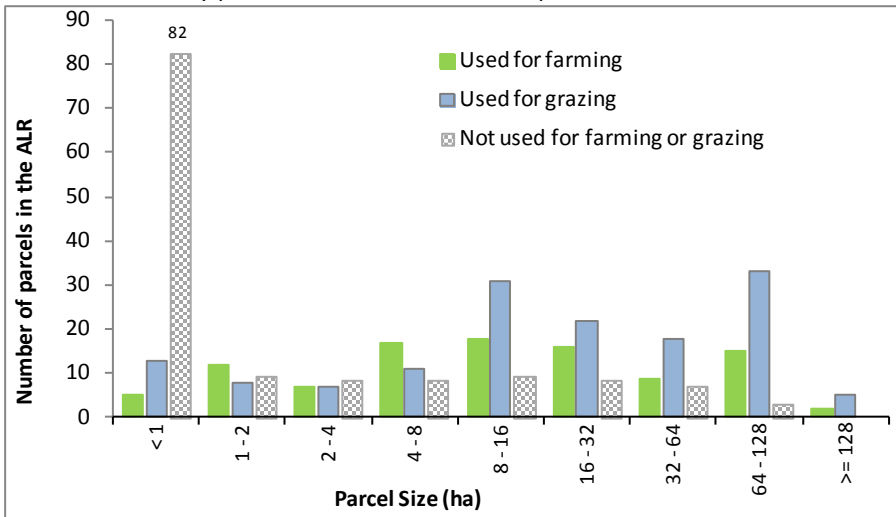


Figure 38 shows that of the 134 or 35% of privately owned parcels in the ALR “Not used for farming or grazing”, 82 or 61% are less than one hectare.

In all parcel size categories greater than 4 hectares, the number of parcels “Used for farming” and “Used for grazing” is greater than the number of parcels not used.

Figure 39. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size (line chart) – Private ownership

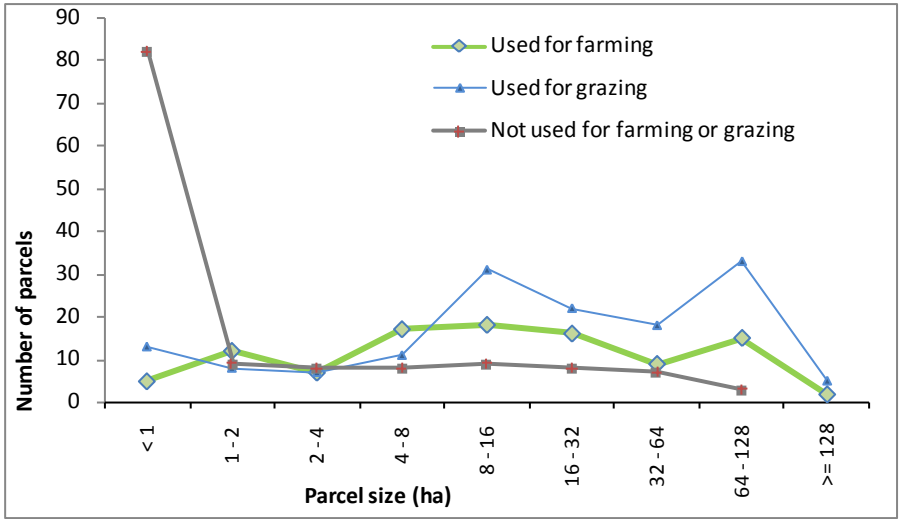


Figure 39 illustrates that parcels of all sizes are “Used for farming” but there are fewer small parcels farmed.

Figure 40. Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Private ownership

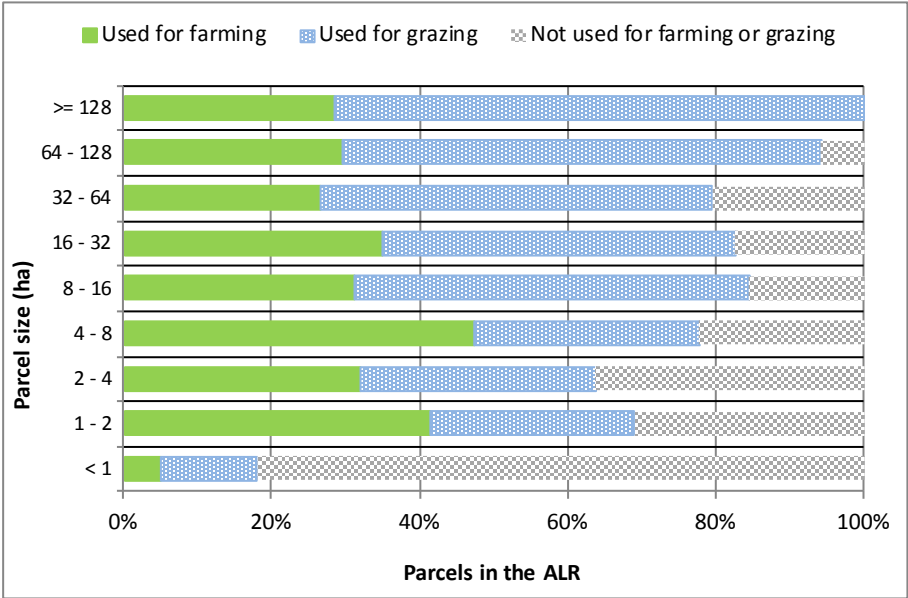
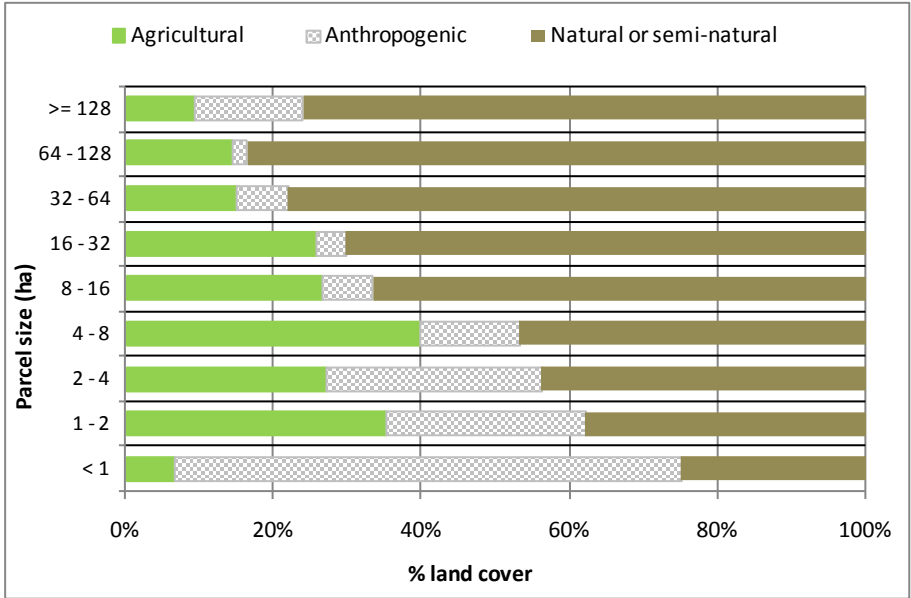


Figure 40 shows that in Kamloops, the proportion of privately owned parcels being “Used for farming” is somewhat consistent across parcel size categories except for parcels < 1 hectare.

Only 5% of privately owned parcels that are less than 1 hectare are “Used for farming”.

The proportion of privately owned parcels being “Used for grazing” increases as the parcel size increases.

Figure 41. Proportion of land cover by parcel size in the ALR– Private ownership

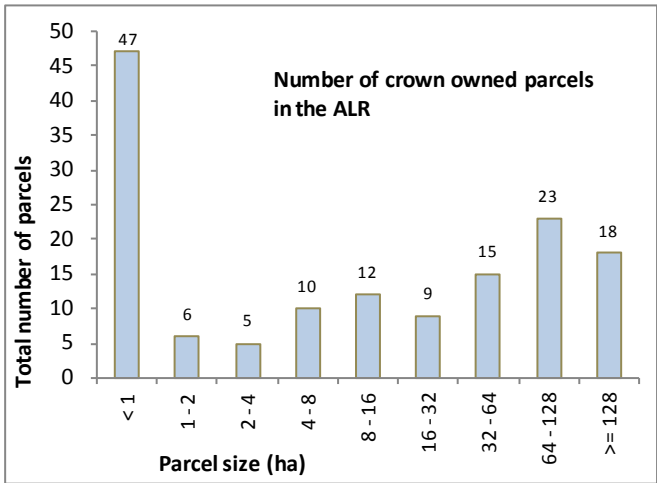


Similar to Figure 40 above, Figure 41 shows that in Kamloops, the proportion of farmed land cover remains somewhat consistent across parcel size categories except for parcels < 1 hectare.

Less than 7% of the land cover is farmed on privately owned parcels less than 1 hectare.

### Crown Owned Parcels

Figure 42. Number of parcels in the ALR by parcel size – Crown ownership



Approximately one third of the Crown owned ALR parcels are less than one hectare.

Figure 42 illustrates that of the 145 Crown owned parcels in the ALR:

- 32% (47 parcels) are less than 1 hectare.
- 40% (58 parcels) are less than 4 hectares.
- 7% (10 parcels) are between 4 and 8 hectares.
- 8% (12 parcels) are between 8 and 16 hectares.
- 45% (65 parcels) are greater than 16 hectares.

Refer to Map B19 in Appendix B for more information.

Figure 43. Total area in the ALR by parcel size – Crown ownership

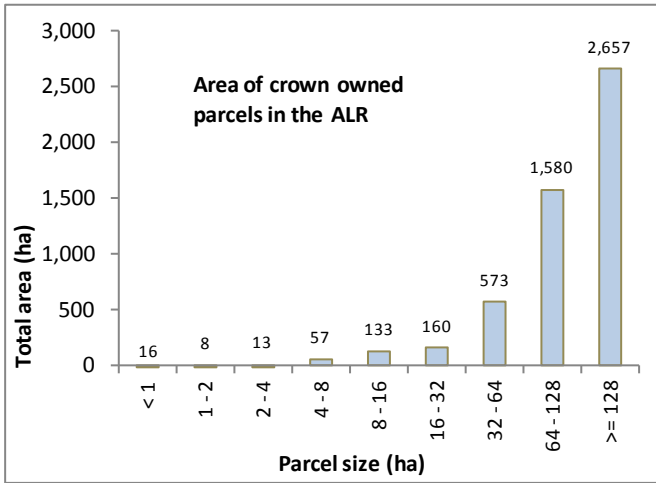


Figure 43 illustrates that of the 5,197 hectares on Crown owned parcels in the ALR:

- <1% (16 hectares) is on parcels less than 1 hectare.
- <1% (36 hectares) is on parcels less than 4 hectares.
- 1% (57 hectares) is on parcels between 4 and 8 hectares.
- 3% (133 hectares) is on parcels between 8 and 16 hectares.
- 96% (4,971 hectares) is on parcels greater than 16 hectares.

