Growing Knowledge

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Land Use Inventory Report

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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

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.

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

Crown owned – Crown owned includes parcels which are owned by municipal, provincial or federal governments. Parcel ownership is determined by the Integrated Cadastre Fabric maintain 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 – 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 – 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 – 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 – 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 – 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 – 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

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.

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

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 or unmaintained crops)
- 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 or unmaintained crops) or farm infrastructure and small scale livestock, apiculture or aquaculture operations
- at least 20% parcel area in cultivated field crops (excluding unused or unmaintained crops) or farm infrastructure and farm classification for tax assessment.
- at least 5 ha in cultivated field crops (excluding unused or unmaintained crops) or farm infrastructure and farm classification for tax assessment.
- at least 33% parcel area in cultivated field crops (excluding unused or unmaintained crops) and at least 55% parcel area in cultivated field crops (excluding unused or unmaintained crops) 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 or unmaintained crops) or farm infrastructure
- at least 20% parcel area and at least 20 ha in cultivated field crops (excluding unused or unmaintained crops)
- at least 25% parcel area and at least 10 ha in cultivated field crops (excluding unused or unmaintained crops)
- at least 30% parcel area and at least 5 ha in cultivated field crops (excluding unused or unmaintained crops)
- 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.

Executive Summary

In the summer of 2011, an Agricultural Land Use Inventory (ALUI) was conducted within the Regional District of East Kootenay (RDEK). The ALUI was funded by RDEK and was completed with in-kind support from the BC Ministry of Agriculture.

ALUI's can be used to understand which agricultural activities are occurring in the surveyed area. The data provides an estimate of the capacity for agricultural expansion, and the amount of land within the Agricultural Land Reserve (ALR) that is not available for agriculture. The data can also be used to model agricultural water demand and estimate the amount of water required for irrigation.

The ALUI for RDEK was conducted using a drive-by inventory that recorded land cover and land use on a per-parcel basis, as a "snapshot in time". Included in the inventory are i) all parcels completely or partially in the ALR greater than one acre and accessible by road, ii) all parcels with "Farm" status for property tax assessment, and iii) parcels where photo interpretation showed signs of agriculture.

The RDEK is a large area that is managed in three distinct units: Columbia Valley, Central, and Elk Valley. This report encompasses the information collected by the ALUI for the Central region.

The ALR in the Central region consists of 178,066 hectares. Only 64,162 hectares or just over 36% of the ALR was surveyed as part of this inventory. The remaining 64% is on parcels less than one acre, remotely located with limited access, in Indian reserves, or on unsurveyed Crown land (45%).

Of the 64,162 hectares surveyed in the ALR, 22,454 hectares (13% of the ALR) is Crown land, with the remaining 41,707 hectares being private land. A portion of the Crown land (3,285 hectares) is in Provincial Parks or properties managed for conservation of wildlife habitat.

An additional 14,104 hectares of non-ALR land was surveyed that either showed signs of agriculture from the photo interpretation or were classified as "Farm" status from BC Assessment. Of the 14,104 hectares surveyed outside the ALR, 1,706 hectares is on Crown land and 12,398 on private land.

In total, 3,133 parcels with a combined area of 78,265 hectares were surveyed. This included 54,105 hectares of private land (41,707 hectares in the ALR and 12,398 hectares outside the ALR), and 24,161 hectares of Crown land (22,454 hectares in the ALR and 1,706 hectares outside the ALR).

The data on each parcel was collected in two ways: land cover (the biophysical material at the surface of the earth) and land use (how people utilize the land). A parcel could have numerous land covers, but assigned up to two land uses.

In the ALR by land cover, 7,387 hectares (4%) is actively farmed, 283 hectares (< 1%) is inactively farmed, 2,146 hectares (1%) is anthropogenically modified, and 54,336 hectares (31%) is in natural pasture/rangeland or forested. The remaining 64% of the ALR was not surveyed for reasons stated above.

In the ALR by parcel land use, 16,150 hectares (9%) is used for some sort of farming (14,781 private land and 1,369 hectares Crown land), 28,712 hectares (16%) is used for grazing purposes (13,680 hectares private land and 15,032 hectares Crown land), and 19,299 (11%) is not used for farming or grazing. The remaining 64% of the ALR was not surveyed but one can assume this land is not used for farming but may be used for grazing.

The inventory did provide some insight into ALR land available and with potential for farming. Of the ALR, only 7,388 hectares (4%) is actively farmed right now. Another 125 hectares supports farming (e.g. housing, farm buildings, etc.). There are 4,661 hectares (3%) of the ALR unavailable for farming due to existing land use or land cover, with the largest being protected area or park (1,405 hectares).

There are 12,867 hectares (7%) of the ALR that have limited potential for farming due to topography, soils, and flooding but would have the ability to sustain some level of grazing. That leaves 39,112 hectares (22%) of the ALR available and with potential for farming, with 23,715 hectares on private land and 15,397 on Crown land. This potential for farming may increase if access was improved to remote parcels of ALR land. Of the 23,715 hectares on private land, 1,661 hectares is held by conservation groups who are managing for wildlife conservation. In some cases, this is historical farm land that is intentionally being converted from agriculture use.

Further analysis shows that 52% of the privately owned areas available and with potential for farming are smaller than 2 hectares, 31% are larger than 4 hectares and only 9% are larger than 32 hectares. Larger continuous areas are preferred as they provide a wider range of options for agriculture. In the Central region, there are 155 privately owned areas greater than 32 hectares with a combined area of 11,337 hectares that are available with potential for farming. Of these 155 areas, 14 (1,023 hectares) are held by wildlife conservation groups.

In total, there was 7,617 hectares of land under cultivation (7,419 in the ALR and 197 outside). Forage and pasture was the most common crop accounting for 95% of all cultivated land. Barley was the next most common crop with 214 hectares or 3% of cultivated land. There were 63 hectares of oats, 39 hectares of Canola, and 21 hectares of ornamentals / shrubs. There were 29 greenhouses producing a mixture of crops as well as 6 hectares under vegetable production.

Irrigation use was captured by crop type and irrigation system type to aid in developing an estimate of agricultural water demand. Sprinkler systems were the most commonly used, and were used on all crop types. Centre pivot systems were the next most common and were exclusively used on forage, pasture and cereal / oilseed crops. In the Central region, 57% of all cultivated crops were irrigated.

Livestock activities were also recorded, but are very difficult to measure using a windshield survey method. Livestock may be in barns, may be mobile, may utilize more than one land parcel, and may be remotely located on rangelands. The inventory data reports livestock at the parcel where the animals or related structures are observed. Additional information such as Crown grazing licenses were used to determine livestock homesites and the number of animals. In the Central region, equines were the most common type of livestock activity (with 354 out of 499 activities) followed by beef (92 out of 499 activities). However, most equine activities were very small when compared with beef activities. In total, the report estimates there are 6,100 head of beef cattle and 1,207 equines in the Central region. There were also a few small scale sheep / goat and llama activities, one medium scale bison activity, and one medium scale sheep / lamb activity.

Parcel size must be considered when determining the agricultural potential of a land parcel. Of the 2,413 privately owned parcels surveyed in the ALR, 1,485 are not used for farming or grazing. Of these 1,485 parcels, 50% are less than 2 hectares in size and 755 are less than 4 hectares. The majority of all parcels less than 32 hectares are not used for farming or grazing.

Summary This report provides the necessary background to understand the current status of agriculture on the land base and help make informed decisions on how best to manage the agriculture land base in order to support and strengthen farming into the future.

Agrologist Comments

Agriculture in the Regional District of East Kootenay (RDEK) has evolved and changed with the years. Small scale operations with a diversity of products slowly gave away to almost entirely beef production. Along the way, small tree fruit farms started up and then disappeared, as did potato, poultry and dairy farms. Whether it was the distance to markets or the cost of production, the economics dedicated that larger scale agriculture operations were necessary to be profitable. Based on the climate and land, cattle ranching and forage production has become the dominate agriculture operation in the regional district.

Agriculture production in the RDEK is restricted mainly to the valley bottoms of the Columbia, Kootenay, and Elk drainages. Urban centers (Radium Hot Springs, Invermere, Canal Flats, Cranbrook, Fernie, Sparwood) and residential and recreational development are located in the same valleys which continually adds pressure to the limited agriculture land base.

Agriculture is one of the many economic drivers in the region. Gross farm receipts have risen 46% since 1986 to a high of $15,570,846 in 2006, but have dropped to $14,504,239 in 2011.

To ensure agriculture has a future in the region, the RDEK in 2011 approved the preparation of an Agriculture Area Plan for the entire regional district. The purpose of the plan is to support and strengthen agriculture in the region. To support the development of the plan, the first step was an agriculture land use inventory that provides a snap shot in time of the current level of agriculture activity occurring in the area. By the fall of 2011, the agriculture land use inventory field work was completed.

Agriculture in General

In the RDEK, the Agriculture Land Reserve covers 266,058 hectares, which equates to 9.7% of the land base. Both Crown and private land are located in the ALR. Crown land in the ALR are low elevation land, most often associated with Crown Range Units, but the management of those Crown ALR lands is for multiple use (i.e. grazing, wildlife, forestry, mining), not for the benefit of agriculture exclusively.

The number of farms in the RDEK has increased by 2% from 1986 to 2011, however farm size in the has been fairly constant, with;

- 15% of the farms under 4 ha,
- 36% between 4 and 52 ha,
- 24% between 52 and 161 ha, and
- 25% greater than 161 ha.

In the Central region of RDEK, beef and forage production is the dominant agriculture commodity being produced. Available value added processing in the region consists of two abattoirs with limited capacity. Consequently, the majority of the cattle are shipped to Alberta for processing.

Forage and pasture production (95% of cultivated land) is mainly occurring on land that is irrigated where two cuts of forage can be taken. Fields are relatively small in size (average size 13 hectares) and a two cut system is required to produce adequate forage to feed overwintering livestock. In recent years, seed production has increased in the area. Due to the regions remoteness, new varieties of seed can be developed and grown in the Central region before they are ready for the commercial market. This opportunity has created some necessary income for many agriculture producers in the region.

There are 29 greenhouses in the region producing a mixture of crops as well as 6 hectares under vegetable production. All this production is sold locally via farm gate sales or Farmer's Markets. Animal production is almost entirely beef. However, there are a considerable number of horses found in the region, mainly on small acreage and suspect more for recreational purposes.

Issues Facing Agriculture

This report identifies 39,112 hectares of ALR land that is available and with potential for farming. This is 22% of the total ALR area in the Central Region of RDEK. In addition, some of the 18,795 hectares of ALR on parcels not surveyed as part of this inventory may be available and have potential for farming. However, even with this available land base, potential agricultural growth could be hampered by other issues and constraints.

- Water

  Without water for irrigation, the possibility of expanding agriculture will be limited. Even existing water rights and licenses for agriculture does not guarantee a stable water supply. With the continued expansion of the urban centers in the East Kootenay and rural subdivision, water availability for agriculture is a concern.

- Wildlife

  The East Kootenay is known for its vast array of large game animals and the hunting and viewing opportunities that go with that. The financial impacts on agriculture business from elk, deer and predator damage to crops and livestock are substantial. The increased use of preventative measures to minimize agriculture losses to wildlife is now a requirement for the agriculture sector.

  Also, private land in the ALR is being sold to conservation groups and in some cases, the intensively farmed portion of those farms are being left fallow. Once irrigated alfalfa crops are now dryland fields of Canada bluegrass. The limited amount of land capable of soil based agriculture is now out of production on those farms.

- Access

  There are still private land parcels in the RDEK that do not have road access or hydro. If these parcels have the potential for agriculture, the cost to develop that potential is not feasible with the current agriculture commodity prices.

- Recreational Development

  The dramatic increase in recreational and second homes in the Regional District of East Kootenay has impacted the agriculture industry. The increased value of land has severely limited the ability of agriculture businesses to expand. The increase in development has removed agriculture land from production and is slowly urbanizing rural farming areas.

- Crown ALR

  A substantial amount of ALR land in the RDEK is on Crown land. Much of this land is under range licenses which allow summer grazing for the cattle industry. However, even with an ALR designation, there is no consultation with the Agriculture Land Commission on balancing the multiple needs (e.g. forestry, wildlife, agriculture) on that land base. Agricultural interests are not recognized on par with forestry and wildlife interests on land designated ALR.

- Secondary Industries

  As the agriculture sector get's smaller in the RDEK, the businesses that support agriculture are affected as well. The value of each dollar spent in the local economy continues to provide added value as it circulates. With the shrinking agriculture sector, these dollars are leaving the local economy. Many of the agricultural services once available locally are now only available in Alberta. Growing agriculture will also allow other supporting business's to grow locally.

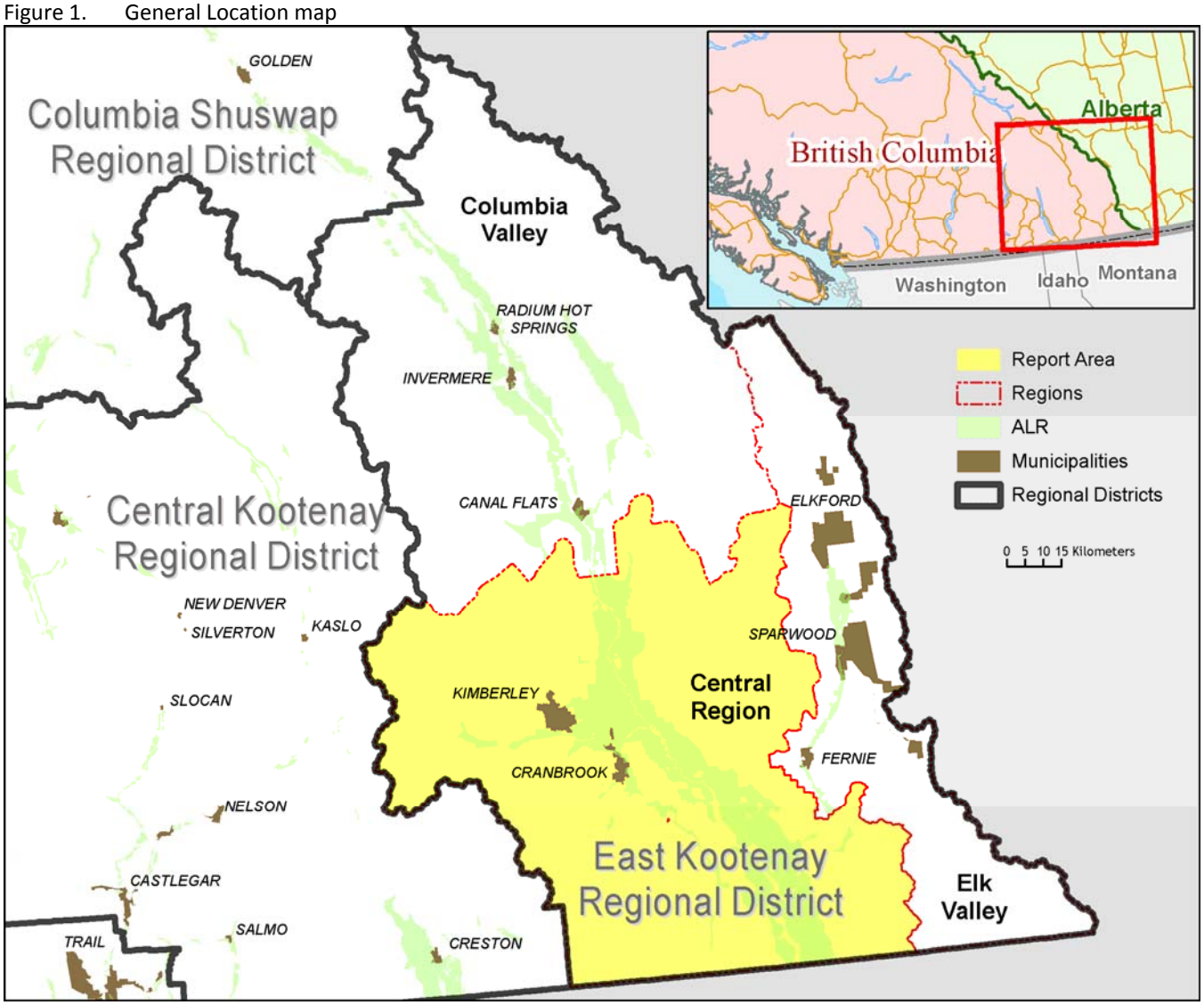
General Information

The Regional District of East Kootenay (RDEK) is located in the southeast corner of British Columbia along the western edge of the Rocky Mountain Trench. The RDEK is divided into three distinct regions: Columbia Valley, Central and Elk Valley.

The Central Region contains electoral areas B, C and E as well as the municipalities of Cranbrook and Kimberley. The region has a total area including land and water of 1,180,919 hectares[1] and a population of 34,053[1]; approximately 60% of the regional district's population.

The region is defined by steep rocky uplands with a relatively broad valley bottom in which settlement and agriculture is widely dispersed. Most of the reasonably level terrain lies in the narrow Kootenay River valley where the Kootenay River flows southward through the region, eventually widening into Lake Koocanusa reservoir formed by Libby Dam located 130 kilometers downstream in Montana.

Figure 1. General Location map



[1] 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 plus Indian reserves.

AGRICULTURAL LAND RESERVE

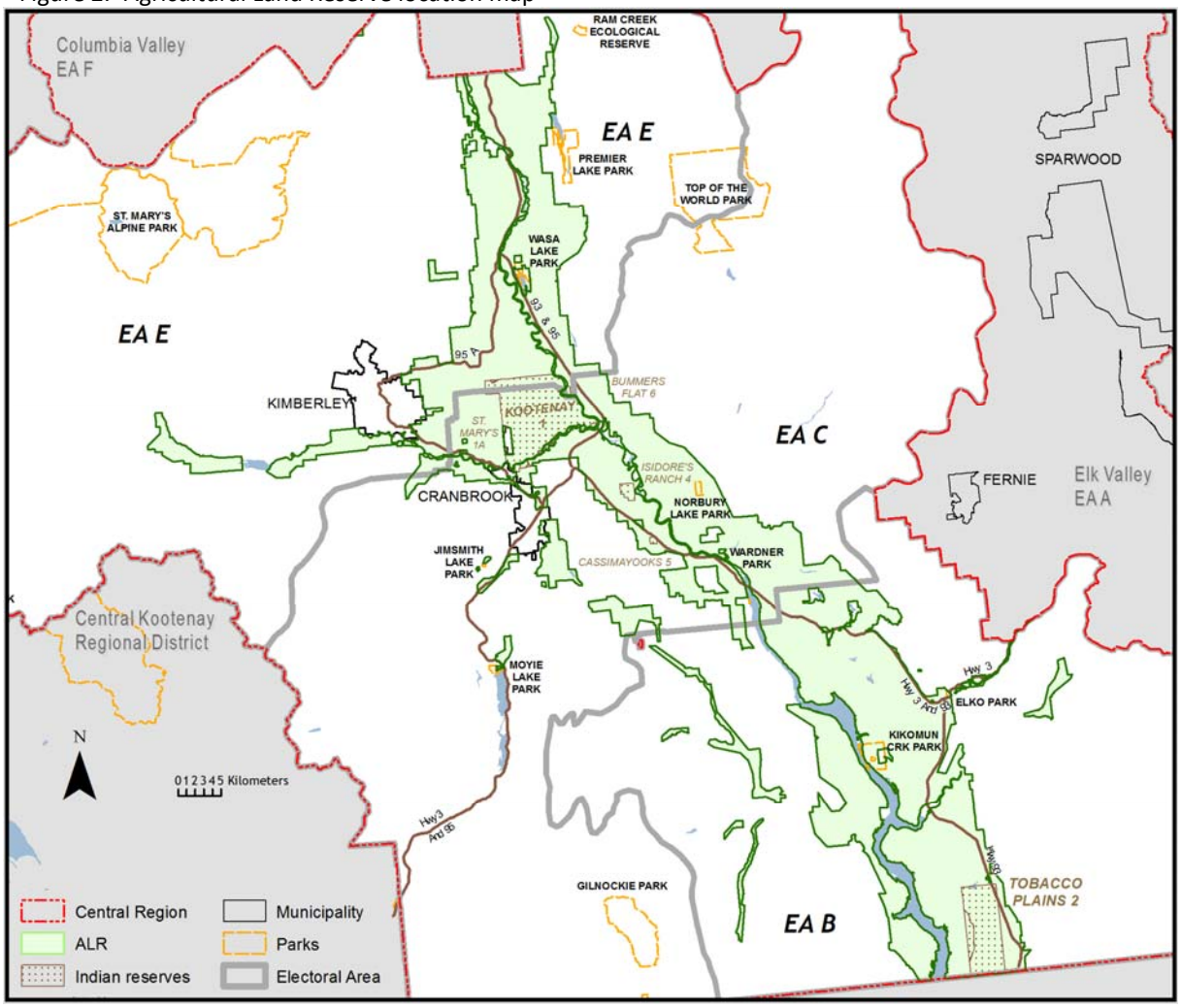
The Agricultural Land Reserve (ALR) is a provincial land use zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

There are 266,058 hectares[2] of ALR land within the Regional District of East Kootenay (refer to Figure 1 above); 178,066 hectares[3] or 67% is within the Central Region.

The total area of the Central Region is 1,180,919 hectares[4]. With 178,066 hectares[3] in the ALR, over 15% of the region is in the ALR. This ALR area includes:

- 82,956 hectares in surveyed parcels (including 18,795 hectares not included in this inventory)
- 11,831 hectares in Indian reserves
- 83,279 hectares outside surveyed parcels
  - 1,622 hectares of designated rights-of-way
  - 1,928 hectares of foreshore
  - 79,728 hectares of unsurveyed Crown land.

Figure 2. Agricultural Land Reserve location map



[2] BC Agricultural Land Commission Report 2009/10 & 2010/11 Pg 39. http://www.alc.gov.bc.ca/publications/Annual_Report_2009-10_and_2010-11.pdf.
[3] Agricultural Land Commission, ALR mapping, Land and Resource Data Warehouse, 2011-01-31 (area calculated in GIS).
[4] BC Ministry of Community, Sport & Cultural Dev., Statistics http://www.cscd.gov.bc.ca/lgd/infra/library/regional_stats11_summary.pdf plus Indian Res.

