Growing Knowledge

BRITISH COLUMBIA | Ministry of Agriculture

Land Use Inventory Report

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Elk Valley

East Kootenay

- Summer 2011 –

Strengthening Farming Program
Sustainable Agriculture Management Branch
Ministry of Agriculture

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Disclaimer:
Agriculture and Agri-Food Canada, the BC Ministry of Agriculture and the Investment Agriculture Foundation of BC, are pleased to participate in the delivery of this project. We are committed to working with our industry partners to address issues of importance to the agriculture and agri-food industry in British Columbia. Opinions expressed in this report are those of the authors and not necessarily those of the Investment Agriculture Foundation, the BC Ministry of Agriculture or Agriculture and Agri-Food Canada.

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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 inventories.

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 maintained by the Parcel Fabric Section of the BC Government.

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

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

Land Cover

Anthropogenic – 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 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

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.

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.

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.This page was left blank intentionally

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 were 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 Elk Valley.

The ALR in the Elk Valley consists of 14,761 hectares. Only 12,525 hectares or 85% of the ALR was surveyed as part of this inventory. The remaining 15% is on parcels less than one acre, on parcels remotely located with limited access, Indian reserves, water, foreshore, or on unsurveyed Crown land. Of the 12,525 hectares surveyed in the ALR, 10,901 hectares (74% of the ALR) is private land, with the remaining 1,624 hectares being Crown land.

An additional 33,076 hectares of non-ALR land was surveyed on parcels that are partially in the ALR, showed signs of agriculture from the photo interpretation, or were classified as "Farm" status from BC Assessment. Of the 33,076 hectares surveyed outside the ALR, 32,371 hectares is on private land and 705 on Crown land.

In total, 622 parcels with a combined area of 45,600 hectares were surveyed. This included 43,272 hectares of private land (10,901 hectares in the ALR and 32,371 hectares outside the ALR), and 2,329 hectares of Crown land (1,624 hectares in the ALR and 705 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, 1,355 hectares (9%) is actively farmed, 65 hectares (< 1%) is inactively farmed, 275 (2%) is anthropogenically modified, and 10,829 hectares (73%) is in natural pasture/rangeland or forested. The remaining 15% of the ALR was not surveyed for reasons stated above.

In the ALR by parcel land use, 2,441 hectares (17%) is used for some sort of farming (all on private land), 224 hectares (2%) is used for grazing purposes (all on private land), and 9,860 (67%) is not used for farming or grazing. The remaining 15% 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 1,325 hectares (9%) is actively farmed right now. Another 34 hectares supports farming (e.g. housing, farm buildings, etc.). There are 833 hectares (6%) of the ALR unavailable for farming due to existing land use or land cover, with the largest being protected area / park / reserve (562 hectares).

There are 5,907 hectares (40%) 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 4,396 hectares (30%) of the ALR available and with potential for farming, with 3,802 hectares on private land and 594 on Crown land. This potential for farming may increase slightly if access was improved to remote parcels of ALR land. Of the 3,802 hectares on private land, 573 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 46% of the privately owned areas available and with potential for farming are smaller than 2 hectares, 31% are larger than 4 hectares and only 10% are larger than 32 hectares. Larger continuous areas are preferred as they provide a wider range of options for agriculture. In the Elk Valley, there are only 23 privately owned areas greater than 32 hectares with a combined area of 2,373 hectares that are available and with potential for farming. Of these 23 areas, 8 (569 hectares) are held by wildlife conservation groups.

In total, there is 1,390 hectares of land under cultivation (1,381 in the ALR and 125 outside). Forage and pasture is the most common crop accounting for 99% of all cultivated land. Oats is the next most common crop with 6 hectares of cultivated land. There are 2 hectares of tree plantations and 1.2 hectares of greenhouses (3 poly greenhouse operations with a total of 9 greenhouses). In the Elk Valley, none of the cultivated crops are reported as irrigated.

Livestock activities are 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 Elk Valley, equines are the most common type of livestock activity (with 49 out of 75 activities) followed by beef (21 out of 75 activities). However, most equine activities are very small when compared with beef activities. In total, the report estimates there are 572 head of beef cattle and 130 equines in the Elk Valley. There is one small scale sheep / lamb / goat and one small scale llama / alpaca activity.

Parcel size must be considered when determining the agricultural potential of a land parcel. Of the 513 privately owned parcels surveyed in the ALR, 334 are not used for farming or grazing. Of these 334 parcels, 32% are less than 2 hectares in size and 63% are less than 4 hectares.

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.

Farm size in the RDEK 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 Elk Valley of RDEK, beef and forage production is the dominant agriculture commodity being produced. There is limited value added processing in the region. Consequently, the majority of the cattle are shipped to Alberta for processing.

Forage and pasture production (99% of cultivated land) is mainly occurring on land that is within the valley bottoms and is not irrigated. Forage fields are relatively small in size (average size 6.6 hectares) and is a one cut system. Due to the limited forage supply, beef herds are not large in the Elk Valley as enough winter feed cannot be supplied on farm. Supplemental feed would have to be purchased.

There are three greenhouse operations (9 greenhouses) and 2 tree plantations in the Elk Valley. No vegetable or fruit production was found during the survey. Animal production is almost entirely beef. However, there are considerable amount of horses found in the region, mainly on small acreages.

Issues Facing Agriculture

This report identifies 4,396 hectares of ALR land that is available and with potential for farming. This is 30% of the total ALR area in the Elk Valley. In addition, some of the 533 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 becoming 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 electricity. 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.

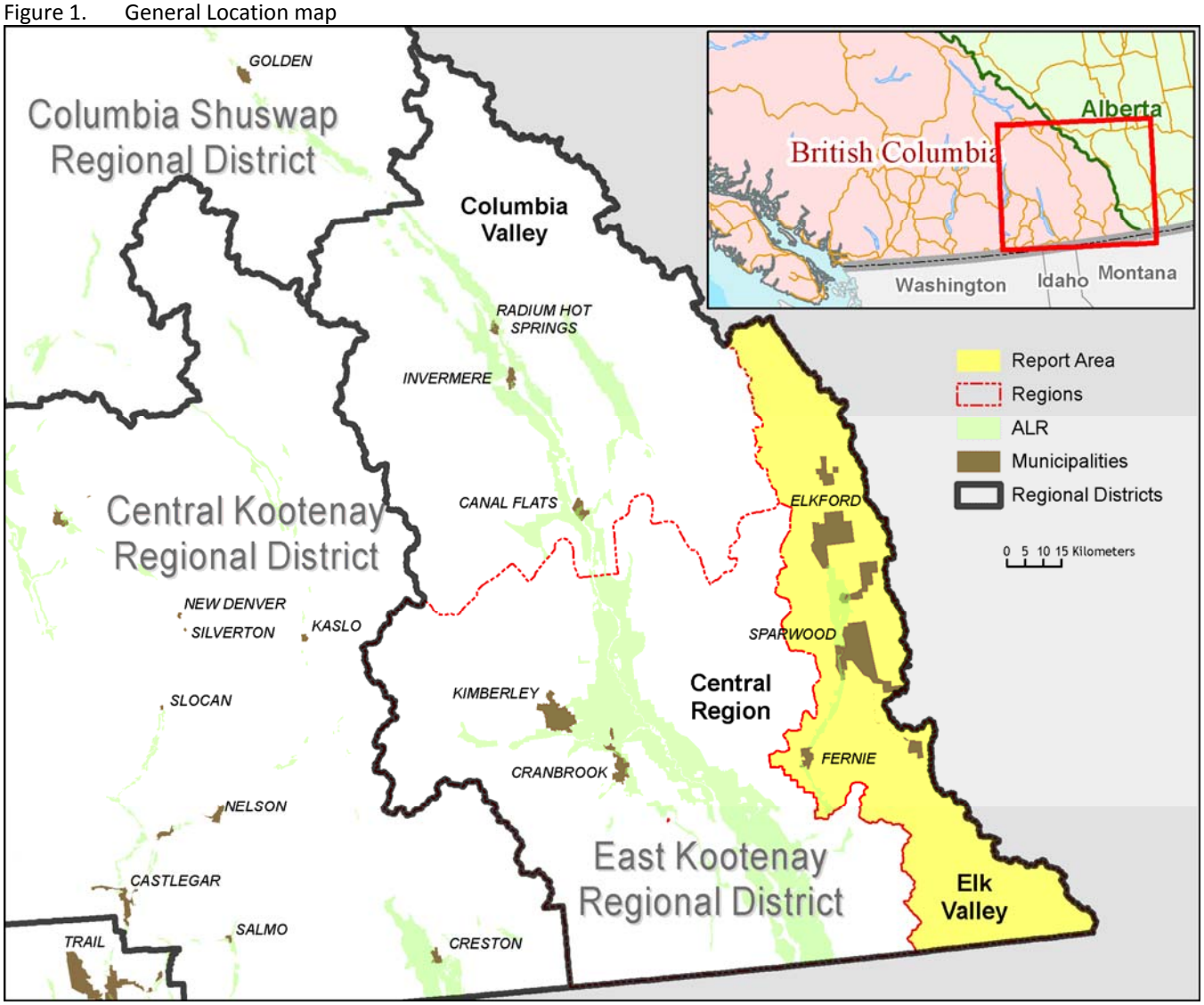
General Information

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 Elk Valley contains electoral area A as well as the municipalities of Fernie, Sparwood and Elkford. The region has a total area including land and water of 497,044 hectares[1] and a population of 12,171[1]; approximately 22% of the regional district's population.

Elk Valley is in the southern Rockies which is the entrance to the Crowsnest Pass. The Elk Valley's vegetation, soils and climate are substantially different than the other regions due to its higher elevation and steep topography. The approximate elevation of the valley ranges from 1,000 m in Fernie to 1,137 m in Sparwood. Settlement is concentrated in the narrow Elk River valley along rail and road routes.

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

AGRICULTURAL LAND RESERVE

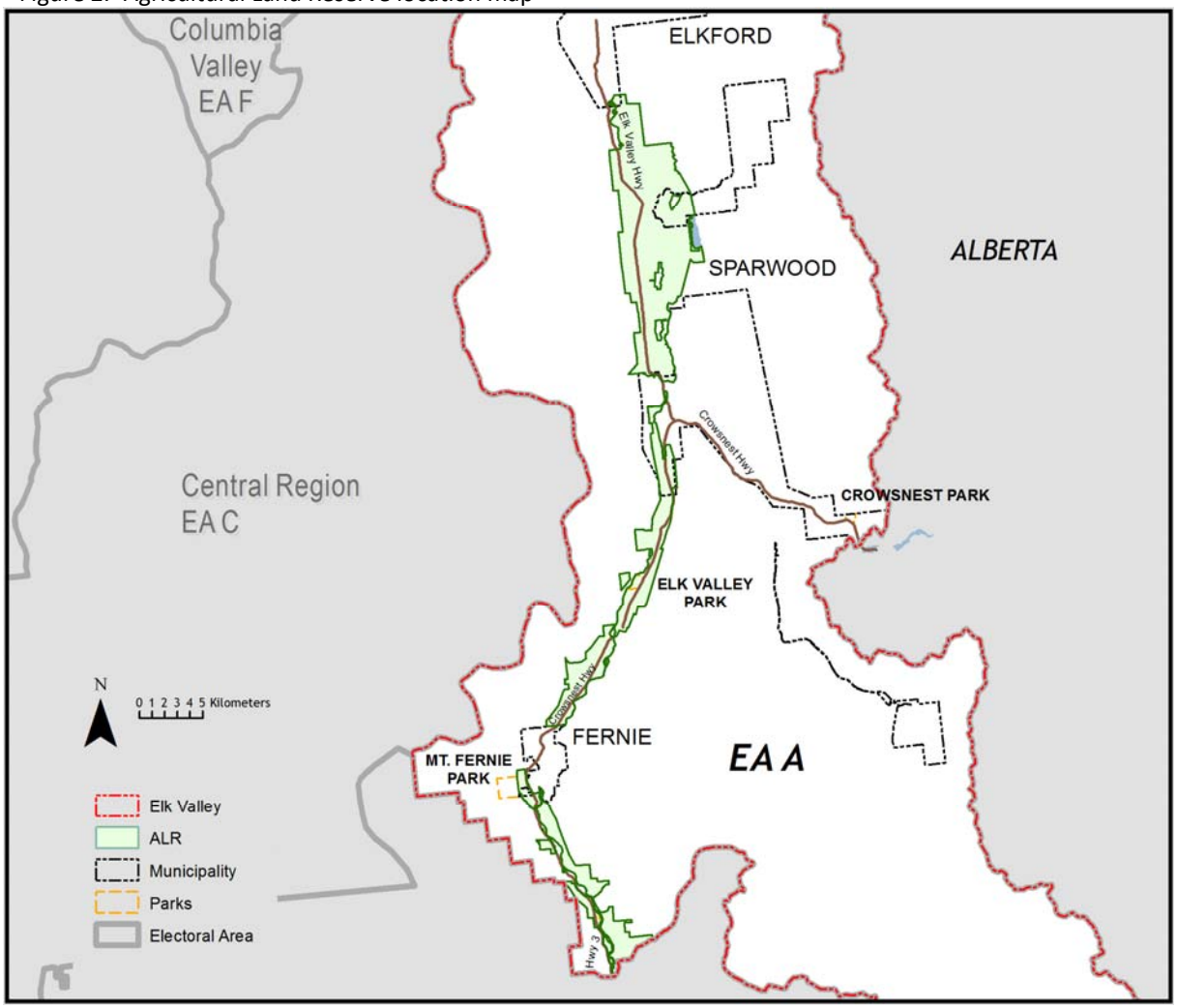
The Agricultural Land Reserve (ALR) is a provincial land use zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

There are 266,058 hectares[2] of ALR land within the Regional District of East Kootenay (refer to Figure 1 above); 14,761 hectares[3] or just under 6% is within the Elk Valley.

The total area of the Elk Valley is 497,044 hectares[4]. With 14,761 hectares[3] in the ALR, 3% of the region is in the ALR. This ALR area includes:

- 13,058 hectares in surveyed parcels (including 533 hectares not included in this inventory)
- 0 hectares in Indian reserves
- 1,704 hectares outside surveyed parcels
  - 505 hectares of designated rights-of-way
  - 358 hectares of water or foreshore
  - 841 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

INVENTORY AREA

The total inventory area encompasses 622 parcels with a combined area of 45,600 hectares or over 9% of the Elk Valley. This includes 12,525 hectares of ALR land or 85% of the ALR within the region. On 11 large parcels, only the ALR area was inventoried for land cover. Included in the inventory area are:

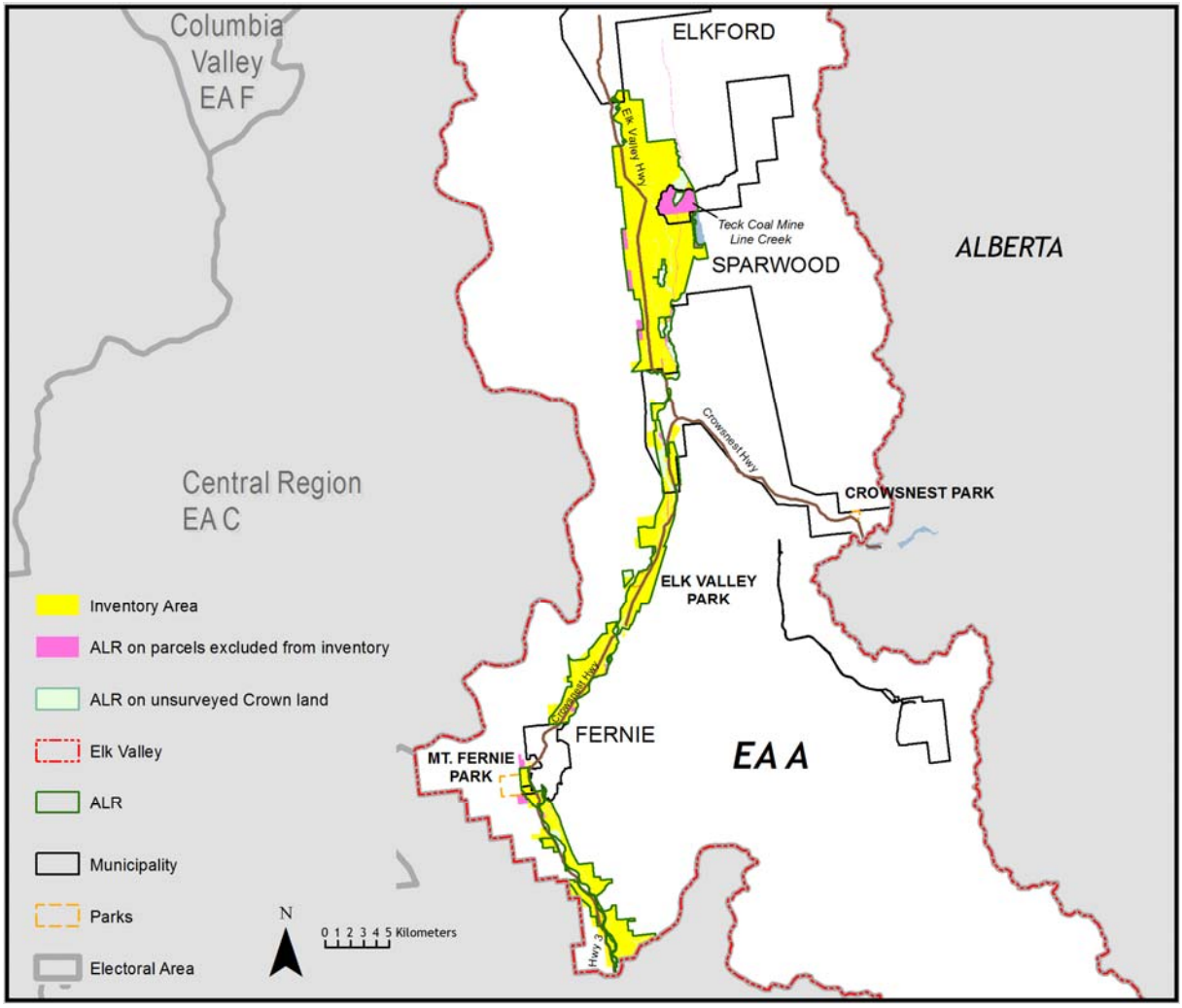
- 571 parcels completely or partially within the Agricultural Land Reserve with reasonable road access and
  - greater than 1 acre in size or
  - classified by BC Assessment as having "Farm" status for property tax assessment or
  - photo interpretation showed signs of agriculture
- 51 parcels outside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

There is an additional 533 hectares or 4% of the ALR located on 76 parcels (including Teck Coal Mine – Line Creek Operations in Sparwood) which are excluded from the inventory as:

- photo interpretation shows no signs of agriculture and
- parcel is less than 1 acre in size (55) or remotely located with limited access (21).