Table 19. Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Crown ownership

| Parcel status with respect to farming | Number of parcels | % of parcels in the ALR |
|---------------------------------------|-------------------|-------------------------|
| Used for farming                      | 8                 | 6 %                     |
| Used for grazing                      | 87                | 60 %                    |
| Not used for farming or grazing       | 50                | 34 %                    |
| <b>TOTAL</b>                          | <b>145</b>        | <b>100 %</b>            |

Table 19 demonstrates that of the 145 Crown owned parcels in the ALR, only 50 or 34% are “Not used for farming or grazing”.

Figure 44. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Crown ownership

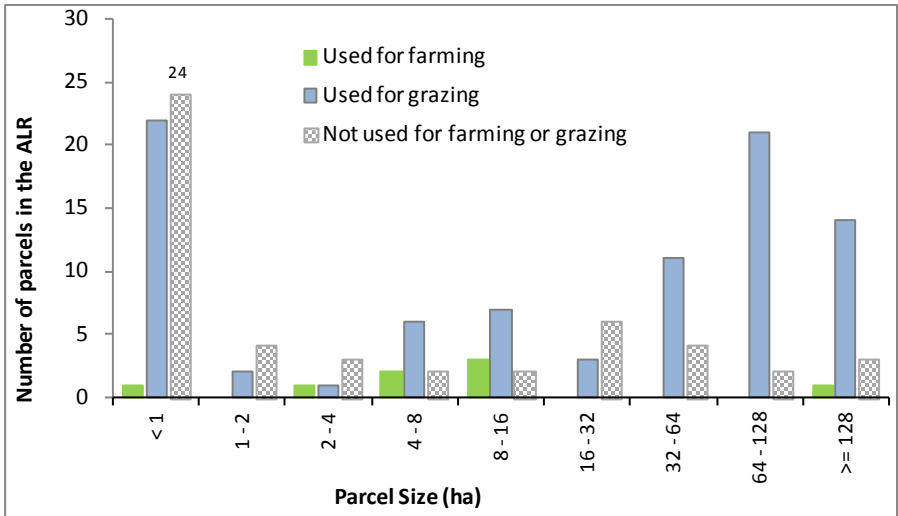


Figure 44 shows that of the 50 or 34% of parcels in the ALR and “Not used for farming or grazing”, 24 or 50% are less than one hectare.

In most parcel size categories greater than 4 hectares, the number of parcels “Used for grazing” is greater than the number of parcels not used.



Figure 45. Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Crown ownership

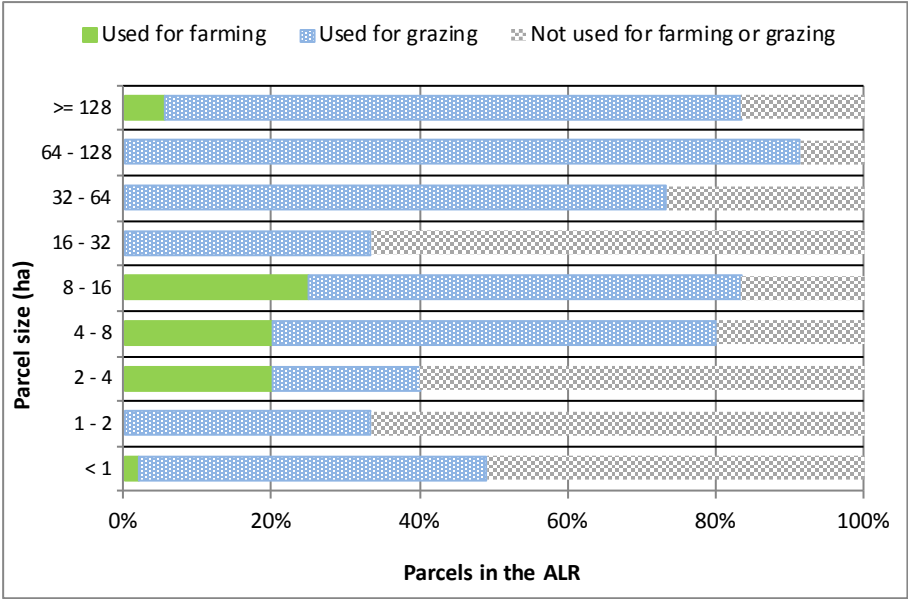
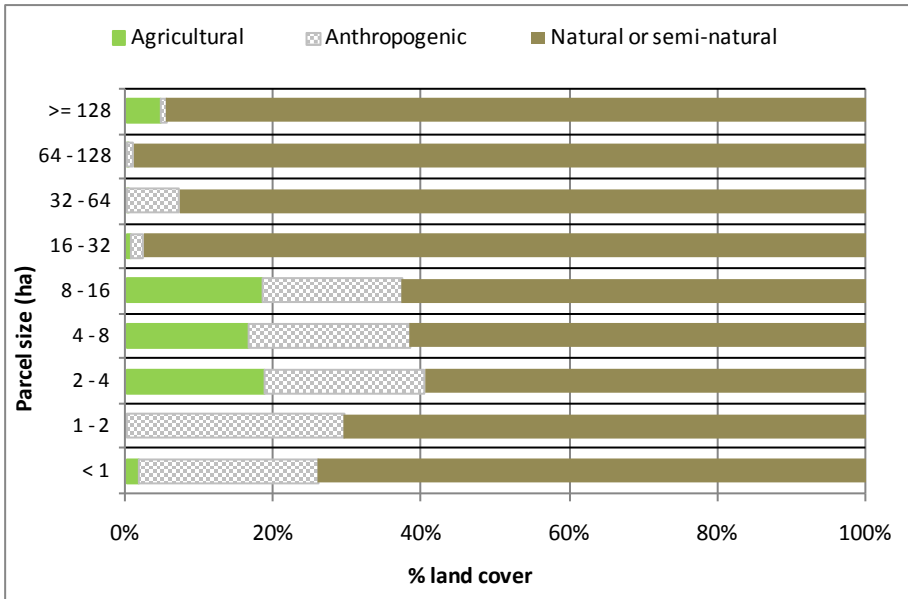


Figure 45 shows that in Kamloops, the proportion of Crown owned parcels being “Used for grazing” increases as the parcels size increases.

Figure 46. Proportion of land cover by parcel size in the ALR– Crown ownership



Similar to Figure 45 above, Figure 46 shows that in Kamloops, the proportion of natural or semi-natural land cover increases as the size of Crown owned parcels increase.

## RESIDENTIAL USE IN THE ALR

---

The ALR is a provincial zone in which agriculture is the priority use and some “Residential” use is considered a necessary accessory to the agricultural use of a property. However “Residential” use which is not an accessory to agriculture can effectively limit the ability of agriculture to grow, intensify and respond to market demands. When the primary motivation for ownership of ALR land is residential use, the residence is often placed to maximize privacy and views, with little consideration for agricultural opportunities on the parcel. Houses that are not adjacent to the frontage road alienate portions of land from future agriculture. If the occupants are non-farmers, they are more likely to be affected by noise or odour from neighbouring farm operations.

The size of the residence may be another factor to consider. Properties with larger residences have higher property values making it unrealistic for a farmer to acquire and convert this land to farmland in the future.

*Average land improvement values of Kamloops properties with residences in the ALR were as follows:*

- *large or estate single family house \$451,000*
- *medium single family house \$231,000*
- *small single family house \$164,000*
- *single mobile home \$92,000.*

*(Calculated using 2011 BC Assessment database - Last improvement value)*

In the following analysis cabins/cottages, mobile homes, single-family houses, duplexes, townhouses, apartments, motels, hotels, dormitories, and institutional living buildings are included. Single-family houses are further described by estimated size of the building:

- Small single-family house <1,500 sq. ft.
- Medium single-family house 1,500 – 3,500 sq. ft.
- Large single-family house 3,500 – 5,000 sq. ft.
- Estate (very large) single-family house > 5,000 sq. ft.

Residential footprint includes the main residence plus its associated yard, driveway, parking and any auxiliary buildings or structures. When two residences are on a property, areas associated to both (such as shared driveways, parking or yard), are assigned to the closest residence.

Properties “Not used for farming but available” are properties with either no apparent use or an existing non-farm use that is compatible with agriculture, such as Residential.

Properties “Not used for farming and unavailable” have an established non-farm use that is incompatible with agriculture.

In Kamloops, all residences in the ALR are on privately owned parcels.

## Privately Owned Parcels

Table 20. Farming and residences in the ALR

| Privately owned parcels<br>Status with respect to farming | With residence       |                 | Without residence    |                 | Total<br>number of<br>parcels |
|---|----------------------|-----------------|----------------------|-----------------|-------------------------------|
|   | Number<br>of parcels | % of<br>parcels | Number<br>of parcels | % of<br>parcels |                               |
| Used for farming  | 66                   | 17%             | 35                   | 9%              | 101                           |
| Not used for farming but available - used for grazing     | 40                   | 10%             | 107                  | 28%             | 147                           |
| Not used for farming but available                        | 29                   | 8%              | 38                   | 10%             | 67                            |
| Unavailable for farming - used for grazing                | -                    | -               | 1                    | < 1%            | 1                             |
| Unavailable for farming                                   | 44                   | 11%             | 23                   | 6%              | 67                            |
| <b>TOTAL</b>  | <b>179</b>           | <b>47%</b>      | <b>204</b>           | <b>53%</b>      | <b>383</b>                    |

Table 20 shows that 179 or 47% of the privately owned ALR parcels have residences, but 73 of these parcels are not used for farming or grazing.