INVENTORY AREA

The total inventory area encompasses 3,133 parcels with a combined area of 78,265 hectares or almost 7% of the Central Region. This includes 64,162 hectares of ALR land or just over 36% of the ALR within the region. Included are:

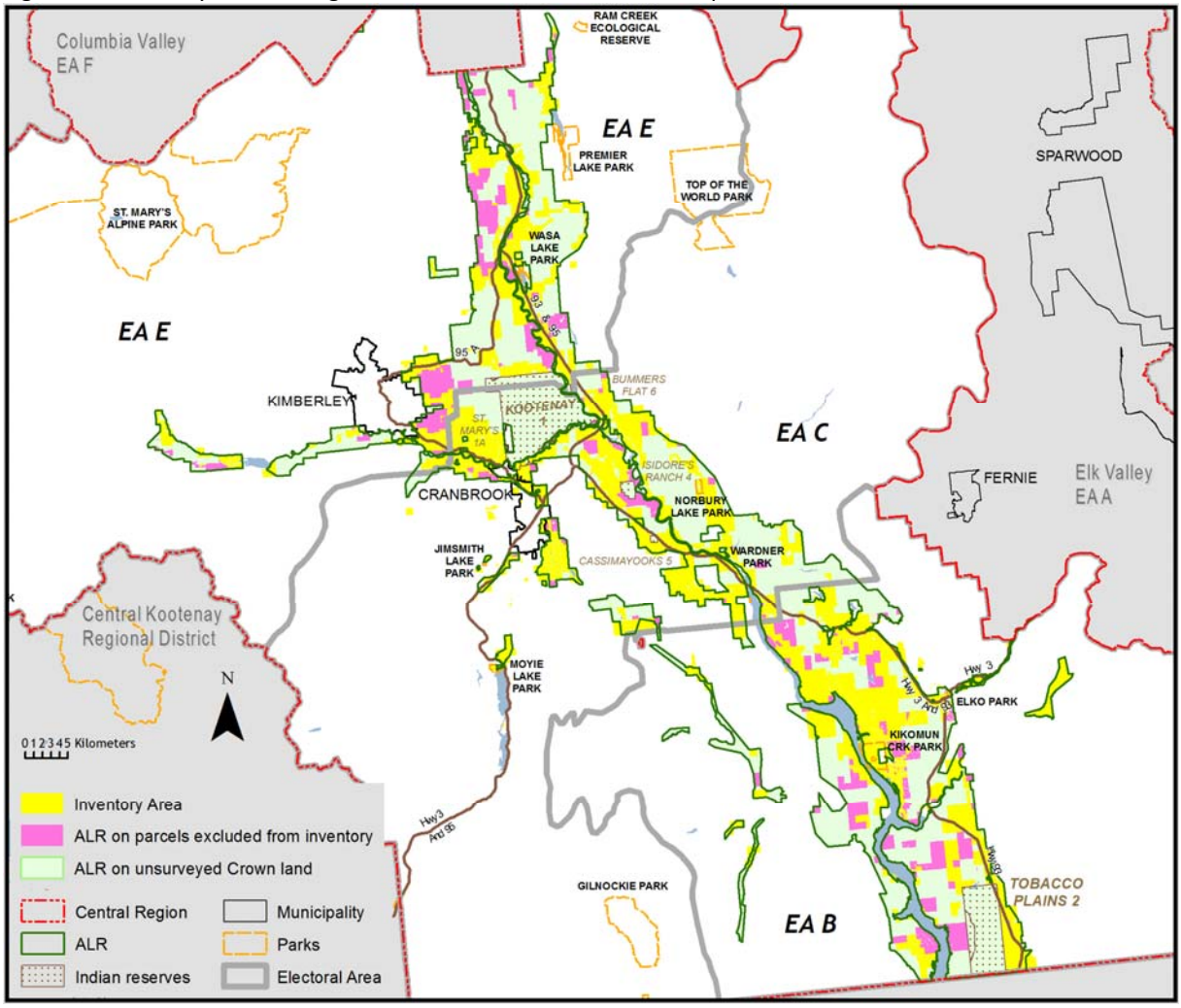
- 3,083 parcels completely or partially within the ALR with reasonable road access and
  - greater than 1 acre in size or
  - classified by BC Assessment as having "Farm" status for property tax assessment or
  - photo interpretation showed signs of agriculture
- 50 parcels outside the ALR but classified by BC Assessment as having "Farm" status for property tax assessment.

There is an additional 18,795 hectares or 11% of the ALR located on 1,196 parcels which are excluded from the inventory as:

- photo interpretation showed no signs of agriculture and
- parcel was less than 1 acre in size (444 parcels) or remotely located with limited access (752 parcels).

The remaining 95,110 hectares or 53% of the ALR is excluded from the inventory as it is in Indian reserves, in Rights-of-ways, water, foreshore or unsurveyed Crown land.

Figure 3. Inventory area and Agricultural Land Reserve location map



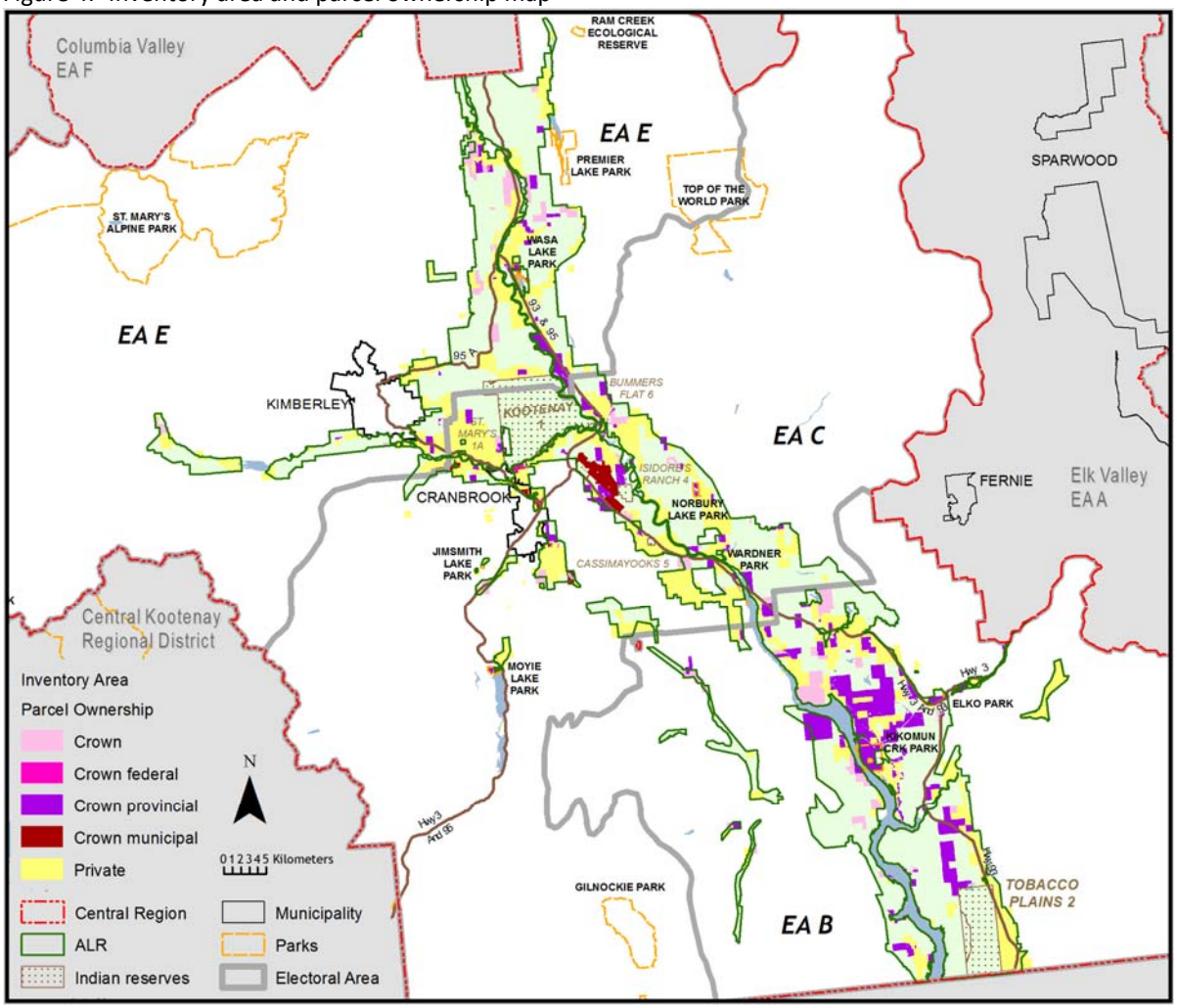
PARCEL OWNERSHIP

Crown owned 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 3,133 parcels surveyed as part of this inventory, 568 or 18% are Crown owned with a total area of 24,161 hectares or 31% of the region's survey area. The amount of surveyed ALR land Crown owned is 22,454 hectares or 13% of the region's total ALR.

- 134 parcels are Crown owned (federal, provincial or municipal)
  - 7,414 hectares or 9 % of the survey area
  - 6,610 hectares or almost 4 % of the ALR area
- 2 parcels are federally owned (Indian reserve)
  - 98 hectares or <1 % of the survey area
  - 98 hectares or <1 % of the ALR area
- 384 parcels are provincially owned (includes several provincial parks and conservation areas)
  - 75,012 hectares or 19 % of the survey area
  - 14,157 hectares or 8 % of the ALR area
- 48 parcels are municipally owned (includes Wycliff Regional park, Grasmere Elementary school, and the Cranbrook wastewater treatment plant)
  - 1,637 hectares or 2 % of the survey area
  - 1,590 hectares or < 1 % of the ALR area

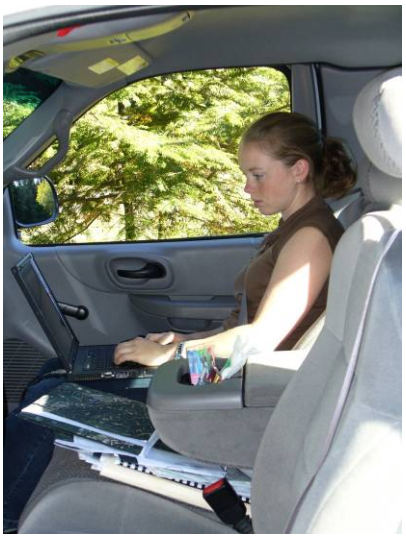
Figure 4. Inventory area and parcel ownership map



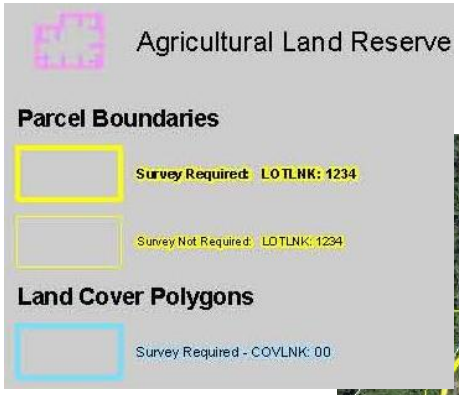
INVENTORY METHODOLOGY

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 Central Region land use inventory was conducted in the summer of 2011 by professional agrologists assisted by a field technician provided by Regional District of East Kootenay. 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)[5]
- 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.

[5] Cadastre mapping (2011) was provided by the Integrated Cadastral Information Society.

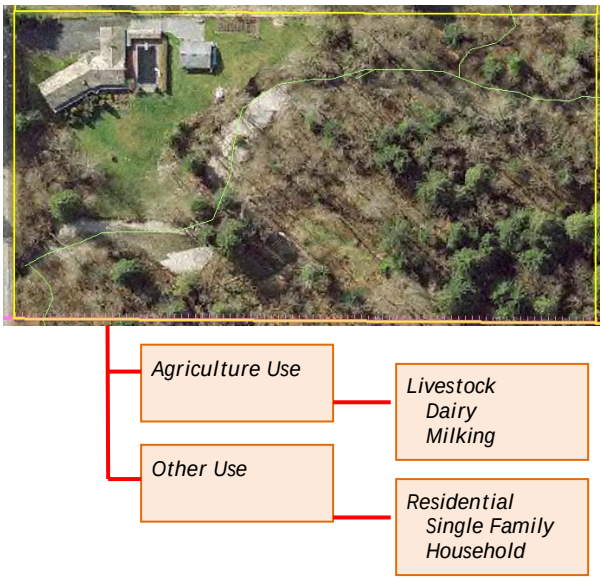
DESCRIPTION OF THE DATA

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.

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:

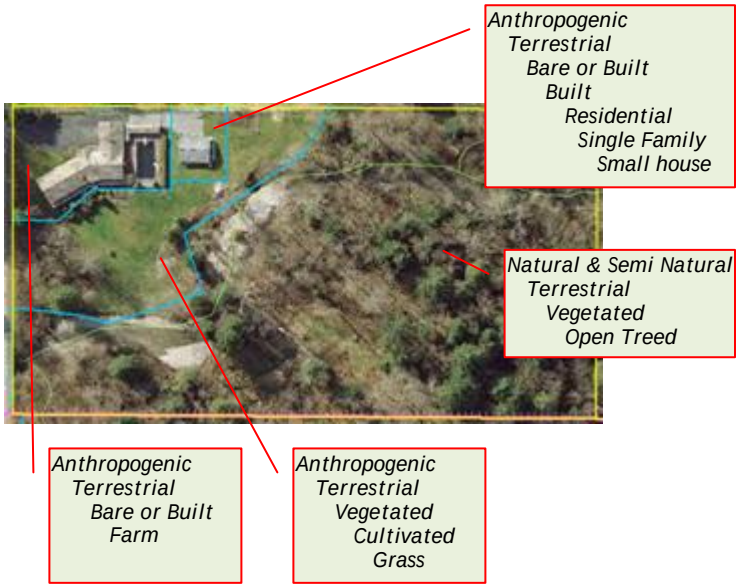
- The actual human use of land and related structures and modifications to the landscape
- Use-related land cover (where land cover implies a use or is important to interpreting patterns of use)
- Declared interests in the land (which may limit use) such as parks.



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 is presented in the form of summarized tables and charts. Absolute data values are preserved throughout the summarization process to maintain precision. Data values are rounded to the nearest whole number during the final formatting of the summarized tables and charts. As a result, the summarized tables and charts may not appear to add up correctly.

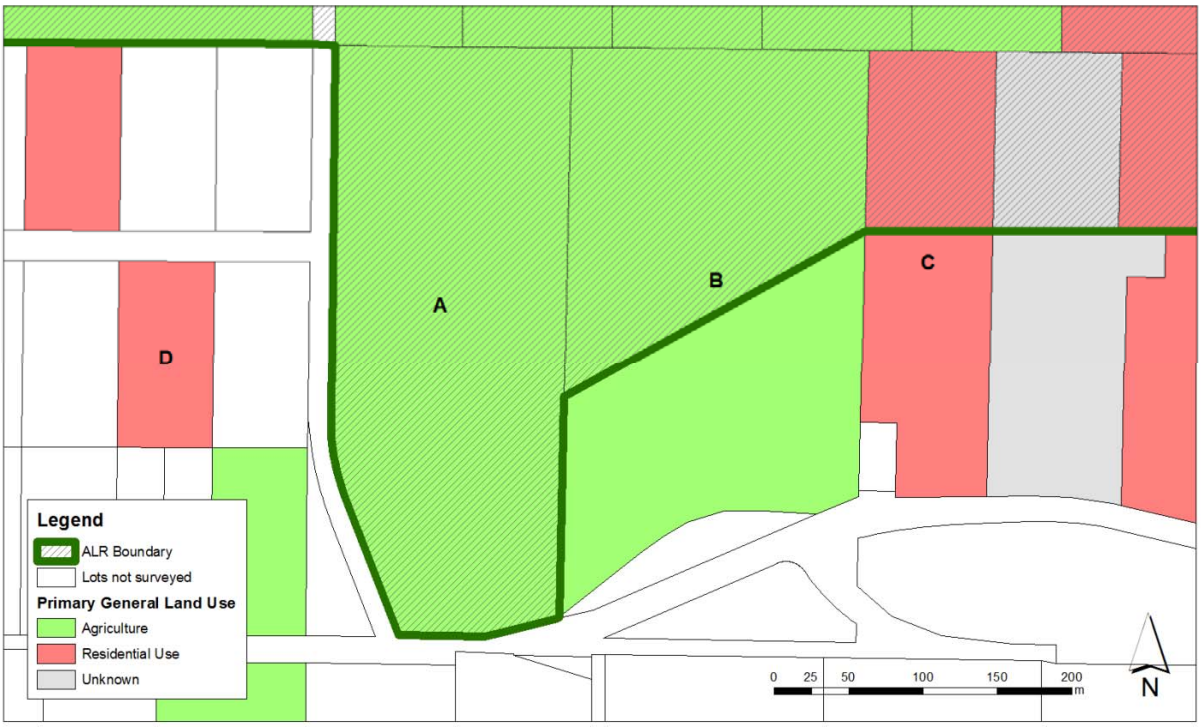
DETERMINATION OF PARCELS WITHIN THE ALR

Since much of the following analysis is parcel based, it is important to note that the ALR boundaries are not always coincident 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

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 use is surveyed by assigning the parcel up to two land uses. Some examples of land use are Residential, Commercial and Industrial. Refer to Section 2 of this report for more information on land use.

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 considered "Farmed" although these usually 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 Crown owned
		In ALR (ha)	% of ALR	% of ALR Crown owned				
Actively farmed	Cultivated field crops	7,137	4%	< 1%	172	7,309	9%	1%
	Farm Infrastructure	250	< 1%	< 1%	18	268	< 1%	< 1%
	Greenhouses	<1	< 1%	-	1	2	< 1%	-
Inactively farmed	Unused forage or pasture	201	< 1%	< 1%	23	224	< 1%	< 1%
	Unmaintained field crops	82	< 1%	< 1%	3	85	< 1%	< 1%
	Unmaintained greenhouses	-	-	-	<1	<1	< 1%	-
FARMED SUBTOTAL		**7,670**	**4%**	**< 1%**	**217**	**7,887**	**10%**	**1%**
Anthropogenic (not farmed)	Managed vegetation	206	< 1%	< 1%	16	221	< 1%	< 1%
	Golf fairway / green	107	< 1%	< 1%	<1	107	< 1%	< 1%
	Non Built or Bare	227	< 1%	< 1%	11	237	< 1%	< 1%
	Residential footprint	595	< 1%	< 1%	38	633	< 1%	< 1%
	Settlement	180	< 1%	< 1%	10	190	< 1%	< 1%
	Transportation	772	< 1%	< 1%	160	932	1%	< 1%
	Utilities	24	< 1%	< 1%	3	27	< 1%	< 1%
	Built up - Other	12	< 1%	-	3	14	< 1%	-
	Waterbodies	19	< 1%	< 1%	<1	19	< 1%	< 1%
	Wetlands	5	< 1%	< 1%	<1	5	< 1%	< 1%
SUBTOTAL		**2,146**	**1%**	**< 1%**	**241**	**2,386**	**3%**	**< 1%**
Natural and Semi-natural	Natural pasture or rangeland	34,071	19%	8%	2,298	36,368	46%	20%
	Vegetated	19,206	11%	3%	2,180	21,386	27%	8%
	Wetlands	822	< 1%	< 1%	47	869	1%	< 1%
	Natural bare areas	26	< 1%	< 1%	10	37	< 1%	< 1%
	Waterbodies	211	< 1%	< 1%	163	374	< 1%	< 1%
SUBTOTAL		**54,336**	**31%**	**12%**	**4,698**	**59,034**	**75%**	**29%**
TOTAL		**64,152**	**36%**	**13%**	**5,155**	**69,307**	**89%**	**31%**
Unknown land cover		9	< 1%	< 1%	8,949	8,958	11%	< 1%
TOTAL		**64,162**	**36%**	**13%**	**14,104**	**78,266**	**100%**	**31%**
Not surveyed	Parcels - no access or < 1 acre	18,795	11%					
	Indian reserves	11,831	7%					
	Water & foreshore	1,928	1%					
	Rights-of-way	1,622	< 1%					
	Unsurveyed Crown land	79,728	45%					
SUBTOTAL		**113,905**	**64%**					
TOTAL		**178,066**	**100%**					

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

In the Central Region, 7,887 hectares of land is in "Farmed" land cover although 309 of those hectares are "Inactively farmed"; in unused forage, unused pasture, or unmaintained field crops.

When considering both Crown and privately owned land, 31% of the ALR is reported to be in natural and semi-natural land cover. This would probably increase to 87% if all of the ALR had been surveyed as part of this inventory.

About two thirds of the natural and semi-natural land cover is being used as natural pasture or range land.

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

Figure 6. Land cover and farmed area in the ALR

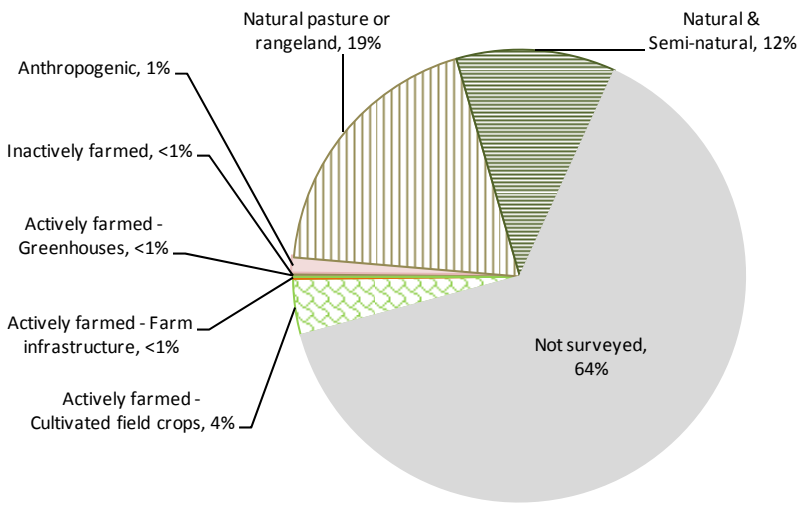


Figure 6 shows the proportions of the different land cover types across the ALR in the Central Region.

Of the ALR land, only 4% is "Actively Farmed" in cultivated field crops.

Nineteen percent of the ALR is in "Natural pasture or rangeland" however this would probably increase to over 60% if the grazing licenses on unsurveyed Crown land were included.

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

2. Land Use and Farm Use

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 said to be "Used for farming", even if one is a dairy farm and the other is in blueberries. If one parcel is a hotel and the other is a retail store, they are both considered as "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 owned land in this section of the report 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.

Table 2. Parcel ownership

Parcel land use		ALR		Outside ALR (ha)	Total inventory area (ha)	% of inventory area	Number of parcels	% of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area						
PRIVATELY OWNED SUBTOTAL		**41,707**	**23 %**	**12,398**	**54,105**	**69 %**	**2,565**	**82 %**	**54**
CROWN OWNED SUBTOTAL		**22,454**	**13 %**	**1,706**	**24,161**	**31 %**	**568**	**18 %**	**49**
Not surveyed	Parcels - no access or < 1 acre	18,795	11 %						
	Indian reserves	11,831	7 %						
	Water & foreshore	1,928	1 %						
	Rights-of-way	1,622	<1 %						
	Unsurveyed Crown land	79,728	45 %						
	NOT SURVEYED SUBTOTAL	113,905	64 %						
TOTAL		**178,066**	**100 %**	**14,104**	**78,265**	**100 %**	**3,133**	**100 %**	

Table 2 shows that 36% of region's ALR area was surveyed as part of the inventory and represents the region's accessible and operational ALR area. Twenty three percent is on privately owned parcels while 13% is on Crown (municipal, provincial, or federal) owned parcels.

11% of the region's ALR area is on parcels with no signs of agriculture (based on air photo interpretation) and less than one acre in size or remotely located with limited access.

Refer to Map B3 in Appendix B for more information.