The remaining 11% of the ALR is excluded from the inventory as it is in unsurveyed Crown land, water & foreshore, or rights-of-way.

Figure 3. Inventory area and Agricultural Land Reserve location map



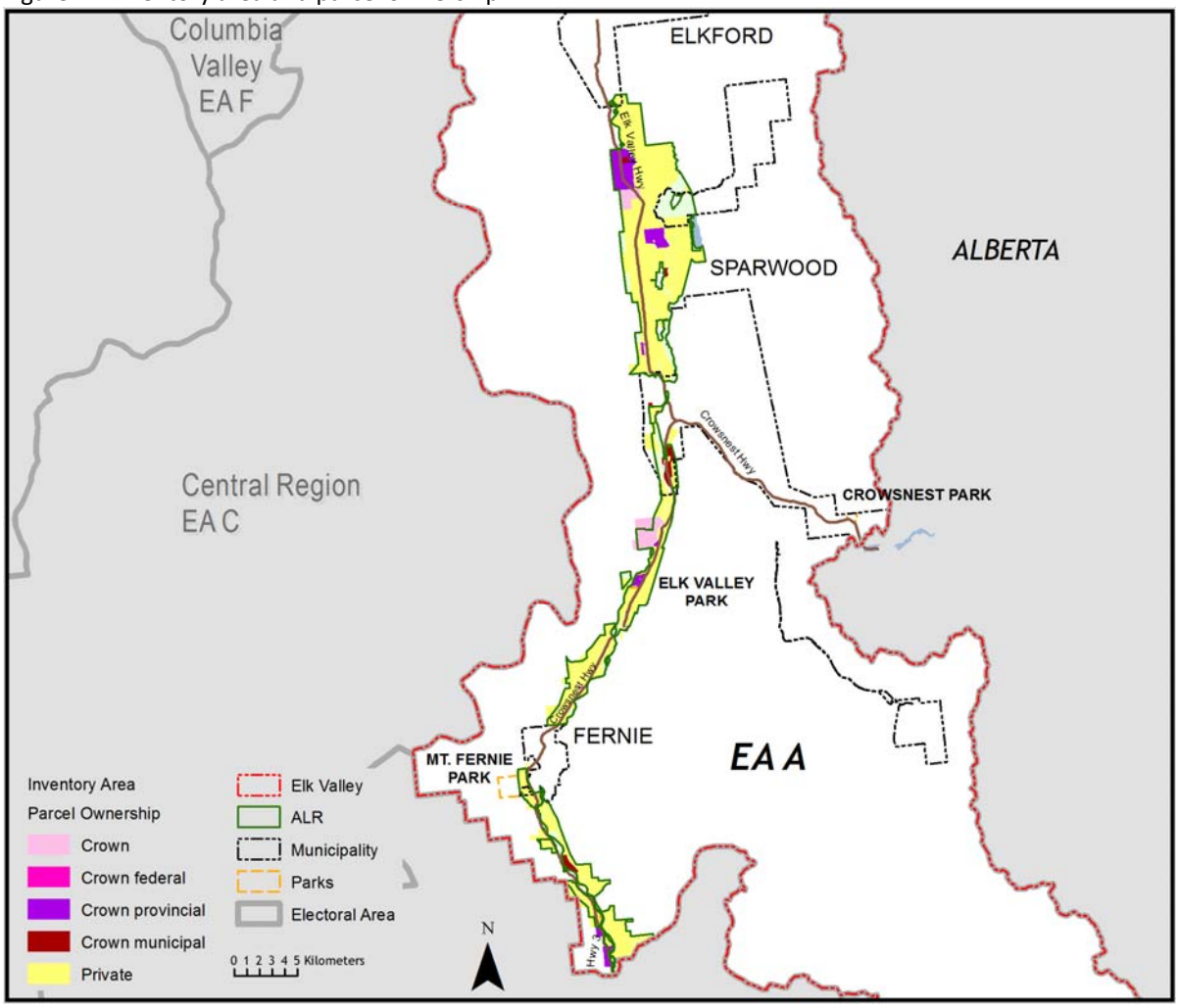
PARCEL OWNERSHIP

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 622 parcels inventoried, 44 or 7% are Crown owned with a total area of 2,329 hectares or 5% of the region's inventory area. The amount of inventoried ALR land Crown owned is 1,624 hectares or 11% of the region's total ALR.

- 2 parcels are Crown owned (federal, provincial or municipal)
  - 630 hectares or 1 % of the inventory area
  - 475 hectares or 3 % of the ALR area
- 0 parcels are federally owned (Indian reserve)
- 28 parcels are provincially owned (includes Elk Valley Provincial Park, Musil-Big Ranch conservation area, and several other conservation areas)
  - 1,295 hectares or 3 % of the inventory area
  - 849 hectares or almost 6 % of the ALR area
- 14 parcels are municipally owned (includes Fernie Sewer Treatment Facility and several municipal parks)
  - 404 hectares or < 1 % of the inventory area
  - 300 hectares or 2 % of the ALR area

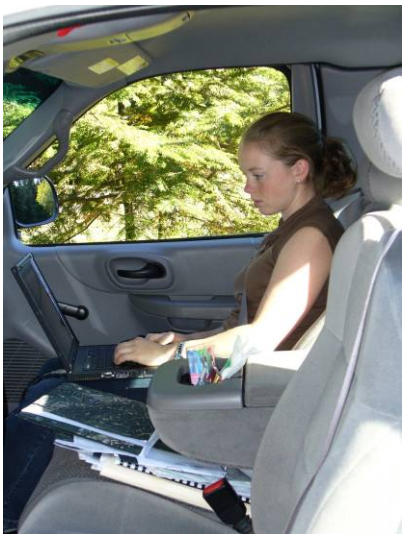
Figure 4. Inventory area and parcel ownership



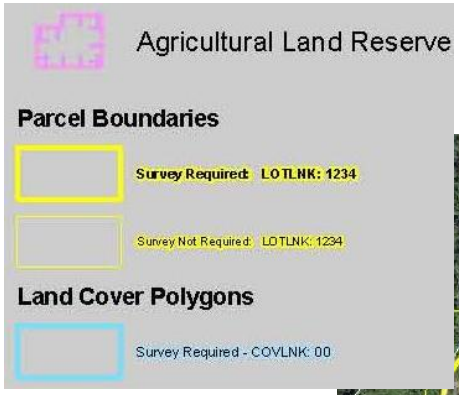
INVENTORY METHODOLOGY

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 Elk Valley 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 inventory data into a database on a laptop computer.



Field survey maps provided the basis for the inventory 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.

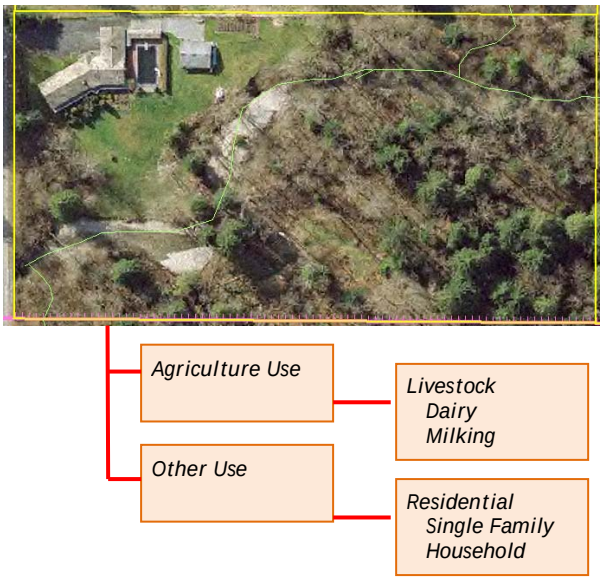
DESCRIPTION OF THE DATA

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 field 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 inventory for general land use focuses solely on human use and considers:

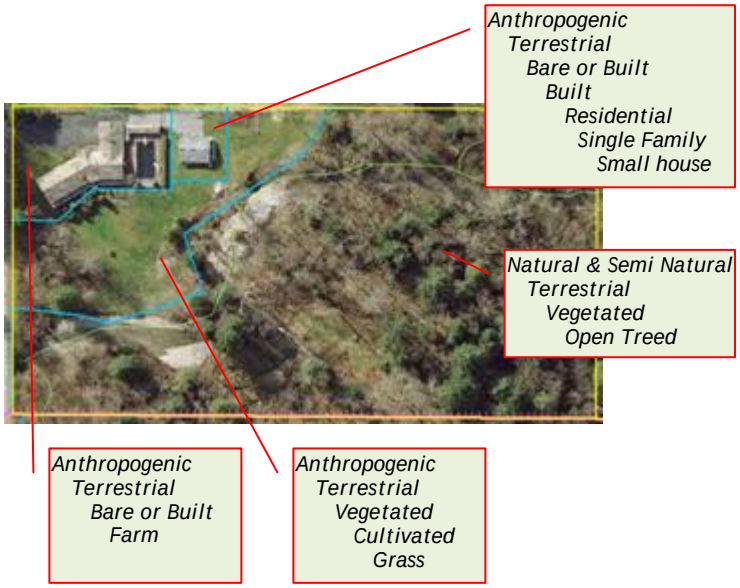
- The actual human use of land and related structures and modifications to the landscape
- Use-related land cover (where land cover implies a use or is important to interpreting patterns of use)
- Declared interests in the land (which may limit use) such as parks.



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 inventoried 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 inventoried.

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 field 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.

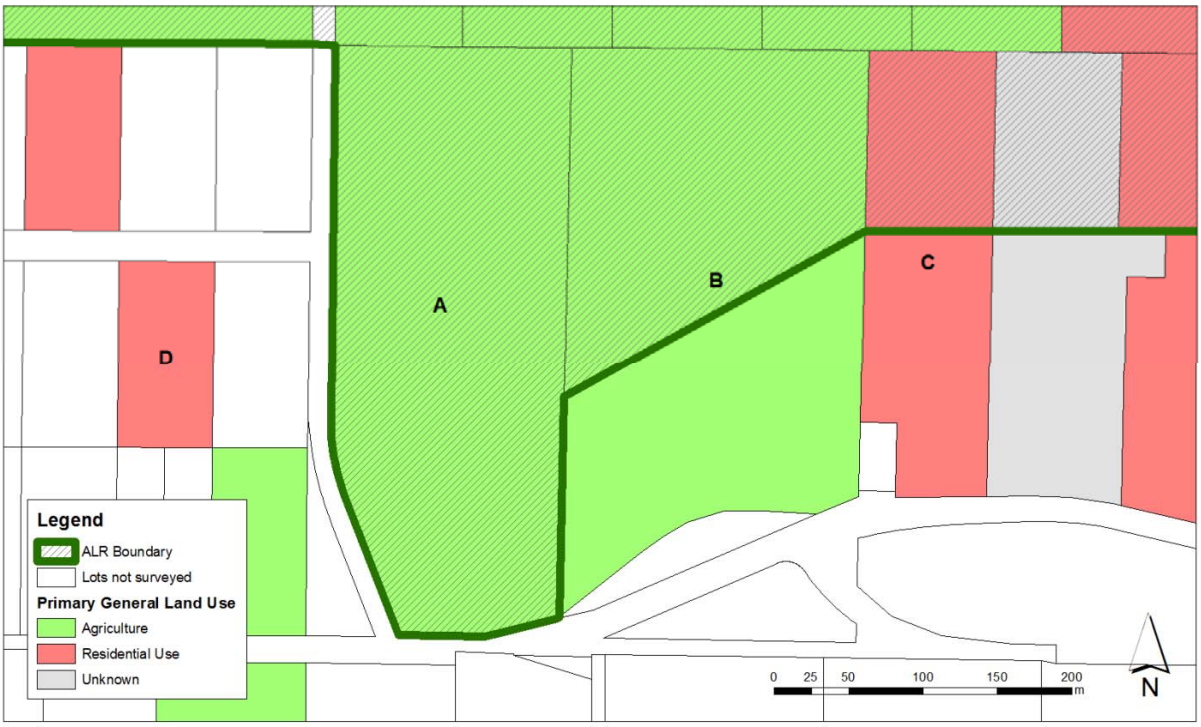
DETERMINATION OF PARCELS WITHIN THE ALR

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 inventoried 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 inventoried 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 inventoried 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 in Crown ownership
		In ALR (ha)	% of ALR	% of ALR in Crown ownership				
Actively farmed	Cultivated field crops	1,325	9%	-	120	1,445	3%	-
	Farm Infrastructure	29	< 1%	-	1	30	< 1%	-
	Greenhouses	1	< 1%	-	-	1	< 1%	-
Inactively farmed	Unused forage or pasture	65	< 1%	< 1%	<1	65	< 1%	< 1%
	Unmaintained field crops	-	-	-	5	5	< 1%	< 1%
FARMED SUBTOTAL		**1,420**	**10%**	**< 1%**	**126**	**1,546**	**3%**	**< 1%**
Anthropogenic (not farmed)	Managed vegetation	47	< 1%	< 1%	2	49	< 1%	< 1%
	Golf fairway / green	4	< 1%	-	67	71	< 1%	-
	Non Built or Bare	44	< 1%	< 1%	3	47	< 1%	< 1%
	Residential footprint	117	< 1%	-	2	119	< 1%	-
	Settlement	41	< 1%	< 1%	1	42	< 1%	< 1%
	Transportation	23	< 1%	-	2	25	< 1%	-
	Built up - Other	<1	< 1%	-	<1	<1	< 1%	-
SUBTOTAL		**275**	**2%**	**< 1%**	**78**	**353**	**< 1%**	**< 1%**
Natural and Semi-natural	Natural pasture	346	2%	-	1	347	< 1%	-
	Vegetated	10,395	70%	11%	861	11,256	25%	4%
	Waterbodies	88	< 1%	< 1%	19	107	< 1%	< 1%
SUBTOTAL		**10,829**	**73%**	**11%**	**881**	**11,710**	**26%**	**4%**
LAND COVER TOTAL		**12,524**	**85%**	**11%**	**1,086**	**13,609**	**30%**	**4%**
Unknown land cover		<1	< 1%	< 1%	31,990	31,991	70%	< 1%
PARCEL AREA TOTAL		**12,525**	**85%**	**11%**	**33,076**	**45,600**	**100%**	**5%**
Not inventoried	Parcels - no access	533	4%					
	Indian reserves	-	-					
	Water & foreshore	358	2%					
	Rights-of-way	505	3%					
	Unsurveyed Crown land	841	6%					
SUBTOTAL		**2,237**	**15%**					
TOTAL		**14,761**	**100%**					

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

In the Elk Valley, 1,546 hectares of land is in "Farmed" land cover although 70 of those hectares are "Inactively farmed"; in unused forage, unused pasture, or unmaintained field crops.

When considering both Crown and privately owned land, 73% of the ALR is in natural and semi-natural land cover. This would probably increase to 84% if all ALR land had been inventoried.