Table 21. Farming and residence type in the ALR

| Privately owned parcels<br>Status with respect to farming | Residences *             |                |                 |                |                 | Total<br>residences | Total<br>number<br>of parcels |
|---|--------------------------|----------------|-----------------|----------------|-----------------|---------------------|-------------------------------|
|   | Single<br>mobile<br>home | Small<br>house | Medium<br>house | Large<br>house | Estate<br>house |                     |                               |
| Used for farming  | 8 ( 4)                   | 9 ( 8)         | 45 ( 41)        | 11 ( 11)       | 2 ( 2)          | 75                  | 66                            |
| Not used for farming but available - used for grazing     | 1 ( 1)                   | 8 ( 7)         | 24 ( 23)        | 9 ( 9)         | -               | 42                  | 40                            |
| Not used for farming but available                        | -                        | 7 ( 6)         | 20 ( 18)        | 4 ( 4)         | 1 ( 1)          | 32                  | 29                            |
| Unavailable for farming                                   | -                        | 5 ( 3)         | 21 ( 21)        | 19 ( 19)       | 1 ( 1)          | 46                  | 44                            |
| <b>TOTAL RESIDENCES</b>                                   | <b>9</b>                 | <b>29</b>      | <b>110</b>      | <b>43</b>      | <b>4</b>        | <b>195</b>          |                               |
| <b>TOTAL PARCELS</b>                                      | <b>5</b>                 | <b>24</b>      | <b>103</b>      | <b>43</b>      | <b>4</b>        |                     | <b>179</b>                    |

\* xx ( yy) - xx indicates the number of residences and ( yy) indicates the number of parcels

Table 21 demonstrates that there are 179 privately owned parcels in the ALR with 195 residences (some parcels have more than one residence). Most residences are medium houses (1,500 – 3,500 sq. ft).

Figure 47. Total area in residential footprint by parcel size

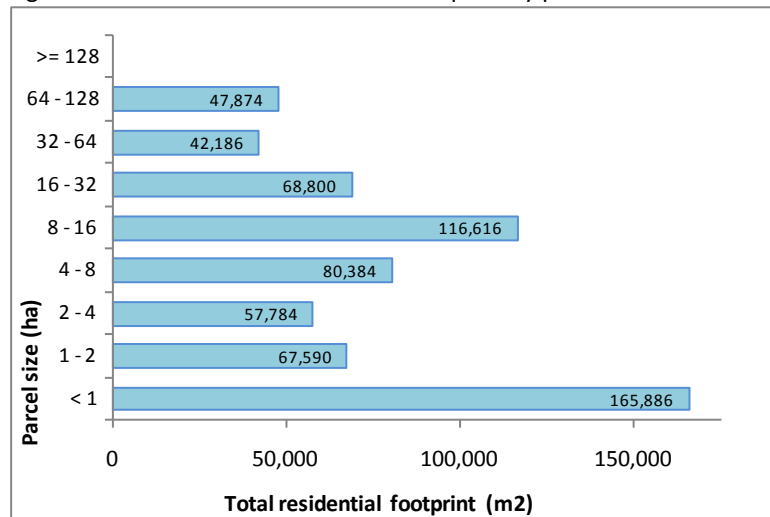


Figure 47 illustrates that there are almost 65 hectares (647,000 m2) of ALR land in residential footprints distributed across all parcel sizes except >=128 hectares.

Figure 48. Proportion of parcels with residences by parcel size

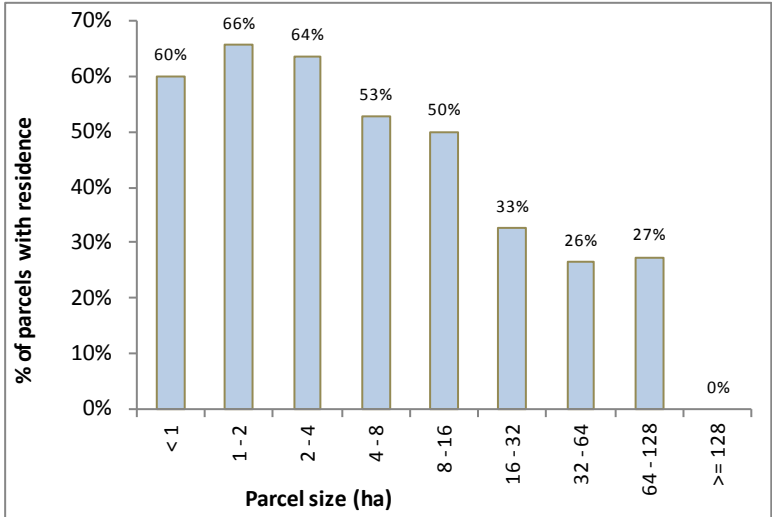


Figure 48 shows that over 50% of all privately owned ALR parcels less than 16 hectare in size have a residence.

Figure 49. Average percent of parcel area in residential footprint by parcel size

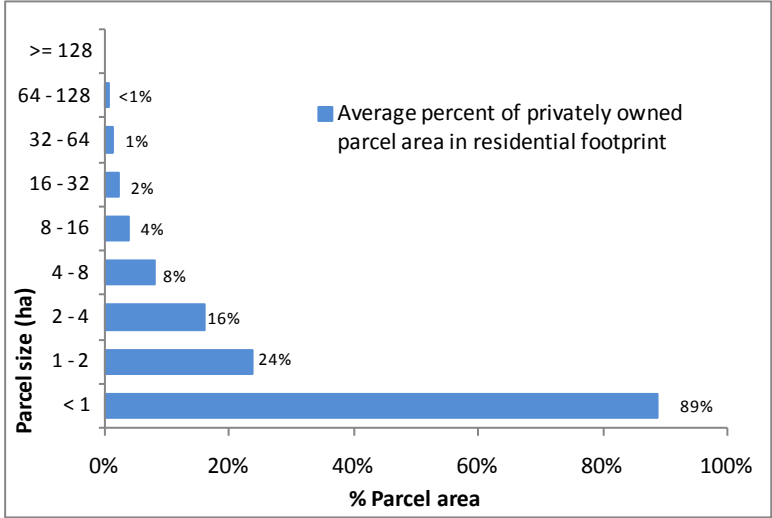


Figure 49 demonstrates that residential footprints on smaller parcels use a much greater proportion of the parcel area than those on larger parcels.

Figure 50. Average total area in residential footprint by parcel size

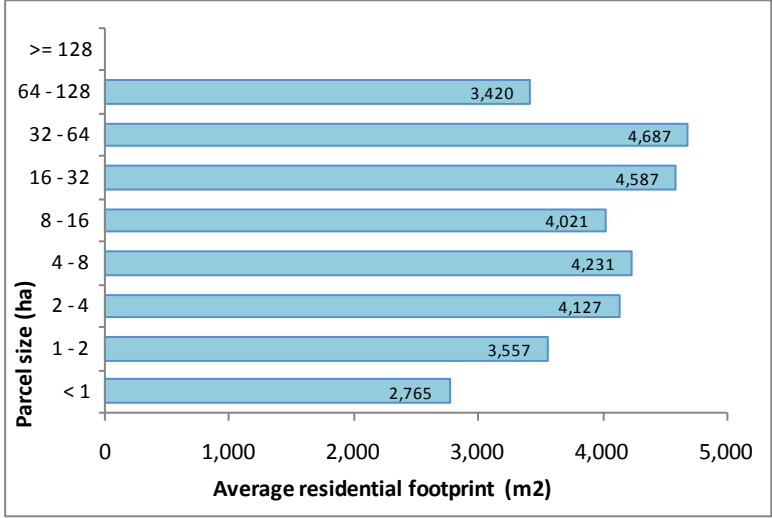
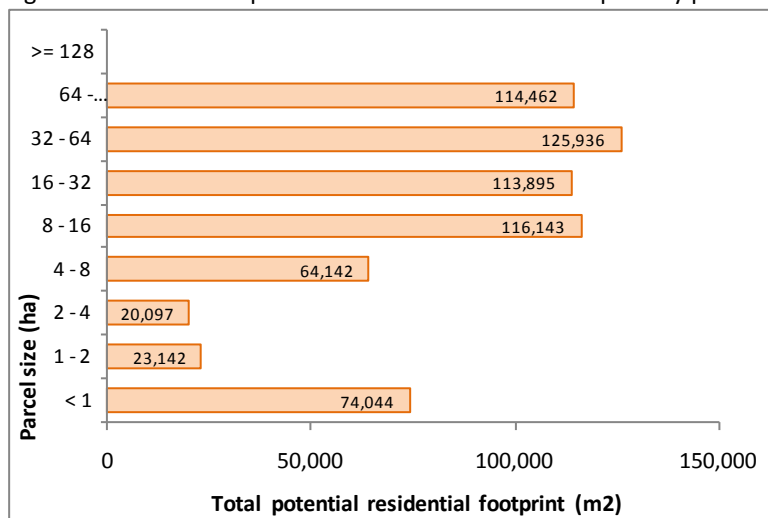


Figure 50 illustrates that even though residential footprints on small parcels use a greater proportion of the parcel area, the average size of the footprint is smaller compared to the footprint on larger parcels.

Figure 51. Total and potential area in residential footprint by parcel size



There are 180 privately owned parcels in the ALR that are "Used for farming" or "Not used for farming but available" that do not yet have a residence (Refer to Table 20 above).

If all 180 parcels built a residence, using the average percent of parcel area in residential footprint presented in Figure 50, an additional 65 hectares (651,862 m2) of ALR land would be permanently removed from potential production.

Table 22. Main agriculture activity and largest residence on "Used for farming" parcels in the ALR

| Privately owned parcels<br>Main agricultural activity | Largest residence on the parcel |             |              |             |              | Number of parcels |
|---|---------------------------------|-------------|--------------|-------------|--------------|-------------------|
|   | Single mobile home              | Small house | Medium house | Large house | Estate house |                   |
| Equine  | 1                               | 5           | 16           | 4           | 1            | 27                |
| Forage, pasture                                       | 1                               | 2           | 16           | 3           | -            | 22                |
| Grains, cereals, oilseeds                             | -                               | -           | -            | 1           | -            | 1                 |
| Livestock   | 2                               | -           | 6            | 3           | 1            | 12                |
| Tree fruits   | -                               | -           | 1            | -           | -            | 1                 |
| Vegetables  | -                               | 1           | 2            | -           | -            | 3                 |
| <b>TOTAL PARCELS</b>                                  | <b>4</b>                        | <b>8</b>    | <b>41</b>    | <b>11</b>   | <b>2</b>     | <b>66</b>         |

There are 66 parcels with residences that are "Used for farming" (refer to Table 20 above).