PRIVATELY OWNED PARCELS

Table 3. Land use and farming use by parcel – Privately owned

Privately owned parcels 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						
Used only for farming - no other use		4,389	2 %	294	4,683	6 %	152	5 %	31
Used for farming - Mixed use	Residential	8,792	5 %	501	9,292	12 %	216	7 %	43
	Wildlife management	967	<1 %	117	1,085	1 %	13	<1 %	83
	Gravel extraction	188	<1 %	3	191	<1 %	2	<1 %	96
	Commercial & service	185	<1 %	-	185	<1 %	2	<1 %	93
	Industrial	117	<1 %	< 1	117	<1 %	1	<1 %	117
	Institutional, community	98	<1 %	-	98	<1 %	1	<1 %	98
	Recreation & leisure - golf	45	<1 %	-	45	<1 %	1	<1 %	45
	Transportation - airport	-	-	70	70	<1 %	2	<1 %	35
USED FOR FARMING SUBTOTAL		14,781	8 %	985	15,766	20 %	390	12 %	
Used only for grazing - no other use		7,393	4 %	1,172	8,566	11 %	220	7 %	39
Used for grazing - Mixed use	Residential	5,220	3 %	358	5,578	7 %	339	11 %	16
	Wildlife management	490	<1 %	80	570	<1 %	14	<1 %	41
	Utilities	249	<1 %	643	891	1 %	3	<1 %	297
	Industrial	148	<1 %	< 1	148	<1 %	2	<1 %	74
	Gravel extraction	96	<1 %	17	114	<1 %	1	<1 %	114
	Recreation & leisure - intensive	67	<1 %	< 1	67	<1 %	2	<1 %	34
	Dumps & deposits	16	<1 %	< 1	16	<1 %	1	<1 %	16
	Commercial & service	< 1	<1 %	-	< 1	<1 %	1	<1 %	< 1
USED FOR GRAZING SUBTOTAL		13,680	8 %	2,270	15,951	20 %	583	19 %	
Not used for farming or grazing	Residential	4,906	3 %	565	5,471	7 %	1,064	34 %	5
	No apparent use	3,705	2 %	832	4,537	6 %	413	13 %	11
	Wildlife management	2,127	1 %	7,394	9,521	12 %	26	<1 %	366
	Utilities	678	<1 %	< 1	678	<1 %	7	<1 %	97
	Transportation & communications	562	<1 %	239	802	1 %	16	<1 %	50
	Recreation & leisure - intensive	349	<1 %	9	358	<1 %	9	<1 %	40
	Commercial & service	229	<1 %	16	246	<1 %	22	<1 %	11
	Gravel extraction	200	<1 %	< 1	200	<1 %	5	<1 %	40
	Protected area / park / reserve	163	<1 %	1	165	<1 %	4	<1 %	41
	Recreation & leisure - golf	88	<1 %	< 1	89	<1 %	5	<1 %	18
	Industrial	83	<1 %	79	163	<1 %	6	<1 %	27
	Transportation - airport	62	<1 %	< 1	62	<1 %	3	<1 %	21
	Institutional, community	42	<1 %	2	44	<1 %	6	<1 %	7
	Resource protection & research	38	<1 %	< 1	38	<1 %	1	<1 %	38
	Land in transition	6	<1 %	< 1	6	<1 %	3	<1 %	2
	Heritage - armoury	4	<1 %	< 1	4	<1 %	1	<1 %	4
	Dumps & deposits	< 1	<1 %	3	3	<1 %	1	<1 %	3
NOT USED FOR FARMING/GRAZING SUBTOTAL		13,246	7 %	9,142	22,388	29 %	1,592	51 %	
TOTAL		**41,707**	**23 %**	**12,398**	**54,105**	**69 %**	**2,565**	**82 %**	

Table 3 shows that only 390 privately owned parcels are "Used for farming" and 593 are "Used for grazing". Many "Used for farming" parcels are also used for other purposes with only 152 parcels "Used only for farming – no other use".

Thirteen parcels in conservation areas; Sheep Mountain Ranch, MacDonald Wetland, Three Sons, Wycliff, and Edith Lake, are mixed use "Used for farming" and "Wildlife management". Two parcels associated with the Top of the World Addiction Treatment Facility and Fort Steele Farms are mixed use "Used for farming" and "Commercial & service". One parcel associated with the Adi Vajra Shambhasalem Ashram church is mixed use "Used for farming" and "Institutional, community".

A total of 28,461 hectares or 16% of ALR land is on privately owned parcels that are 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 – Privately owned

Privately owned parcels Land use		Land Cover Category							Total	
		Farmed *		Anthropogenic (not farmed)		Natural & Semi - natural		Unknown		
		In ALR (ha)	% of ALR	In ALR (ha)	% of ALR	In ALR (ha)	% of ALR	In ALR (ha)	In ALR (ha)	% of ALR
Used only for farming - no other use		2,021	1 %	19	<1 %	2,349	1 %	-	4,389	2 %
Used for farming - Mixed use	Residential	3,971	2 %	130	<1 %	4,690	3 %	-	8,792	5 %
	Wildlife management	167	<1 %	5	<1 %	795	<1 %	-	967	<1 %
	Gravel extraction	63	<1 %	8	<1 %	118	<1 %	-	188	<1 %
	Commercial & service	55	<1 %	3	<1 %	127	<1 %	-	185	<1 %
	Industrial	42	<1 %	4	<1 %	71	<1 %	-	117	<1 %
	Institutional, community	23	<1 %	4	<1 %	-	-	-	98	<1 %
	Recreation & leisure - golf	21	<1 %	22	<1 %	-	-	-	45	<1 %
USED FOR FARMING SUBTOTAL		6,363	4 %	195	<1 %	8,151	5 %	-	14,781	8 %
Used only for grazing - no other use		37	<1 %	35	<1 %	7,321	4 %	<1 %	7,393	4 %
Used for grazing - Mixed use	Residential	116	<1 %	124	<1 %	4,980	3 %	-	5,220	3 %
	Wildlife management	3	<1 %	3	<1 %	483	<1 %	-	490	<1 %
	Utilities	-	-	< 1	<1 %	248	<1 %	-	249	<1 %
	Industrial	7	<1 %	12	<1 %	-	-	-	148	<1 %
	Gravel extraction	-	-	3	<1 %	93	<1 %	-	96	<1 %
	Recreation & leisure - intensive	< 1	<1 %	9	<1 %	59	<1 %	-	67	<1 %
	Dumps & deposits	-	-	1	<1 %	-	-	-	16	<1 %
	Commercial & service	-	-	< 1	<1 %	-	-	-	< 1	<1 %
USED FOR GRAZING SUBTOTAL		163	<1 %	188	<1 %	13,184	7 %	<1 %	13,680	8 %
USED FOR FARMING OR GRAZING SUBTOTAL		6,526	4 %	384	<1 %	21,335	12 %	<1 %	28,461	16 %
Not used for farming or grazing		297	<1 %	1,355	<1 %	11,585	7 %	9 %	13,246	7 %
TOTAL PRIVATELY OWNED ALR									**41,707**	**23 %**

* 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 ALR land cover on privately owned parcels that were surveyed as part of this land use inventory. For example, privately owned parcels with the mixed use "Used for farming" and "Residential" have a total of 3,971 hectares of ALR in "Farmed" land cover, 130 hectares of ALR in Anthropogenic (not farmed) land cover, and 4,690 hectares of ALR in Natural & Semi-natural land cover.

Although 14,781 hectares or 8% of ALR is on privately owned parcels "Used for farming" (Refer to Table 3 above), only 6,363 hectares or 4% 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 owned

Crown owned parcels 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						
Used only for farming - no other use		751	<1 %	35	786	1 %	7	<1 %	112
Used for farming - Mixed use	Land in transition	447	<1 %	< 1	447	<1 %	3	<1 %	149
	Residential	117	<1 %	< 1	117	<1 %	2	<1 %	59
	Wildlife management	50	<1 %	< 1	50	<1 %	3	<1 %	17
	Commercial & service	4	<1 %	14	18	<1 %	1	<1 %	18
USED FOR FARMING SUBTOTAL		1,369	<1 %	49	1,418	2 %	16	<1 %	
Used only for grazing - no other use		13,343	7 %	804	14,147	18 %	272	9 %	52
Used for grazing - Mixed use	Protected area / park / reserve	863	<1 %	< 1	863	1 %	8	<1 %	108
	Wildlife management	360	<1 %	< 1	360	<1 %	9	<1 %	40
	Gravel extraction	198	<1 %	-	198	<1 %	4	<1 %	49
	Transportation & communications	105	<1 %	48	153	<1 %	3	<1 %	51
	Recreation & leisure - intensive	88	<1 %	4	93	<1 %	3	<1 %	31
	Utilities	75	<1 %	18	93	<1 %	1	<1 %	93
USED FOR GRAZING SUBTOTAL		15,032	8 %	874	15,906	20 %	300	10 %	
Not used for farming or grazing	No apparent use	3,254	2 %	542	3,797	5 %	158	5 %	24
	Protected area / park / reserve	1,933	1 %	88	2,021	3 %	42	1 %	48
	Recreation & leisure - intensive	152	<1 %	13	165	<1 %	7	<1 %	24
	Institutional, community	122	<1 %	85	207	<1 %	9	<1 %	23
	Garbage dumps	105	<1 %	< 1	105	<1 %	3	<1 %	35
	Recreation & leisure - golf	98	<1 %	< 1	98	<1 %	2	<1 %	49
	Wildlife management	79	<1 %	< 1	79	<1 %	2	<1 %	40
	Gravel extraction	78	<1 %	34	112	<1 %	5	<1 %	22
	Utilities	76	<1 %	< 1	76	<1 %	10	<1 %	8
	Transportation & communications	46	<1 %	8	54	<1 %	5	<1 %	11
	Recreation & leisure - extensive	45	<1 %	13	58	<1 %	3	<1 %	19
	Commercial & service	44	<1 %	< 1	44	<1 %	2	<1 %	22
	Residential	21	<1 %	< 1	21	<1 %	4	<1 %	5
NOT USED FOR FARMING/GRAZING SUBTOTAL		6,053	3 %	783	6,836	9 %	252	8 %	
TOTAL		**22,454**	**13 %**	**1,706**	**24,161**	**31 %**	**568**	**18 %**	

Table 5 details land use on Crown owned parcels that were surveyed as part of this land use inventory.

In total, 1,369 hectares or less than 1% of the region's ALR is on Crown owned parcels "Used for farming". This includes two mixed use "Used for Farming" and "Residential" properties; one is a Crown lease and the other is associated with Newgate Marsh Conservation site. The new Cranbrook wastewater treatment plant is mixed use "Used for farming" and "Land in transition". One parcel within the Fort Steele Heritage area is mixed use "Used for farming" and "Commercial & service". Parcels within MacDonald Wetland and Newgate conservation areas are mixed use "Used for farming" and "Wildlife management".

Many parcels "Used for grazing" have other uses as well. Several parcels in Three Sons Protected Area, Kikomun Creek Provincial Park, and Horseshoe Lake forest recreation site are "Used for grazing" and "Protected area / park / reserve". One parcel associated with the Gold Creek Reservoir is mixed use "Used for grazing" and "Utilities". Several parcels in Suzanne Creek, Pine Butte Ranch, and Newgate conservation areas are mixed use "Used for grazing" and "Wildlife management".

Most Crown owned parcels that were not surveyed as part of this inventory and much of the unsurveyed Crown land is probably used for livestock grazing since Crown grazing licenses cover much of the region.

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

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

Crown owned parcels Land use		Land Cover Category							Total	
		Farmed *		Anthropogenic (not farmed)		Natural & Semi - natural		Unknown		
		In ALR (ha)	% of ALR	In ALR (ha)	% of ALR	In ALR (ha)	% of ALR	In ALR (ha)	In ALR (ha)	% of ALR
Used only for farming - no other use		427	<1 %	28	<1 %	296	<1 %	-	751	<1 %
Used for farming Mixed use	Land in transition	293	<1 %	-	-	154	<1 %	-	447	<1 %
	Residential	26	<1 %	2	<1 %	89	<1 %	-	117	<1 %
	Wildlife management	15	<1 %	< 1	<1 %	35	<1 %	-	50	<1 %
	Commercial & service	1	<1 %	< 1	<1 %	-	-	-	4	<1 %
USED FOR FARMING SUBTOTAL		762	<1 %	30	<1 %	574	<1 %	-	1,369	<1 %
Used only for grazing - no other use		25	<1 %	43	<1 %	13,275	7 %	< 1	13,343	7 %
Used for grazing Mixed use	Protected area / park / reserve	5	<1 %	1	<1 %	857	<1 %	-	863	<1 %
	Wildlife management	8	<1 %	-	-	352	<1 %	-	360	<1 %
	Gravel extraction	3	<1 %	15	<1 %	180	<1 %	-	198	<1 %
	Transportation & communications	-	-	4	<1 %	102	<1 %	-	105	<1 %
	Recreation & leisure - intensive	-	-	-	-	88	<1 %	-	88	<1 %
	Utilities	2	<1 %	2	<1 %	72	<1 %	-	75	<1 %
USED FOR GRAZING SUBTOTAL		43	<1 %	65	<1 %	14,925	8 %	< 1	15,032	8 %
USED FOR FARMING OR GRAZING SUBTOTAL		805	<1 %	95	<1 %	15,499	9 %	< 1	16,401	9 %
Not used for farming or grazing		43	<1 %	312	<1 %	5,698	3 %	-	6,053	3 %
TOTAL CROWN OWNED ALR									**22,454**	**13 %**

* 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 surveyed as part of this inventory. For example, Crown owned parcels with mixed use "Used for farming" and "Utilities" have a total of 2 hectares of ALR in "Farmed" land cover, and 2 hectares of ALR in Anthropogenic (not farmed) land cover.

Although Table 5 (above) shows that 1,369 hectares of ALR is on Crown owned parcels "Used for farming", Table 6 shows that only 762 hectares of ALR is actually in "Farmed" land cover. Many "Used for farming" parcels are also used for other purposes and/or have significant area left as Natural & Semi-natural land cover.

3. Availability of Land for Farming

The demand for locally grown agricultural products is anticipated to grow as the population grows [6]. This demand along with a number of other factors, such as commodity types and farm management requirements (nutrient management, bio-security), will influence agricultural land needs in the future. Growth in extensive agriculture sectors such as dairy or berry will require large increases in land base which may not be available. Future agriculture growth may come from new commodity types and intensifying land use rather than finding new land for development.

The analysis of the availability of land for farming examines how much land is available for farming, has the potential to be farmed, and the characteristics of this land.

Properties currently "Used for farming" or with some agriculture present are considered available for farming regardless of any existing non-farm use. In addition, properties with an existing use compatible with agriculture, such as Residential, are considered available for farming since the existing land use can be maintained.

Properties not currently farmed with an established non-farm use that is incompatible with agriculture are considered unavailable for farming. These properties also have very high values making it unrealistic for a farmer to acquire and convert this land to farmland.

Land is further assessed for its farming potential based on physical and environmental characteristics. Only areas in natural and semi-natural vegetation, areas in managed vegetation (managed for landscaping, dust or soil control), and non-built or bare areas are considered to have potential for farming. Areas covered with built structures, steep slopes or rocky soils and areas with operational constraints such as very small size are considered to have limited potential for farming. For this analysis, it is assumed that removing built structures and fill piles, filling in water bodies or remediating slopes to create land with potential for farming would likely not occur.

[6] 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.

Table 7. Status of the land base with respect to farming

Land status		ALR			Outside ALR (ha)	Total area (ha)	% inventory area	% inventory area Crown owned
		In ALR (ha)	% ALR area	% ALR area Crown owned				
Actively farmed	Cultivated field crops	7,137	4 %	<1 %	172	7,309	9 %	1 %
	Farm Infrastructure	250	<1 %	<1 %	18	268	<1 %	<1 %
	Greenhouses	< 1	<1 %	-	1	2	<1 %	-
ACTIVELY FARMED		7,388	4 %	<1 %	191	7,579	10 %	1 %
Anthropogenic areas supporting farming	Residential footprint	76	<1 %	<1 %	3	79	<1 %	<1 %
	Transportation	45	<1 %	<1 %	3	49	<1 %	<1 %
	Built up - Other	2	<1 %	<1 %	< 1	3	<1 %	<1 %
	Artificial Waterbodies	1	<1 %	-	-	1	<1 %	-
SUPPORTING FARMING		125	<1 %	<1 %	6	131	<1 %	<1 %
Unavailable for farming due to existing land use which is incompatible with farming	Protected area / park / reserve	1,405	<1 %	<1 %	89	1,494	2 %	2 %
	Wildlife management	620	<1 %	<1 %	35	655	<1 %	<1 %
	Transportation & communications	446	<1 %	<1 %	238	684	<1 %	<1 %
	Recreation & leisure - golf	182	<1 %	<1 %	< 1	183	<1 %	<1 %
	Recreation & leisure - intensive	69	<1 %	<1 %	4	73	<1 %	<1 %
	Institutional, community	43	<1 %	<1 %	4	47	<1 %	<1 %
	Utilities	42	<1 %	<1 %	< 1	42	<1 %	<1 %
	Residential	33	<1 %	-	1	34	<1 %	-
	Industrial	24	<1 %	-	-	24	<1 %	-
	Heritage - armoury	4	<1 %	-	< 1	4	<1 %	-
	Commercial & service	1	<1 %	-	< 1	2	<1 %	-
	Gravel extraction	1	<1 %	<1 %	-	1	<1 %	<1 %
	Land in transition	< 1	<1 %	-	-	< 1	<1 %	-
Unavailable for farming due to existing land cover	Waterbodies & wetlands	926	<1 %	<1 %	210	1,136	1 %	<1 %
	Residential footprint	472	<1 %	<1 %	18	490	<1 %	<1 %
	Transportation	208	<1 %	<1 %	20	228	<1 %	<1 %
	Built up - Other	160	<1 %	<1 %	14	174	<1 %	<1 %
	Natural bare areas	23	<1 %	<1 %	9	32	<1 %	<1 %
UNAVAILABLE FOR FARMING		4,661	3 %	1 %	642	5,303	7 %	3 %
Site limitations - used for grazing	Soils &/or topography	6,465	4 %	1 %	776	7,242	9 %	3 %
	Flooding &/or drainage	126	<1 %	<1 %	94	221	<1 %	<1 %
	Operational	11	<1 %	<1 %	< 1	12	<1 %	<1 %
Site limitations (may have grazing potential)	Soils &/or topography	5,696	3 %	<1 %	1,015	6,711	9 %	2 %
	Operational	339	<1 %	<1 %	18	357	<1 %	<1 %
	Flooding &/or drainage	229	<1 %	<1 %	14	243	<1 %	<1 %
LIMITED POTENTIAL FOR FARMING		12,867	7 %	2 %	1,919	14,785	19 %	6 %
Available & with potential for farming	Natural pasture or rangeland	27,133	15 %	7 %	1,427	28,560	36 %	16 %
	Natural & Semi-natural - Veg.	11,525	6 %	2 %	1,035	12,561	16 %	5 %
	Unused forage or pasture	197	<1 %	<1 %	23	220	<1 %	<1 %
	Anthropogenic - Managed veg.	154	<1 %	<1 %	14	168	<1 %	<1 %
	Unmaintained field crops	82	<1 %	<1 %	3	85	<1 %	<1 %
	Anthropogenic - Non Built or Bare	15	<1 %	<1 %	3	19	<1 %	<1 %
	Anthropogenic - Wetlands	5	<1 %	<1 %	< 1	5	<1 %	<1 %
	Unmaintained greenhouses	-	-	-	< 1	< 1	<1 %	-
AVAILABLE & WITH POTENTIAL FOR FARMING		39,112	22 %	9 %	2,505	41,616	53 %	21 %
Availability and potential is unknown		9	<1 %	<1 %	8,842	8,851	11 %	<1 %
TOTAL		**64,162**	**36 %**	**13 %**	**14,104**	**78,266**	**100 %**	**31 %**
Not surveyed	Parcels - no access or < 1 acre	18,795	11 %					
	Indian reserves	11,831	7 %					
	Water & foreshore	1,928	1 %					
	Rights-of-way	1,622	<1 %					
	Unsurveyed Crown land	79,728	45 %					
SUBTOTAL		113,905	64 %					
TOTAL		**178,066**	**100 %**					

Table 7 shows that 4% of the ALR is currently used for farming; 3% is unavailable for farming; 7% has limited potential for farming, and 22% is available and has potential for farming. The remaining 64% was not surveyed as part of this inventory as it is inaccessible or not suitable for farming. Refer to Map B6 in Appendix B for more information.

Figure 7. Availability and potential of ALR lands for farming

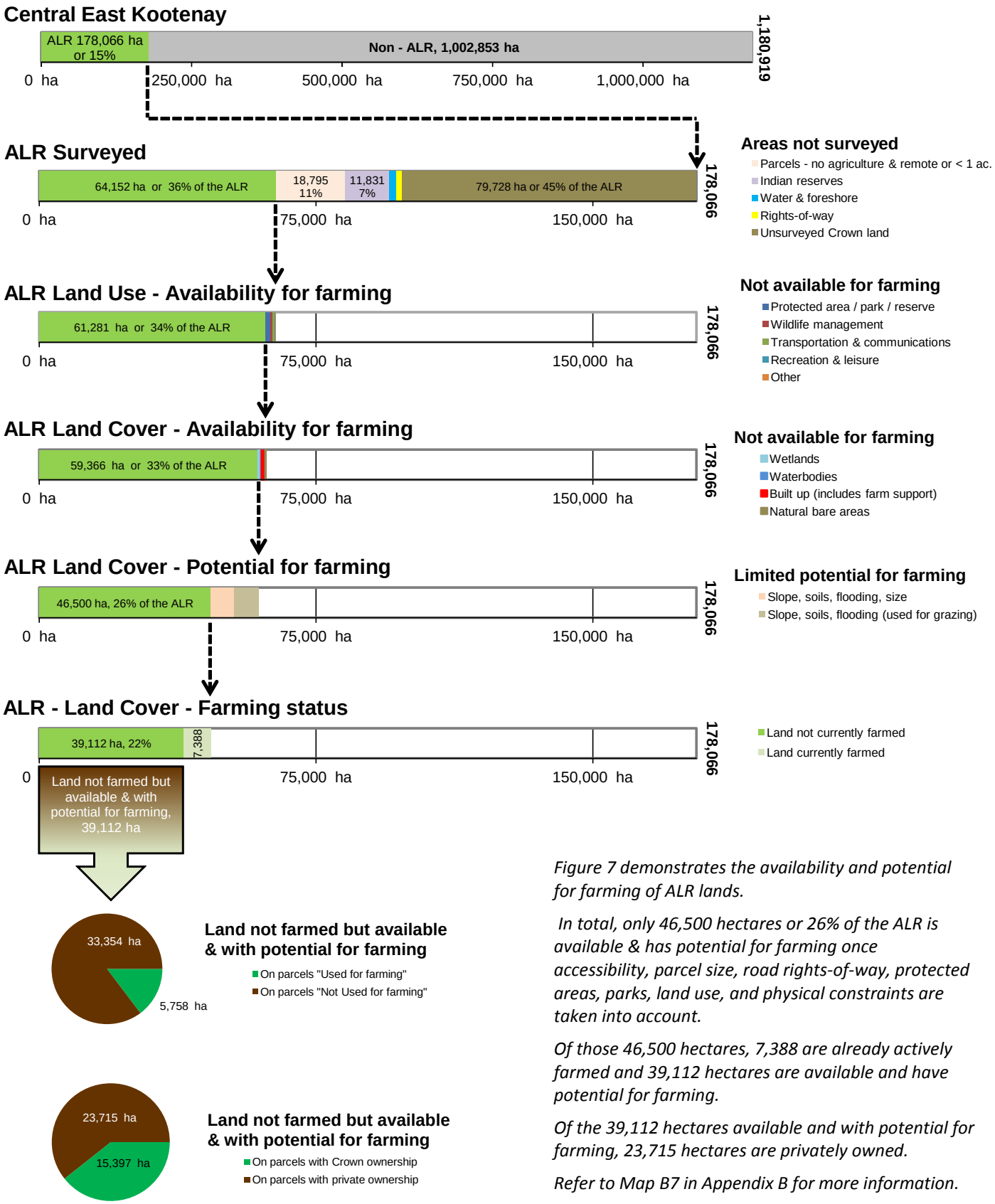


Figure 7 demonstrates the availability and potential for farming of ALR lands.