A very small portion of the natural and semi-natural land cover in the ALR 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

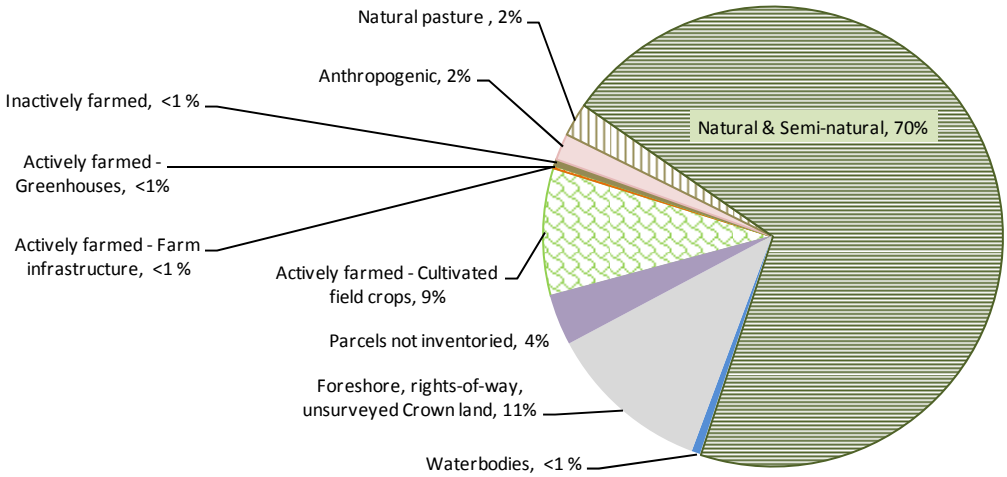


Figure 6 shows the proportions of the different land cover types across the ALR in the Elk Valley.

Of the ALR land, only 9% is "Actively Farmed" in cultivated field crops.

Only 2% is in "Natural pasture" however this would probably increase slightly if all ALR land had been inventoried.

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 area (ha)	% of inventory area	Number of parcels	% of parcels	Avgerage parcel size (ha)
		In ALR (ha)	% of ALR area						
PRIVATE OWNERSHIP SUBTOTAL		**10,901**	**74 %**	**32,371**	**43,272**	**95 %**	**578**	**93 %**	**196**
CROWN OWNERSHIP SUBTOTAL		**1,624**	**11 %**	**705**	**2,329**	**5 %**	**44**	**7 %**	**52**
Not inventoried	Parcels - no access or < 1 acre	533	4 %						
	Indian reserves	-	-						
	Water & foreshore	358	2 %						
	Rights-of-way	505	3 %						
	Unsurveyed Crown land	841	6 %						
	NOT INVENTORIED SUBTOTAL	2,237	15 %						
TOTAL		**14,761**	**100 %**	**33,076**	**45,600**	**100 %**	**622**	**100 %**	

Table 2 shows that 85% of region's ALR area was inventoried which represents the region's accessible and operational ALR area. Seventy-four percent is on privately owned parcels while 11% is on Crown (municipal, provincial, or federal) owned parcels.

15% of the region's ALR area was not inventoried. Of this, 4% 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. A further 11% is in water, foreshore, rights-of-way or unsurveyed Crown land.

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 In ALR (ha)	ALR % of ALR	Outside ALR (ha)	Total area (ha)	% of inventory area	Number of parcels	% of inventoried parcels	Average parcel size (ha)
Used only for farming - no other use		997	7 %	58	1,055	2 %	104	17 %	10
Used for farming - Mixed use	Residential	1,404	10 %	211	1,616	4 %	85	14 %	19
	Recreation & leisure - intensive	38	<1 %	< 1	38	<1 %	1	<1 %	38
	Land in transition	2	<1 %	-	2	<1 %	1	<1 %	2
USED FOR FARMING SUBTOTAL		2,441	17 %	269	2,710	6 %	191	31 %	
Used only for grazing - no other use		7	<1 %	< 1	7	<1 %	1	<1 %	7
Mixed use	Residential	217	1 %	< 1	217	<1 %	20	3 %	11
USED FOR GRAZING SUBTOTAL		224	2 %	< 1	224	<1 %	21	3 %	
Not used for farming or grazing	No apparent use	5,376	36 %	15,872	21,248	47 %	125	20 %	170
	Residential	1,215	8 %	83	1,299	3 %	217	35 %	6
	Wildlife management	673	5 %	16,072	16,745	37 %	6	<1 %	2,791
	Industrial	308	2 %	4	311	<1 %	2	<1 %	156
	Protected area / park / reserve	269	2 %	< 1	269	<1 %	2	<1 %	134
	Forestry	190	1 %	-	190	<1 %	1	<1 %	190
	Land in transition	103	<1 %	< 1	103	<1 %	2	<1 %	51
	Gravel extraction	39	<1 %	< 1	39	<1 %	1	<1 %	39
	Transportation & communications	21	<1 %	2	23	<1 %	2	<1 %	12
	Commercial & service	21	<1 %	2	23	<1 %	5	<1 %	5
	Recreation & leisure - intensive	15	<1 %	< 1	15	<1 %	1	<1 %	15
	Recreation & leisure - golf	4	<1 %	67	71	<1 %	1	<1 %	71
	Institutional, community	2	<1 %	-	2	<1 %	1	<1 %	2
NOT USED FOR FARMING/GRAZING SUBTOTAL		8,236	56 %	32,102	40,338	88 %	366	59 %	
TOTAL		**10,901**	**74 %**	**32,371**	**43,272**	**95 %**	**578**	**93 %**	

Table 3 shows that only 191 privately owned parcels are "Used for farming" and 21 are "Used for grazing". This is only 34% of all parcels inventoried (private and Crown owned).

Many "Used for farming" parcels are also used for other purposes; 85 parcels are also used for "Residential", one parcel associated with Elk River Lodge is also used for "Recreation & leisure – intensive", and one parcel also used for "Land in transition" is transitioning to "Residential".

A total of 2,665 hectares or 18% 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

Private ownership 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		511	3 %	2	<1 %	484	3 %	-	997	7 %
Used for farming - Mixed use	Residential	771	5 %	40	<1 %	593	4 %	-	1,404	10 %
	Recreation & leisure - intensive	21	<1 %	< 1	<1 %	16	<1 %	-	38	<1 %
	Land in transition	1	<1 %	< 1	<1 %	< 1	<1 %	-	2	<1 %
USED FOR FARMING SUBTOTAL		1,304	9 %	43	<1 %	1,094	7 %	-	2,441	17 %
Used only for grazing - no other use		-	-	-	-	7	<1 %	-	7	<1 %
Mixed use	Residential	7	<1 %	5	<1 %	205	1 %	-	217	1 %
USED FOR GRAZING SUBTOTAL		7	<1 %	5	<1 %	212	1 %	-	224	2 %
USED FOR FARMING OR GRAZING SUBTOTAL		1,311	9 %	48	<1 %	1,306	9 %	-	2,665	18 %
Not used for farming or grazing		100	<1 %	196	1 %	7,939	54 %	< 1	8,236	56 %
TOTAL ALR									**10,901**	**74 %**

* 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 inventoried. For example, privately owned parcels with the mixed use "Used for farming" and "Residential" have a total of 771 hectares of ALR in "Farmed" land cover, 40 hectares of ALR in Anthropogenic (not farmed) land cover, and 593 hectares of ALR in Natural & Semi-natural land cover.

Although 2,441 hectares or 17% of the ALR is on privately owned parcels "Used for farming" (Refer to Table 3 above), only 1,304 hectares or 9% 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 inventoried parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR						
Used for farming		-	-	-	-	-	-	-	-
Used for grazing		-	-	-	-	-	-	-	-
Not used for farming or grazing	No apparent use	1,214	8 %	703	1,916	4 %	36	6 %	53
	Protected area / park / reserve	293	2 %	< 1	294	<1 %	2	<1 %	147
	Utilities	77	<1 %	2	79	<1 %	4	<1 %	20
	Garbage dumps	26	<1 %	< 1	26	<1 %	1	<1 %	26
	Dumps & deposits	14	<1 %	< 1	14	<1 %	1	<1 %	14
NOT USED FOR FARMING/GRAZING SUBTOTAL		1,624	11 %	705	2,329	5 %	44	7 %	
TOTAL		**1,624**	**11 %**	**705**	**2,329**	**5 %**	**44**	**7 %**	

Table 5 details land use on Crown owned parcels that were inventoried.

No Crown owned parcels are "Used for farming" or "Used for grazing".

Many Crown provincial owned parcels that were not inventoried and a significant amount of unsurveyed Crown land is estimated to be used for livestock grazing since Crown grazing licenses cover about one third of the region's 497,044 hectares.

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 ownership 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 for farming	-	-	-	-	-	-	-	-	-
Used for grazing	-	-	-	-	-	-	-	-	-
Not used for farming or grazing	9	<1 %	30	<1 %	1,585	11 %	< 1	1,624	11 %
TOTAL CROWN OWNED ALR								**1,624**	**11 %**

* 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 inventoried.

Although Table 5 (above) shows that no Crown owned parcels are "Used for farming", Table 6 shows that there is 9 hectares of ALR in "Farmed" land cover on Crown owned parcels. This land cover is "Unused forage or pasture" and does not meet the minimum extent or intensity of agricultural activities required to call any Crown owned parcels "Used for farming".

For a complete definition of "Used for farming", see the definition section of this report.

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	1,325	9 %	-	120	1,445	3 %	-
	Farm Infrastructure	29	<1 %	-	1	30	<1 %	-
	Greenhouses	1	<1 %	-	-	1	<1 %	-
ACTIVELY FARMED		1,355	9 %	-	122	1,477	3 %	-
Anthropogenic areas supporting farming	Residential footprint	31	<1 %	-	1	32	<1 %	-
	Built up - Other	2	<1 %	-	< 1	2	<1 %	-
	Transportation	< 1	<1 %	-	< 1	< 1	<1 %	-
SUPPORTING FARMING		34	<1 %	-	1	35	<1 %	-
Unavailable for farming due to existing land use	Protected area / park / reserve	562	4 %	2 %	< 1	563	1 %	<1 %
	Garbage dumps	26	<1 %	<1 %	-	26	<1 %	<1 %
	Transportation & communications	21	<1 %	-	2	23	<1 %	-
	Commercial & service	8	<1 %	-	2	9	<1 %	-
	Recreation & leisure - golf	4	<1 %	-	67	71	<1 %	-
	Residential	3	<1 %	-	-	3	<1 %	-
	Utilities	< 1	<1 %	<1 %	-	< 1	<1 %	<1 %
Unavailable for farming due to existing land cover	Waterbodies & wetlands	88	<1 %	<1 %	19	107	<1 %	<1 %
	Residential footprint	83	<1 %	-	< 1	84	<1 %	-
	Built up - Other	36	<1 %	<1 %	< 1	37	<1 %	<1 %
	Transportation	< 1	<1 %	-	-	< 1	<1 %	-
UNAVAILABLE FOR FARMING		833	6 %	2 %	91	923	2 %	<1 %
Site limitations - used for grazing	Soils &/or topography	83	<1 %	-	< 1	83	<1 %	-
	Operational	< 1	<1 %	-	-	< 1	<1 %	-
Site limitations (may have potential for grazing)	Soils &/or topography	5,802	39 %	5 %	708	6,510	14 %	2 %
	Flooding &/or drainage	14	<1 %	<1 %	7	20	<1 %	<1 %
	Operational	8	<1 %	<1 %	< 1	9	<1 %	<1 %
LIMITED POTENTIAL FOR FARMING		5,907	40 %	5 %	716	6,623	15 %	2 %
Available & with potential for farming	Natural & Semi-natural - Vegetation	4,021	27 %	4 %	153	4,174	9 %	1 %
	Natural pasture	263	2 %	-	1	264	<1 %	-
	Unused forage or pasture	65	<1 %	<1 %	< 1	65	<1 %	<1 %
	Anthropogenic - Managed vegetation	44	<1 %	-	2	46	<1 %	-
	Anthropogenic - Non Built or Bare	3	<1 %	-	< 1	3	<1 %	-
AVAILABLE & WITH POTENTIAL FOR FARMING		4,396	30 %	4 %	156	4,552	10 %	1 %
Available but potential is unknown		< 1	<1 %	<1 %	31,990	31,991	70 %	<1 %
TOTAL		**12,525**	**85 %**	**11 %**	**33,076**	**45,600**	**100 %**	**5 %**
Not inventoried	Parcels - no access or < 1 acre	533	4 %					
	Indian reserves	-	-					
	Water & foreshore	358	2 %					
	Rights-of-way	505	3 %					
	Unsurveyed Crown land	841	6 %					
SUBTOTAL		2,237	15 %					
TOTAL		**14,761**	**100 %**					

Table 7 shows that 9% of the ALR is actively farmed, 6% is unavailable for farming, 40% has limited potential for farming, and 30% is available and has potential for farming.

The remaining 15% was not inventoried as it is on parcels with no signs of agriculture, less than one acre in size or remotely located with limited access, or in water, foreshore, rights-of-way, or unsurveyed Crown land.

Refer to Map B6 in Appendix B for more information.

Figure 7. Availability and potential of ALR lands for farming

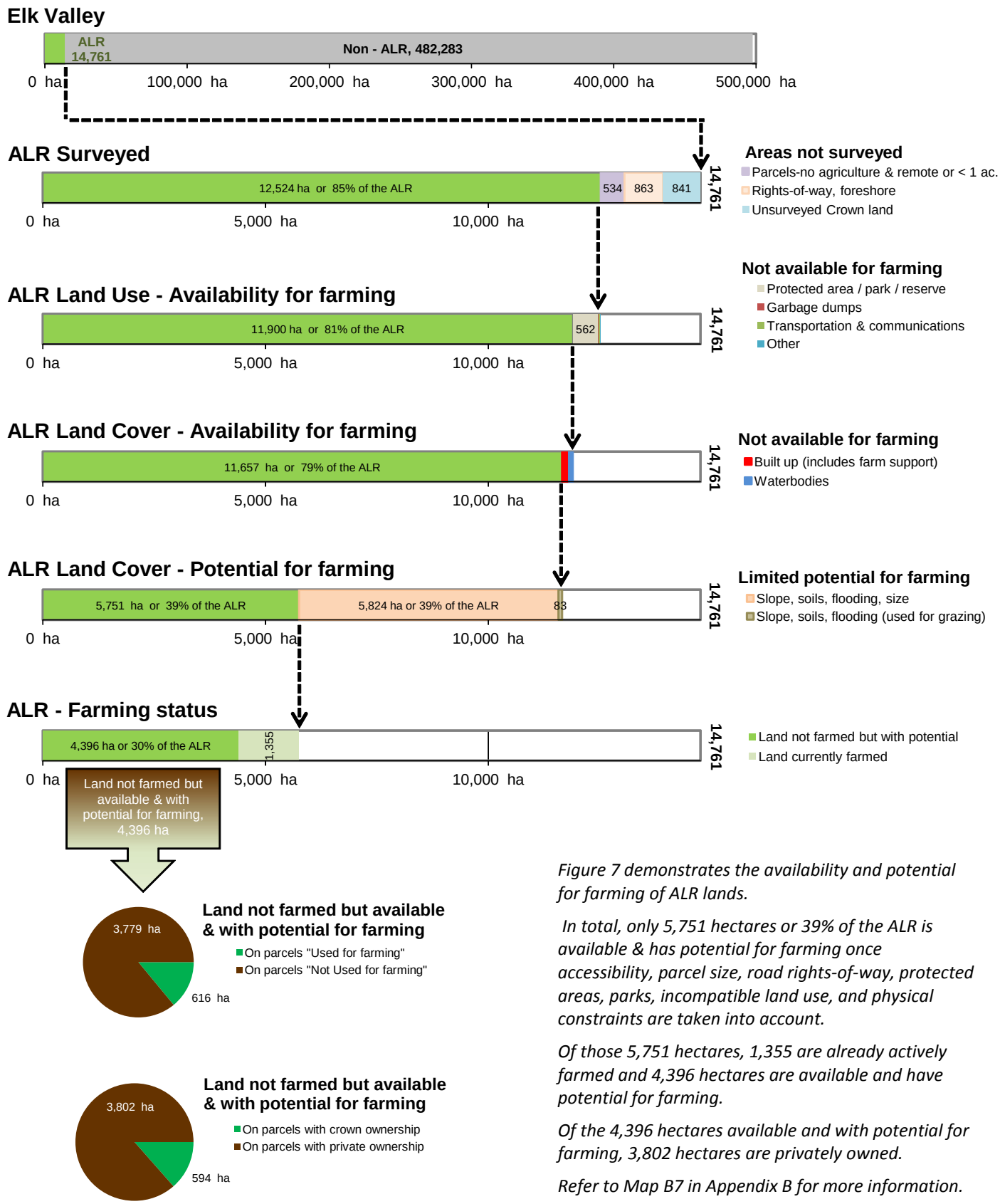


Figure 7 demonstrates the availability and potential for farming of ALR lands.

In total, only 5,751 hectares or 39% of the ALR is available & has potential for farming once accessibility, parcel size, road rights-of-way, protected areas, parks, incompatible land use, and physical constraints are taken into account.

Of those 5,751 hectares, 1,355 are already actively farmed and 4,396 hectares are available and have potential for farming.

Of the 4,396 hectares available and with potential for farming, 3,802 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

Mixed land use on "Used for farming" parcels	Parcel Ownership	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)	
Used only for farming	Private	32	228	2	229	325	< 1	325	17 %
Residential		39	372	44	416	483	111	594	27 %
Recreation & leisure - intensive		1	16	-	16	21	-	21	1 %
Land in transition		1	< 1	-	< 1	1	-	1	<1 %
TOTAL		**73**	**616**	**45**	**662**	**830**	**112**	**942**	**45 %**

There is 662 hectares with the potential to expand agricultural activities on parcels already "Used for farming".