Table 22 shows that large houses occur most frequently on parcels with equines as the main agricultural activity.

Table 23. Main agriculture activity on "Used for farming" parcels with Large or Estate residences in the ALR

| Privately owned parcels<br>Main agricultural activity | Parcels with "Large" or "Estate" residences |                         |                                  |                          |
|---|---|-------------------------|----------------------------------|--------------------------|
|   | Number of parcels                           | Crop area utilized (ha) | Average % of parcel area in crop | Average parcel area (ha) |
| Equine  | 5   | 51                      | 68 %                             | 22                       |
| Livestock   | 4   | 33                      | 54 %                             | 30                       |
| Forage, pasture                                       | 3   | 57                      | 79 %                             | 21                       |
| Grains, cereals, oilseeds                             | 1   | 30                      | 99 %                             | 30                       |
| <b>TOTAL</b>  | <b>13</b>                                   | <b>172</b>              |                                  |                          |

There are 13 privately owned parcels with Large or Estate residences in the ALR that are "Used for farming" (see Table 22 above).

Table 23 illustrates that of these parcels, 5 or 38% were associated with 51 hectares of crop area associated with equine activities.

## Definitions

### General

**Agricultural Land Reserve (ALR)** – A provincial zone in which agriculture is recognized as the priority use. Farming is encouraged and non-agricultural uses are controlled.

**BC Assessment** – The Crown corporation which produces annual, uniform property assessments that are used to calculate local and provincial taxation. The database purchased from BC Assessment contains information about property ownership, land use, and farm classification, which is useful for land use surveys.

**Cadastral** – The GIS layer containing parcel boundaries, i.e. legal lot lines.

**Crown ownership** – Crown ownership includes parcels which are owned by municipal, provincial or federal governments. Parcel ownership is determined by the Integrated Cadastral Fabric maintained by the Parcel Fabric Section of the BC Government.

**Farm classification for tax assessment** – Applies to parcels producing the minimum dollar amount to be classified as a farm by BC Assessment. Local governments apply a tax rate to farmland which is usually lower than for other land. To receive and maintain the farm classification, the land must generate annual income from agricultural production.

**Farm Unit** – An area of land used for a farm operation consisting of one or more contiguous or non-contiguous parcels, that may be owned, rented or leased, which form and are managed as a single farm.

### Land Cover

**Anthropogenic – Built up - Other** – Lands covered by various unused or unmaintained built objects (structures) and associated yards that are not directly used for farming.

**Anthropogenic – Managed vegetation** – Lands seeded or planted for landscaping, dust or soil control but not cultivated for harvest or pasture. Includes parklands, golf courses, landscaping, lawns, vegetated enclosures, remediation areas.

**Anthropogenic – Non Built or Bare** – Human created bare areas such as extraction or disposal sites. Includes piles, pits, fill dumps, dirt parking or storage areas.

**Anthropogenic – Residential** – Lands covered by built objects (structures) and their associated auxiliary buildings, yards, roads, and parking. Includes single and multifamily dwellings, and mobile homes.

**Anthropogenic – Residential footprint** – Includes the main residence plus its associated yard, driveway, parking and any auxiliary buildings or structures. When two residences are on a property, areas associated to both (such as shared driveways, parking or yard), are assigned to the closest residence.

**Anthropogenic – Settlement** – Lands covered by built objects (structures) and their associated yards, roads, parking. Includes institutional, commercial, industrial, sports / recreation, military, non linear utility areas and storage / parking.

**Anthropogenic** – The term *anthropogenic* describes an effect or object resulting from human activity. In this report, the term anthropogenic refers to land cover originating and maintained by human actions but excludes farmed land cover; cultivated field crops, farm infrastructure, crop cover structures.

**Anthropogenic – Transportation** – Lands covered by built objects (structures). Includes roads, railways, and airports and associated buffers and yards.

**Anthropogenic – Utilities** – Lands covered by built objects (structures). Includes linear features such as pipelines or transmission lines.

**Anthropogenic Waterbodies** – Areas covered by water, snow or ice due to human construction. Includes reservoirs, canals, ditches, and artificial lakes - with or without non cultivated vegetation.

**Crop cover structures** – Land covered with built objects including permanent enclosed glass or poly structures (**greenhouses**) with or without climate control facilities for growing plants and vegetation under controlled environments, and barns used for growing crops such as mushrooms. Excludes non permanent structures such as hoop or tunnel covers.

**Cultivated field crops** - Land under cultivation for harvest or pasture. Includes crop land, fallow farmland, unused forage or pasture, un-housed container crops and crops under temporary covers. Excludes natural pasture, rangeland, greenhouses, mushroom barns and other crop houses.

**Farm infrastructure** – Land covered by farm related built objects (structures) and their associated yards, roads, parking. Includes barns, storage structures, paddocks, corrals, riding rings, farm equipment storage, and specialized farm buildings such as hatcheries. Excludes greenhouses, mushroom barns and other crop houses.

**Natural and Semi-natural – Grassland** – greater than 50% of cover is herbaceous plants with long, narrow leaves characterized by linear venation; including grasses, sedges, rushes, and other related species.

**Natural and Semi-natural – Herbaceous** – the dominant vegetation is native low, non woody plants such as ferns, grasses, horsetails, closers and dwarf woody plants. If greater than 50% cover is grass, the land is categorized as grassland.

**Natural and Semi-natural** – Land cover which has not originated from human activities or is not being maintained by human actions. Includes regenerating lands, and old farm fields.

**Natural and Semi-natural – Natural bare areas** – Includes bare rock areas, sands and deserts.

**Natural and Semi-natural – Natural pasture** – smaller fenced area on private land with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock.

**Natural and Semi-natural – Rangeland** – larger fenced area usually on crown land with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock.

**Natural and Semi-natural – Shrubland** – less than 10% crown cover is native trees and at least 20% crown cover is multi-stemmed woody perennial plants, both evergreen and deciduous.

**Natural and Semi-natural – Treed - closed** – between 60 and 100% of crown cover is native trees.



**Natural and Semi-natural – Treed - open** – between 10 and 60% of crown cover is native trees.

**Natural pasture or rangeland** – land with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock. This land cover is considered “Used for grazing” and “Not used for farming” although usually these areas are extensions of more intensive farming areas.

**Unmaintained field crops** – Land under cultivation for field crops which has not been maintained for several years and probably would not warrant harvest.

**Unmaintained forage or pasture** – Land under cultivation for forage or pasture which has not been cut or grazed during the current growing season and has not been maintained for several years.

**Unused forage or pasture** – Land under cultivation for forage or pasture which has not been cut or grazed during the current growing season.

## ***Livestock***

**Animal Unit Equivalent** – A standard measurement used to compare different livestock types. One animal unit equivalent is approximately equal to one adult cow or horse.

**Scale of livestock operations** – The scale system used in this report to describe livestock operations includes 4 levels:

- **“Very Small** Approximately 1 cow or horse or bison, 3 hogs, 5 goats or deer, 10 sheep, 50 turkeys, 100 chickens (1 animal unit equivalent)
- **“Small”** LESS THAN 25 cows or horses or bison, 75 hogs, 125 goats or deer, 250 sheep, 1250 turkeys, 2500 chickens (2 - 25 animal unit equivalents)
- **“Medium”** LESS THAN 100 cows or horses or bison, 300 hogs, 500 goats or deer, 1000 sheep, 5,000 turkeys, 10,000 chickens (25 - 100 animal unit equivalents)
- **“Large”** MORE THAN 100 cows or horses or bison, 300 hogs, 500 goats or deer, 1000 sheep, 5,000 turkeys, 10,000 chickens (over 100 animal unit equivalents)

## ***Land Cover and Farming***

**Actively farmed** – Land cover considered **Farmed** but excludes unused / unmaintained field crops, and unmaintained greenhouses.

**Farmed** – Land cover directly contributing to agricultural production (both actively farmed and inactively farmed). Includes land in **Cultivated field crops, Farm infrastructure** and **Crop cover structures** (see individual definitions). Does not include natural pasture or rangeland.

**Inactively farmed.** Land cover considered “Farmed” but is currently inactive. Includes unused / unmaintained forage and pasture, unmaintained field crops, and unmaintained greenhouses. Does not include natural pasture or rangeland.

**Potential for farming** – Land without significant topographical, physical or operational constraints to farming such as steep terrain, land under water, or built structures. For example, land with little slope, sufficient soils and exhibiting a natural treed land cover would be considered as having potential for farming.

## ***Land Use***

**No apparent use** – Parcel with no apparent human use; natural area, long term fallow land, cleared land not in production, abandoned or neglected land, abandoned or unused structures.

**Resource protection & research** – Government or private research activities (including agriculture). Flood protection areas.

**Water management** – Areas used to actively or inactively manage water; reservoirs, dikes, ditches, managed wetland.

## ***Land Use and Farming***

**Used for farming** – Parcels where the majority of the parcel area is farmed OR parcels which exhibit significant intensity of farming are considered “Used for farming”. Specifically, parcels that meet at least one of the following criteria:

- medium or large scale livestock, apiculture or aquaculture operations
- at least 50% parcel area in cultivated field crops (excluding unused forage or pasture)
- at least 50% parcel area built up with farm infrastructure
- at least 25% parcel area built up with crop cover structures (excluding unmaintained structures)
- at least 40% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and small scale livestock, apiculture or aquaculture operations
- at least 33% parcel area in cultivated field crops (excluding unused forage or pasture) and at least 55% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure
- at least 10% parcel area in crop cover structures (excluding unmaintained structures) and at least 40% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure
- at least 20% parcel area and at least 20 ha in cultivated field crops (excluding unused forage or pasture)
- at least 25% parcel area and at least 10 ha in cultivated field crops (excluding unused forage or pasture)
- at least 30% parcel area and at least 5 ha in cultivated field crops (excluding unused forage or pasture)
- at least 10% parcel area and at least 2 ha built up with crop cover structures (excluding unmaintained structures)
- at least 20% parcel area and at least 1 ha built up with crop cover structures (excluding unmaintained structures)

**Not used for farming** – Parcels that do not meet the “Used for farming” criteria presented above.

**Used for grazing** – Parcels “Not used for farming” with a significant portion of their area in natural pasture or rangeland and evidence of active grazing domestic livestock.