In total, only 46,500 hectares or 26% of the ALR is available & has potential for farming once accessibility, parcel size, road rights-of-way, protected areas, parks, land use, and physical constraints are taken into account.

Of those 46,500 hectares, 7,388 are already actively farmed and 39,112 hectares are available and have potential for farming.

Of the 39,112 hectares available and with potential for farming, 23,715 hectares are privately owned.

Refer to Map B7 in Appendix B for more information.

CHARACTERISTICS OF NOT FARMED BUT AVAILABLE ALR LANDS

The potential for future agriculture expansion is affected by the size of the area available. Small areas can effectively be used for some intensive agricultural operations such as mushrooms, floriculture, greenhouses, poultry, and container nurseries. Small areas 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 areas provide fewer farming choices than large lots. 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.

On Parcels "Used for farming"

Parcels currently "Used for farming" do not always utilize 100% of their land area. Land not farmed but available and with potential for farming can offer opportunities to expand faming activities on parcels already "Used for farming".

Table 8. Land use and cover on parcels "Used for farming" with land available for farming but not farmed

Parcel Ownership	Mixed land use on "Used for farming" parcels	Number of parcels	Land not farmed but with potential for farming			Land currently farmed			% potential increase to total ALR farmed area
			In ALR (ha)	Outside ALR (ha)	Total area (ha)	In ALR (ha)	Outside ALR (ha)	Total area (ha)	
PRIVATE	Used only for farming - no other use	94	1,286	12	1,298	1,360	18	1,378	17 %
	Residential	167	3,214	183	3,397	3,409	58	3,467	44 %
	Wildlife management	9	508	107	615	123	< 1	124	7 %
	Gravel extraction	2	97	< 1	97	63	< 1	63	1 %
	Commercial & service	2	67	-	67	55	< 1	55	<1 %
	Institutional, community	1	46	-	46	23	< 1	23	<1 %
	Industrial	1	35	-	35	42	-	42	<1 %
	Recreation & leisure - golf	1	12	-	12	21	-	21	<1 %
	Transportation - airport	2	-	11	11	-	22	22	-
SUBTOTAL		279	5,264	313	5,578	5,097	99	5,195	71 %
CROWN PROVINCIAL	Used only for farming - no other use	4	10	< 1	10	61	14	75	<1 %
	Residential	1	41	-	41	< 1	-	< 1	<1 %
	Wildlife management	3	17	< 1	17	15	< 1	15	<1 %
	Commercial & service	1	2	5	7	1	4	6	<1 %
CROWN MUNICIPAL	Used only for farming - no other use	2	269	< 1	269	363	< 1	363	4 %
	Land in transition	3	153	< 1	153	293	-	293	2 %
SUBTOTAL		14	493	5	498	734	18	752	7 %
	TOTAL	**293**	**5,758**	**318**	**6,076**	**5,831**	**117**	**5,947**	**78 %**

Table 8 demonstrates that the largest potential increase in farmed land on parcels that are already "Used for farming" could come from privately owned properties that currently have "Residential" use.

Privately owned parcels used for "Wildlife management" also show potential, however these 9 parcels (508 hectares) are held by wildlife conservation groups such as Ducks Unlimited – Edith Lake, MacDonald Wetland, and Three Sons; The Land Conservancy – Wycliff; and The Nature Trust – Sheep Mountain Ranch. In some cases, this is historical farm land that has reverted to semi natural vegetation after intentionally being left fallow for wildlife habitat.

Figure 8. Land cover available for farming but not farmed on parcels "Used for farming"

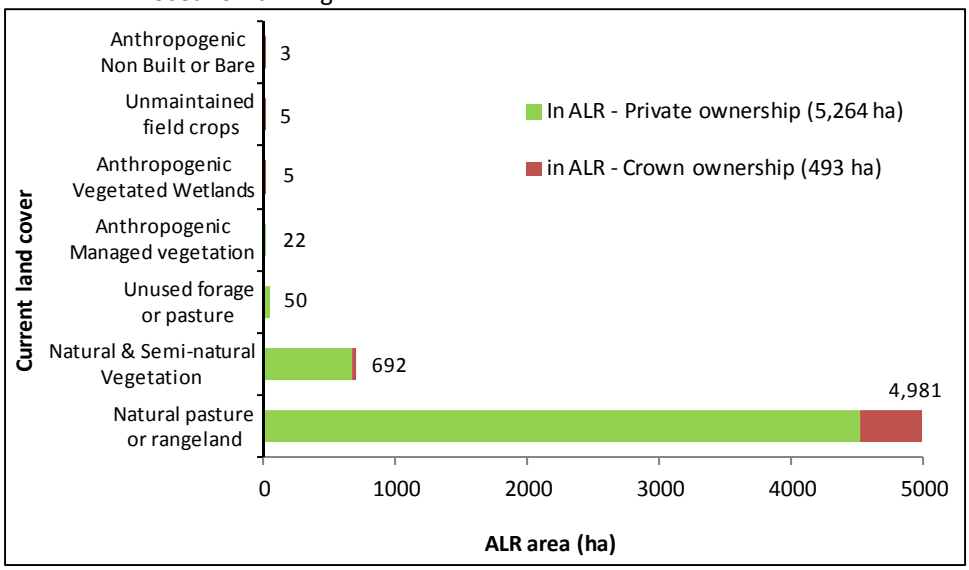


Figure 8 indicates that privately owned land currently in natural pasture or rangeland would offer the greatest gains in farming production on parcels that are already "Used for farming". These gains in farming would have to be measured against the loss of natural pasture or rangeland.

Converting non grazed "Natural & Semi-natural Vegetation" to farming may be better supported by the ranchers in the area.

On Parcels "Not Used for Farming"

Table 9 (below) illustrates that for parcels currently "Not used for farming", the greatest potential for increasing actively farmed land could come from Crown owned parcels that are currently being "Used only for grazing – no other use" followed by privately owned parcels that are currently being "Used only for grazing – no other use". Privately owned residential parcels also show great potential for increasing actively farmed land.

Privately owned parcels used for "Wildlife management" also show potential for increasing actively farmed land, however these 24 parcels (1,153 hectares) are held by conservation groups who are managing for wildlife conservation. In some cases, this is historical farm land that has reverted to semi natural vegetation after intentionally being left fallow.

For more information on wildlife conservation projects on parcels "Not used for farming", refer to The Nature Trust – Bull River Complex 1; Ducks Unlimited – Edith Lake, Kayla Lake, MacDonald Wetland, Spring Lakes, Ta Ta Lakes, Three Sons, and Wolf Creek Extension; Nature Conservancy of Canada – Mt. Broadwood; BC Ministry of Environment – Newgate Conservation Area.

It is important to note that all potential increases to the area of actively farmed land would require sufficient water to be available for irrigation. Actual water availability is beyond the scope of this report.

Table 9. Land use and cover on parcels "Not used for farming" with land available for farming

Parcel Ownership	Parcel Land use		Number of parcels	Land not farmed but with potential for farming			% potential increase to total ALR farmed area
				In ALR (ha)	Outside ALR (ha)	Total area (ha)	
PRIVATE	Used for grazing only - no other use		195	5,656	708	6,363	77 %
	Used for grazing - Mixed use	Residential	323	4,012	186	4,198	54 %
		Wildlife management	10	336	54	390	5 %
		Utilities	3	219	1	220	3 %
		Recreation & leisure - intensive	2	59	<1	59	<1 %
		Gravel extraction	1	23	-	23	<1 %
		Industrial	1	13	-	13	<1 %
		Dumps & deposits	1	12	-	12	<1 %
		Commercial & service	1	<1	-	<1	<1 %
		SUBTOTAL	**537**	**10,330**	**949**	**11,279**	**140 %**
		Residential	858	3,622	322	3,944	49 %
		No apparent use	294	2,457	173	2,630	33 %
		Wildlife management	14	817	<1	817	11 %
		Utilities	6	448	<1	448	6 %
		Recreation & leisure - intensive	4	191	8	199	3 %
		Commercial & service	18	153	15	168	2 %
		Gravel extraction	4	133	<1	133	2 %
		Protected area / park / reserve	2	94	<1	94	1 %
		Transportation & communications	4	83	<1	83	1 %
		Industrial	5	39	<1	39	<1 %
		Resource protection & research	1	35	<1	35	<1 %
		Transportation - airport	3	32	<1	32	<1 %
		Recreation & leisure - golf	1	11	-	11	<1 %
		Land in transition	2	5	<1	5	<1 %
		Dumps & deposits	1	<1	2	2	<1 %
		SUBTOTAL	**1,217**	**8,120**	**519**	**8,640**	**110 %**
TOTAL PRIVATELY OWNED ALR			**1,754**	**18,450**	**1,468**	**19,919**	**250 %**
CROWN	Used for grazing only - no other use		238	10,901	398	11,299	148 %
	Used for grazing - Mixed use	Protected area / park / reserve	2	565	<1	565	8 %
		Gravel extraction	4	151	-	151	2 %
		Wildlife management	5	131	-	131	2 %
		Transportation & communications	3	92	<1	92	1 %
		Recreation & leisure - intensive	3	88	4	93	1 %
		Utilities	1	40	<1	40	<1 %
		SUBTOTAL	**256**	**11,968**	**403**	**12,371**	**162 %**
		No apparent use	109	2,420	222	2,642	33 %
		Protected area / park / reserve	6	136	<1	136	2 %
		Institutional, community	4	104	79	183	1 %
		Recreation & leisure - intensive	4	99	7	106	1 %
		Commercial & service	1	39	<1	39	<1 %
		Recreation & leisure - extensive	3	37	7	44	<1 %
		Gravel extraction	3	33	<1	33	<1 %
		Garbage dumps	3	28	-	28	<1 %
		Utilities	6	23	<1	23	<1 %
		Wildlife management	1	11	-	11	<1 %
		Residential	3	6	<1	6	<1 %
		SUBTOTAL	**143**	**2,935**	**316**	**3,251**	**40 %**
TOTAL CROWN OWNED ALR			**399**	**14,904**	**719**	**15,622**	**202 %**
TOTAL			**2,153**	**33,354**	**2,187**	**35,541**	**451 %**

Figure 9. Land cover available for farming but not farmed on parcels "Not used for farming"

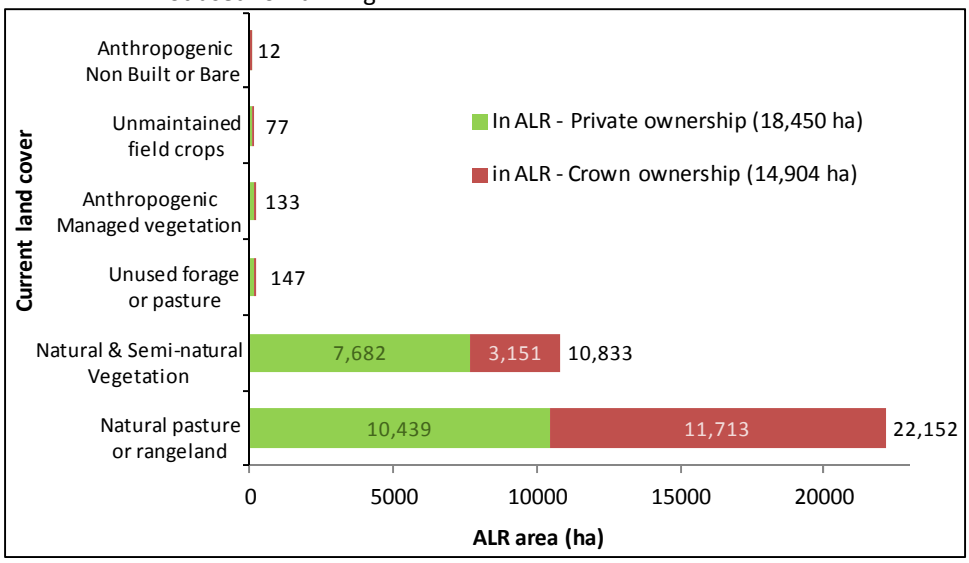


Figure 9 indicates that developing privately owned and Crown owned land currently used for natural pasture or rangeland would provide the greatest gains in farmed land on parcels currently "Not used for farming". These gains in farming would have to be measured against the loss of natural pasture or rangeland.

Converting non grazed "Natural & Semi-natural Vegetation" to farming may be better supported by the ranchers in the area.

Figure 10. Size of areas available for farming but not farmed on parcels "Not used for farming" – Privately owned

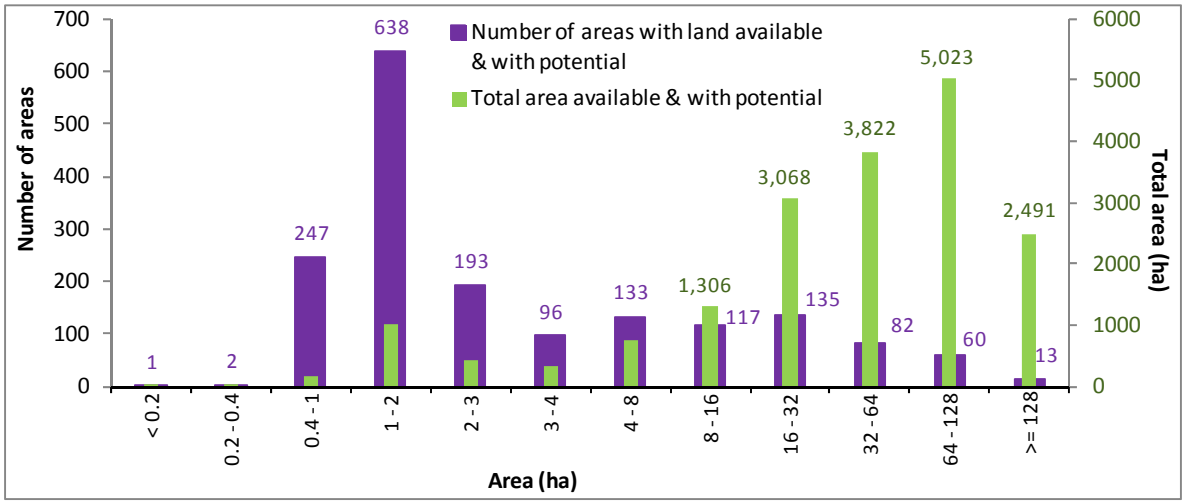


Figure 10 demonstrates that 52% of the privately owned areas available for farming are smaller than 2 hectares, only 31% are larger than 4 hectares, and only 9% are larger than 32 hectares. The smaller the area, the fewer options are available to efficiently farm.

Larger areas provide the widest range of options for bringing the area into farming production. In the Central Region, there are 155 areas greater than 32 hectares in size with a combined area of 11,337 hectares that are available and with potential for farming. Many of these areas are currently being used for grazing. Fourteen of these larger areas (totalling 1,023 hectares) are on privately owned parcels held by wildlife conservation groups.

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 (forage or pasture, vegetables, nursery, 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 the Central Region are described by seven crop groupings:

- **Forage, pasture**: grass, legumes, forage corn
- **Cereal, oilseeds**: barley, oats, canola
- **Cultivated land**: land that has been prepared for planting but the crop is not yet visible
- **Ornamentals and shrubs**: nursery
- **Fallow land:** cultivated land that has not been seeded or planted for one or more growing seasons
- **Mixed vegetables**: field of a variety of vegetable types
- **Berries:** unknown type

Table 10. 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	7,018	4%	< 1%	196	7,213	95%	10%
Cereals, oilseeds	317	< 1%	< 1%	< 1	318	4%	< 1%
Cultivated land	40	< 1%	< 1%	< 1	40	< 1%	< 1%
Ornamentals and shrubs	21	< 1%	-	< 1	21	< 1%	-
Fallow land	17	< 1%	-	< 1	18	< 1%	-
Mixed vegetables	6	< 1%	-	< 1	6	< 1%	-
Berries	< 1	< 1%	-	-	< 1	< 1%	-
TOTAL	**7,419**	**4%**	**< 1%**	**197**	**7,617**	**100%**	**11%**

Table 10 shows the 7 main field crop types produced on the 7,419 hectares of cultivated land in the Central Region.

Forage and pasture is by far the most common type of cultivated field crop accounting for 95% of all cultivated land and 4% of the ALR in the region. Cereals and oilseeds are a distant second, accounting for 4% of all cultivated land in the region.

Refer to Map B8 in Appendix B for more information.

Figure 11. All crop fields by size

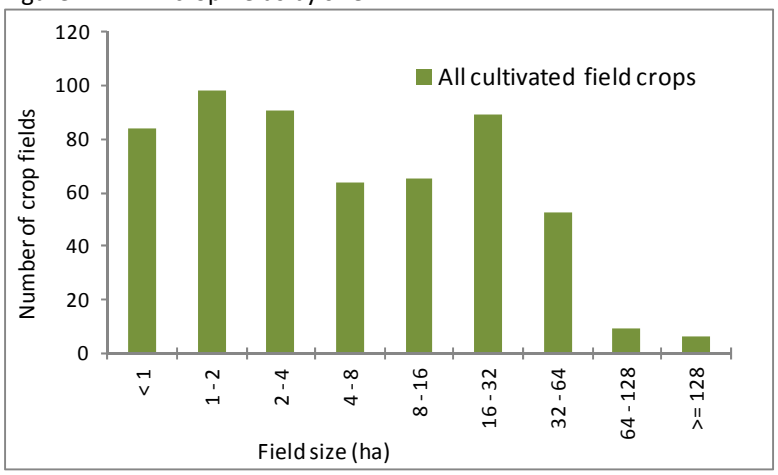


Figure 11 illustrates the number and size distribution of fields used for cultivated field crops.

In the Central Region, cultivated fields are most likely to be 1-2 hectares in size.

There are 559 individual crop fields with an average area of 14 hectares and median area of 4 hectares.

Field crops occur on 502 parcels with an average size of 43 hectares and median size of 25 hectares.

Refer to Table A1 in Appendix A for more information.

Figure 12. Forage, pasture and cereal, oilseed fields by size

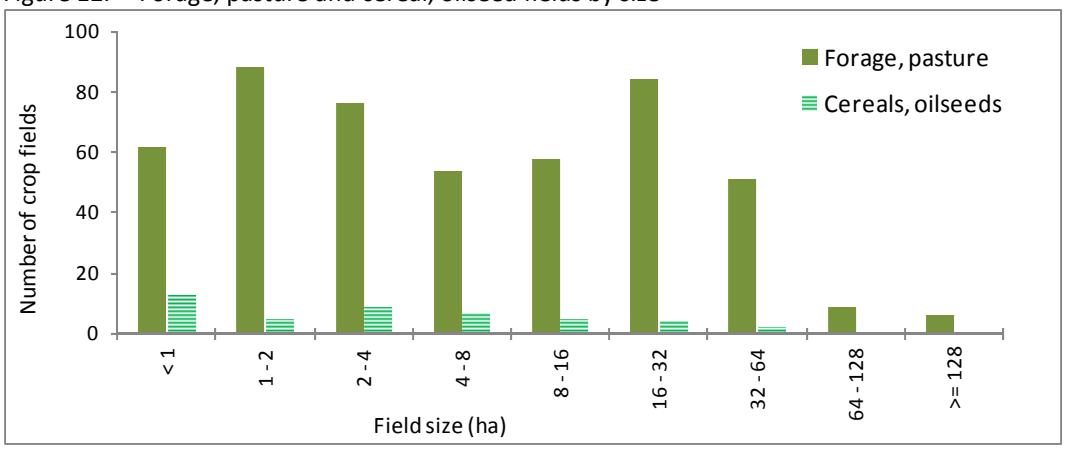


Figure 12 compares the top two main crop types by field sizes.

"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 cattle 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. 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.

Areas previously used for forage or pasture are considered inactively farmed:

- **Unused**: forage or pasture which has not been cut or grazed during the current growing season.
- **Unmaintained**: 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 11. 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 (managed)	Grass	417	< 1%	22	439	6%
Forage (managed)	Mixed grass / legume	520	< 1%	26	545	7%
Forage (managed)	Forage corn	13	< 1%	-	13	< 1%
Forage (unmanaged)	Grass	261	< 1%	6	267	4%
Forage (unmanaged)	Mixed grass / legume	397	< 1%	39	436	6%
	Subtotal	**1,608**	**< 1%**	**92**	**1,700**	**22%**
Pasture^	Grass	24	< 1%	1	25	< 1%
Pasture^	Mixed grass / legume	7	< 1%	-	7	< 1%
Pasture (managed)	Grass	298	< 1%	18	316	4%
Pasture (managed)	Mixed grass / legume	21	< 1%	-	21	< 1%
Pasture (unmanaged)	Grass	607	< 1%	1	608	8%
Pasture (unmanaged)	Mixed grass / legume	46	< 1%	17	63	< 1%
	Subtotal	**1,003**	**< 1%**	**37**	**1,040**	**14%**
Forage & pasture (managed)	Grass	1,083	< 1%	< 1	1,083	14%
Forage & pasture (managed)	Mixed grass / legume	3,041	2%	41	3,082	40%
	Subtotal	**4,125**	**2%**	**41**	**4,166**	**55%**
Unused	Grass	188	< 1%	23	211	3%
Unused	Mixed grass / legume	12	< 1%	-	12	< 1%
Unmaintained	Grass	19	< 1%	-	19	< 1%
Unmaintained	Mixed grass / legume	63	< 1%	3	66	< 1%
	Subtotal	**282**	**< 1%**	**26**	**308**	**4%**
	TOTAL	**7,018**	**4%**	**196**	**7,213**	**95%**

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

Table 11 shows "Forage & pasture (managed)" is the most significant animal feed crop in the Central Region. Refer to Map B9 in Appendix B for more information.

Figure 13. Forage and pasture fields by size

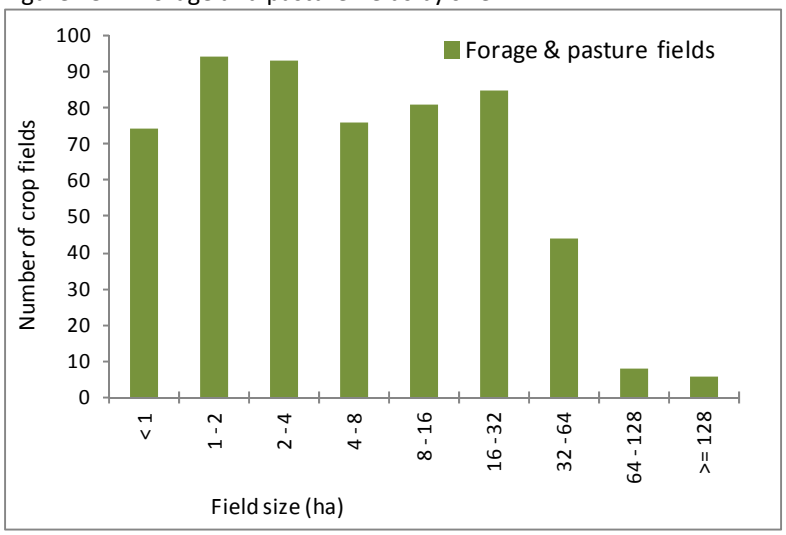


Figure 13 shows there are 561 individual "Forage, pasture" fields with an average area of 13 hectares and median area of 5 hectares.