Table 8 demonstrates that the largest potential expansion could come from privately owned properties that currently have mixed use "Residential" and "Used for faming".

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

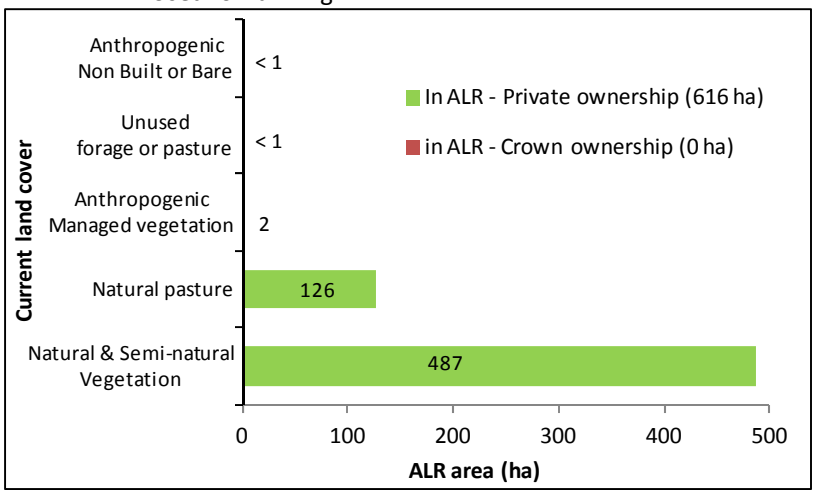


Figure 8 indicates that privately owned land currently in "Natural & Semi-natural Vegetation" would offer the greatest gains in farming production on parcels that are already "Used for farming".

These gains in farming may not be supported by residents who value privacy and viewscapes over agricultural production.

On Parcels "Not Used for Farming"

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		1	7	<1	7	<1 %
	Mixed use	Residential	18	145	<1	145	11 %
	SUBTOTAL		**19**	**152**	**<1**	**152**	**11 %**
	Not used for farming or grazing	No apparent use	69	1,090	80	1,169	80 %
		Residential	131	733	11	744	54 %
		Wildlife management	5	573	11	584	42 %
		Industrial	1	293	2	295	22 %
		Forestry	1	190	-	190	14 %
		Land in transition	2	103	<1	103	8 %
		Gravel extraction	1	39	<1	39	3 %
		Recreation & leisure - intensive	1	11	-	11	<1 %
		Institutional, community	1	2	-	2	<1 %
	SUBTOTAL		**212**	**3,033**	**103**	**3,136**	**224 %**
TOTAL PRIVATELY OWNED ALR			**231**	**3,185**	**103**	**3,289**	**235 %**
Crown	Not used for farming or grazing	No apparent use	28	528	6	533	39 %
		Utilities	1	52	2	55	4 %
		Dumps & deposits	1	14	-	14	1 %
TOTAL CROWN OWNED ALR			**30**	**594**	**8**	**602**	**44 %**
TOTAL			**261**	**3,779**	**111**	**3,890**	**279 %**

Table 9 illustrates that for parcels currently "Not used for farming", the greatest potential for increasing actively farmed land could come from privately owned parcels that currently have "No apparent use" followed by privately owned parcels that are currently being used for "Residential". Privately owned parcels used for "Wildlife management" also show great potential for increasing actively farmed land, however these 573 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.

Refer to nature Conservancy of Canada - Elk Valley Heritage Conservation Area
http://www.natureconservancy.ca/en/where-we-work/british-columbia/our-work/bc-projects-list.html

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.

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

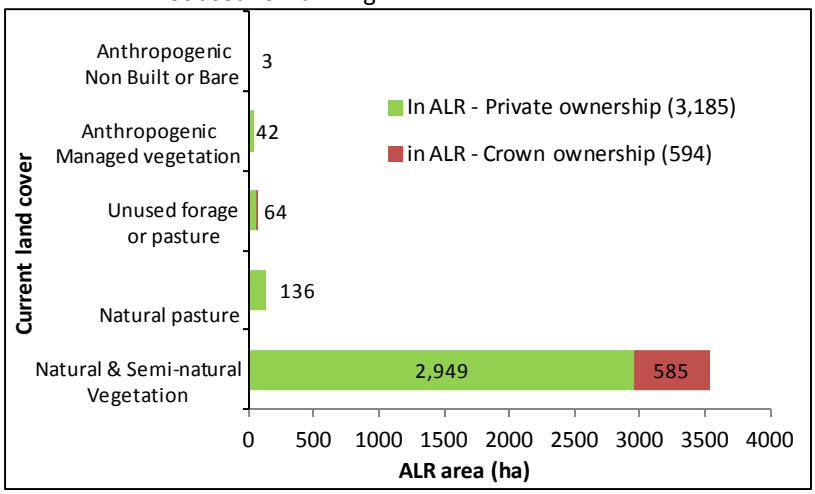


Figure 9 indicates that developing privately owned and Crown owned land currently in "Natural & Semi-natural Vegetation" would provide the greatest gains in farmed land on parcels currently "Not used for farming" in the ALR.

However 573 hectares of the privately owned "Natural & Semi-natural Vegetation" is on parcels used for "Wildlife management". These gains in farmed land would have to be measured against resulting changes to wildlife habitat.

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

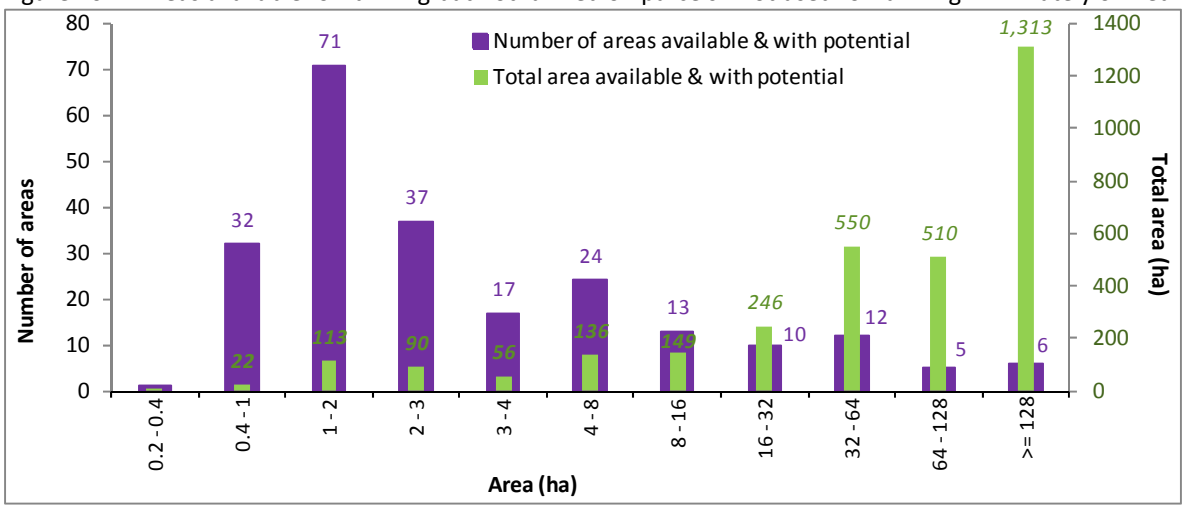


Figure 10 demonstrates that 46% of the privately owned areas available for farming are smaller than 2 hectares, only 31% are larger than 4 hectares, and only 10% are larger than 32 hectares. The smaller the area, the fewer options are available to efficiently farm.

Larger areas provide the widest range of options for bringing the area into farming production. In the Elk Valley, there are only 23 areas greater than 32 hectares in size with a combined area of 2,373 hectares that are available and with potential for farming. Eight of these larger areas (totalling 569 hectares) are on 4 privately owned parcels used for "Wildlife management".

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 field survey season. Excluded are crops grown in crop cover structures such as greenhouses or mushroom barns.

Cultivated field crops in the Elk Valley are described by four crop groupings:

- **Forage, pasture**: grass and legumes
- **Oats**
- **Trees (plantation)**
- **Crop transition**: transitioning from one type of crop to another

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	1,381	9%	< 1%	125	1,506	99%	< 1%
Oats	6	< 1%	-	-	6	< 1%	-
Trees (plantation)	2	< 1%	-	-	2	< 1%	-
Crop transition	< 1	< 1%	-	-	< 1	< 1%	-
TOTAL	**1,390**	**9%**	**< 1%**	**125**	**1,515**	**100%**	**< 1%**

Table 10 shows the 4 main field crop types produced on the 1,390 hectares of cultivated land in the Elk Valley.

Forage and pasture is by far the most common type of cultivated field crop accounting for 99% of all cultivated land and 9% of the ALR in the region.

Refer to Map B8 in Appendix B for more information.

Figure 11. All crop fields by size

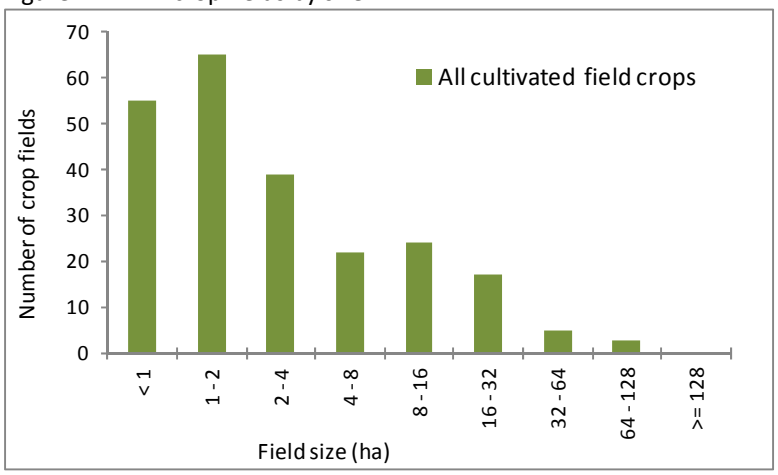


Figure 11 illustrates the number and size distribution of fields used for cultivated field crops.

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

There are 230 individual crop fields when separated by main crop type. These fields have an average area of 6.6 hectares and median area of 1.9 hectares.

Field crops occur on 228 parcels with an average parcel size of 16.4 hectares and median parcel size of 3.2 hectares.

Refer to Table A1 in Appendix A for more information.

Figure 12. Top 4 crop types by field size

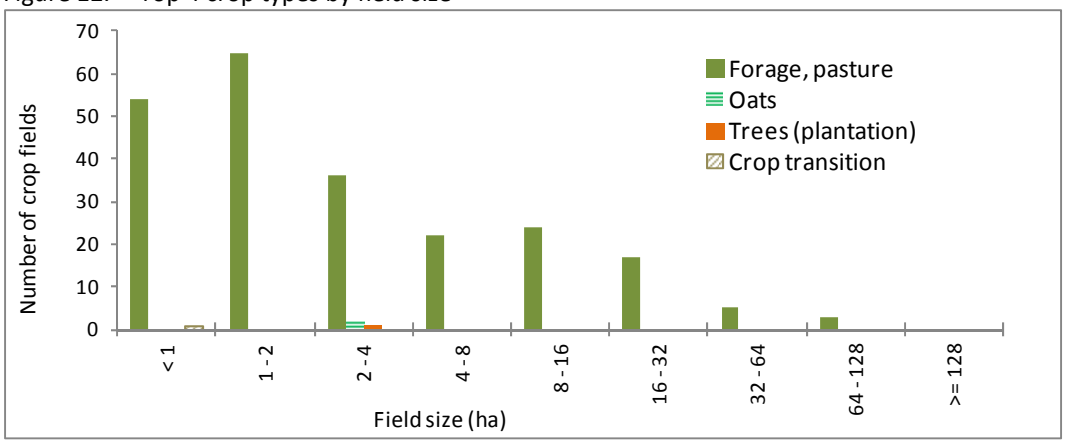


Figure 12 compares the main crop types by field sizes.

"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 (unmanaged)	Grass	445	3%	32	477	31%
Forage (unmanaged)	Mixed grass / legume	55	< 1%	< 1	55	4%
Forage ^	Grass	74	< 1%	-	74	5%
Forage ^	Mixed grass / legume	5	< 1%	< 1	5	< 1%
	Subtotal	**579**	**4%**	**32**	**611**	**40%**
Pasture (unmanaged)	Grass	14	< 1	5	18	1
Pasture ^	Grass	< 1	< 1%	-	< 1	< 1%
	Subtotal	**14**	**< 1%**	**5**	**19**	**1%**
Forage & pasture (managed)	Grass	525	4%	2	527	35%
Forage & pasture (managed)	Mixed grass / legume	198	1%	81	279	18%
	Subtotal	**723**	**5%**	**83**	**806**	**53%**
Unused	Grass	65	< 1%	< 1	65	4%
Unmaintained	Mixed grass / legume	-	-	5	5	< 1%
	Subtotal	**65**	**< 1%**	**5**	**70**	**5%**
	TOTAL	**1,381**	**9%**	**125**	**1,506**	**99%**

^ 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 Elk Valley although Forage (unmanaged) is a close second.

Refer to Map B9 in Appendix B for more information.

Figure 13. Forage and pasture fields by size

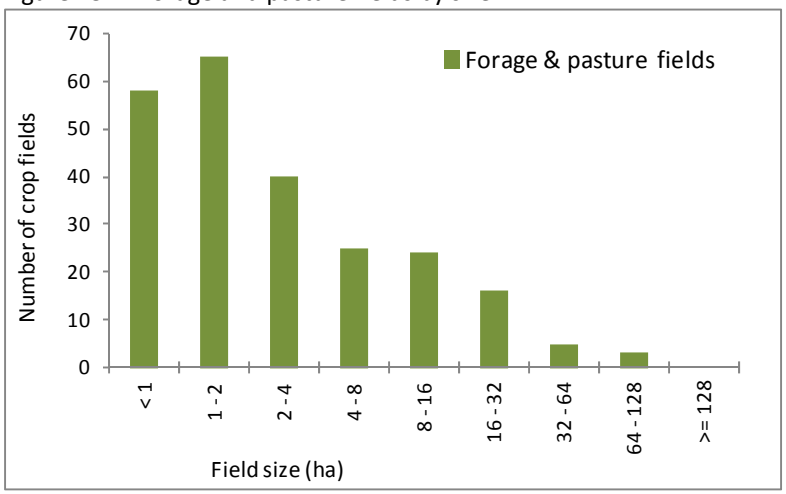


Figure 13 shows that "Forage, pasture" fields are most likely to be 1-2 hectares.

In the Elk Valley, there are 236 individual "Forage, pasture" fields when separated by crop type (grass, legume) and management level. These crop fields have an average area of 6.4 hectares and median area of 1.9 hectares.

Forage and pasture fields occur on 226 parcels with an average parcel size of 16.4 hectares and median parcel size of 3.2 hectares.

Refer to Table A2 in Appendix A for more information.

Figure 14. Forage and pasture fields by size and type

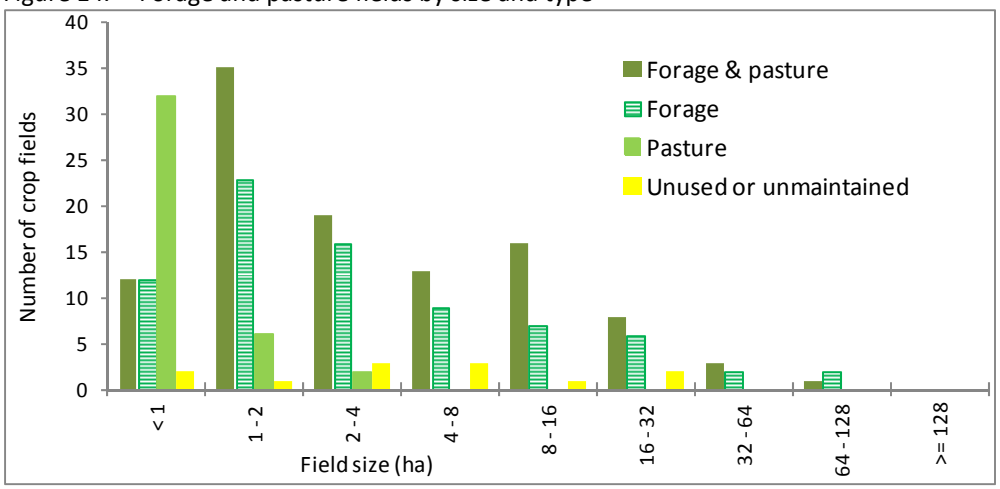


Figure 14 illustrates the variation in field sizes between pasture, forage and unused / unmaintained pasture or forage.

Fields used for forage are generally larger than pasture fields mainly due to harvesting equipment requirements and fencing costs. Most pasture fields are less than 1 hectare and there are no pasture fields greater than 4 hectares.

Refer to Table A2 in Appendix A for more information.