**Unavailable for farming** – “Not used for farming” parcels where future agricultural development is improbable because of a conflicting land use that utilizes the majority of the parcel area. For example, most residential parcels are considered not available for farming if the parcel size is less than 0.4 hectares (approximately 1 acre) since most of the parcel is covered by built structures, pavement and landscaping.

**Available for farming** – Parcels that can be used for agricultural purposes without displacing a current use. Includes all parcels that do not meet the “Unavailable for farming” criteria.

**Not used for farming but available** – Parcels that do not meet the “Used for farming” criteria but can be used for agricultural purposes without displacing a current use.

## Acronyms

|      |                                 |
|------|---------------------------------|
| AAC  | Agricultural Advisory Committee |
| AAP  | Agricultural Area Plan          |
| AGRI | BC Ministry of Agriculture      |
| ALC  | Agricultural Land Commission    |
| ALR  | Agricultural Land Reserve       |
| ALUI | Agricultural Land Use Inventory |
| GIS  | Geographic Information Systems  |

## Appendix A

### CULTIVATED FIELD CROPS

Table A1. Distribution of crop field sizes for all cultivated land

| Crop area (ha)                  | Number of crop fields |              |                  |                           |                 |                   | Total number |
|---------------------------------|-----------------------|--------------|------------------|---------------------------|-----------------|-------------------|--------------|
|                                 | Forage, pasture       | Vegetables   | Tree fruits      | Grains, cereals, oilseeds | Christmas trees | Crop transition * |              |
| < 1                             | 94                    | 4            | 11               | -                         | -               | 1                 | 110          |
| 1 - 2                           | 45                    | -            | 1                | 1                         | -               | -                 | 47           |
| 2 - 4                           | 26                    | 2            | -                | -                         | -               | -                 | 28           |
| 4 - 8                           | 32                    | 1            | -                | -                         | -               | -                 | 33           |
| 8 - 16                          | 22                    | -            | -                | 2                         | 1               | 1                 | 26           |
| 16 - 32                         | 14                    | -            | -                | 1                         | -               | -                 | 15           |
| 32 - 64                         | 6                     | 2            | -                | -                         | -               | -                 | 8            |
| 64 - 128                        | 2                     | -            | -                | -                         | -               | -                 | 2            |
| >= 128                          | 1                     | -            | -                | -                         | -               | -                 | 1            |
| <b>TOTAL NUMBER OF FIELDS</b>   | <b>242</b>            | <b>9</b>     | <b>12</b>        | <b>4</b>                  | <b>1</b>        | <b>2</b>          | <b>270</b>   |
| <b>AVERAGE CROP AREA (ha)</b>   | <b>6 ha</b>           | <b>12 ha</b> | <b>&lt; 1 ha</b> | <b>11 ha</b>              | <b>15 ha</b>    | <b>7 ha</b>       | <b>6 ha</b>  |
| <b>MEDIAN CROP AREA (ha)</b>    | <b>1 ha</b>           | <b>2 ha</b>  | <b>&lt; 1 ha</b> | <b>11 ha</b>              | <b>15 ha</b>    | <b>7 ha</b>       | <b>1 ha</b>  |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>15 ha</b>          | <b>18 ha</b> | <b>4 ha</b>      | <b>30 ha</b>              | <b>37 ha</b>    | <b>14 ha</b>      | <b>15 ha</b> |

\* Crop transition. An area that is transitioning from one type of crop to another.

Table A2. Distribution of forage and pasture field sizes<sup>1</sup>

| Field size (ha)                 | Number of forage or pasture fields |                  |             |                 | Total number |
|---------------------------------|------------------------------------|------------------|-------------|-----------------|--------------|
|                                 | Forage                             | Pasture          | Unused *    | Unmaintained ** |              |
| < 1                             | 11                                 | 86               | 5           | 6               | 108          |
| 1 - 2                           | 12                                 | 34               | 3           | 2               | 51           |
| 2 - 4                           | 16                                 | 17               | 1           | 2               | 36           |
| 4 - 8                           | 22                                 | 16               | -           | 3               | 41           |
| 8 - 16                          | 13                                 | 7                | 1           | -               | 21           |
| 16 - 32                         | 12                                 | 2                | 1           | -               | 15           |
| 32 - 64                         | 4                                  | -                | -           | -               | 4            |
| 64 - 128                        | 1                                  | 1                | -           | -               | 2            |
| >= 128                          | 1                                  | -                | -           | -               | 1            |
| <b>TOTAL NUMBER OF FIELDS</b>   | <b>92</b>                          | <b>163</b>       | <b>11</b>   | <b>13</b>       | <b>279</b>   |
| <b>AVERAGE CROP AREA (ha)</b>   | <b>11 ha</b>                       | <b>3 ha</b>      | <b>4 ha</b> | <b>2 ha</b>     | <b>5 ha</b>  |
| <b>MEDIAN CROP AREA (ha)</b>    | <b>5 ha</b>                        | <b>&lt; 1 ha</b> | <b>1 ha</b> | <b>1 ha</b>     | <b>2 ha</b>  |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>32 ha</b>                       | <b>9 ha</b>      | <b>8 ha</b> | <b>5 ha</b>     | <b>16 ha</b> |

\* Unused refers to forage or pasture which has not been cut or grazed during the current growing season.

\*\* Unmaintained refers to forage or pasture which has not been maintained for several years.

<sup>1</sup> Unused refers to forage or pasture which has not been cut or grazed during the current growing season.

Table A3. Distribution of vegetable field sizes

| Field size (ha)                 | Number of vegetable fields |                 |                    |                  | Total number |
|---------------------------------|----------------------------|-----------------|--------------------|------------------|--------------|
|                                 | Potatoes                   | Root vegetables | Unknown vegetables | Mixed vegetables |              |
| < 1                             | -                          | 1               | 2                  | 1                | 4            |
| 1 - 2                           | -                          | -               | -                  | 1                | 1            |
| 2 - 4                           | 1                          | -               | 1                  | -                | 2            |
| 4 - 8                           | 1                          | -               | -                  | -                | 1            |
| 8 - 16                          | -                          | -               | -                  | -                | -            |
| 16 - 32                         | 1                          | -               | -                  | -                | 1            |
| 32 - 64                         | 1                          | 1               | -                  | -                | 2            |
| 64 - 128                        | -                          | -               | -                  | -                | -            |
| >= 128                          | -                          | -               | -                  | -                | -            |
| <b>TOTAL NUMBER OF FIELDS</b>   | <b>4</b>                   | <b>2</b>        | <b>3</b>           | <b>2</b>         | <b>11</b>    |
| <b>AVERAGE CROP AREA (ha)</b>   | <b>15 ha</b>               | <b>23 ha</b>    | <b>&lt; 1 ha</b>   | <b>1 ha</b>      | <b>10 ha</b> |
| <b>MEDIAN CROP AREA (ha)</b>    | <b>12 ha</b>               | <b>23 ha</b>    | <b>&lt; 1 ha</b>   | <b>1 ha</b>      | <b>2 ha</b>  |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>36 ha</b>               | <b>43 ha</b>    | <b>2 ha</b>        | <b>4 ha</b>      | <b>22 ha</b> |

Table A4. Distribution of cereal or grain crop fields

| Field size (ha)                 | Number of cereal, grain and oilseed activities |              |              | Total number |
|---------------------------------|--|--------------|--------------|--------------|
|                                 | Barley   | Oats         | Canola       |              |
| < 1                             | -  | -            | -            | -            |
| 1 - 2                           | -  | 1            | -            | 1            |
| 2 - 4                           | -  | -            | 1            | 1            |
| 4 - 8                           | 1  | -            | -            | 1            |
| 8 - 16                          | -  | 1            | -            | 1            |
| 16 - 32                         | 1  | -            | -            | 1            |
| 32 - 64                         | -  | -            | -            | -            |
| 64 - 128                        | -  | -            | -            | -            |
| >= 128                          | -  | -            | -            | -            |
| <b>TOTAL NUMBER OF FIELDS</b>   | <b>2</b>                                       | <b>2</b>     | <b>1</b>     | <b>5</b>     |
| <b>AVERAGE CROP AREA (ha)</b>   | <b>12 ha</b>                                   | <b>7 ha</b>  | <b>3 ha</b>  | <b>8 ha</b>  |
| <b>MEDIAN AREA (ha)</b>         | <b>12 ha</b>                                   | <b>7 ha</b>  | <b>3 ha</b>  | <b>6 ha</b>  |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>34 ha</b>                                   | <b>26 ha</b> | <b>17 ha</b> | <b>27 ha</b> |

Table A5. Distribution of natural pasture or rangeland areas

| Area (ha)                       | Number of areas   |                     | Total number |
|---------------------------------|-------------------|---------------------|--------------|
|                                 | Pasture (natural) | Rangeland (natural) |              |
| < 1                             | 79                | 37                  | 116          |
| 1 - 2                           | 33                | 21                  | 54           |
| 2 - 4                           | 23                | 27                  | 50           |
| 4 - 8                           | 28                | 36                  | 64           |
| 8 - 16                          | 9                 | 65                  | 74           |
| 16 - 32                         | 11                | 46                  | 57           |
| 32 - 64                         | 7                 | 58                  | 65           |
| 64 - 128                        | 1                 | 66                  | 67           |
| >= 128                          | -                 | 29                  | 29           |
| <b>TOTAL NUMBER OF AREAS</b>    | <b>191</b>        | <b>385</b>          | <b>576</b>   |
| <b>AVERAGE AREA (ha)</b>        | <b>6 ha</b>       | <b>39 ha</b>        | <b>28 ha</b> |
| <b>MEDIAN AREA (ha)</b>         | <b>2 ha</b>       | <b>16 ha</b>        | <b>8 ha</b>  |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>10 ha</b>      | <b>42 ha</b>        | <b>31 ha</b> |