Forage and pasture fields occur on 488 parcels with an average size of 43 hectares and median size of 26 hectares.

Refer to Table A2 in Appendix A for more information.

Figure 14. Forage and pasture fields by size and type

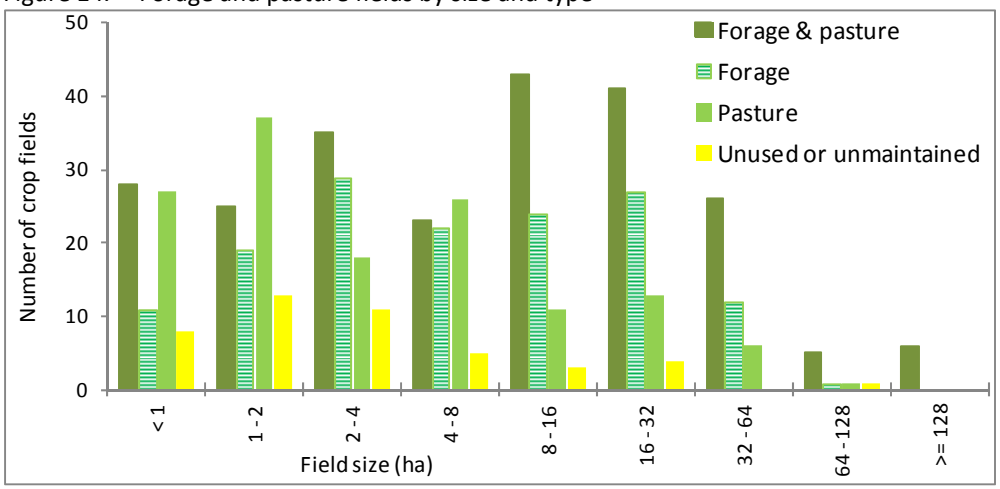


Figure 14 illustrates the variation in field sizes between pasture, forage and unused / unmaintained pasture or forage.

Fields used for forage are generally larger than pasture fields mainly due to harvesting equipment requirements and fencing costs.

Cereal & oilseed crops

Grains are organized into categories based on the type of grain:

- **Cereals** are members of the grass family that are used for livestock food (barley, oats, rye, wheat and triticale).
- **Pulses** are the seeds of legumes which are used for livestock food (field peas).
- **Oilseeds** are used to extract oil from their seeds (canola).

Table 12. Cereals and oilseeds by area

Cereal and oilseeds	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Barley	214	< 1%	< 1	214	3%
Oats	63	< 1%	< 1	63	< 1%
Canola	39	< 1%	< 1	40	< 1%
TOTAL	**317**	**< 1%**	**< 1**	**318**	**4%**

Table 12 shows that the Central Region has 317 hectares in cereal and oilseed crops, mostly Barley.

Barley is primarily intended for greenfeed production and often is used as a first year cover crop after an old forage field is cultivated and re-seeded.

Since the area in barley is about 4.5% of the area in managed forage, this indicates that about 4.5% of managed forage is under rejuvenation.

Refer to Map B10 in Appendix B for more information.

Figure 15. Cereal and oilseed fields by size

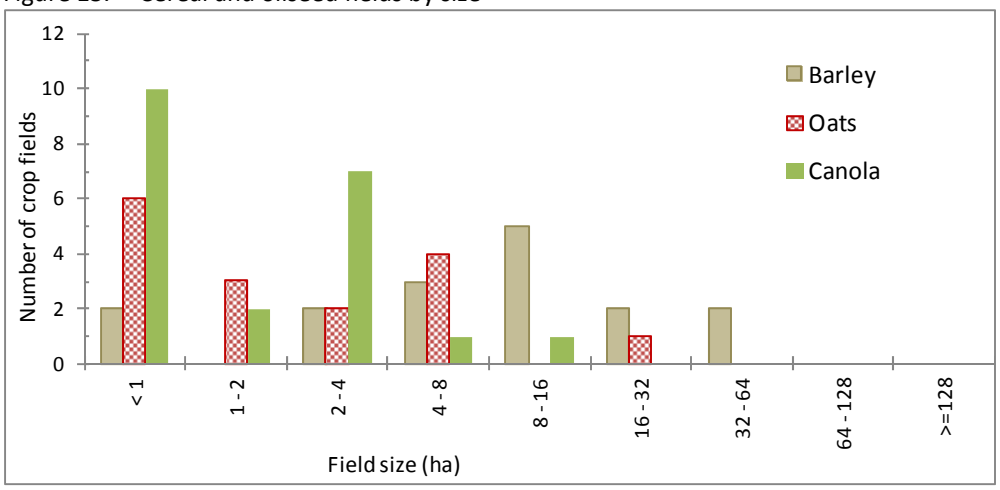


Figure 15 shows that there are 53 individual cereal or oilseed fields with an average area of 6 hectares and median area of 2 hectares.

Cereal and oilseed fields occur on 45 parcels with an average size of 68 hectares and median size of 62 hectares.

Refer to Table A3 in Appendix A for more information.

Individual Crops

Table 13. Individual crop types by area

Cultivated field crop	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Forage & pasture (managed)	4,125	2%	41	4,166	55%
Forage (managed)	949	< 1%	47	997	13%
Forage (unmanaged)	659	< 1%	44	703	9%
Pasture (unmanaged)	653	< 1%	18	671	9%
Pasture (managed)	319	< 1%	18	337	4%
Unused forage/pasture	201	< 1%	23	224	3%
Barley	214	< 1%	< 1	214	3%
Unmaintained forage/pasture	82	< 1%	3	85	1%
Oats	63	< 1%	< 1	63	< 1%
Cultivated land	40	< 1%	< 1	40	< 1%
Canola	39	< 1%	< 1	40	< 1%
Pasture ^	30	< 1%	1	32	< 1%
Ornamentals and shrubs	21	< 1%	< 1	21	< 1%
Fallow land	17	< 1%	< 1	18	< 1%
Mixed vegetables	6	< 1%	< 1	6	< 1%
Berries (unknown type)	< 1	< 1%	-	< 1	< 1%
TOTAL	**7,419**	**4%**	**197**	**7,617**	**100%**

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

Table 13 shows the 16 individual crops that account for all cultivated land in the Central Region.

Figure 16. Individual crop types by area

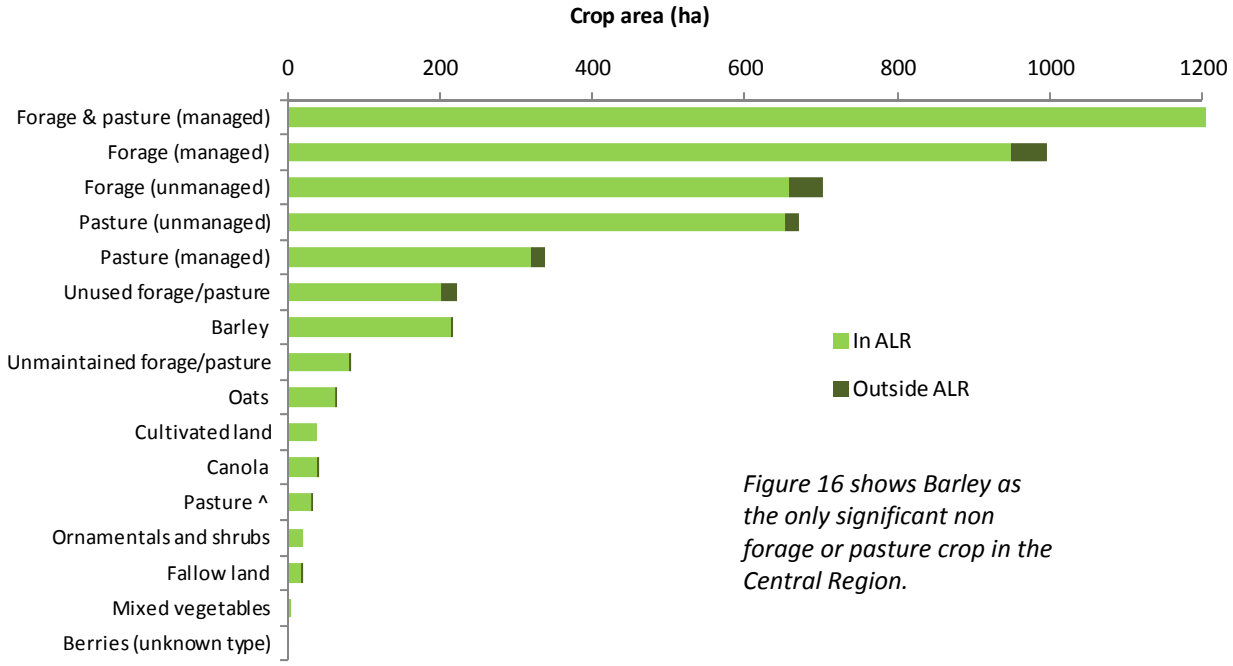


Figure 16 shows Barley as the only significant non forage or pasture crop in the Central Region.

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 equines. 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. Rangelands tend 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 or equines 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 influence natural vegetation as pasture. 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 14. Natural pasture and rangeland vegetation types by area

Natural pasture and rangeland		ALR			Outside ALR (ha)	Total area (ha)	% of inventory area	% of inventory area Crown owned	% of natural pasture and rangeland
		In ALR (ha)	% of ALR	% of ALR Crown owned					
Rangeland (natural)	Treed - closed	18,029	10%	6%	1,637	19,666	25%	14%	54%
	Treed - open	3,920	2%	1%	35	3,955	5%	2%	11%
	Herbaceous	2,619	1%	< 1%	35	2,654	3%	< 1%	7%
	Shrubland	977	< 1%	< 1%	3	980	1%	< 1%	3%
	Grassland	112	< 1%	< 1%	< 1	112	< 1%	< 1%	< 1%
Subtotal		**25,657**	**14%**	**7%**	**1,710**	**27,367**	**35%**	**18%**	**75%**
Pasture (natural)	Treed - closed	3,963	2%	< 1%	218	4,180	5%	< 1%	11%
	Herbaceous	2,579	1%	< 1%	105	2,684	3%	< 1%	7%
	Treed - open	1,062	< 1%	< 1%	145	1,207	2%	< 1%	3%
	Shrubland	755	< 1%	< 1%	120	875	1%	< 1%	2%
	Grassland	54	< 1%	-	-	54	< 1%	-	< 1%
Subtotal		**8,413**	**5%**	**< 1%**	**588**	**9,001**	**12%**	**2%**	**25%**
TOTAL		**34,071**	**19%**	**8%**	**2,298**	**36,368**	**46%**	**20%**	**100%**

Table 14 shows that land cover of Treed – closed (10% to 60% of crown cover is native trees) is most commonly used for natural pasture and rangeland.

Refer to Map B11 in Appendix B for more information.

Figure 17. Natural pasture and rangeland areas by size

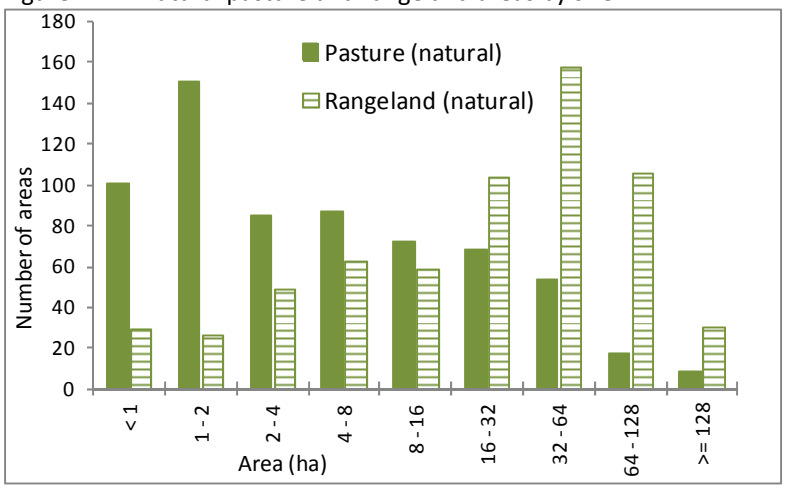


Figure 17 shows that natural pastures are most likely to be 1-2 hectares in size while rangeland areas are most likely to be 32-64 hectares in size.

In the Central Region, there are 644 individual natural pastures with an average area of 14 hectares and median area of 3 hectares.

The average size of parcels where natural pasture occurs is 29 hectares and median size is 7 hectares.

Rangelands occur on 627 parcels with an average parcel size of 53 hectares. Rangelands typically utilize more than one parcel; therefore statistics based on parcel size do not accurately predict the size of rangeland areas.

Refer to Table A4 in Appendix A for more information.

GREENHOUSES

Greenhouses are structures covered with translucent material and of sufficient size for a person to work inside[7]. 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 15. Greenhouse operations by area[8]

Greenhouse and greenhouse accessory		ALR		Outside ALR (ha)	Total area (ha)	% of greenhouse area
		In ALR (ha)	% of ALR			
Poly greenhouse	Unknown Unmaintained	-	-	.3	.3	11%
Poly greenhouse	Mixed	.9	< 1%	1.3	2.2	89%
TOTAL		**.9**	**< 1%**	**1.6**	**2.5**	**100%**

In the Central region, there were only 7 poly greenhouse operations reported which include Casey's Greenhouses, Top Crop Nursery, Penny Acre Greenhouse Ltd., and East Kootenay Greenhouses which appears unmaintained. Tipi Mountain Native Plants located on St. Mary's 1A Indian reserve was not captured in this inventory.

Table 15 shows that less than 1 hectare of ALR land is covered by these 7 poly greenhouse operations.

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

Refer to Map B12 in Appendix B for more information.

Figure 18. Greenhouses by size

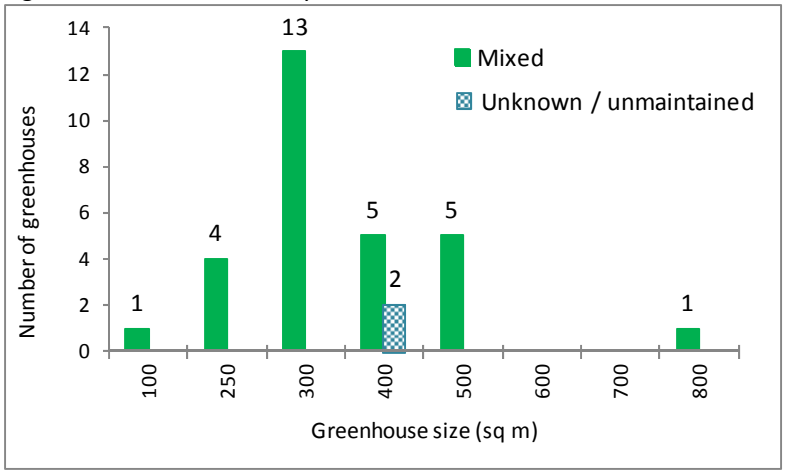


Figure 18 shows that the 7 greenhouse operations have a total of 31 poly greenhouses; 29 with mixed crops and 2 unmaintained with unknown crops.

The largest greenhouse is part of an unidentified operation with 4 greenhouses located on 4th Avenue South, just south of Cranbrook.

[7] Source: *Guide for Bylaw Development*, 1998 Issue (Working Copy) by Ministry of Agriculture and Food.

[8] The areas reported in this table include 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. High salinity or microbial contamination renders water unsuitable for irrigation. Insufficient water sources or water delivery infrastructure limits 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 16. Main crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)					Total area irrigated (ha)	% of crop area irrigated
	Sprinkler	Centre pivot	Giant gun	Landscape / turf	Trickle		
Forage, pasture	2,711	1,267	35	-	-	4,012	56%
Cereals, oilseeds	164	104	12	-	-	281	88%
Ornamentals and shrubs	6	-	11	-	< 1	18	87%
Cultivated land	2	12	-	-	-	13	33%
Mixed vegetables	5	-	-	1	-	6	100%
Fallow land	-	-	-	-	-	-	-
Berries (unknown type)	-	-	-	-	-	-	-
FIELD CROP AREA IRRIGATED	**2,888**	**1,382**	**58**	**1**	**< 1**	**4,331**	**57%**
Greenhouses	Mix of flood and trickle irrigation					2	100%

Table 16 illustrates that all vegetables are irrigated as well as the majority of cereal, oilseed, ornamental and shrub crops. The only trickle irrigation system reported was at Top Crop Nursery in Cranbrook.

Refer to Map B13 in Appendix B for more information.

Figure 19. Irrigation systems by percentage of cultivated land

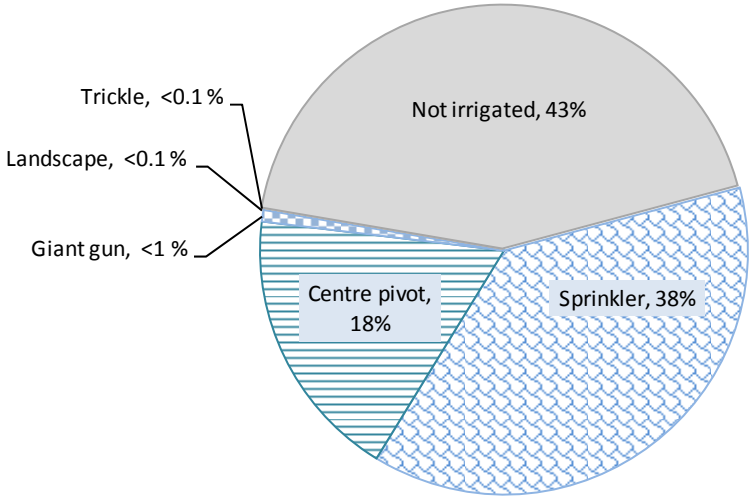


Figure 19 shows that sprinkler irrigation is the most widely used system in the Central Region, occurring on 38% of cultivated land, followed by center pivot systems at 18%, and giant gun systems at <1%.

Figure 19 also shows that 43% of cultivated land is not currently irrigated for reasons which are not apparent from this inventory.

Increasing irrigation offers great potential to increase agricultural productivity; however sufficient water supply and/or water delivery infrastructure may not be reasonably available. Further discussion is beyond the scope of this report.

Table 17. Individual field crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)					Total area irrigated (ha)	% crop area irrigated
	Sprinkler	Centre pivot	Giant gun	Landscape / turf	Trickle		
Forage & pasture (managed)	1,825	1,166	29	-	-	3,020	73%
Forage (managed)	523	74	-	-	-	597	60%
Forage (unmanaged)	319	-	5	-	-	324	46%
Pasture (unmanaged)	37	-	-	-	-	37	6%
Pasture (managed)	6	27	-	-	-	33	10%
Unused forage/pasture	-	-	-	-	-	-	-
Barley	111	77	10	-	-	198	92%
Unmaintained forage/pasture	-	-	-	-	-	-	-
Oats	22	27	-	-	-	49	77%
Cultivated land	2	12	-	-	-	13	33%
Canola	32	-	2	-	-	34	85%
Pasture ^	-	-	-	-	-	-	-
Ornamentals and shrubs	6	-	11	-	< 1	18	87%
Fallow land	-	-	-	-	-	-	-
Mixed vegetables	5	-	-	1	-	6	100%
Berries (unknown type)	-	-	-	-	-	-	-
TOTAL	**2,888**	**1,382**	**58**	**1**	**< 1**	**4,331**	

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

Table 17 outlines the irrigation system types used on the individual field crops in the Central Region. Centre pivot systems are mostly used on "Forage & pasture (managed)", "Forage (managed)", and "Barley".

LIVESTOCK

Livestock activities are very difficult to measure using a windshield survey method. Livestock are often confined to structures or grazing on remote rangelands making it difficult for the surveyor to see the animals. Local knowledge, Crown grazing licenses, 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 or be out on the range. 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 livestock home site is observed or identified through Crown range grazing plans.

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel. The “Main Type” of livestock does not represent the primary agricultural activity, but only the main type of livestock 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 and often utilize non intensive barns and corrals/paddocks.

“Unknown livestock” refers to activities where non specialized livestock related structures are present but the livestock are not visible and therefore the specific type of livestock cannot be determined.

“Inactive operation” refers to parcels where livestock structures are present but appear to be unused.

The scale system used to describe livestock operations relies on animal unit equivalents 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).

Table 18. Livestock activities

Livestock group	Livestock detail *	By parcel		Total activities	*By activity type*	
		Main type	Secondary type		*Intensive*	*Non Intensive*
Beef	Beef	87	4	91	-	*91*
	Beef (Sheep / lamb)	1	-	1	-	*1*
	Beef total	88	4	92	-	*92*
Poultry	Chicken	7	6	13	-	*13*
	Turkey (Chicken)	-	1	1	-	*1*
	Duck	-	1	1	-	*1*
	Goose	-	1	1	-	*1*
	Poultry total	7	9	16	-	16
Swine	Swine total	1	-	1	-	*1*
Sheep / lamb / goat	Sheep / lamb	1	2	3	-	*3*
	Sheep / lamb (Goat)	-	1	1	-	*1*
	Sheep / lamb (Llama)	1	-	1	-	*1*
	Goat	7	2	9	-	*9*
	Sheep / lamb / goat total	9	5	14	-	14
Llama / alpaca	Llama	8	-	8	-	*8*
	Alpaca	3	-	3	-	*3*
	Llama (Alpaca)	1	-	1	-	*1*
	Llama / alpaca total	12	-	12	-	12
Specialty livestock	Bison	1	-	1	-	*1*
	Fur bearing	1	-	1	-	*1*
	Game bird	1	-	1	-	*1*
	Specialty livestock total	3	-	3	-	3
Other livestock	Rabbit total	-	1	1	-	*1*
Unknown livestock	Unknown livestock total	5	-	5	-	*5*
Inactive livestock	Inactive operation total	1	-	1	-	*1*
Equine	Horse	258	16	274	-	*274*
	Pony	2	1	3	-	*3*
	Miniature horse	1	-	1	-	*1*
	Donkey, ass	4	-	4	-	*4*
	Mule	2	-	2	-	*2*
	Mixed equines	11	1	12	-	*12*
	Unknown equines	57	1	58	-	*58*
	Equine total	335	19	354	-	354
TOTAL		**461**	**38**	**499**	**-**	**499**

* Livestock type (Livestock type) indicates the livestock activity is a mixed herd or flock.

Table 18 shows that equine is the most common type of livestock activity in the Central Region, accounting for 354 of 499 or 71% of all livestock activities. Beef is the second most common with 92 activities or 18%.

Refer to Maps B14, B15, and B16 in Appendix B for more information.