Individual Crops

Table 12. 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)	723	5%	83	806	53%
Forage (unmanaged)	499	3%	32	532	35%
Forage ^	80	< 1%	< 1	80	5%
Unused forage/pasture	65	< 1%	< 1	65	4%
Pasture (unmanaged)	14	< 1%	5	18	1%
Oats	6	< 1%	-	6	< 1%
Unmaintained forage/pasture	-	-	5	5	< 1%
Trees (plantation)	2	< 1%	-	2	< 1%
Crop transition	< 1	< 1%	-	< 1	< 1%
Pasture ^	< 1	< 1%	-	< 1	< 1%
TOTAL	**1,390**	**9%**	**125**	**1,515**	**100%**

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

Table 12 shows the 10 individual crops that account for all cultivated land in the Elk Valley.

Figure 15. Individual crop types by area

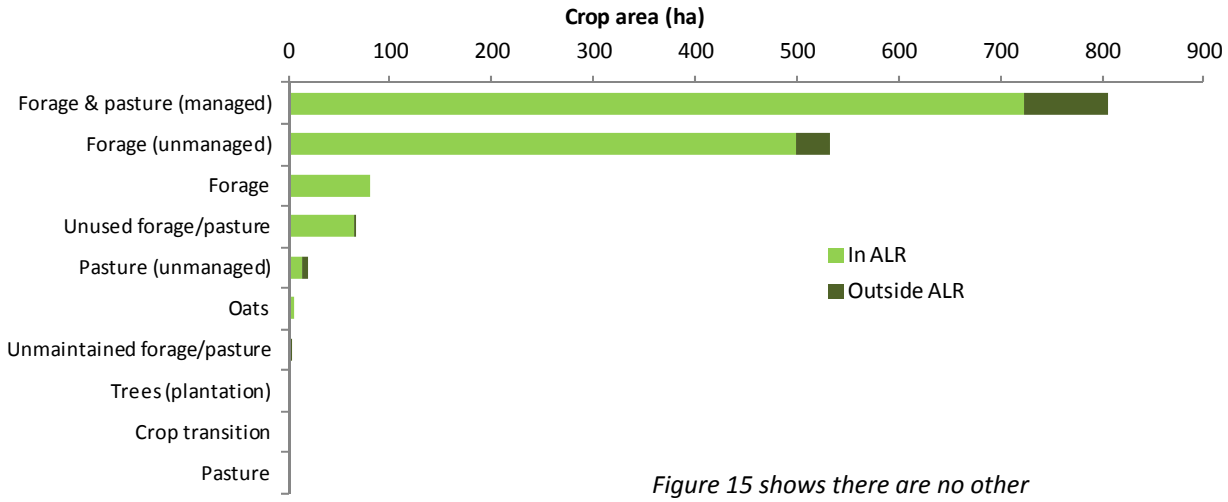


Figure 15 shows there are no other significant non forage or pasture crops in the Elk Valley.

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 13. Natural pasture and rangeland vegetation types by area

Natural pasture and rangeland		ALR			Outside ALR (ha)	Total area (ha)	% of suveyed area	% of inventory area in Crown ownership	% of natural pasture and rangeland
		In ALR (ha)	% of ALR	% of ALR in Crown ownership					
Pasture (natural)	Treed - open	141	< 1%	-	< 1	142	< 1%	-	41%
	Herbaceous	133	< 1%	-	< 1	134	< 1%	-	38%
	Treed - closed	71	< 1%	-	< 1	71	< 1%	-	21%
TOTAL		**346**	**2%**	**-**	**1**	**347**	**< 1%**	**-**	**100%**

Table 13 shows that land cover of Treed – open (10% to 60% of crown cover is native trees) is most commonly used for natural pasture. No rangeland was observed on inventoried parcels, however many of the Crown owned parcels not inventoried and a significant amount of unsurveyed Crown land is estimated to be used for livestock grazing since Crown grazing licenses cover about one third of the region's 497,044 hectares.

Refer to Map B10 in Appendix B for more information.

Figure 16. Natural pasture areas by size

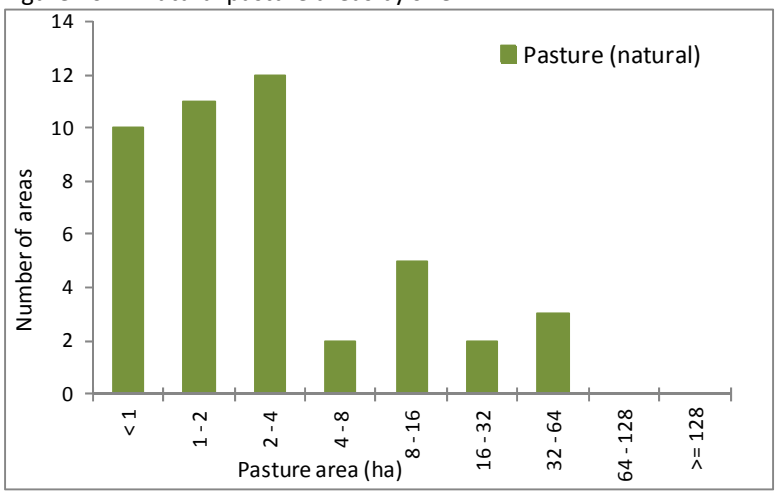


Figure 16 shows that natural pastures are most likely to be 2-4 hectares in size.

In the Elk Valley, there are 45 individual natural pastures with an average area of 7.7 hectares and median area of 2.7 hectares.

Natural pastures occur on 45 parcels with an average parcel size of 21.2 hectares and median parcel size of 4.0 hectares.

Refer to Table A3 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 14. Greenhouses by type and area[8]

Greenhouses		ALR		Outside ALR (ha)	Total area (ha)	% of greenhouse area
		In ALR (ha)	% of ALR			
Poly greenhouse	Mixed	1.2	< 0.1%	-	1.2	100%
TOTAL		**1.2**	**< 0.1%**	**-**	**1.2**	**100%**

In the Elk Valley, there are only 3 poly greenhouse operations which include Fernie Garden Center, Elk Valley Greenhouse & Landscaping, and an unknown operation on Anderson Road in Fernie.

Table 14 shows that just over 1 hectare of ALR land is covered by these 3 poly greenhouse operations.

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

Refer to Map B8 in Appendix B for more information.

Figure 17. Greenhouses by size

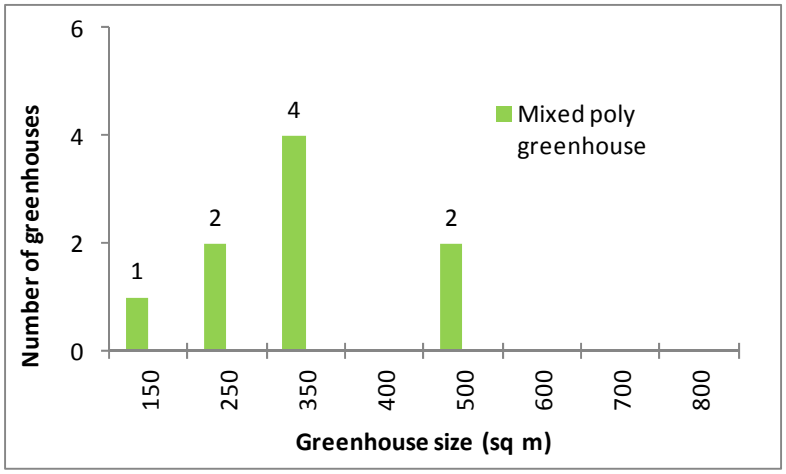


Figure 17 shows that the 3 greenhouse operations have a total of 9 greenhouses; all with mixed crops.

The largest greenhouses are part of the Fernie Garden Center operation.

[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.

There is no irrigation on inventoried parcels in the Elk Valley.

Table 15. Individual field crop types and irrigation

Cultivated field crop	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land	% of crop irrigated
	In ALR (ha)	% of ALR				
Forage & pasture (managed)	723	5%	83	806	53%	-
Forage (unmanaged)	499	3%	32	532	35%	-
Forage ^	80	< 1%	< 1	80	5%	-
Unused forage/pasture	65	< 1%	< 1	65	4%	-
Pasture (unmanaged)	14	< 1%	5	18	1%	-
Oats	6	< 1%	-	6	< 1%	-
Unmaintained forage/pasture	-	-	5	5	< 1%	-
Trees (plantation)	2	< 1%	-	2	< 1%	-
Crop transition	< 1	< 1%	-	< 1	< 1%	-
Pasture ^	< 1	< 1%	-	< 1	< 1%	-
TOTAL	**1,390**	**9%**	**125**	**1,515**	**100%**	**-**

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

Table 15 shows that none of the cultivated land in the Elk Valley is irrigated.

LIVESTOCK

Livestock activities are very difficult to measure using a windshield survey method. Livestock are often confined to structures or grazing on 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 on a pasture 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 16. Livestock activities

Livestock group	Livestock detail	By parcel		Total activities	*By activity type*	
		Main type	Secondary type		*Intensive*	*Non Intensive*
Beef	Beef total	21	-	21	-	*21*
Poultry	Poultry total	-	1	1	-	*1*
Sheep / lamb / goat	Sheep / lamb / goat total	1	-	1	-	*1*
Llama / alpaca	Llama / alpaca total	1	-	1	-	*1*
Unknown livestock *	Unknown livestock * total	2	-	2	-	*2*
Equine	Horse	31	4	35	-	*35*
	Mixed	2	-	2	-	*2*
	Unknown type *	11	1	12	-	*12*
	Equine total	44	5	49	-	49
TOTAL		**69**	**6**	**75**	**-**	**75**

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

Table 16 shows that equine is the most common type of livestock activity in the Elk Valley, accounting for 49 livestock activities or 65% of all livestock activities. Beef is the second most common with 21 activities or 28%.

Refer to Maps B11 and B12 in Appendix B for more information.

Table 17. Equine activities

Type of activity	Scale of equine activity	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)	11	-	11	-	*11*	15
Ranching		-	1	1	-	*1*	1
Recreation		2	1	3	-	*3*	4
Unknown	Small scale (2-25 horses)	21	2	23	-	*23*	79
Boarding		1	-	1	-	*1*	3
Companion		5	-	5	-	*5*	14
Ranching		-	1	1	-	*1*	2
Recreation		4	-	4	-	*4*	12
TOTAL		**44**	**5**	**49**	**-**	***49***	**130**

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

Table 17 details the equine activities in the Elk Valley. The total number of animals is estimated from field observations and Crown grazing licenses associated to livestock home sites located in the Elk Valley.

Refer to Table A4 and Figure A1, A2 in Appendix A and Map B12 in Appendix B for more information on equine activities in the Elk Valley.

Table 18. 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*	
Finishing	Very small scale (1 cow)	1	-	1	-	*1*	1
Unknown	Small scale (2-25 cattle)	2	-	2	-	*2*	28
Cow / calf		9	-	9	-	*9*	88
Unknown	Medium scale (25-100 cattle)	4	-	4	-	*4*	130
Cow / calf		3	-	3	-	*3*	123
Cow / calf	Large scale (>100 cattle)	2	-	2	-	*2*	202
TOTAL	**TOTAL**	**21**	**-**	**21**	**-**	***21***	**572**

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

Table 18 details the beef activities in the Elk Valley. The total number of animals is estimated from field observations and Crown grazing licenses associated to livestock home sites located in the Elk Valley.

Although equine is the most common activity, there are almost five times as many beef cattle as equines in the Elk Valley as beef activities tend to be much larger than equine activities.

Refer to Table A5 and Figure A3, A4 in Appendix A and Map B12 in Appendix B for more information on beef activities in the Elk Valley.

Figure 18. Livestock activities (excluding equine) by scale and type

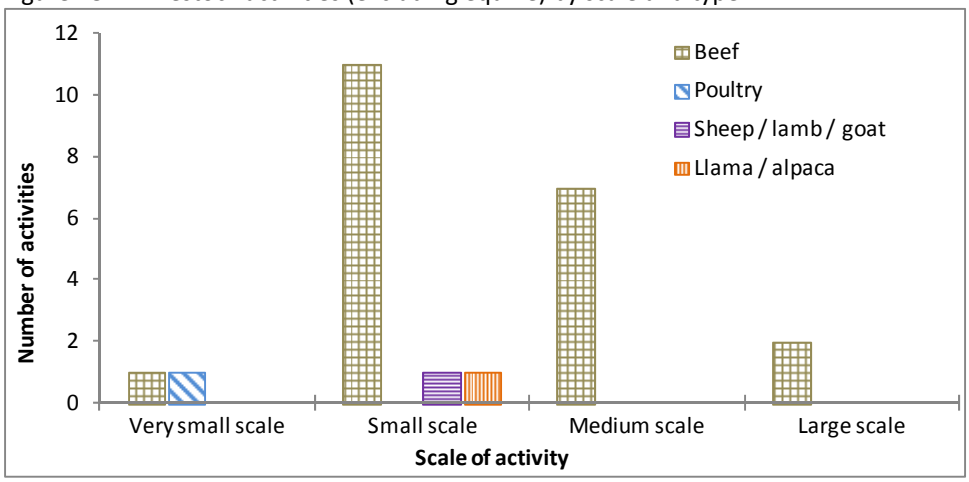


Figure 18 illustrates the scale of livestock activities (excluding equine) in the Elk Valley.

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

All "medium" and "large" scale livestock activities are beef.

Figure 19. Livestock and equine activities by scale

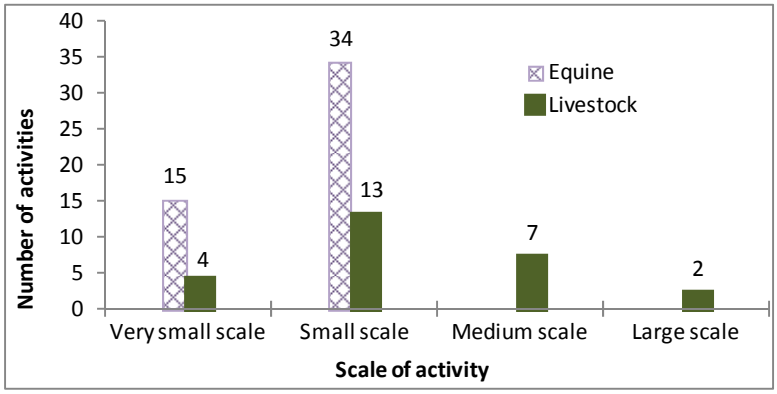


Figure 19 compares the scale of livestock activities with equine activities.

Even though 49 of the 75 livestock activities are equines, all are "very small" or "small" scale. There are no "medium" or "large" scale equine activities compared to 9 "medium" or "large" scale livestock activities.

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

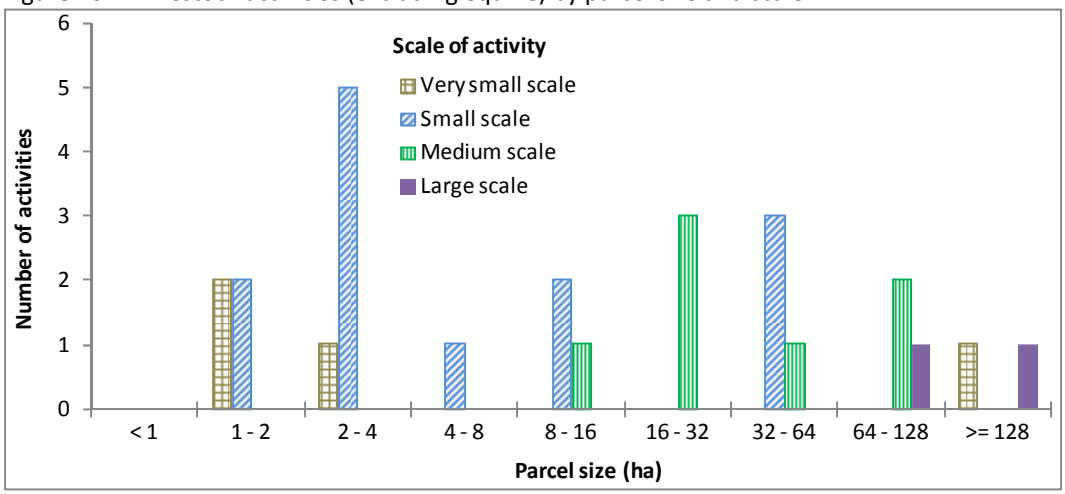


Figure 20 illustrates the distribution of livestock activities (excluding equine) by scale across parcel size categories.

All "large" scale livestock activities are associated with large parcels; however, some "small" and "very small" scale livestock activities are also reported on larger parcels.