## GREENHOUSES

Table A6. Distribution of greenhouses by crop type<sup>2</sup>

| Greenhouse size (ha)            | Number of greenhouses |                  |                  | Total number     |
|---------------------------------|-----------------------|------------------|------------------|------------------|
|                                 | Vegetables            | Floriculture     | Unknown *        |                  |
| < 1                             | 1                     | 1                | 2                | 4                |
| 1 - 2                           | -                     | -                | -                | -                |
| 2 - 4                           | -                     | -                | -                | -                |
| 4 - 8                           | -                     | -                | -                | -                |
| 8 - 16                          | -                     | -                | -                | -                |
| 16 - 32                         | -                     | -                | -                | -                |
| 32 - 64                         | -                     | -                | -                | -                |
| 64 - 128                        | -                     | -                | -                | -                |
| >= 128                          | -                     | -                | -                | -                |
| <b>TOTAL NUMBER</b>             | <b>1</b>              | <b>1</b>         | <b>2</b>         | <b>4</b>         |
| <b>AVERAGE AREA (ha)</b>        | <b>&lt; 1 ha</b>      | <b>&lt; 1 ha</b> | <b>&lt; 1 ha</b> | <b>&lt; 1 ha</b> |
| <b>MEDIAN AREA (ha)</b>         | <b>&lt; 1 ha</b>      | <b>&lt; 1 ha</b> | <b>&lt; 1 ha</b> | <b>&lt; 1 ha</b> |
| <b>AVERAGE PARCEL SIZE (ha)</b> | <b>4 ha</b>           | <b>8 ha</b>      | <b>5 ha</b>      | <b>5 ha</b>      |

\* Unknown. The type of crop produced within the greenhouse is unknown. ☐

<sup>2</sup> The average area and median area reported in this table excludes external greenhouse yards, parking, warehouses and other infrastructure related to the greenhouse operation.

## LIVESTOCK

Table A7. Distribution of livestock operations by type

| Parcel size (ha)                  | Type of activity |              |             |             |                     |                |                     |             | Total number of activities |
|-----------------------------------|------------------|--------------|-------------|-------------|---------------------|----------------|---------------------|-------------|----------------------------|
|                                   | Beef             | Dairy        | Poultry     | Swine       | Sheep / lamb / goat | Llama / alpaca | Unknown livestock * | Equine      |                            |
| < 1                               | 1                | -            | 3           | -           | 2                   | 2              | -                   | 19          | 27                         |
| 1 - 2                             | 3                | -            | 3           | -           | 3                   | 3              | -                   | 39          | 51                         |
| 2 - 4                             | 3                | -            | 1           | 1           | 1                   | 1              | 2                   | 34          | 43                         |
| 4 - 8                             | 2                | -            | 2           | -           | 2                   | -              | -                   | 20          | 26                         |
| 8 - 16                            | 5                | -            | 1           | -           | 1                   | -              | -                   | 20          | 27                         |
| 16 - 32                           | 2                | 1            | -           | -           | 1                   | -              | -                   | 11          | 15                         |
| 32 - 64                           | 2                | -            | -           | -           | -                   | -              | -                   | 2           | 4                          |
| 64 - 128                          | 4                | -            | -           | -           | -                   | -              | -                   | 5           | 9                          |
| >= 128                            | 1                | -            | -           | -           | -                   | -              | -                   | -           | 1                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | <b>23</b>        | <b>1</b>     | <b>10</b>   | <b>1</b>    | <b>10</b>           | <b>6</b>       | <b>2</b>            | <b>150</b>  | <b>203</b>                 |
| <b>MEDIAN PARCEL SIZE (ha)</b>    | <b>8 ha</b>      | <b>16 ha</b> | <b>1 ha</b> | <b>4 ha</b> | <b>2 ha</b>         | <b>1 ha</b>    | <b>3 ha</b>         | <b>2 ha</b> | <b>2 ha</b>                |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | <b>28 ha</b>     | <b>16 ha</b> | <b>3 ha</b> | <b>4 ha</b> | <b>5 ha</b>         | <b>1 ha</b>    | <b>3 ha</b>         | <b>8 ha</b> | <b>10 ha</b>               |

\* Unknown livestock is where livestock structures were present but the specific type of livestock could not be determined.

Table A8. Beef activities

| Type of activity | Scale                        | By parcel |                | Total number of activities | By activity type |           |
|------------------|------------------------------|-----------|----------------|----------------------------|------------------|-----------|
|                  |                              | Main type | Secondary type |                            | Intensive        | Intensive |
| Cow calf         | Very small scale (1 cow)     | 5         | 2              | 7                          | -                | 7         |
| Cow calf         | Small scale (2-25 cattle)    | 12        | -              | 12                         | -                | 12        |
| Backgrounding    | Small scale (2-25 cattle)    | 1         | -              | 1                          | -                | 1         |
| Cow calf         | Medium scale (25-100 cattle) | 1         | -              | 1                          | -                | 1         |
| Cow calf         | Large scale (> 100 cattle)   | 2         | -              | 2                          | -                | 2         |
| <b>TOTAL</b>     | <b>TOTAL</b>                 | <b>21</b> | <b>2</b>       | <b>23</b>                  | <b>-</b>         | <b>23</b> |

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.



Table A9. Distribution of beef activities by parcel size and scale

| Parcel size (ha)                  | Scale of beef activities |                     |                        |                      | Total number of activities |
|-----------------------------------|--------------------------|---------------------|------------------------|----------------------|----------------------------|
|                                   | Very small (1 cow)       | Small (2-25 cattle) | Medium (25-100 cattle) | Large (> 100 cattle) |                            |
| < 1                               | 1                        | -                   | -                      | -                    | 1                          |
| 1 - 2                             | 2                        | 1                   | -                      | -                    | 3                          |
| 2 - 4                             | 2                        | 1                   | -                      | -                    | 3                          |
| 4 - 8                             | -                        | 2                   | -                      | -                    | 2                          |
| 8 - 16                            | 2                        | 3                   | -                      | -                    | 5                          |
| 16 - 32                           | -                        | 1                   | 1                      | -                    | 2                          |
| 32 - 64                           | -                        | 1                   | -                      | 1                    | 2                          |
| 64 - 128                          | -                        | 3                   | -                      | 1                    | 4                          |
| >= 128                            | -                        | 1                   | -                      | -                    | 1                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | <b>7</b>                 | <b>13</b>           | <b>1</b>               | <b>2</b>             | <b>23</b>                  |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | <b>5 ha</b>              | <b>36 ha</b>        | <b>21 ha</b>           | <b>65 ha</b>         |                            |

Figure A1. Distribution of beef activities by parcel size and scale

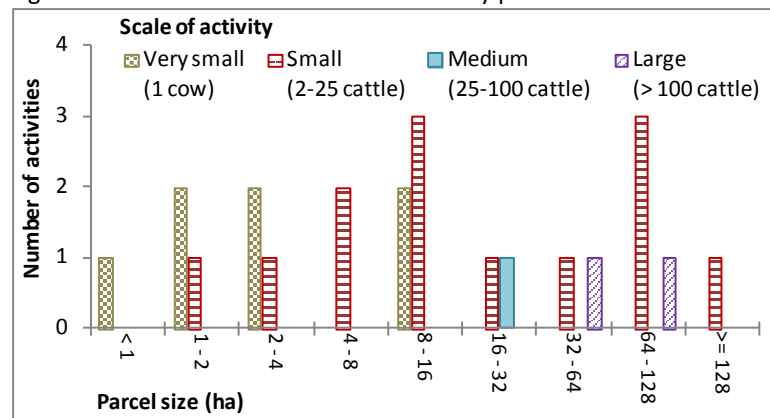


Figure A2. Land cover on parcels with beef activities

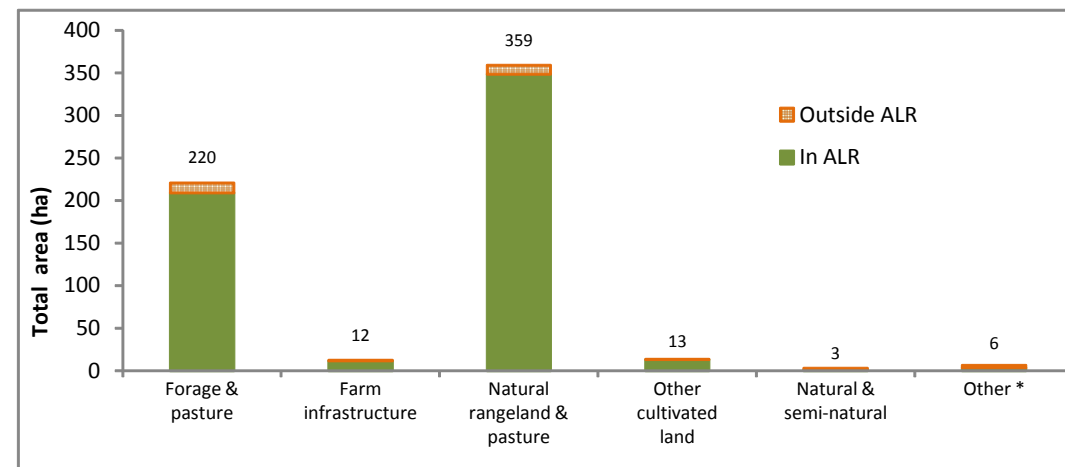


Table A10. Dairy activities

| Type of activity | Scale of dairy activity | By parcel |                | Total number of activities | By activity type |               |
|------------------|-------------------------|-----------|----------------|----------------------------|------------------|---------------|
|                  |                         | Main type | Secondary type |                            | Intensive        | Non intensive |
| Milking          | Large (> 100 cattle)    | 1         | -              | 1                          | 1                | -             |
| <b>TOTAL</b>     | <b>TOTAL</b>            | <b>1</b>  | <b>-</b>       | <b>1</b>                   | <b>1</b>         | <b>-</b>      |