Table 19. Equine activities

Type of activity	Scale	By parcel		Total number of activities	*By activity type*		Total number of animals*
		Main Type	Secondary Type		*Intensive*	*Non intensive*	
Unknown	Very small scale (1-2 horses)	12	1	13	-	*13*	14
Companion		1	-	1	-	*1*	1
Recreation		28	1	29	-	*29*	43
Unknown	Small scale (2-25 horses)	51	3	54	-	*54*	177
Breeding		4	-	4	-	*4*	30
Breeding / Boarding		1	-	1	-	*1*	2
Companion		1	-	1	-	*1*	2
Draft horse		1	-	1	-	*1*	3
Guide / outfitting		1	1	2	-	*2*	46
Ranching		9	4	13	-	*13*	74
Recreation		211	8	219	-	*219*	629
Recreation / Boarding		4	-	4	-	*4*	42
Sporting / racing		6	-	6	-	*6*	25
Sporting / racing / Boarding		2	-	2	-	*2*	10
Unknown	Medium scale (25-100 horses)	1	1	2	-	*2*	54
Guide / outfitting		1	-	1	-	*1*	25
Recreation		1	-	1	-	*1*	30
TOTAL		**335**	**19**	**354**	**-**	***354***	**1,207**

* Total number of animals estimated from Crown grazing licenses and field observations

Table 21 details the equine activities in the Central Region. The total number of animals is estimated from field observations and Crown grazing licenses for livestock home sites in the Central Region.

Refer to Table A5, Figure A1 and A2 in Appendix A and Map B15 in Appendix B for more information on equines.

Table 20. Beef activities

Type of activity	Scale	By parcel		Total number of activities	*By activity type*		Total number of animals*
		Main type	Secondary type		*Intensive*	*Non Intensive*	
Cow / calf	Small scale (2-25 cattle)	37	4	41	-	*41*	388
	Medium scale (25-100 cattle)	25	-	25	-	*25*	1228
	Large scale (> 100 cattle)	26	-	26	-	*26*	4484
TOTAL	**TOTAL**	**88**	**4**	**92**	**-**	***92***	**6,100**

* Total number of animals estimated from Crown grazing licenses and field observations

Table 20 details the beef activities in the Central Region. The total number of animals is estimated from field observations and Crown grazing licenses for livestock home sites in the Central Region.

Although equine is the most common activity, there are five times as many beef cattle as equines in the Central Region as beef activities tend to be larger scale than equine activities. For instance, there are 26 large scale beef activities but no large scale equine activities in the Central region.

Refer to Table A6, Figure A3 and A4 in Appendix A and Map B16 in Appendix B for more information on beef.

Figure 20. Livestock activities (excluding equine) by scale and type

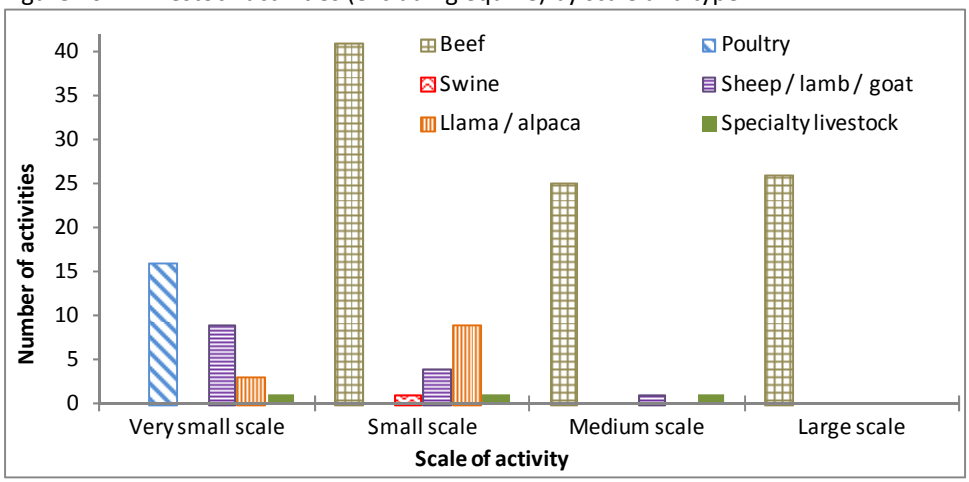


Figure 20 illustrates the scale of livestock activities (excluding equine) in the Central Region.

Most of livestock activities are "small" or "very small".

All "large" scale and most "medium" scale livestock activities are beef, however one "medium" scale livestock activity is specialty livestock (bison) and one is sheep/lamb.

Figure 21. Livestock and equine activities by scale

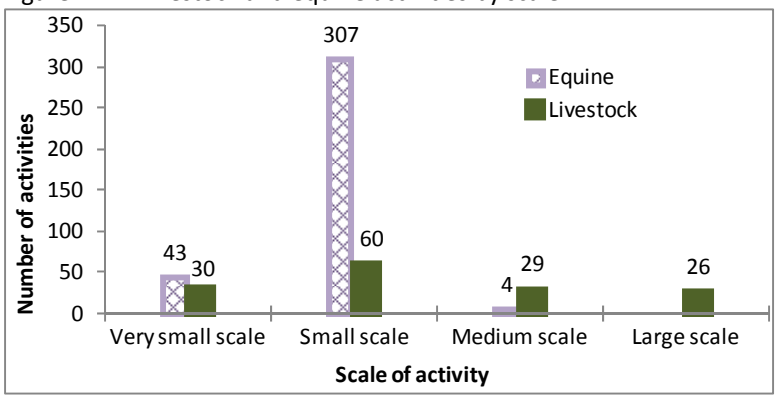


Figure 21 compares the scale of livestock activities with equine activities.

Even though 354 of the 499 livestock activities are equines, almost all are "very small" or "small" scale. There are no "large" scale and only 4 "medium" scale equine activities compared to 55 "large" or "medium" scale livestock activities.

Figure 22. Livestock activities (excluding equine) by parcel size and scale

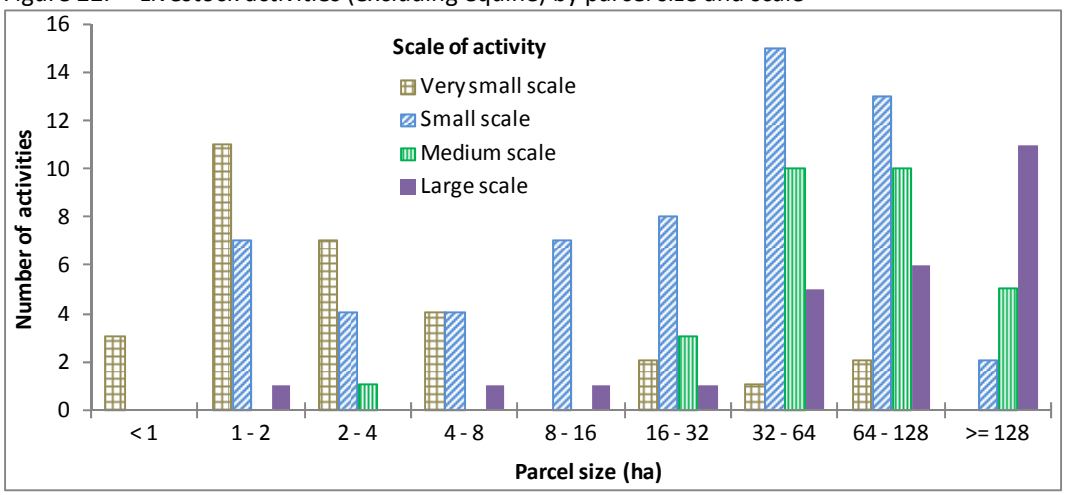


Figure 22 illustrates the distribution of livestock activities (excluding equine) by scale across parcel size categories.

Most "large" scale livestock activities are associated with larger parcels. However, many "small" scale livestock activities are also reported on larger parcels.

Figure 23. Livestock activities (excluding equine) by parcel size and type

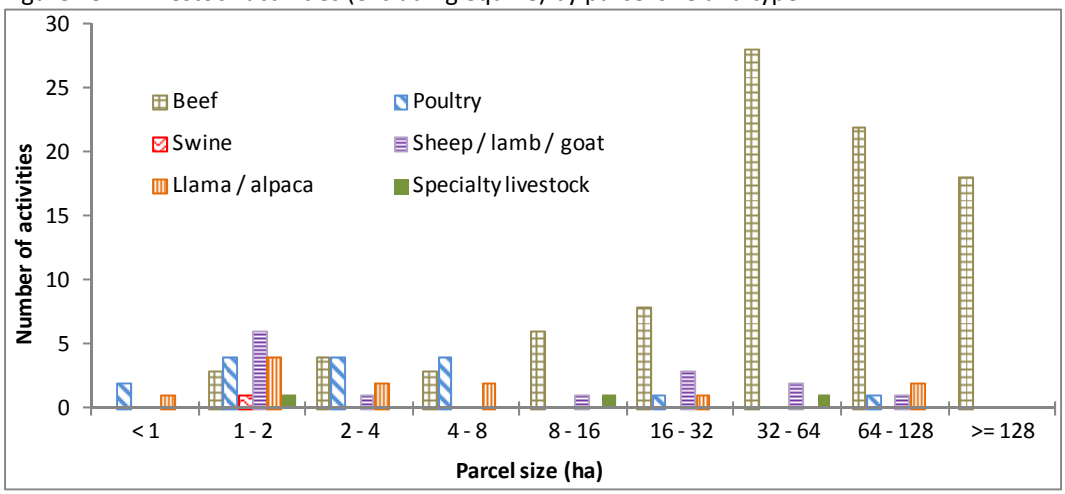


Figure 23 compares the distribution of different livestock types across parcel size categories. Most beef activities occur on larger parcels. The one "medium" scale specialty livestock activity (bison) is on a 32-64 hectare parcel.

Refer to Table A7 in Appendix A for more information.

Figure 24. Livestock and equine activities by parcel size

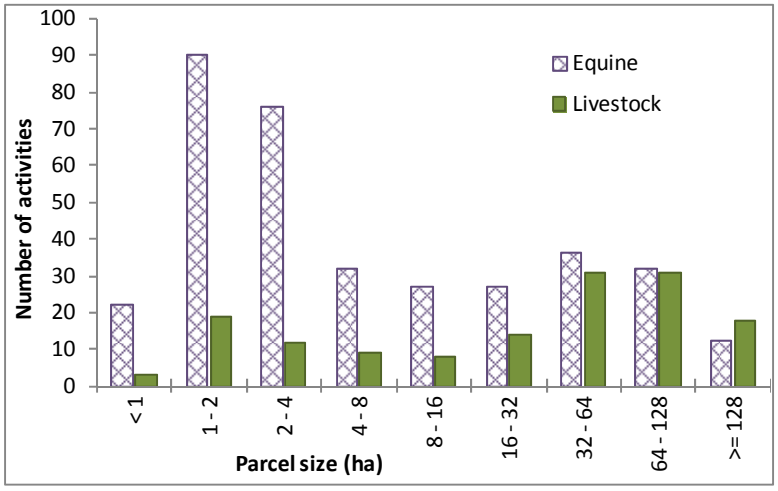


Figure 24 compares the distribution of equine and livestock across parcel size categories.

Equine activities are commonly found on smaller parcels than other livestock activities.

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

Figure 25. Average area in forage or pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)

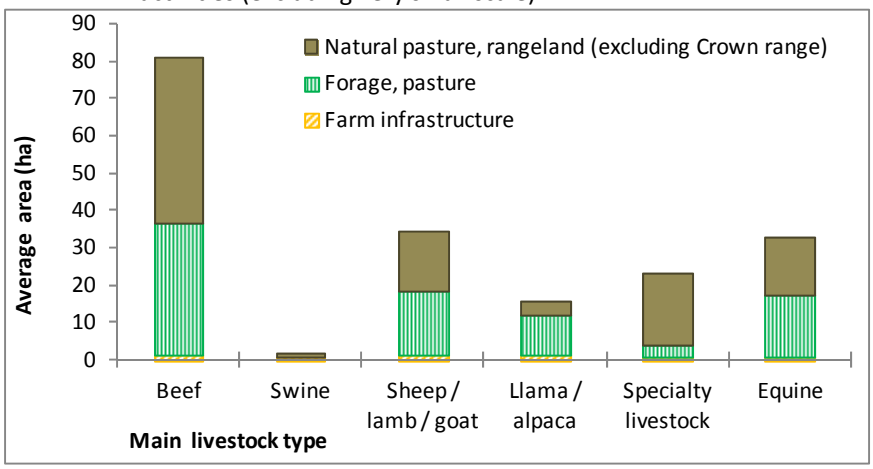
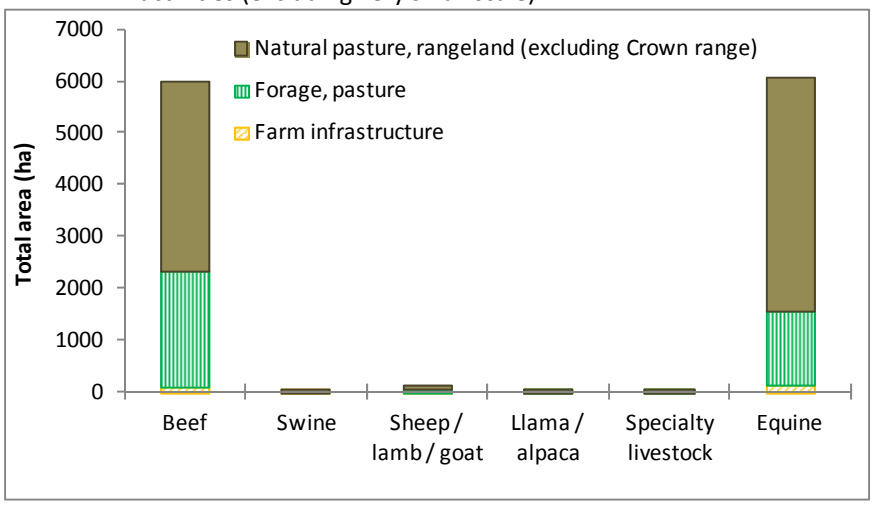


Figure 25 shows that on average, a beef activity is associated with 35 hectares of forage or pasture land and 44 hectares of natural pasture or rangeland, more than any other type of livestock activity.

Figure 26. Total area in forage or 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 or pasture and natural pasture or rangeland than each equine activity (see Figure 25 above), Figure 26 shows that total area is quite similar.

Figure 27. Percent of parcel area utilized for forage or pasture, farm infrastructure, and natural pasture or rangeland on parcels with livestock activities (excluding very small scale)

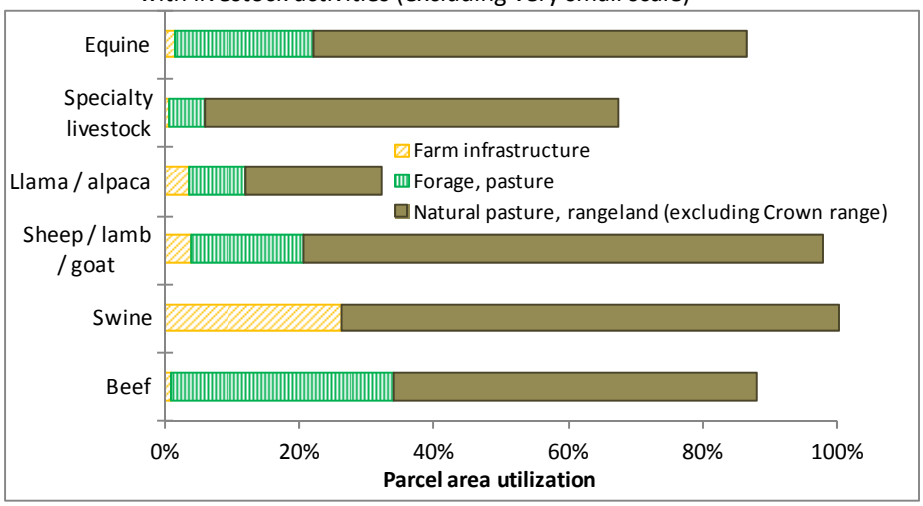


Figure 27 shows that on average, livestock and equine activities in the Central region utilize between 6% and 35% of their parcel area for forage, pasture, and farm infrastructure.

Figure 28. Land cover on parcels with livestock activities (excluding very small scale)[9]

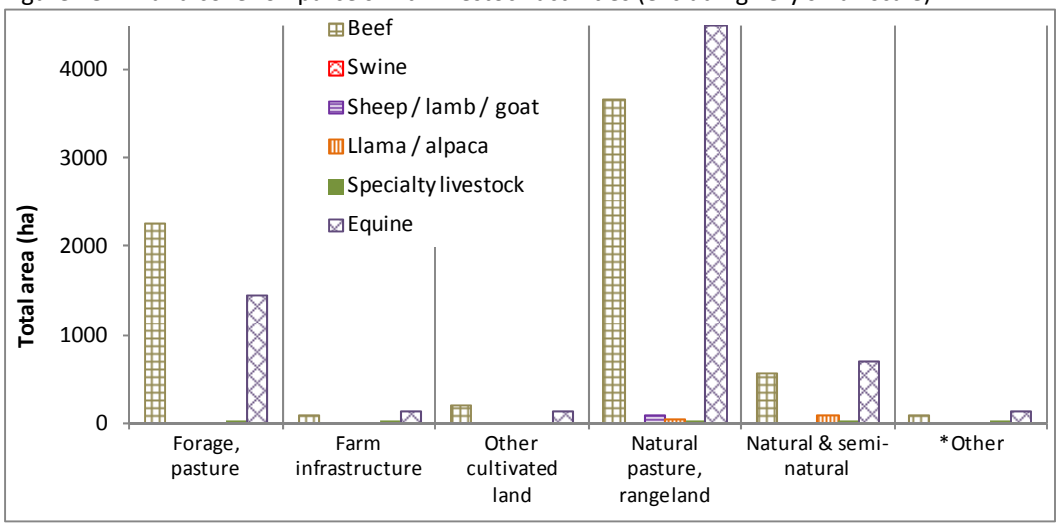


Figure 28 demonstrates the land cover on parcels with livestock activities including equines. All livestock types except swine are growing some of their own feed but are also relying heavily on natural areas.

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

[9] * 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.

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[10] 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.

Figure 29. Percentage of parcels "Used for farming" and with value-added activitie

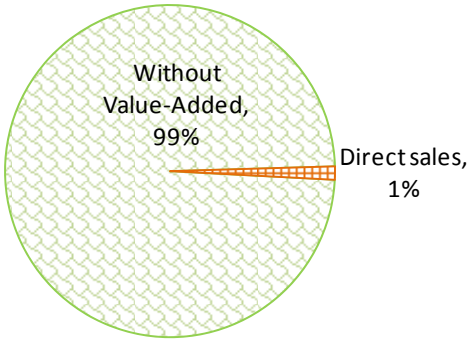


Figure 29. Only 4 parcels or 1% of all parcels "Used for farming" are reported as being used for a value-added activity in the Central Region.

There are two "small" scale and two "medium" scale seasonal stores or stands (direct sales).

Given the other recreational activities in the area, there may be opportunities to increase activities such as agri-tourism.

[10] On-farm refers to the farm unit which includes all the property belonging to the farm and may incorporate more than one parcel.

5. Condition of ALR Lands

This section presents a parcel based analysis of parcel size and residential uses in the ALR. Land ownership can impact the type of agricultural activities that occur on a parcel, therefore privately owned land is reported separately from Crown owned land. 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.

PARCEL INCLUSION IN THE ALR

The inventory area includes 64,162 hectares of ALR on 3,083 parcels which is just over 36% of the ALR within the Central Region. In addition, there is 18,795 hectares or 11% of the ALR on parcels that were excluded from the inventory as:

- photo interpretation showed no signs of agriculture and
- parcel area < 1 acre or parcel remotely located with limited access.

The remaining 53% of the ALR was excluded from the inventory as it is in Indian reserves, in Rights-of-ways, water, foreshore, or on unsurveyed Crown land.

ALR boundaries are not always coincident with parcel boundaries which results in many parcels having only a portion of their area in the ALR. To achieve an accurate picture of the ALR land in the Central Region, only parcels that meet the following criteria are considered to be within the ALR:

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

In total, 4,127 parcels with 82,721 hectares or just over than 46% of the Central Region's ALR land meet the above criteria. This includes 43 parcels that have less than 50% of their area in the ALR but contain greater than 10 hectares of ALR land. Of these 4,127 parcels, 3,207 or 55,266 hectares are privately owned and 920 or 27,456 hectares are Crown owned.

Of these 4,129 parcels, only 2,944 or 63,977 hectares are within the inventory area and thus included in the further analysis of ALR lands. Of these 2,944 parcels, 2,413 or 41,576 hectares are privately owned and 531 or 22,402 hectares are Crown owned.

Figure 30. Parcel inclusion in the ALR

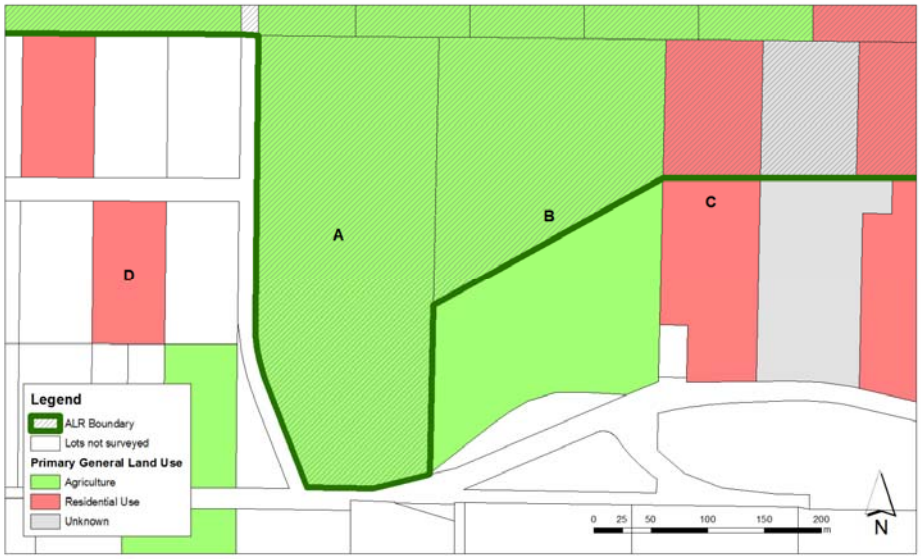


Figure 30 illustrates the distinction between parcels considered to be within or outside the ALR:

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.*

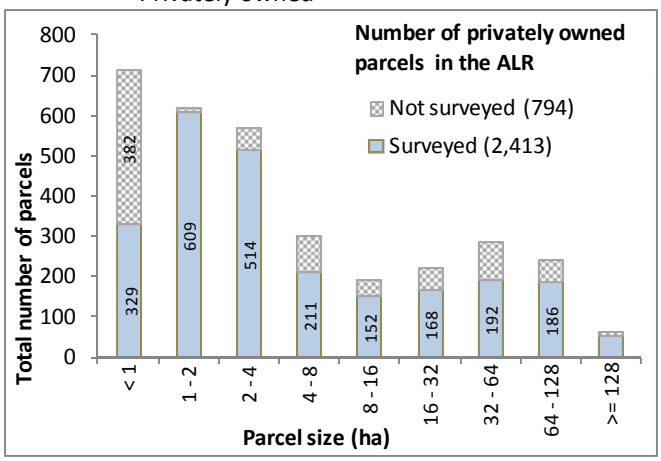
PARCEL SIZE & FARMING IN THE ALR

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[11], 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.