Figure 21. Livestock activities (excluding equine) by parcel size and type

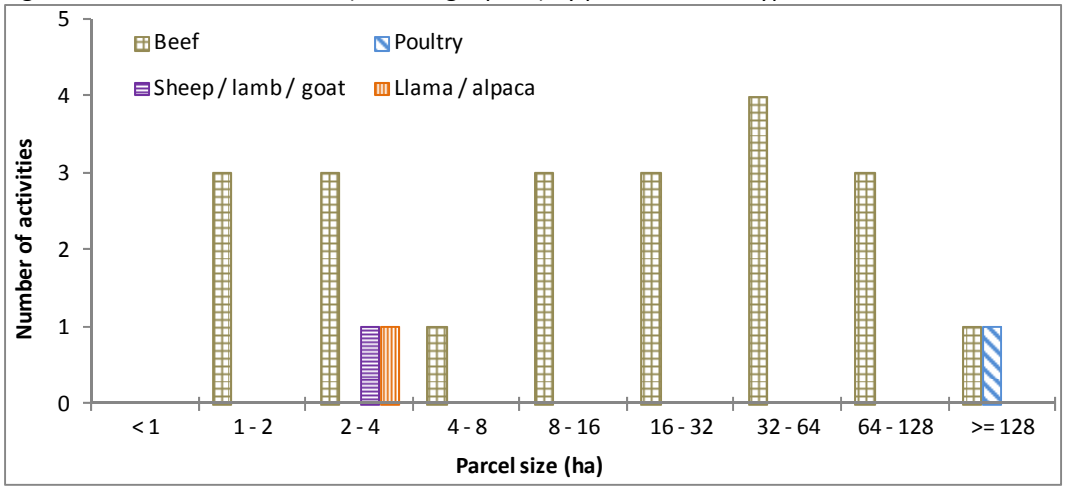


Figure 21 compares the distribution of different livestock types across parcel size categories. Beef activities occur across all parcel sizes except less than 1 hectare. The one poultry activity on a parcel greater than 128 hectares is secondary to a "small" scale equine activity on the same parcel.

Refer to Table A6 in Appendix A for more information.

Figure 22. Livestock and equine activities by parcel size

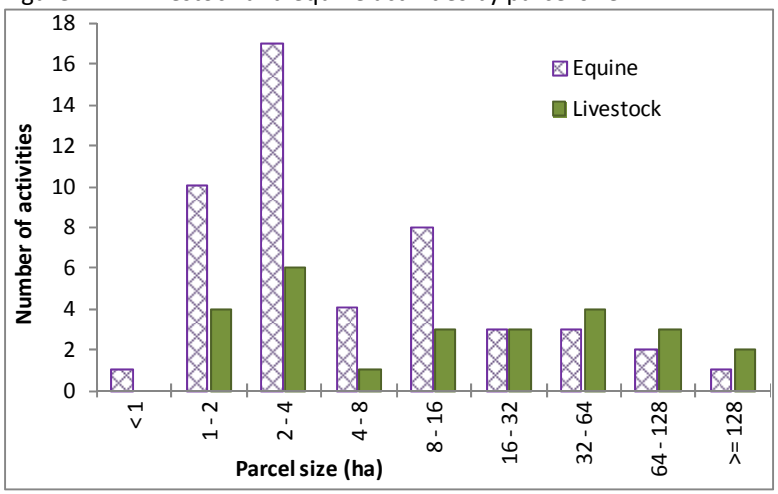


Figure 22 compares the distribution of equine and livestock across parcel size categories.

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

Only equine activities occur on parcels less than 1 hectare.

Figure 23. Average area in forage or pasture, farm infrastructure, and natural pasture on parcels with livestock activities (excluding very small scale)

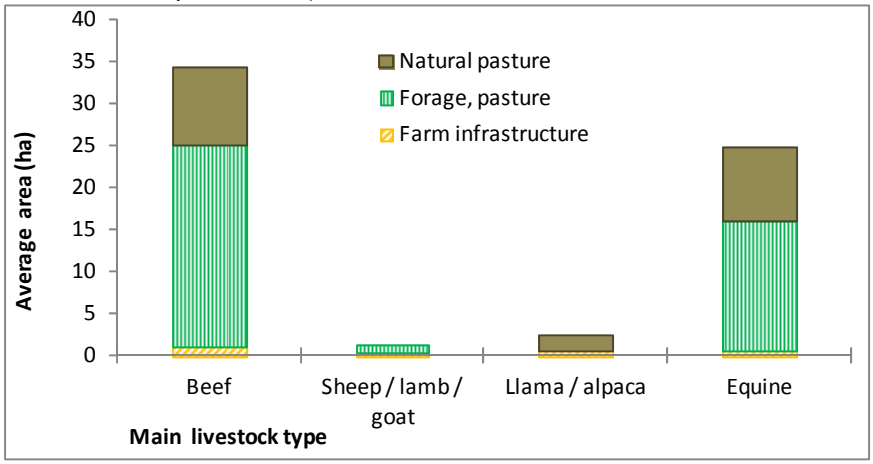


Figure 23 shows that on average, a beef activity is associated with 24 hectares of forage or pasture land and 9 hectares of natural pasture, more than any other type of livestock activity.

Figure 24. Total area in forage or pasture, farm infrastructure, and natural pasture on parcels with livestock activities (excluding very small scale)

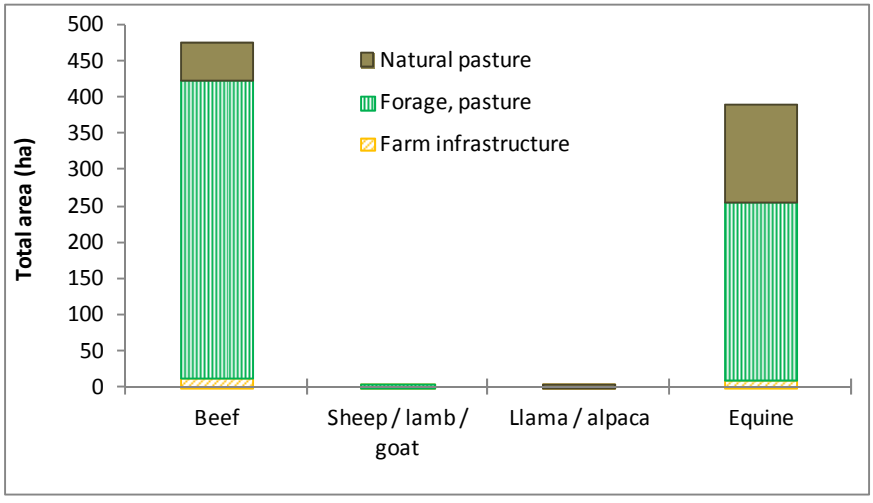


Figure 24 shows that in total, beef activities are associated with 411 hectares of forage or pasture land, more than any other type of livestock activity.

Figure 25. Percent of parcel area utilized for forage or pasture, farm infrastructure, and natural pasture on parcels with livestock activities (excluding very small scale)

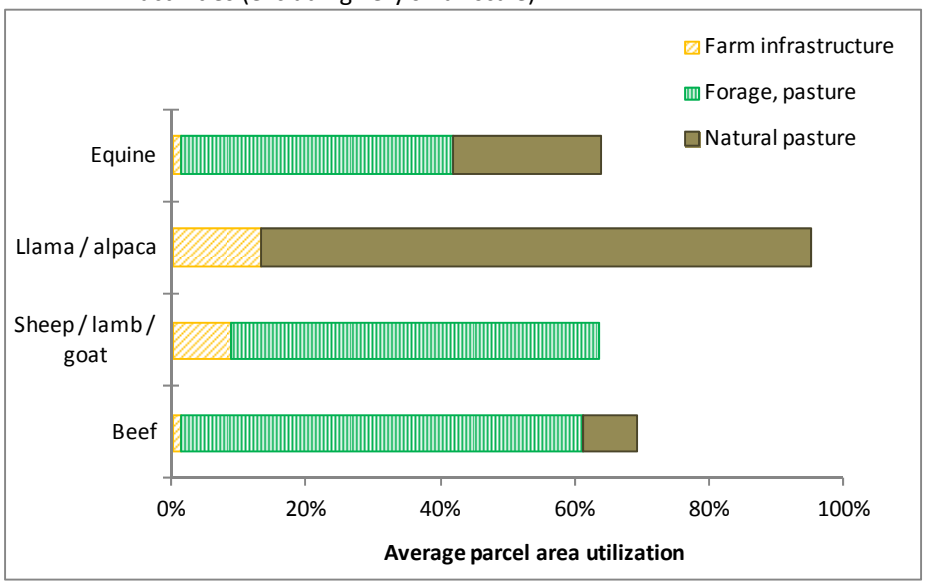


Figure 25 shows that on average, livestock and equine activities in the Elk Valley utilize between 13% and 63% of their parcel area for forage, pasture, and farm infrastructure.

Figure 26. Land cover on parcels with livestock activities (excluding very small scale)

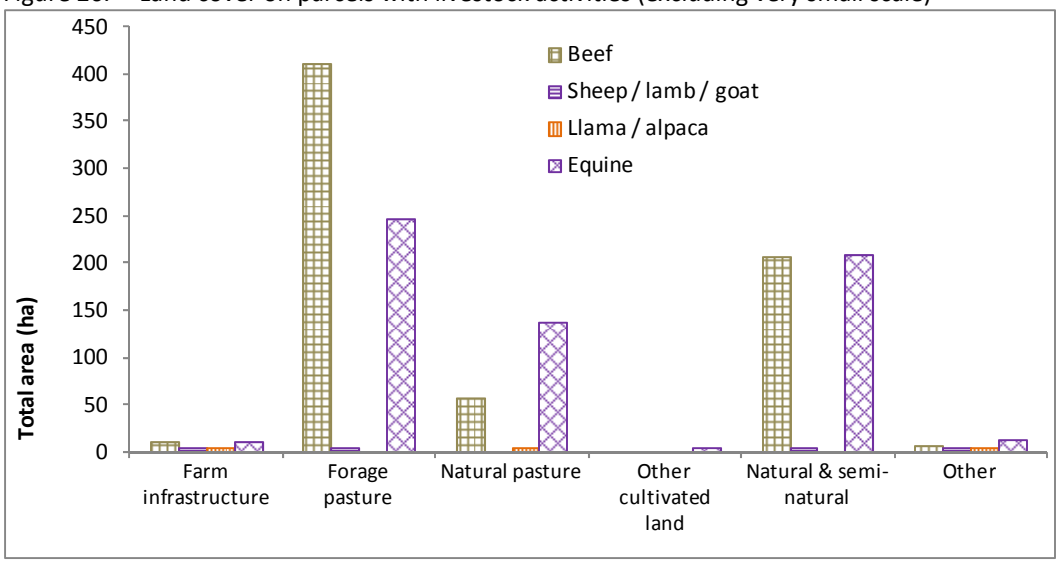


Figure 26 demonstrates the land cover on parcels with livestock and equine activities. All livestock types except Llamas are growing some of their own feed but are also relying on natural areas.

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[9] 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.

Table 19. On farm value-added activities by scale

Value added	Description	Small scale	Medium scale	Total number of activities	Average parcel size (ha)
Direct sales	Seasonal store (stand)	2	1	3	3.2
TOTAL NUMBER OF ACTIVITIES		**2**	**1**	**3**	

Table 19. Only 3 parcels or 1.5% of all parcels "Used for farming" are reported as being used for a value-added activity in the Elk Valley.

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

[9] 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 12,525 hectares of ALR on 571 parcels which is just over 85% of the ALR within the Elk Valley. In addition, there is 533 hectares or 4% 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 11% of the ALR was excluded from the inventory as it is in rights-of-ways, water, foreshore or 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 Elk Valley, 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, 623 parcels with 13,001 hectares or just over than 88% of Elk Valley's ALR land meet the above criteria. This includes 20 parcels that have less than 50% of their area in the ALR but contain greater than 10 hectares of ALR land. Of these 623 parcels, 582 or 11,376 hectares of ALR are privately owned and 41 or 1,625 hectares of ALR are Crown owned.

Of these 623 parcels, only 552 or 12,473 hectares of ALR are within the inventory area and thus included in the further analysis of ALR lands. Of these 552 parcels, 513 or 10,860 hectares of ALR are privately owned and 39 or 1,613 hectares of ALR are Crown owned.

Figure 27. Parcel inclusion in the ALR

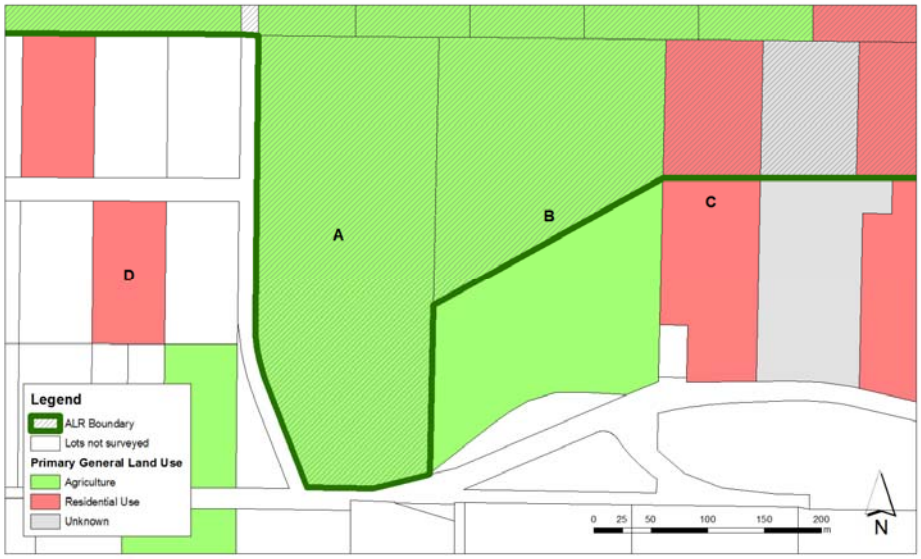


Figure 27 illustrates the distinction between parcels considered to be within or outside the ALR:

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.*

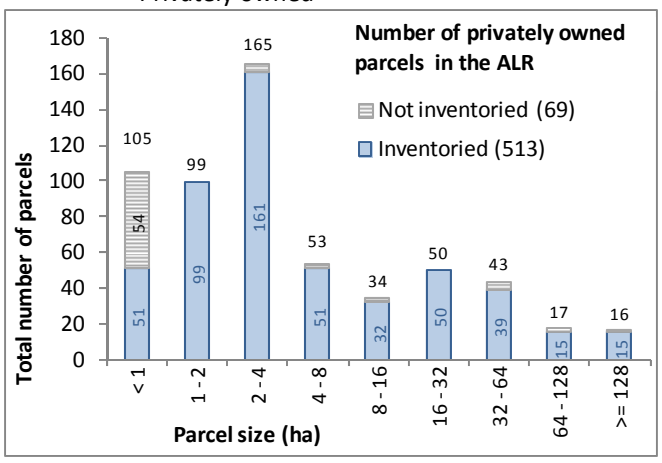
PARCEL SIZE & FARMING IN THE ALR

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[10], 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 28. Number of parcels in the ALR by parcel size – Privately owned



Approximately 18% of the Elk Valley's privately owned ALR parcels are less than one hectare. Average parcel size is 74 hectares, and median parcel size is 2.5 hectares.

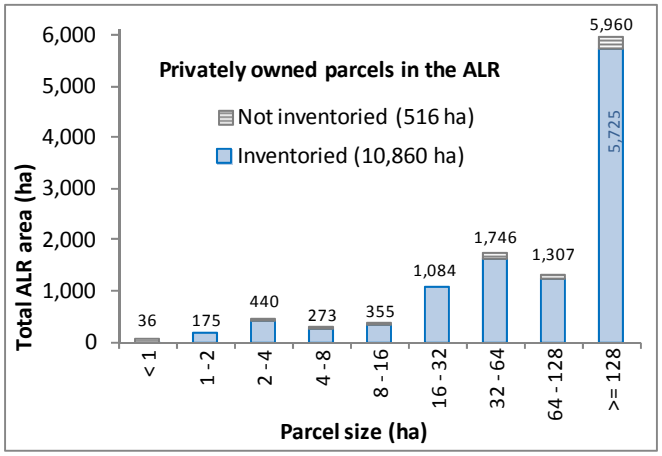
Figure 28 illustrates that of the 582 privately owned parcels in the ALR:

- *18% (105 parcels) are less than 1 hectare (including 64 parcels less than 1 acre)*
- *63% (369 parcels) are less than 4 hectares*
- *9% (53 parcels) are between 4 and 8 hectares*
- *6% (34 parcels) are between 8 and 16 hectares*
- *22% (126 parcels) are greater than 16 hectares.*

Of these 582 parcels, only 513 were inventoried for land use and land cover. This includes 51 parcels less than 1 hectare of which 10 are less than 1 acre.

Refer to Map B13 in Appendix B for more information.

Figure 29. Total area in the ALR by parcel size – Privately owned



Even though the Elk Valley has large number of small parcels, most of its privately owned ALR area is on larger parcels.

Figure 29 illustrates that of the 11,376 hectares of ALR on privately owned parcels in the ALR:

- *<1% (36 hectares) is on parcels less than 1 hectare*
- *6% (651 hectares) is on parcels less than 4 hectares*
- *2% (273 hectares) is on parcels between 4 and 8 hectares*
- *3% (355 hectares) is on parcels between 8 and 16 hectares*
- *89% (10,097 hectares) is on parcels greater than 16 hectares.*

Of these 11,376hectares, only 10,860 were inventoried for land use and land cover.

[10]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 20. 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	158	27 %
Used for grazing	21	4 %
Not used for farming or grazing	334	57 %
Not inventoried	69	12 %
TOTAL	**582**	**100 %**

Table 20 demonstrates that of the 582 privately owned parcels in the ALR, only 158 or 27% are "Used for farming".