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

Table A11. Distribution of dairy activities by parcel size and scale

| Parcel Size (ha)                  | Scale of dairy activities |                     |                        |                      | Total number of activities |
|-----------------------------------|---------------------------|---------------------|------------------------|----------------------|----------------------------|
|                                   | Very small (1 cow)        | Small (2-25 cattle) | Medium (25-100 cattle) | Large (> 100 cattle) |                            |
| < 1                               | -                         | -                   | -                      | -                    | -                          |
| 1 - 2                             | -                         | -                   | -                      | -                    | -                          |
| 2 - 4                             | -                         | -                   | -                      | -                    | -                          |
| 4 - 8                             | -                         | -                   | -                      | -                    | -                          |
| 8 - 16                            | -                         | -                   | -                      | -                    | -                          |
| 16 - 32                           | -                         | -                   | -                      | 1                    | 1                          |
| 32 - 64                           | -                         | -                   | -                      | -                    | -                          |
| 64 - 128                          | -                         | -                   | -                      | -                    | -                          |
| >= 128                            | -                         | -                   | -                      | -                    | -                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | -                         | -                   | -                      | <b>1</b>             | <b>1</b>                   |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | -                         | -                   | -                      | <b>16 ha</b>         | <b>16 ha</b>               |

Figure A3. Distribution of dairy activities by parcel size and scale

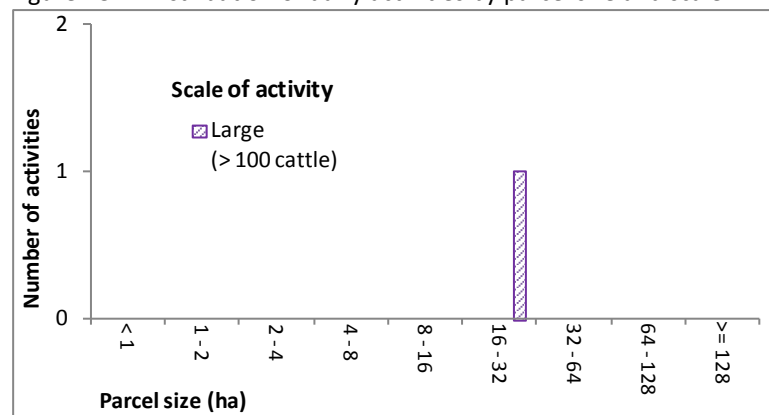


Figure A4. Land cover on parcels with dairy activities

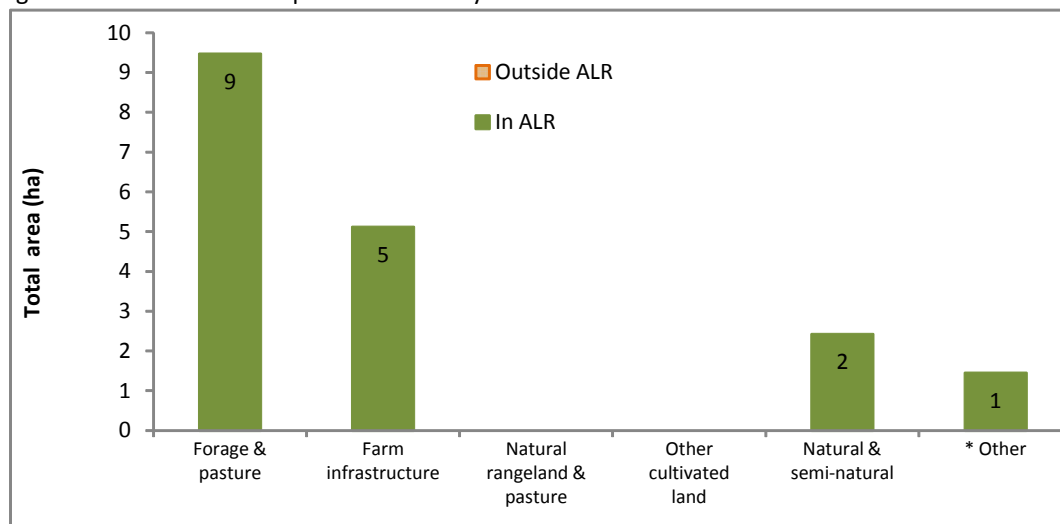


Table A12. Poultry activities

| Poultry activity | Scale                           | By parcel |                | Total number of activities | By activity type |               |
|------------------|---------------------------------|-----------|----------------|----------------------------|------------------|---------------|
|                  |                                 | Main type | Secondary type |                            | Intensive        | Non intensive |
| Chicken          | Very small scale (< 100 birds)  | 2         | 1              | 3                          | -                | 3             |
| Chicken          | Small scale ( 100 - 2500 birds) | 4         | -              | 4                          | -                | 4             |
| Turkey           | Very small scale (< 50 birds)   | 1         | 1              | 2                          | -                | 2             |
| Turkey           | Small scale ( 50 - 1250 birds)  | -         | 1              | 1                          | -                | 1             |
| <b>TOTAL</b>     | <b>TOTAL</b>                    | <b>7</b>  | <b>3</b>       | <b>10</b>                  | <b>-</b>         | <b>10</b>     |

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns.

Table A13. Distribution of poultry activities by parcel size and scale

| Parcel size (ha)                  | Scale of poultry activities |                           |                               |                        | Total number of activities |
|-----------------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|
|                                   | Very small (< 100 birds)    | Small (100 - 2,500 birds) | Medium (2,500 - 10,000 birds) | Large (> 10,000 birds) |                            |
| < 1                               | 3                           | -                         | -                             | -                      | 3                          |
| 1 - 2                             | 2                           | 1                         | -                             | -                      | 3                          |
| 2 - 4                             | -                           | 1                         | -                             | -                      | 1                          |
| 4 - 8                             | -                           | 2                         | -                             | -                      | 2                          |
| 8 - 16                            | -                           | 1                         | -                             | -                      | 1                          |
| 16 - 32                           | -                           | -                         | -                             | -                      | -                          |
| 32 - 64                           | -                           | -                         | -                             | -                      | -                          |
| 64 - 128                          | -                           | -                         | -                             | -                      | -                          |
| >= 128                            | -                           | -                         | -                             | -                      | -                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | <b>5</b>                    | <b>5</b>                  | <b>-</b>                      | <b>-</b>               | <b>10</b>                  |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | <b>1 ha</b>                 | <b>6 ha</b>               | <b>-</b>                      | <b>-</b>               | <b>4 ha</b>                |

Figure A5. Distribution of poultry activities by parcel size and scale

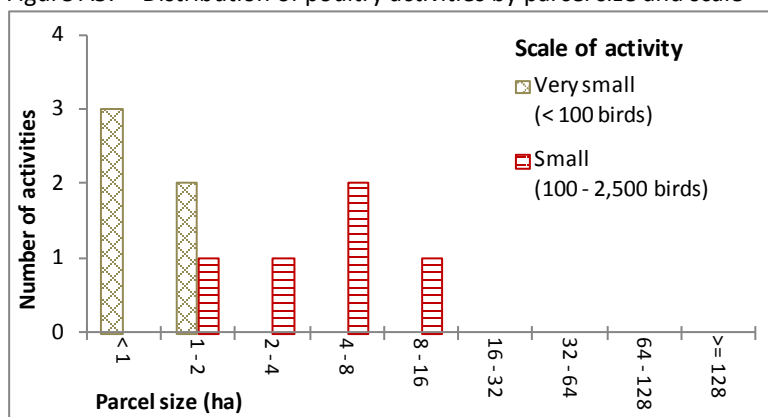
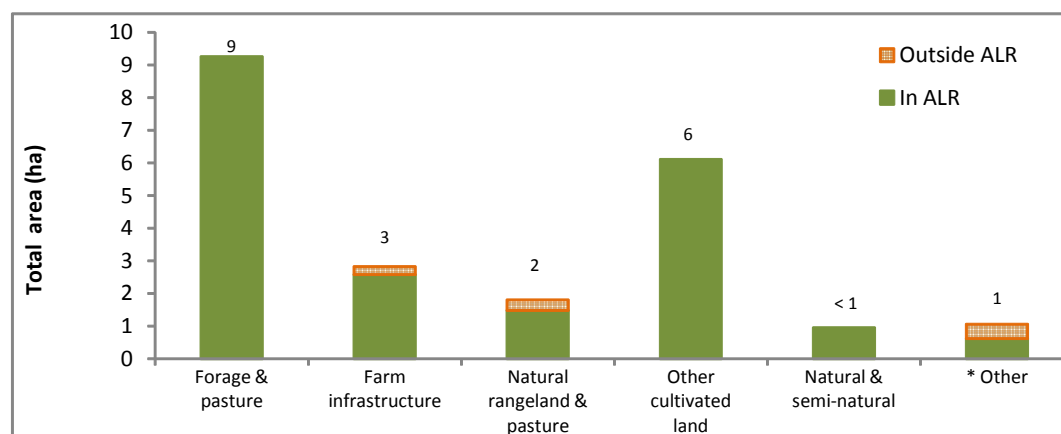


Figure A6. Land cover on parcels with poultry activities



\* Other includes vegetated lands seeded or planted for landscaping, dust, or soil control but not cultivated for harvest or pasture, lands covered by built objects but not farm infrastructure, and bare areas such as piles, pits, fill dumps.

Table A14. Sheep / lamb / goat activities

| Activity     | Scale                         | By parcel |                | Total number of activities | By activity type |               |
|--------------|-------------------------------|-----------|----------------|----------------------------|------------------|---------------|
|              |                               | Main type | Secondary type |                            | Intensive        | Non intensive |
| Goat         | Very small scale (< 5 goats)  | 2         | -              | 2                          | -                | 2             |
| Goat         | Small scale ( 5 - 125 goats)  | 1         | -              | 1                          | -                | 1             |
| Sheep / lamb | Very small scale (< 10 sheep) | 3         | 1              | 4                          | -                | 4             |
| Sheep / lamb | Small scale ( 10 - 250 sheep) | 1         | 2              | 3                          | -                | 3             |
| <b>TOTAL</b> | <b>TOTAL</b>                  | <b>7</b>  | <b>3</b>       | <b>10</b>                  | <b>-</b>         | <b>10</b>     |

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns.