Privately Owned Parcels

Figure 31. Number of parcels in the ALR by parcel size – Privately owned



Approximately 22% of the Central Region's privately owned ALR parcels are less than one hectare. Average parcel size is 20.7 hectares, and median parcel size is 2.3 hectares.

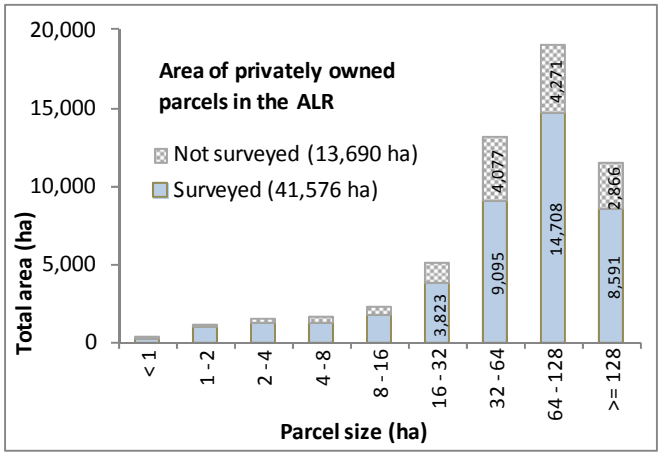
Figure 31 illustrates that of the 3,207 privately owned parcels in the ALR:

- *22% (711 parcels) are less than 1 hectare (including 465 parcels less than 1 acre).*
- *59% (1,897 parcels) are less than 4 hectares.*
- *9% (303 parcels) are between 4 and 8 hectares.*
- *6% (194 parcels) are between 8 and 16 hectares.*
- *25% (813 parcels) are greater than 16 hectares.*

Of these 3,207 parcels, only 2,413 were surveyed for land use and land cover as part of this inventory project. This includes 329 parcels less than 1 hectare of which 85 are less than 1 acre.

Refer to Map B17 in Appendix B for more information.

Figure 32. Total area in the ALR by parcel size – Privately owned



Even though the Central Region has large number of small parcels, most of its privately owned ALR area is in larger parcels.

Figure 32 illustrates that of the 55,266 hectares on privately owned parcels in the ALR:

- *<1% (271 hectares) is on parcels less than 1 hectare.*
- *2% (2,736 hectares) is on parcels less than 4 hectares.*
- *3% (1,630 hectares) is on parcels between 4 and 8 hectares.*
- *4% (2,277 hectares) is on parcels between 8 and 16 hectares.*
- *91% (48,623 hectares) is on parcels greater than 16 hectares.*

Of these 55,266 hectares, only 41,575 were surveyed for land use and land cover as part of this inventory project.

[11]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.

Table 21. Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Privately owned

Parcel status with respect to farming Private ownership	Number of parcels	% of parcels in the ALR
Used for farming	372	12 %
Used for grazing	556	17 %
Not used for farming or grazing	1,485	46 %
Not surveyed as part of this inventory	794	25 %
TOTAL	**3,207**	**100 %**

Table 21 demonstrates that of the 3,207 privately owned parcels in the ALR, only 372 or 12% are "Used for farming".

Figure 33. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Privately owned

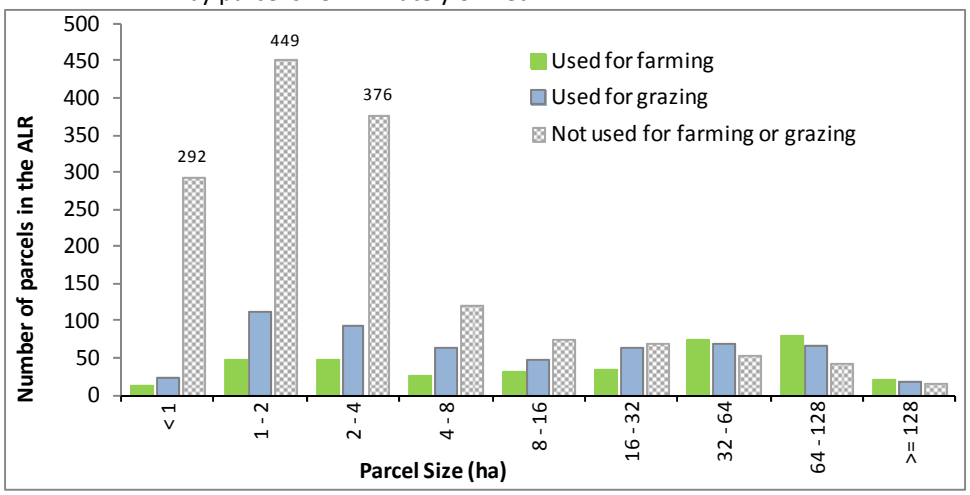


Figure 33 shows that of the 1,485 privately owned parcels in the ALR "Not used for farming or grazing", 741 or 50% are less than two hectares.

In all parcel size categories less than 32 hectares, the majority of parcels are "Not used for farming or grazing".

Figure 34. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size (line chart) – Privately owned

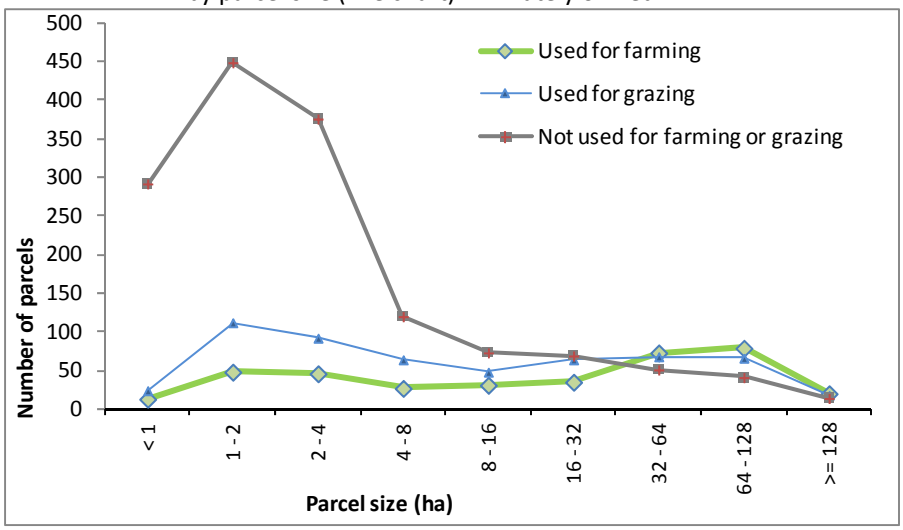


Figure 34 illustrates that the proportion of parcels "Not used for farming or grazing" declines as parcel size rises.

Figure 35. Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Privately owned

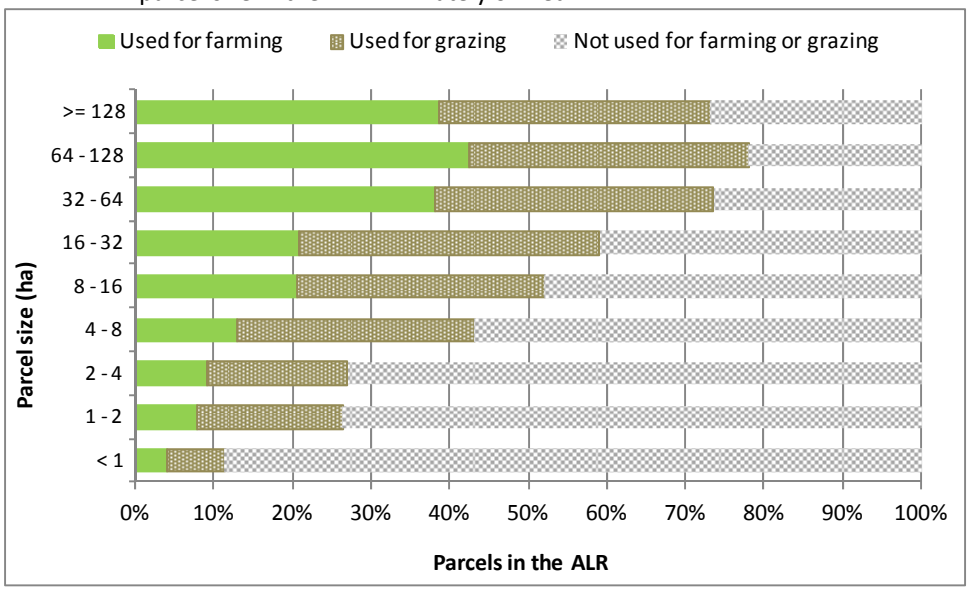


Figure 35 shows that for privately owned parcels, the proportion of "Used for farming" parcels increases as parcel size increases. This is also true for "Used for grazing" parcels.

Only 4% of privately owned parcels less than 1 hectare are "Used for farming". This would drop to about 2% if all small parcels had been surveyed as part of this inventory.

Figure 36. Proportion of land cover by parcel size in the ALR– Privately owned

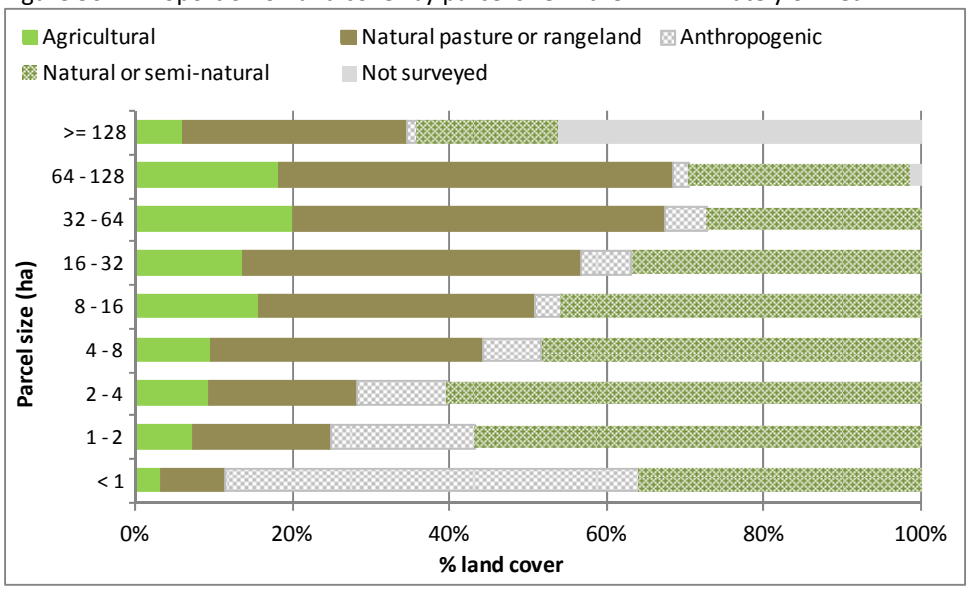


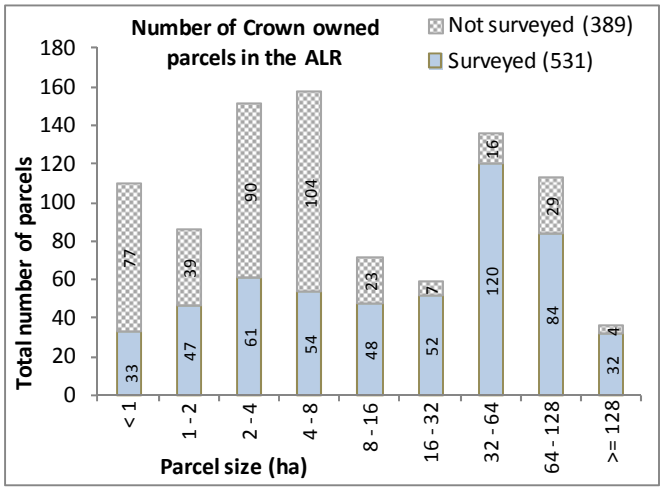
Figure 36 shows the average percentage of parcel area in different land cover types.

For privately owned parcels, the proportion of farmed land cover on ALR land increases slightly as parcel size increases.

More dramatically, the proportion of natural pasture or rangeland on ALR land increases as parcel size increases.

Crown Owned Parcels

Figure 37. Number of parcels in the ALR by parcel size – Crown owned



Crown owned ALR parcels in the Central Region are distributed across all parcel sizes. Average parcel size is 31.4 hectares, and median parcel size is 5.1 hectares.

Figure 37 illustrates that of the 920 Crown owned parcels in the ALR:

- *12% (110 parcels) are less than 1 hectare (including 69 parcels less than 1 acre).*
- *38% (347 parcels) are less than 4 hectares.*
- *17% (158 parcels) are between 4 and 8 hectares.*
- *8% (71 parcels) are between 8 and 16 hectares.*
- *37% (344 parcels) are greater than 16 hectares.*

Of these 920 parcels, only 531 were surveyed for land use and land cover as part of this inventory project. This includes 33 parcels less than 1 hectare of which 7 are less than 1 acre.

Refer to Map B18 in Appendix B for more information.

Figure 38. Total area in the ALR by parcel size – Crown owned

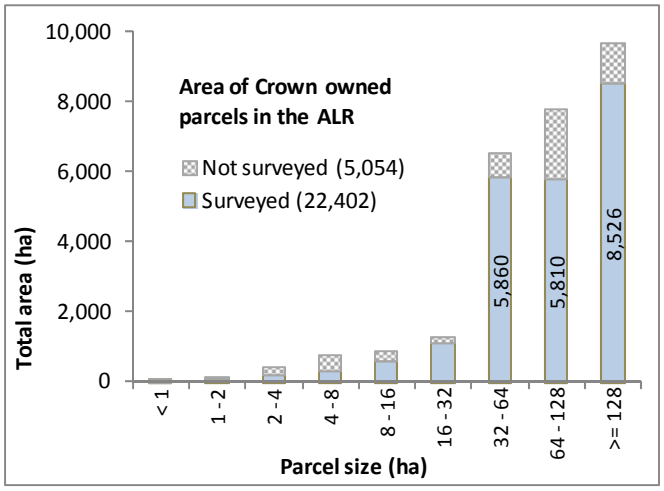


Figure 38 illustrates that of the 27,456 hectares on Crown owned parcels in the ALR:

- *<1% (37 hectares) is on parcels less than 1 hectare.*
- *2% (592 hectares) is on parcels less than 4 hectares.*
- *3% (774 hectares) is on parcels between 4 and 8 hectares.*
- *3% (852 hectares) is on parcels between 8 and 16 hectares.*
- *92% (25,238 hectares) is on parcels greater than 16 hectares.*

Of these 27,456 hectares, only 22,402 were surveyed for land use and land cover as part of this inventory project.

Table 22. Number of farmed, grazed, and not farmed or grazed parcels in the ALR – Crown owned

Parcel status with respect to farming Crown ownership	Number of parcels	% of parcels in the ALR
Used for farming	15	2 %
Used for grazing	294	32 %
Not used for farming or grazing	222	24 %
Not surveyed as part of this inventory	389	42 %
TOTAL	**920**	**100 %**

Table 22 demonstrates that of the 920 Crown owned parcels in the ALR, only 15 or 2% are "Used for farming", however 294 or 32% are "Used for grazing". This would probably increase to about 55% if all Crown parcels were surveyed as part of this inventory.

Crown owned parcels in Newgate and MacDonald Wetland conservation areas as well as parcels associated with the new Cranbrook wastewater treatment plant are included as "Used for farming".

Figure 39. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Crown owned

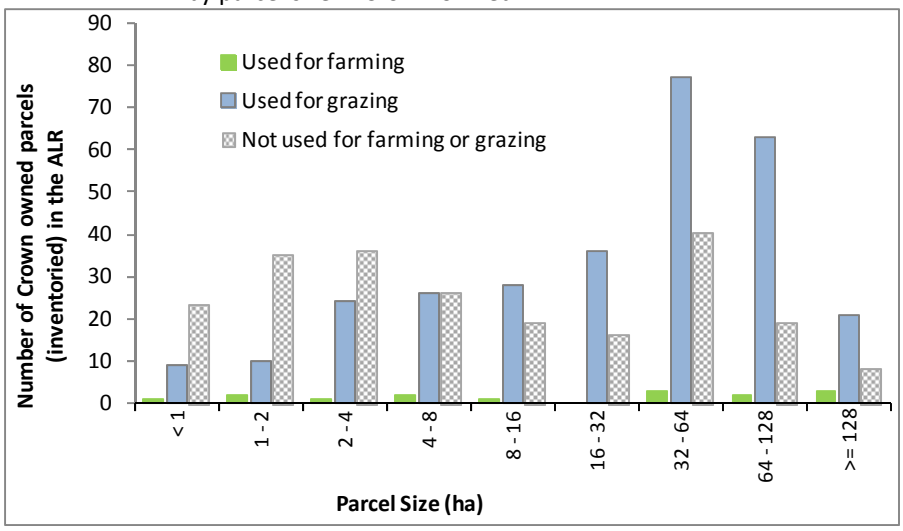


Figure 39 shows that the larger Crown owned parcels are more commonly used for grazing than the smaller Crown owned parcels.

Some Crown owned parcels were acquired from private land owners under conservation agreements for wildlife and fish habitat. These agreements often allow some historical agriculture to remain but limit the extent and type of agriculture expansion in the future.

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

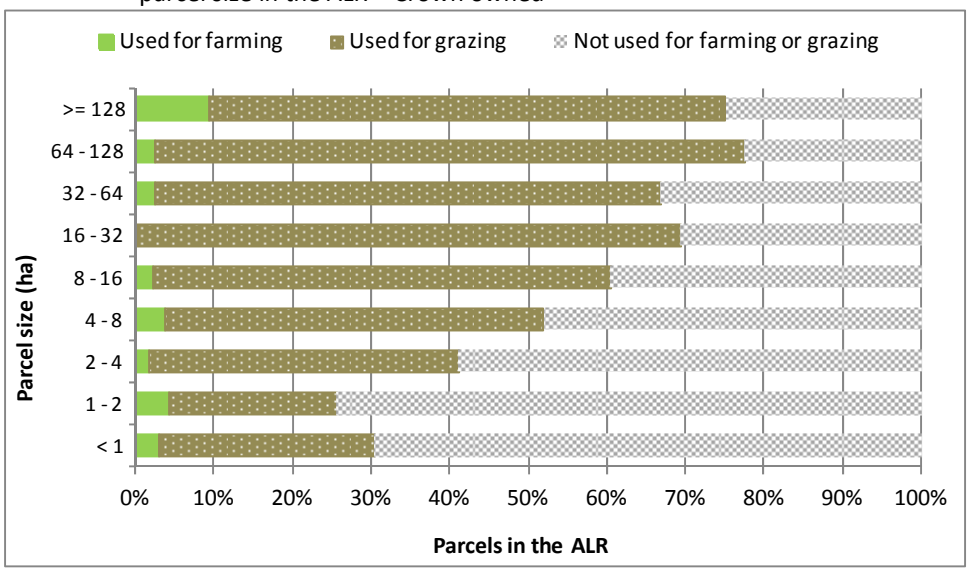
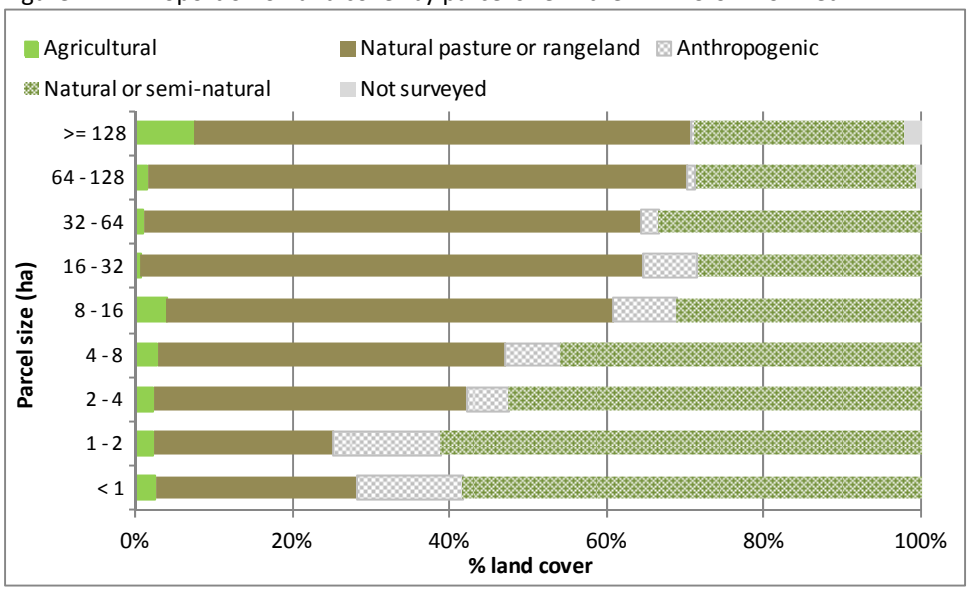


Figure 40 shows that for Crown parcels, the proportion "Used for grazing" increases as the parcel size increases.

Figure 41. Proportion of land cover by parcel size in the ALR– Crown owned



Similar to Figure 40 above, Figure 41 shows that for Crown parcels, on average, the proportion of parcel area in natural pasture or rangeland land cover increases as parcel size increases.

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.

In the following analysis camp sites/RV parks, 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 "Available for farming" are properties not currently "Used for farming" with either no apparent use or an existing non-farm use that is compatible with agriculture, such as Residential.

Properties "Unavailable for farming" are properties not currently "Used for farming" that have an established non-farm use that is incompatible with agriculture.

There are 1,605 privately owned parcels with residences in the ALR which are included in further analysis of residential use in the ALR.

There are 14 Crown owned parcels with residences in the ALR. This includes campsites in Kikomun Creek Provincial Park, a medium house in Wycliff Regional Park, a mobile home associated with a shooting range Crown lease, a mobile home associated with Newgate Sandy Shores Resort Crown lease, and medium houses in Newgate Marsh and MacDonald Wetland conservation areas. These parcels are not included in further analysis of residential use in the ALR.

Privately Owned Parcels

Table 23. Farming and residences in the ALR – Privately owned

Privately owned parcels Status with respect to farming	With residence		Without residence		Total number of parcels
	Number of parcels	% of parcels	Number of parcels	% of parcels	
Used for farming	219	9%	153	6%	372
Available for farming - grazing	328	14%	226	9%	554
Available for farming	1,011	42%	393	16%	1,404
Unavailable for farming - grazing	-	-	2	< 1%	2
Unavailable for farming	47	2%	34	1%	81
TOTAL	**1,605**	**67%**	**808**	**33%**	**2,413**

Table 23 shows that 1,605 or 67% of privately owned parcels in the ALR surveyed as part of the inventory have residences. Most of these parcels are "Not used for farming but available". This would probably increase to about 80% if all small parcels had been surveyed as part of this inventory.