Figure 30. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size – Privately owned

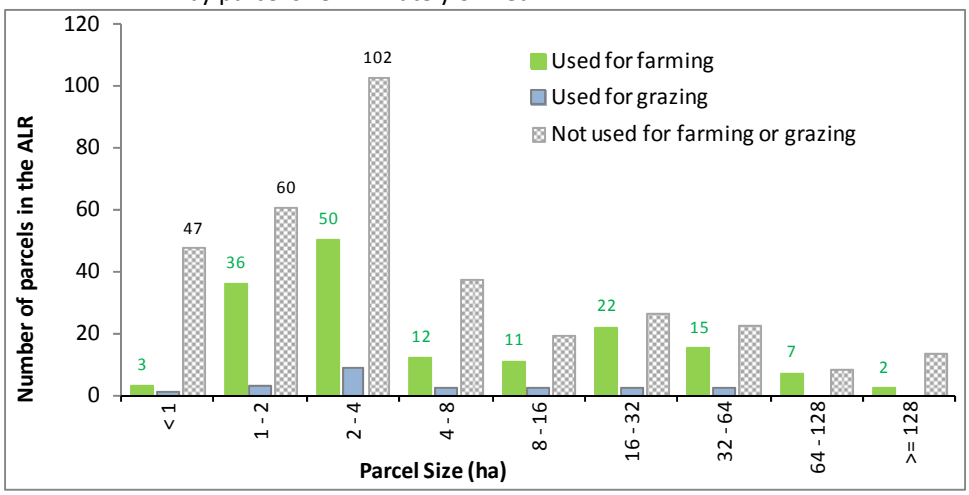


Figure 30 shows that the majority of parcels in all parcel size categories are "Not used for farming or grazing".

Figure 31. Number of farmed, grazed, and not farmed or grazed parcels in the ALR by parcel size (line chart) – Privately owned

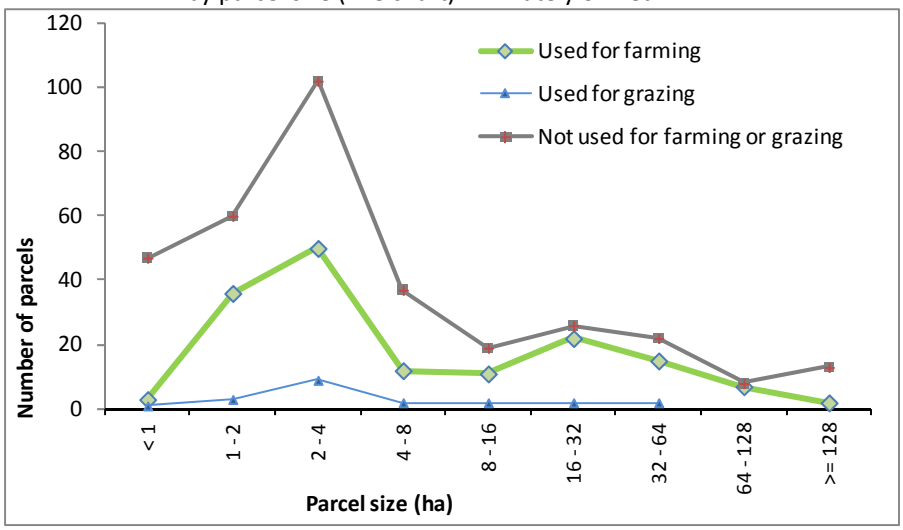


Figure 31. Even though the majority of parcels in all parcel size categories are "Not used for farming or grazing", the proportion of parcels "Not used for farming or grazing" declines as parcel size rises.

Figure 32. Proportion of parcels farmed, grazed, and not farmed or grazed by parcel size in the ALR – Privately owned

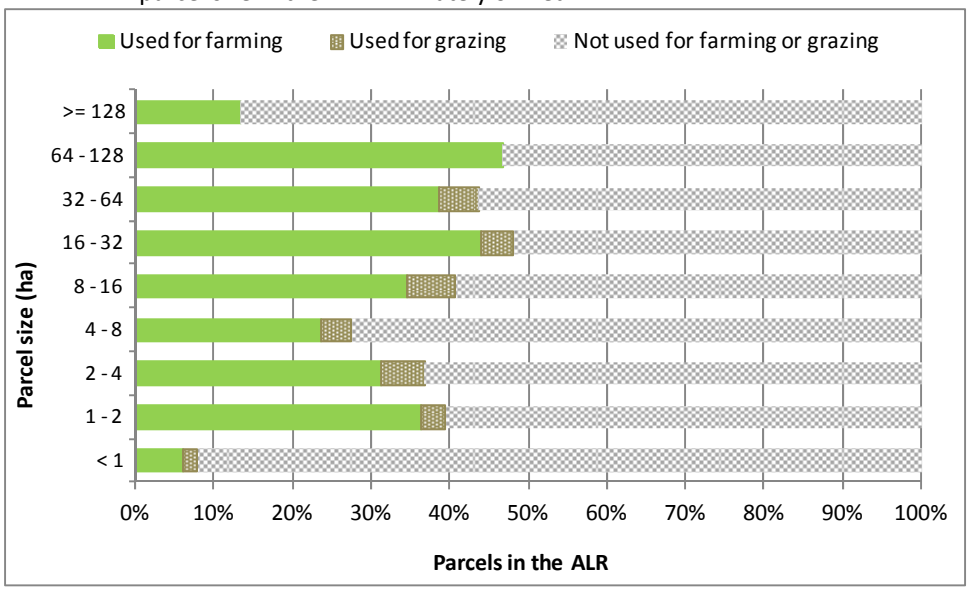


Figure 32 shows that for privately owned parcels, the proportion of "Used for farming" parcels is significantly lower on parcels less than 1 hectare.

Only 6% of privately owned parcels less than 1 hectare are "Used for farming". This would drop to about 2.5% if all small parcels had been inventoried.

Figure 33. Proportion of land cover by parcel size in the ALR– Privately owned

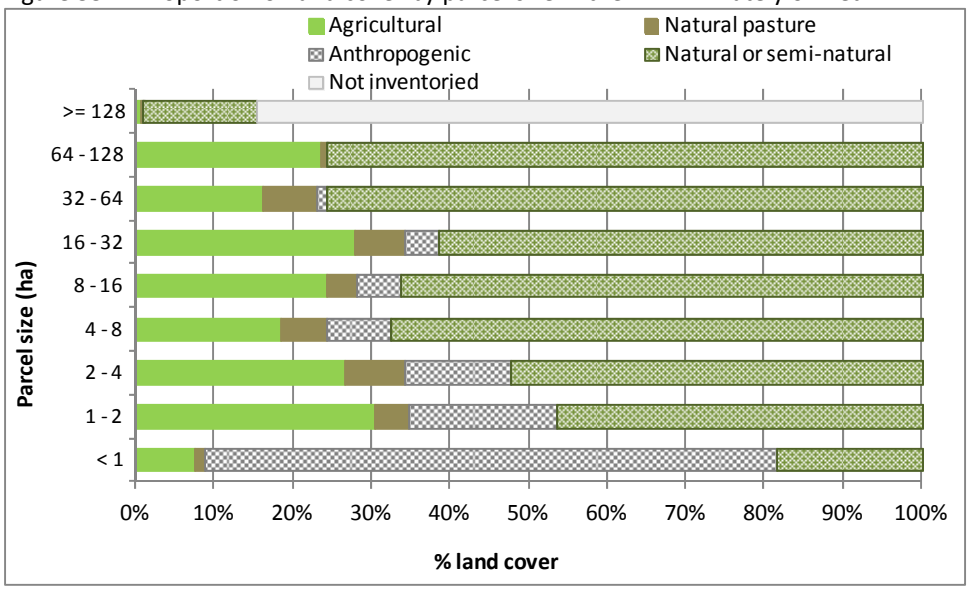
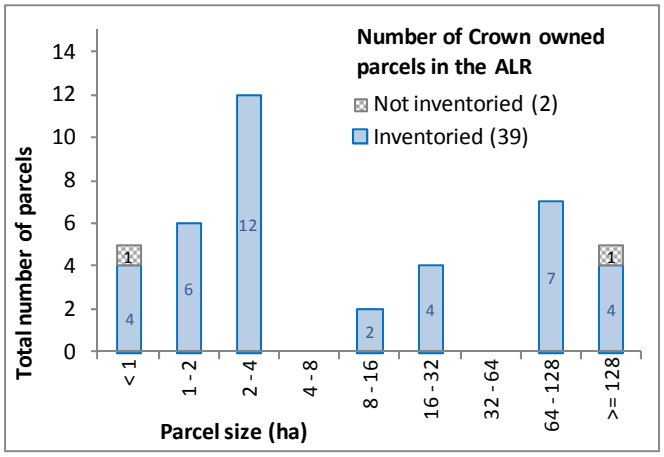


Figure 33 shows the average percentage of parcel areas in different land cover types.

For privately owned parcels, the proportion of anthropogenic land cover increases dramatically as parcel size decreases.

Crown Owned Parcels

Figure 34. Number of parcels in the ALR by parcel size – Crown owned



Crown owned parcels in the ALR are relatively rare in Elk Valley. Average parcel size is 64 hectares, and median parcel size is 3 hectares.

Figure 34 illustrates that of the 41 Crown owned parcels in the ALR:

- *12% (5 parcels) are less than 1 hectare*
- *56% (23 parcels) are less than 4 hectares*
- *0% (0 parcels) are between 4 and 8 hectares*
- *5% (2 parcels) are between 8 and 16 hectares*
- *39% (16 parcels) are greater than 16 hectares.*

Of these 41 parcels, 39 were inventoried for land use and land cover. This includes 11 large parcels where only the portion of the parcel inside the ALR was inventoried for land cover.

Refer to Map B14 in Appendix B for more information.

Figure 35. Total area in the ALR by parcel size – Crown owned

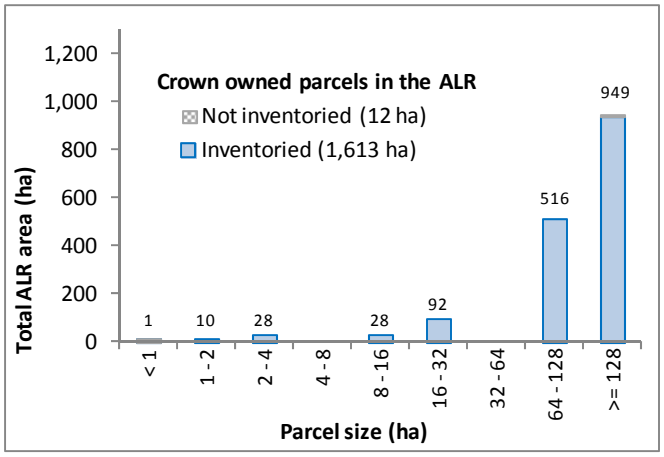


Figure 35 illustrates that of the 1,625 hectares of ALR land on Crown owned parcels in the ALR:

- *<1% (1 hectare) is on parcels less than 1 hectare.*
- *2% (40 hectares) is on parcels less than 4 hectares.*
- *0% (0 hectares) is on parcels between 4 and 8 hectares.*
- *2% (28 hectares) is on parcels between 8 and 16 hectares.*
- *96% (1,557 hectares) is on parcels greater than 16 hectares.*

Of these 1,625 hectares, 1,613 were inventoried for land use and land cover.

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

Parcel status with respect to farming	Number of parcels	% of parcels in the ALR
Used for farming	-	-
Used for grazing	-	-
Not used for farming or grazing	39	95 %
Not inventoried	2	5 %
TOTAL	**41**	**100 %**

Table 21 demonstrates that of the 41 Crown owned parcels in the ALR, 95% are "Not used for farming or grazing". This would probably increase to 100% if all Crown parcels in the ALR were inventoried.

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

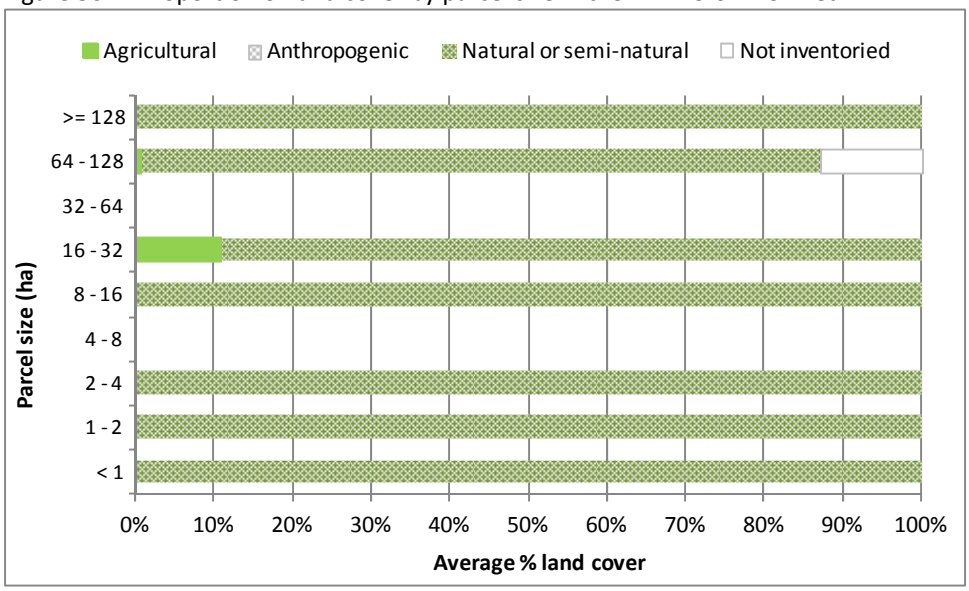


Figure 36 shows that for Crown parcels, almost all of the parcel area is in Natural or semi-natural land cover.

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 513 privately owned parcels in the ALR which are included in further analysis of residential use in the ALR. There is no Crown owned parcels in the ALR with residences.

Table 22. 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	82	16%	76	15%	158
Available for farming - grazing	20	4%	1	< 1%	21
Available for farming	211	41%	115	22%	326
Unavailable for farming - grazing	-	-	-	-	-
Unavailable for farming	1	< 1%	7	1%	8
TOTAL	**314**	**61%**	**199**	**39%**	**513**

Table 22 shows that 314 or 61% of privately owned parcels in the ALR have residences. This would probably increase to about 65% if all small parcels had been inventoried.

Most of these parcels are not used for farming but "Available for farming".

Table 23. 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	Mobile home park		
Used for farming	11 (9)	8 (7)	61 (57)	7 (7)	2 (2)	-	-	89	82
Available for farming - grazing	2 (1)	2 (2)	16 (15)	2 (2)	-	-	-	22	20
Available for farming	14 (13)	18 (17)	160 (156)	20 (20)	3 (3)	1 ( )	2 (2)	218	211
Unavailable for farming	-	-	-	-	-	-	1 (1)	1	1
TOTAL RESIDENCES	**27**	**28**	**237**	**29**	**5**	**1**	**3**	**330**	
TOTAL PARCELS	**23**	**26**	**228**	**29**	**5**	**-**	**3**		**314**

* xx (yy) - xx indicates the number of residences and (yy) indicates the number of parcels where that residence is the largest on the parcel.
For example, if a small house and estate house occur on the same parcel, the parcel is counted in the estate house column.

Table 23 describes the 330 residences observed on 314 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 5 estate residences (> 5,000 sq. ft) in the ALR.

Figure 37. Total ALR area in residential footprint by parcel size – Privately owned

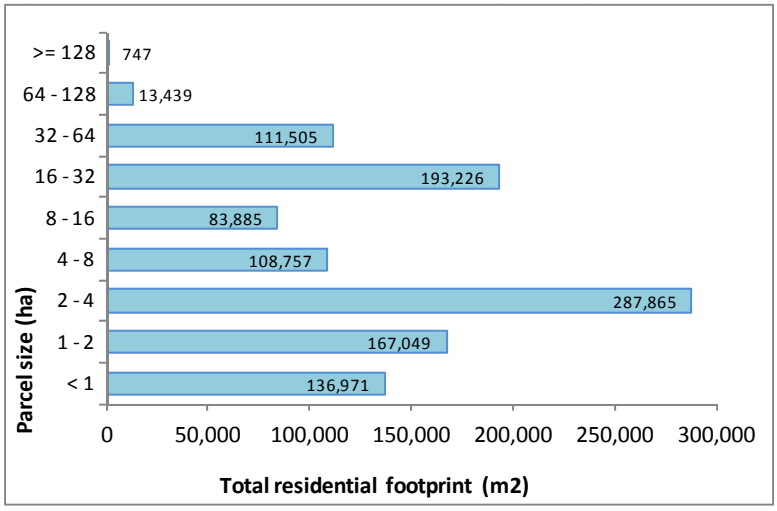


Figure 37 illustrates that there are over 110 hectares (1,103,444 m2) of ALR land in residential footprints distributed across all parcel sizes.