Table A15. Distribution of sheep / lamb / goat activities by parcel size and scale

| Parcel size (ha)                  | Scale of poultry activities         |  |  |                                      | Total number of activities |
|-----------------------------------|-------------------------------------|--|--|--------------------------------------|----------------------------|
|                                   | Very small<br>(5 goats or 10 sheep) | Small<br>(5-125 goats or 10-250 sheep) | Medium<br>(125-500 goats or 250- 1000 sheep) | Large<br>(>500 goats or >1000 sheep) |                            |
| < 1                               | 2                                   | -                                      | -  | -                                    | 2                          |
| 1 - 2                             | 2                                   | 1                                      | -  | -                                    | 3                          |
| 2 - 4                             | 1                                   | -                                      | -  | -                                    | 1                          |
| 4 - 8                             | 1                                   | 1                                      | -  | -                                    | 2                          |
| 8 - 16                            | -                                   | 1                                      | -  | -                                    | 1                          |
| 16 - 32                           | -                                   | 1                                      | -  | -                                    | 1                          |
| 32 - 64                           | -                                   | -                                      | -  | -                                    | -                          |
| 64 - 128                          | -                                   | -                                      | -  | -                                    | -                          |
| >= 128                            | -                                   | -                                      | -  | -                                    | -                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | <b>6</b>                            | <b>4</b>                               | <b>-</b>                                     | <b>-</b>                             | <b>10</b>                  |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | <b>2 ha</b>                         | <b>10 ha</b>                           | <b>-</b>                                     | <b>-</b>                             | <b>5 ha</b>                |

Figure A7. Distribution of sheep / lamb / goat activities by parcel size and scale

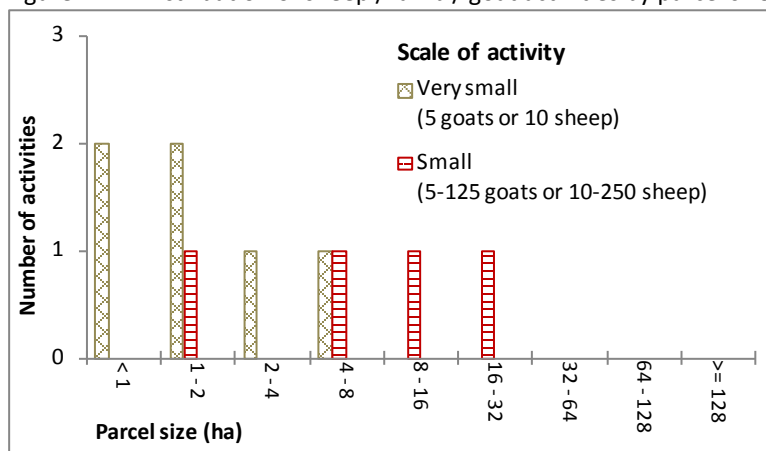
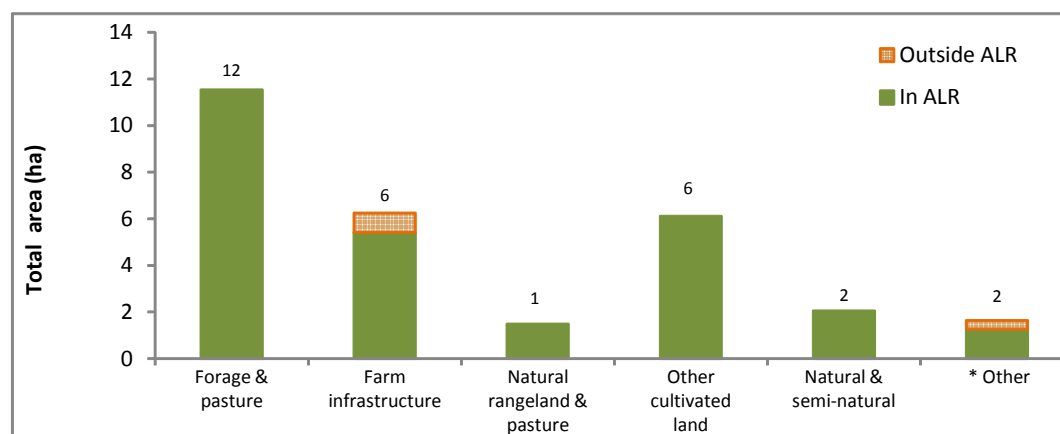


Figure A8. Land cover on parcels with poultry activities



\* Other includes vegetated lands seeded or planted for landscaping, dust, or soil control but not cultivated for harvest or pasture, lands covered by built objects but not farm infrastructure, and bare areas such as piles, pits, fill dumps.

Table A16. Equine activities

| Type of activity | Scale of equine activity   | By parcel  |                | Total number of activities | By activity type |               |
|------------------|----------------------------|------------|----------------|----------------------------|------------------|---------------|
|                  |                            | Main Type  | Secondary Type |                            | Intensive        | Non intensive |
|                  | Very small scale (1 horse) | 84         | 1              | 85                         | -                | 85            |
|                  | Small scale (2-25 horses)  | 60         | 2              | 62                         | -                | 62            |
| Boarding         | Small scale (2-25 horses)  | 2          | -              | 2                          | -                | 2             |
|                  | Large scale (> 100 horses) | 1          | -              | 1                          | -                | 1             |
| <b>TOTAL</b>     | <b>TOTAL</b>               | <b>147</b> | <b>3</b>       | <b>150</b>                 | <b>-</b>         | <b>150</b>    |

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

Table A17. Distribution of equine activities by parcel size and scale

| Parcel size (ha)                  | Scale of equine activities |                       |                          |                      | Total number of activities |
|-----------------------------------|----------------------------|-----------------------|--------------------------|----------------------|----------------------------|
|                                   | Very small (1 - 2 equine)  | Small (2 - 25 equine) | Medium (25 - 100 equine) | Large (> 100 equine) |                            |
| < 1                               | 14                         | 5                     | -                        | -                    | 19                         |
| 1 - 2                             | 26                         | 13                    | -                        | -                    | 39                         |
| 2 - 4                             | 23                         | 11                    | -                        | -                    | 34                         |
| 4 - 8                             | 9                          | 10                    | -                        | 1                    | 20                         |
| 8 - 16                            | 9                          | 11                    | -                        | -                    | 20                         |
| 16 - 32                           | 4                          | 7                     | -                        | -                    | 11                         |
| 32 - 64                           | -                          | 2                     | -                        | -                    | 2                          |
| 64 - 128                          | -                          | 5                     | -                        | -                    | 5                          |
| >= 128                            | -                          | -                     | -                        | -                    | -                          |
| <b>TOTAL NUMBER OF ACTIVITIES</b> | <b>85</b>                  | <b>64</b>             | <b>-</b>                 | <b>1</b>             | <b>150</b>                 |
| <b>AVERAGE PARCEL SIZE (ha)</b>   | <b>4 ha</b>                | <b>14 ha</b>          | <b>-</b>                 | <b>5 ha</b>          | <b>8 ha</b>                |

Figure A9. Distribution of equine activities by parcel size and scale

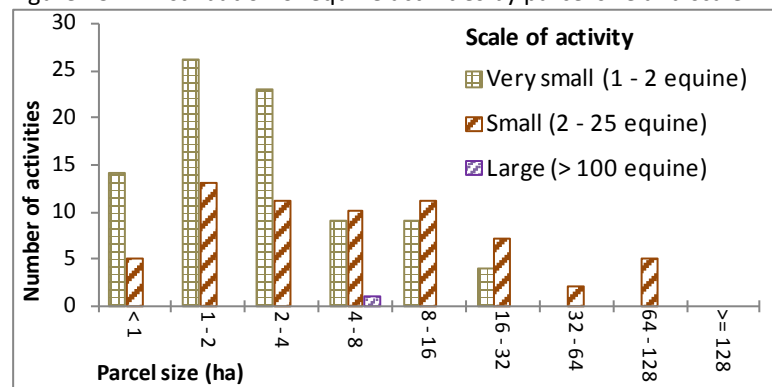
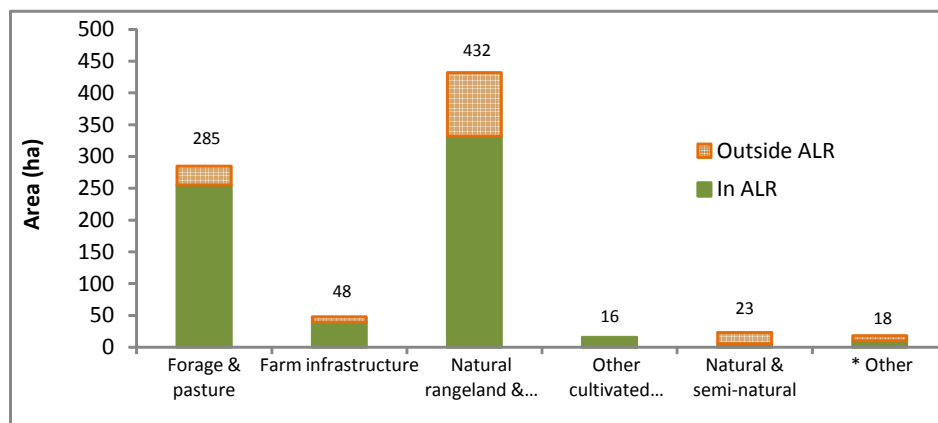


Figure A10. Land cover on parcels with equine activities



\* Other includes vegetated lands seeded or planted for landscaping, dust, or soil control but not cultivated for harvest or pasture, lands covered by built objects but not farm infrastructure, and bare areas such as piles, pits, fill dumps.



## Appendix B – Maps

|           |  |
|-----------|--|
| Map B1.   | Land cover and farmed area                                   |
| Map B2.   | Land cover and farmed area - detail                          |
| Map B3.   | Parcel ownership and land use                                |
| Map B4.   | Land use and farming use by parcel – Private Ownership       |
| Map B5.   | Land use and farming use by parcel – Crown Ownership         |
| Map B6.   | Land status with respect to farming                          |
| Map B7.   | Land not farmed but available and with potential for farming |
| Map B8.   | Cultivated field crops                                       |
| Map B9.   | Forage and pasture crops                                     |
| Map B10.  | Vegetable crops  |
| Map B11.  | Cereal, grain, and oilseed crops                             |
| Map B12a. | Rangeland & Natural pasture – Use type                       |
| Map B12b. | Rangeland & Natural pasture – Ownership type                 |
| Map B13.  | Greenhouses  |
| Map B14.  | Irrigation   |
| Map B15.  | Livestock activities – all types including Equines           |
| Map B16.  | Beef, dairy, poultry activities                              |
| Map B17.  | Equine activities  |
| Map B18.  | Parcel size in the ALR – Private ownership                   |
| Map B19.  | Parcel size in the ALR – Crown ownership                     |

Paper size: 22" x 17" landscape