Table 24. Farming and residence type in the ALR – Privately owned

Privately owned parcels Status with respect to farming	Residences *										Total residences	Total number of parcels
	Single mobile home	Small house	Medium house	Large house	Estate house	Cabin / cottage	Camp site / RV park	Mobile home park	Motel style	Dormitory		
Used for farming	28 (15)	37 (28)	147 (125)	47 (44)	6 (6)	-	-	-	1 (1)	-	266	219
Available for farming - grazing	31 (19)	49 (38)	237 (215)	52 (51)	3 (3)	4 ( )	2 (2)	-	-	-	378	328
Available for farming	86 (65)	136 (122)	610 (591)	196 (194)	22 (22)	8 (7)	7 (7)	2 (2)	1 (1)	-	1068	1011
Unavailable for farming	6 (5)	7 (6)	22 (21)	9 (9)	-	1 (1)	1 (1)	3 (3)	-	1 (1)	50	47
TOTAL RESIDENCES	**151**	**229**	**1016**	**304**	**31**	**13**	**10**	**5**	**2**	**1**	**1762**	
TOTAL PARCELS	**104**	**194**	**952**	**298**	**31**	**8**	**10**	**5**	**2**	**1**		**1605**

* xx (yy) - xx indicates the number of residences and (yy) indicates the number of parcels where that residence is the largest on the parcel.
xx ( ) - the parcels accomodate larger residences as well as those indicated.

Table 24 describes the 1,762 residences on 1,605 privately owned parcels in the ALR (some parcels have more than one residence). Most residences are medium houses (1,500 – 3,500 sq. ft) but there are at least 31 estate residences (> 5,000 sq. ft) in the ALR.

Figure 42. Total area in residential footprint by parcel size – Privately owned

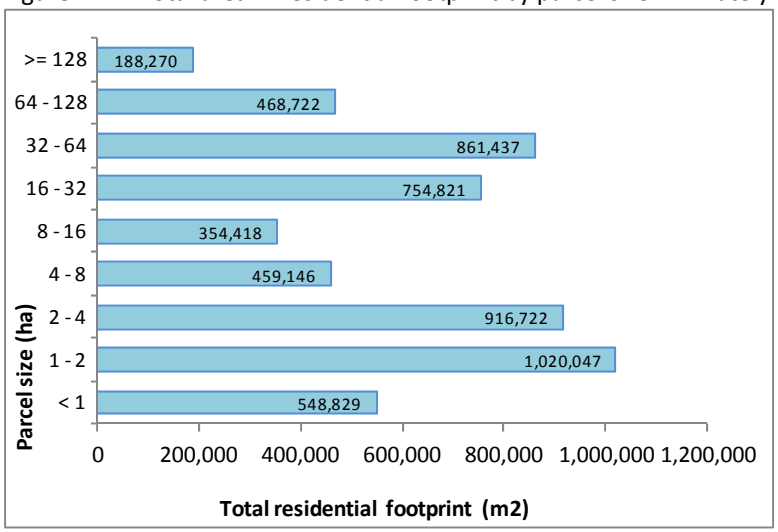


Figure 42 illustrates that there are almost 557 hectares (5,572,413 m2) of ALR land in residential footprints distributed across all parcel sizes.

Figure 43. Proportion of parcels with residences by parcel size – Privately owned

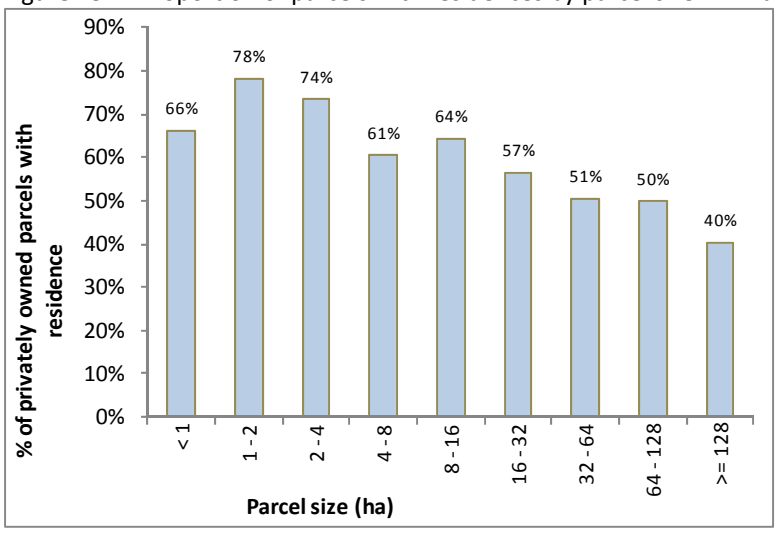


Figure 43 shows that the proportion of privately owned parcels with residences decreases as parcel size increases.

Although only 66% of parcels less than 1 hectare are shown to have residences, this would increase to about 80% if all small parcels not surveyed as part of this inventory were assumed to have residences.

Figure 44. Average percent of parcel area in residential footprint by parcel size – Privately owned

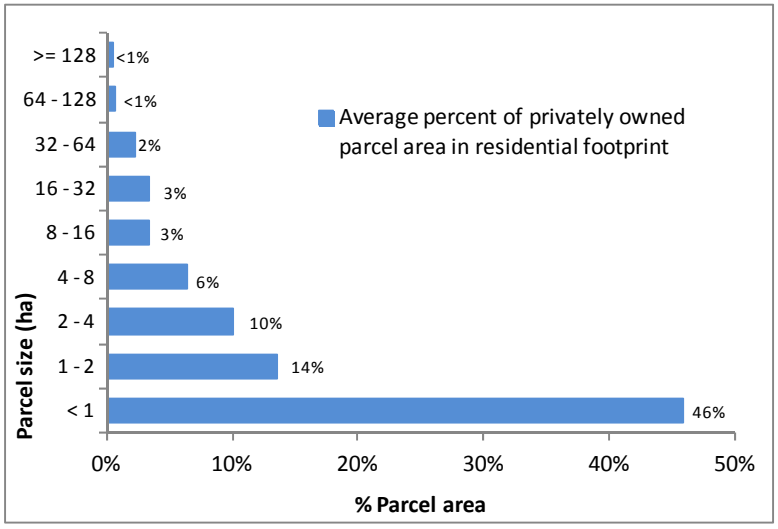


Figure 44 demonstrates that residential footprints on smaller parcels use a much greater proportion of the parcel area than those on larger parcels.

Figure 45. Average total area in residential footprint by parcel size – Privately owned

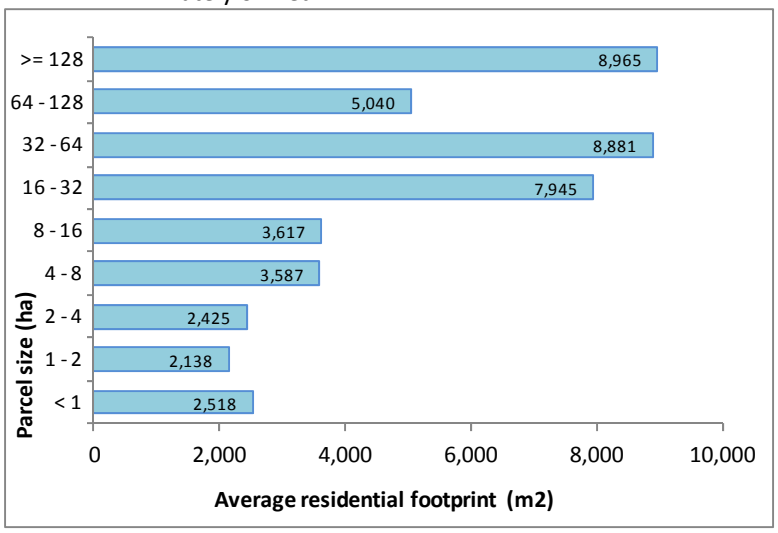
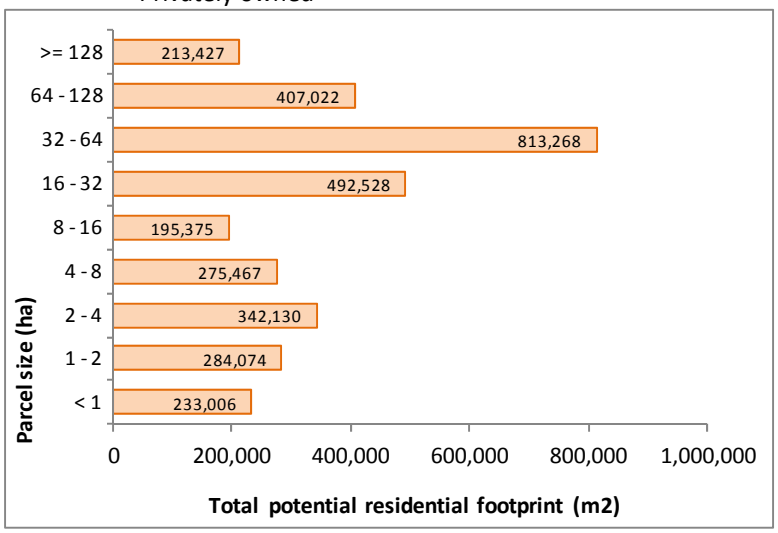


Figure 45 illustrates that even though residential footprints on small parcels use a greater proportion of the parcel area, the average size of the footprint is small compared to the footprint on larger parcels.

Figure 46. Total potential area in residential footprint by parcel size – Privately owned



There are 772 privately owned parcels in the ALR "Used for farming" or "Available for farming" that do not yet have a residence (Refer to Table 23 above).

If all 792 parcels built a residence, using the average percent of parcel area in residential footprint presented above, Figure 46 shows that an additional 110 hectares (1,105,265 m2) of ALR land would be permanently removed from potential production.

The most significant potential loss of ALR land is on parcels 32-64 hectares where 73 parcels do not yet have a residence.

Table 25. Main agriculture activity and largest residence on parcels "Used for farming" in the ALR – Privately owned

Privately owned parcels Main agricultural activity	Largest residence on the parcel						Number of parcels
	Single mobile home	Small house	Medium house	Large house	Estate house	Motel style	
Forage, pasture	5	9	51	18	3	-	86
Equine	7	9	40	10	3	-	69
Livestock	1	9	32	14	-	1	57
Cereals, oilseeds	1	-	1	1	-	-	3
Vegetables	1	-	1	-	-	-	2
Farm storage	-	1	-	1	-	-	2
TOTAL PARCELS	**15**	**28**	**125**	**44**	**6**	**1**	**219**

*there are 219 parcels "Used for farming" with 266 residences

There are 219 privately owned parcels with residences that are "Used for farming" (refer to Table 23 above).

Table 25 shows that all estate residences are directly associated with forage, pasture or equines and none are directly associated with typical commercial agriculture such as livestock or cereals, oilseeds.

Table 26. Main agriculture activity on "Used for farming" parcels with Large or Estate residences in the ALR – Privately owned

Privately owned parcels Main agricultural activity	Parcels with "Large" or "Estate" residences				
	Number of parcels	Area farmed - crops & infrastructure (ha)	Area not farmed (ha)	Average % of parcel area farmed	Average parcel area (ha)
Forage, pasture	21	308	703	42 %	48
Livestock	15	398	771	50 %	87
Equine	13	320	375	49 %	54
Cereals, oilseeds	1	37	30	56 %	67
TOTAL	**50***	**1,063**	**1,879**		

*there are 50 parcels "Used for farming" with 53 large or estate residences.

There are 50 privately owned parcels in the ALR with "Large" or "Estate" residences that are "Used for farming" (see Table 25 above).

Table 26 illustrates the farmed area associated with these large residences. For instance, 13 parcels use a total of 320 hectares to support their agricultural activities which is mainly equines.

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	Cereals, oilseeds	Cultivated land*	Nursery	Fallow land**	Mixed vegetables	Berries	
< 1	62	13	1	2	2	3	1	84
1 - 2	88	5	2	1	1	1	-	98
2 - 4	76	9	-	1	4	1	-	91
4 - 8	54	7	1	1	1	-	-	64
8 - 16	58	5	1	1	-	-	-	65
16 - 32	84	4	1	-	-	-	-	89
32 - 64	51	2	-	-	-	-	-	53
64 - 128	9	-	-	-	-	-	-	9
>= 128	6	-	-	-	-	-	-	6
TOTAL NUMBER OF FIELDS	**488**	**45**	**6**	**6**	**8**	**5**	**1**	***559***
AVERAGE CROP AREA (ha)	**15 ha**	**7 ha**	**7 ha**	**3 ha**	**2 ha**	**1 ha**	**< 1 ha**	**14 ha**
MEDIAN CROP AREA (ha)	**6 ha**	**2 ha**	**4 ha**	**2 ha**	**2 ha**	**< 1 ha**	**< 1 ha**	**4 ha**
AVERAGE PARCEL SIZE (ha)	**43 ha**	**68 ha**	**104 ha**	**44 ha**	**52 ha**	**10 ha**	**22 ha**	**43 ha**

* Cultivated land refers to an area that has been prepared for planting butht ecrop is not yet visible

** Fallow land is cultivated land that has not been seeded or planted for one or more growing season.

Table A2. Distribution of forage and pasture field sizes

Field size (ha)	Number of forage or pasture fields					Total number
	Forage & pasture	Forage	Pasture	Unused*	Unmaint**	
< 1	28	11	27	4	4	74
1 - 2	25	19	37	7	6	94
2 - 4	35	29	18	5	6	93
4 - 8	23	22	26	3	2	76
8 - 16	43	24	11	1	2	81
16 - 32	41	27	13	3	1	85
32 - 64	26	12	6	-	-	44
64 - 128	5	1	1	1	-	8
>= 128	6	-	-	-	-	6
TOTAL NUMBER OF FIELDS	**232**	**145**	**139**	**24**	**21**	***561***
AVERAGE CROP AREA (ha)	**18 ha**	**12 ha**	**7 ha**	**9 ha**	**4 ha**	***13 ha***
MEDIAN CROP AREA (ha)	**9 ha**	**7 ha**	**3 ha**	**2 ha**	**2 ha**	***5 ha***
AVERAGE PARCEL SIZE (ha)	**58 ha**	**48 ha**	**44 ha**	**31 ha**	**48 ha**	***43 ha***

* 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.

Table A3. Distribution of cereal or grain crop fields

Field size (ha)	Number of cereal, grain and oilseed activities			Total number
	Barley	Oats	Canola	
< 1	2	6	10	18
1 - 2	-	3	2	5
2 - 4	2	2	7	11
4 - 8	3	4	1	8
8 - 16	5	-	1	6
16 - 32	2	1	-	3
32 - 64	2	-	-	2
64 - 128	-	-	-	-
>= 128	-	-	-	-
TOTAL NUMBER OF FIELDS	**16**	**16**	**21**	***53***
AVERAGE CROP AREA (ha)	**13 ha**	**4 ha**	**2 ha**	***6 ha***
MEDIAN AREA (ha)	**10 ha**	**2 ha**	**1 ha**	***2 ha***
AVERAGE PARCEL SIZE (ha)	**98 ha**	**49 ha**	**59 ha**	***68 ha***

Table A4. Distribution of natural pasture or rangeland areas

Area (ha)	Number of areas		Total number
	Pasture (natural)	Rangeland (natural)	
< 1	101	30	131
1 - 2	151	27	178
2 - 4	85	49	134
4 - 8	87	63	150
8 - 16	72	59	131
16 - 32	68	104	172
32 - 64	54	158	212
64 - 128	17	106	123
>= 128	9	31	40
TOTAL NUMBER OF AREAS	**644**	**627**	**1271**
AVERAGE AREA (ha)	**14 ha**		
MEDIAN AREA (ha)	**3 ha**		
AVERAGE PARCEL SIZE (ha)	**29 ha**	**53 ha**	

Table A5. 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	11	11	-	-	22
1 - 2	11	79	-	-	90
2 - 4	9	67	-	-	76
4 - 8	3	29	-	-	32
8 - 16	3	24	-	-	27
16 - 32	2	25	-	-	27
32 - 64	3	30	3	-	36
64 - 128	1	31	-	-	32
>= 128	-	11	1	-	12
TOTAL NUMBER OF ACTIVITIES	**43**	**307**	**4**	**-**	***354***
AVERAGE PARCEL SIZE (ha)	**8 ha**	**25 ha**	**75 ha**	**-**	***23 ha***

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

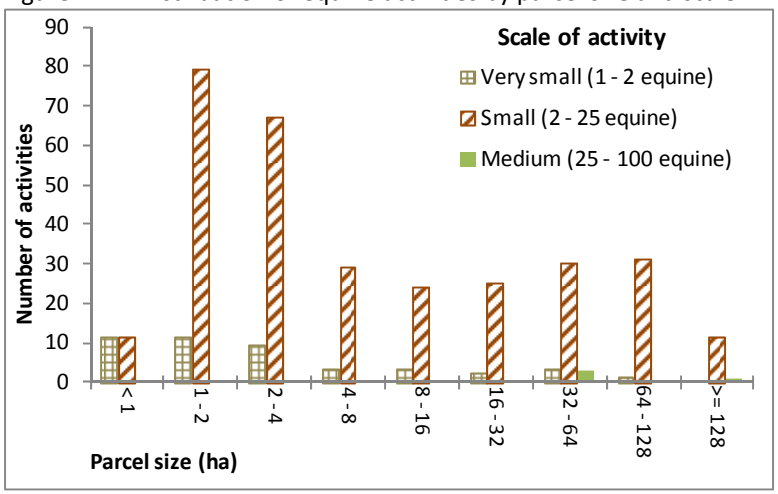


Figure A2. Land cover on parcels with equine activities[1]

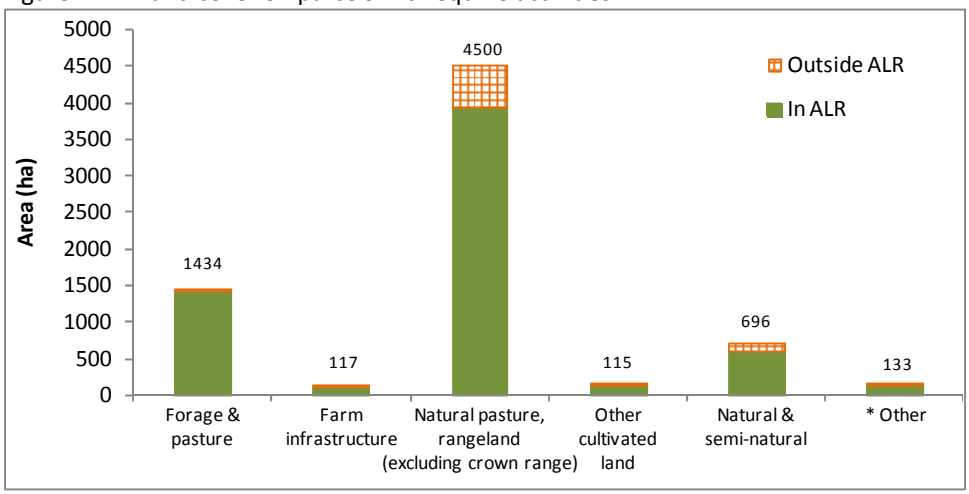
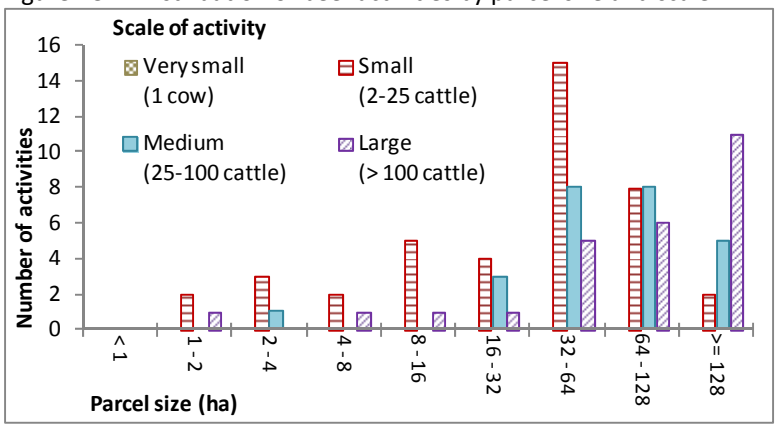


Table A6. Distribution of beef activities by parcel size and scale

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 - 2	-	2	-	1	3
2 - 4	-	3	1	-	4
4 - 8	-	2	-	1	3
8 - 16	-	5	-	1	6
16 - 32	-	4	3	1	8
32 - 64	-	15	8	5	28
64 - 128	-	8	8	6	22
>= 128	-	2	5	11	18
TOTAL NUMBER OF ACTIVITIES	**-**	**41**	**25**	**26**	**92**
AVERAGE PARCEL SIZE (ha)	**-**	**45 ha**	**81 ha**	**139 ha**	**62 ha**

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



[1] * 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.

Figure A4. Land cover on parcels with beef activities[2]

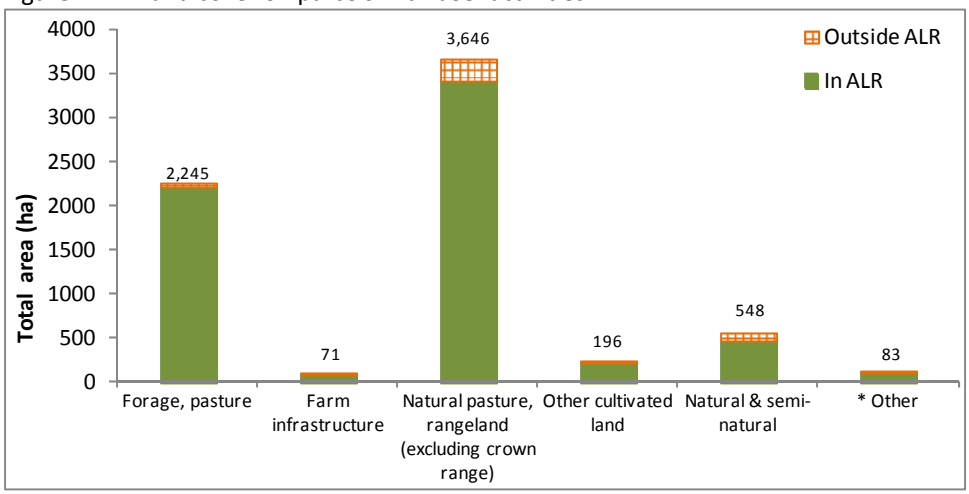


Table A7. Distribution of livestock operations by type

Parcel size (ha)	Type of activity										Total number of activities
	Beef	Poultry	Swine	Sheep / lamb / goat	Llama / alpaca	Specialty livestock	Other livestock	Unknown livestock	Inactive operation	Equine	
< 1	-	2	-	-	1	-	-	-	-	22	25
1 - 2	3	4	1	6	4	1	-	-	-	90	109
2 - 4	4	4	-	1	2	-	1	-	-	76	88
4 - 8	3	4	-	-	2	-	-	-	-	32	41
8 - 16	6	-	-	1	-	1	-	-	-	27	35
16 - 32	8	1	-	3	1	-	-	1	-	27	41
32 - 64	28	-	-	2	-	1	-	-	-	36	67
64 - 128	22	1	-	1	2	-	-	4	1	32	63
>= 128	18	-	-	-	-	-	-	-	-	12	30
TOTAL NUMBER OF ACTIVITIES	**92**	**16**	**1**	**14**	**12**	**3**	**1**	**5**	**1**	**354**	***499***
MEDIAN PARCEL SIZE (ha)	**62 ha**	**2 ha**	**1 ha**	**7 ha**	**2 ha**	**8 ha**	**2 ha**	**107 ha**	**66 ha**	**4 ha**	**6 ha**
AVERAGE PARCEL SIZE (ha)	**81 ha**	**8 ha**	**1 ha**	**18 ha**	**16 ha**	**22 ha**	**2 ha**	**93 ha**	**66 ha**	**23 ha**	**31 ha**

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

[2] * 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