Figure 38. Proportion of parcels with residences by parcel size – Privately owned

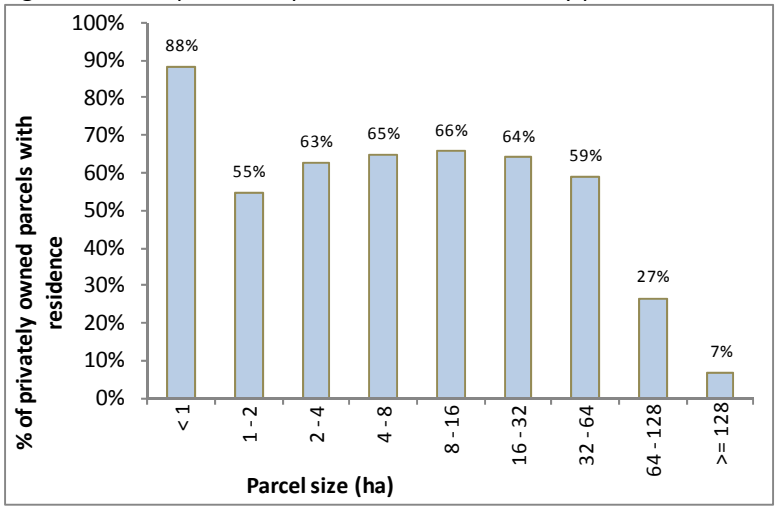


Figure 38 shows that the proportion of privately owned parcels with residences is highest on parcels less than 1 hectare.

Although 88% of parcels less than 1 hectare are shown to have residences, this would increase to about 95% if all 69 small parcels not inventoried were assumed to have residences.

Figure 39. Average percent of parcel area in residential footprint by parcel size – Privately owned

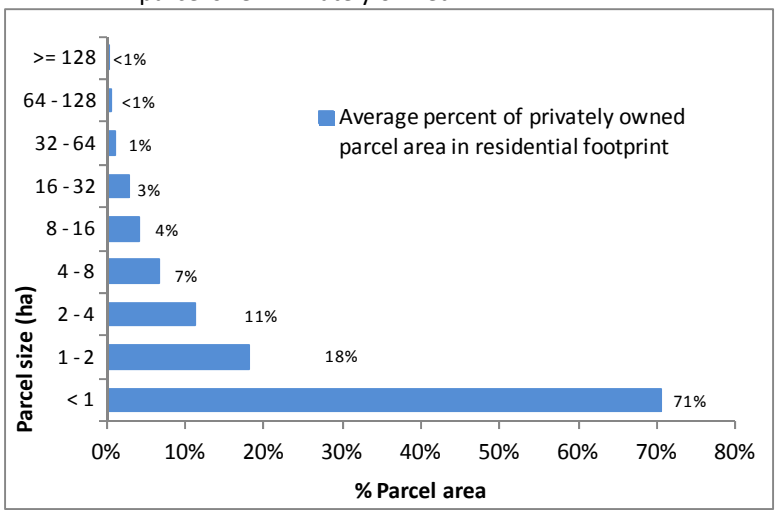


Figure 39 demonstrates that residential footprints on smaller parcels use a much greater proportion of the parcel area than those on larger parcels.

Figure 40. Average total area in residential footprint by parcel size – Privately owned

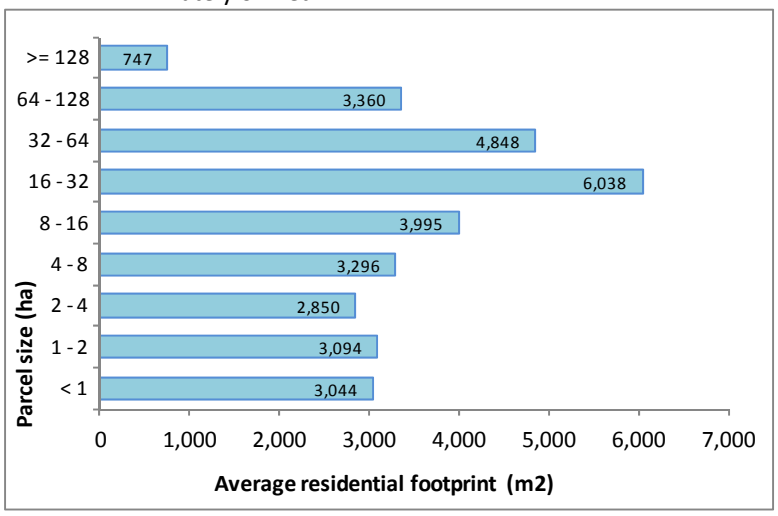
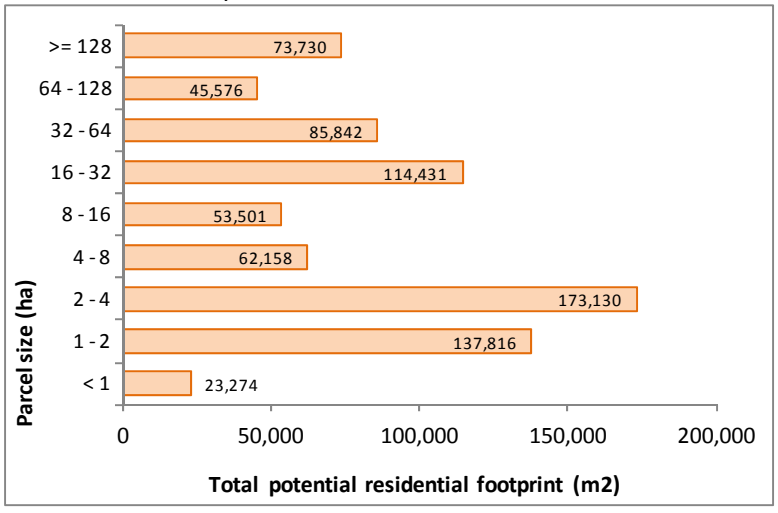


Figure 40 illustrates that even though residential footprints on small parcels use a greater proportion of the parcel area, the average size of the footprint is smaller when compared to the footprint on large parcels.

Figure 41. Total potential area in residential footprint by parcel size – Privately owned



There are 192 privately owned parcels in the ALR "Used for farming" or "Available for farming" that do not yet have a residence (Refer to Table 22 above).

If all 192 parcels built a residence, using the average percent of parcel area in residential footprint presented above, Figure 41 shows that an additional 77 hectares (769,456 m2) of ALR land would be permanently removed from potential production.

The most significant potential loss of ALR land is on parcels 2-4 hectares where 59 parcels do not yet have a residence.

Table 24. 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	
Forage, pasture	5	4	39	6	2	56
Equine	2	2	9	1	-	14
Livestock	2	1	7	-	-	10
Crop transition	-	-	1	-	-	1
Poly greenhouse	-	-	1	-	-	1
TOTAL PARCELS	**9**	**7**	**57**	**7**	**2**	**82**

*there are 82 parcels "Used for farming" with 89 residences

There are 82 privately owned parcels with residences that are "Used for farming" (refer to Table 22 above).

Table 24 shows that all large and estate residences are directly associated with forage, pasture or equines and none are directly associated with typical commercial agriculture such as livestock.

Table 25. 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	8	62	53	66 %	14
Livestock	1	8	1	92 %	8
TOTAL	**9***	**70**	**53**		

*there are 9 parcels "Used for farming" with 9 large or estate residences.

There are 9 privately owned parcels in the ALR with "Large" or "Estate" residences that are "Used for farming" (see Table 24 above).

Table 25 illustrates the crop area associated with these large residences. For instance, 1 parcel with equines as the main agricultural activity has 8 hectares of associated crop area.

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	Oats	Trees (plantation)	Crop transition	
< 1	54	-	-	1	55
1 - 2	65	-	-	-	65
2 - 4	36	2	1	-	39
4 - 8	22	-	-	-	22
8 - 16	24	-	-	-	24
16 - 32	17	-	-	-	17
32 - 64	5	-	-	-	5
64 - 128	3	-	-	-	3
>= 128	-	-	-	-	-
TOTAL NUMBER OF FIELDS	**226**	**2**	**1**	**1**	***230***
AVERAGE CROP AREA (ha)	**7 ha**	**3 ha**	**2 ha**	**< 1 ha**	**7 ha**
MEDIAN CROP AREA (ha)	**2 ha**	**3 ha**	**2 ha**	**< 1 ha**	**2 ha**
AVERAGE PARCEL SIZE (ha)	**16 ha**	**38 ha**	**12 ha**	**2 ha**	**16 ha**

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 *	Unmaintained **	
< 1	12	32	12	2	-	58
1 - 2	23	6	35	1	-	65
2 - 4	16	2	19	3	-	40
4 - 8	9	-	13	2	1	25
8 - 16	7	-	16	1	-	24
16 - 32	6	-	8	2	-	16
32 - 64	2	-	3	-	-	5
64 - 128	2	-	1	-	-	3
>= 128	-	-	-	-	-	-
TOTAL NUMBER OF FIELDS	**77**	**40**	**107**	**11**	**1**	***236***
AVERAGE CROP AREA (ha)	**8 ha**	**< 1 ha**	**8 ha**	**6 ha**	**5 ha**	***6 ha***
MEDIAN CROP AREA (ha)	**2 ha**	**< 1 ha**	**2 ha**	**4 ha**	**5 ha**	***2 ha***
AVERAGE PARCEL SIZE (ha)	**19 ha**	**1 ha**	**20 ha**	**23 ha**	**92 ha**	***16 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 natural pasture or rangeland areas

Area (ha)	Number of areas Pasture (natural)
< 1	10
1 - 2	11
2 - 4	12
4 - 8	2
8 - 16	5
16 - 32	2
32 - 64	3
64 - 128	-
>= 128	-
TOTAL NUMBER OF AREAS	**45**
AVERAGE AREA (ha)	**8 ha**
MEDIAN AREA (ha)	**3 ha**
AVERAGE PARCEL SIZE (ha)	**21 ha**

LIVESTOCK

Table A4. 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	-	1	-	-	1
1 - 2	3	7	-	-	10
2 - 4	6	11	-	-	17
4 - 8	3	1	-	-	4
8 - 16	3	5	-	-	8
16 - 32	-	3	-	-	3
32 - 64	-	3	-	-	3
64 - 128	-	2	-	-	2
>= 128	-	1	-	-	1
TOTAL NUMBER OF ACTIVITIES	**15**	**34**	**-**	**-**	***49***
AVERAGE PARCEL SIZE (ha)	**4 ha**	**20 ha**	**-**	**-**	***15 ha***

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

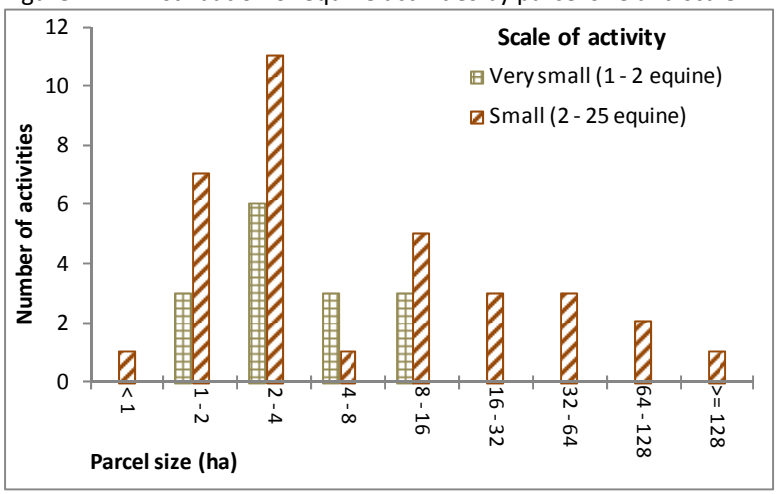


Figure A2. Land cover on parcels with equine activities[1]

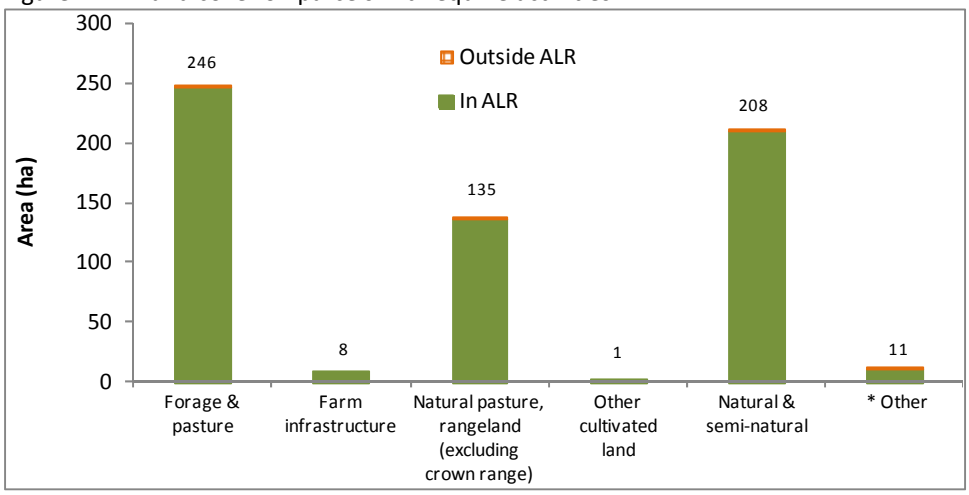


Table A5. Distribution of beef activities by parcel size and scale

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	1	2	-	-	3
2 - 4	-	3	-	-	3
4 - 8	-	1	-	-	1
8 - 16	-	2	1	-	3
16 - 32	-	-	3	-	3
32 - 64	-	4	-	-	4
64 - 128	-	-	2	1	3
>= 128	-	-	-	1	1
TOTAL NUMBER OF ACTIVITIES	**1**	**12**	**6**	**2**	**21**
AVERAGE PARCEL SIZE (ha)	**2 ha**	**18 ha**	**37 ha**	**152 ha**	**35 ha**

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

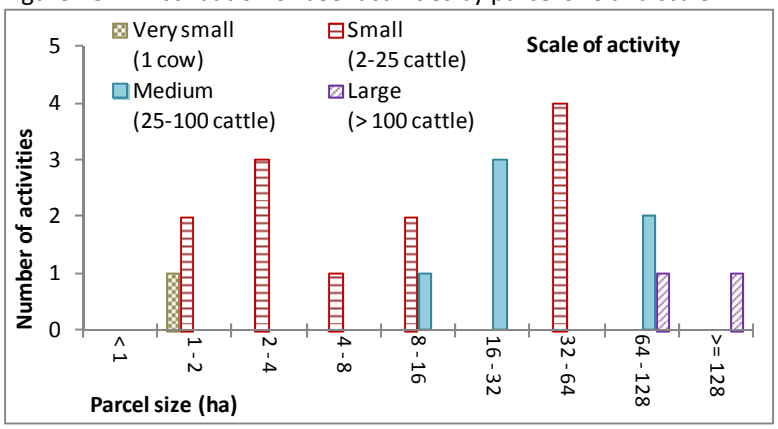


Figure A4. Land cover on parcels with beef activities[2]

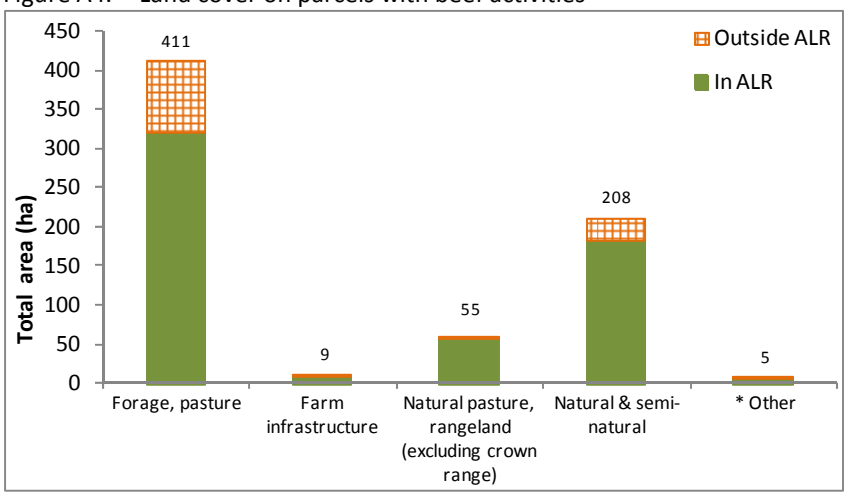


Table A6. Distribution of livestock operations by type

Parcel size (ha)	Type of activity						Total number of activities
	Beef	Poultry	Sheep / lamb / goat	Llama / alpaca	Unknown livestock	Equine	
< 1	-	-	-	-	-	1	1
1 - 2	3	-	-	-	1	10	14
2 - 4	3	-	1	1	1	17	23
4 - 8	1	-	-	-	-	4	5
8 - 16	3	-	-	-	-	8	11
16 - 32	3	-	-	-	-	3	6
32 - 64	4	-	-	-	-	3	7
64 - 128	3	-	-	-	-	2	5
>= 128	1	1	-	-	-	1	3
TOTAL NUMBER OF ACTIVITIES	**21**	**1**	**1**	**1**	**2**	**49**	***75***
MEDIAN PARCEL SIZE (ha)	**18 ha**	**202 ha**	**2 ha**	**4 ha**	**2 ha**	**3 ha**	**4 ha**
AVERAGE PARCEL SIZE (ha)	**35 ha**	**202 ha**	**2 ha**	**4 ha**	**2 ha**	**15 ha**	**20 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