

Growing Knowledge



Ministry of
Agriculture

Agricultural Land Use Inventory

Reference Number: 800.510-87.2014

South Cariboo Cariboo Regional District Summer 2014



Photo credit: G. Jasper, Ministry of Agriculture

**Strengthening Farming Program
Ministry of Agriculture**

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Disclaimer:

Agriculture and Agri-Food Canada 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 or Agriculture and Agri-Food Canada.

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Acronyms

AGRI	BC Ministry of Agriculture
ALR	Agricultural Land Reserve
ALUI	Agricultural Land Use Inventory
CRD	Cariboo Regional District
GIS	Geographic Information Systems
OCP	Official Community Plan

Executive Summary

The Cariboo Regional District (CRD) is located in the central interior of BC and consists of 12 electoral areas (A-L) and 4 member municipalities. CRD is responsible for providing many services to the electoral areas, including land use planning and the development of Official Community Plans. The Agricultural Land Use Inventory (ALUI) will provide background information for updating Official Community Plans (OCP) in the region.

In the summer of 2014, the Ministry of Agriculture and CRD partnered to conduct an ALUI in the South Cariboo OCP region. The South Cariboo OCP area is adjacent to the District of 100 Mile House and straddles the borders of Electoral Area G, Electoral Area H, and Electoral Area L. The ALUI was funded by Cariboo Regional District, BC Ministry of Agriculture and Investment Agriculture Foundation of BC.

ALUIs help to understand the type and extent of agricultural activities in the inventory area and provide a baseline which can be used to measure land use change over time. The data can be used to determine the capacity for agricultural expansion, as well as to quantify the amount of land within the Agricultural Land Reserve (ALR) that is unavailable for agriculture. The data allows the estimation of agricultural water demand with the use of an irrigation water demand model.

Included in the inventory were all parcels i) completely or partially within the ALR; ii) classified by BC Assessment as having “farm” status for tax assessment iii) zoned by local government bylaws to permit agriculture and showing signs of agriculture on aerial photography; iv) with an active water licence for farming or irrigation purposes. Indian reserves were inventoried if they met one of the above criteria. Due to differences in levels of governance, planning, and decision making, ALUI results for land on Indian reserves are presented separately from the main inventory totals.

The ALR in South Cariboo consists of 29,997 ha. Of this area, 26,414 ha (88%) met one of the above criteria and was included in the inventory. A total of 2,439 ha (8%) in the ALR was not inventoried as it was outside of legally surveyed parcels in rights of ways, water, or unsurveyed Crown land (2,347 ha), or was on a parcel that had less than 100 m² in the ALR (2 ha). The remaining 1,144 ha (4% of the ALR) was on Indian reserves and is not included in the main inventory total.

Of the inventoried 26,414 ha in the ALR, 6,209 ha (21%) is on Crown owned parcels and 20,205 ha (67%) is on privately owned parcels. An additional 7,694 ha of non-ALR land was inventoried.

In total 1,503 parcels were inventoried, with a combined area of 34,108 ha. The inventory area consists of 9,507 ha of Crown owned land (6209 ha in the ALR and 3,298 ha outside the ALR) and 24,601 ha of privately owned land (20,205 ha in the ALR and 4,396 ha outside the ALR).

An additional 1,823 ha on Canim Lake 1 and Canim Lake 2 Indian reserves was inventoried (1,144 ha in the ALR and 679 ha outside the ALR). Canim Lake 1 is 67% within the ALR (1,079 ha of ALR) and Canim Lake 2 is 100% within the ALR (65 ha of ALR).

The ALUI was conducted using visual interpretation of aerial imagery combined with a drive-by “windshield” survey method to capture a “snapshot in time” of land use and land cover. Land cover is defined as the biophysical material at the surface of the earth while land use is defined by how people utilize the land. These two types of data allow for different forms of analysis.

In the ALR by land cover, 2,904 ha (10%) was farmed, 425 ha (1%) was anthropogenically modified (not farmed), and 23,085 ha (77%) was in a natural or semi-natural state. Included in the natural or semi-natural land is 15,858 ha (53% of the ALR) in natural pasture or rangeland. Another 1,144 ha (8%) was in Indian reserves and the remaining 4% was outside of legally surveyed parcel and is considered unavailable for farming. An additional 543 ha outside of the ALR was farmed. See Table 1 and Map 1 for more details.

For land use, the entire parcel was examined and a “Used for farming” definition was applied based on the percentage of the parcel in cultivated crops, farm infrastructure, and/or the scale of livestock production. In the ALR by land area, a total of 9,379 ha (31% of the ALR) is on parcels “Used for farming”, 10,384 ha (32%) is on parcels “Used for grazing” (5,328 ha have private ownership & 5,056 ha have Crown ownership), and 6,650 ha is on parcels not used for farming or grazing (5,497 ha have private ownership & 1,153 ha have Crown ownership). See Tables 2 - 6 and Map 2 for more details.

The inventory provided insight into ALR land available for farming by looking at land cover and land use. Of the 29,997 ha of ALR land in the South Cariboo OCP area, 2,858 ha (10%) is actively farmed and 33 ha (<1%) supports farming (e.g. houses, farm roads, etc.) and 1,203 ha (4%) is unavailable for farming due to existing land use or land cover. That leaves 22,319 ha (74% of the ALR) that is available for cultivation. Of this available land 15,858 ha (53% of the ALR) is currently used for natural pasture or rangeland, 16,330 ha have private ownership and 5,989 ha have Crown ownership. Agricultural capability was assessed for lands that are available for cultivation. Of the 22,319 ha available for cultivation in the ALR, 5,746 ha (26%) is Class 3, 2,676 ha (12%) is Class 4, and 13,156 ha (59%) is Class 5 land. See Table 7, Table 10 and Figure 7 for details.

There are 3,195 ha of cultivated field crops in South Cariboo (2,717 ha in the ALR and 478 ha outside the ALR). Forage & pasture was the main crop recorded accounting for 99.8% of all crops. In total, there were 1,652 ha in forage, 968 ha in pasture and 520 ha in forage & pasture. Also recorded were: 1 fallow field, 1 nursery (ornamentals & shrubs) field, 3 berry fields, and 8 vegetable fields. All non forage & pasture crops have a combined area of 8 ha. Of the cultivated crops in the ALR, 54% occur on agricultural capability Class 3 land, 14% occur on Class 4 land, 26% occur on Class 5 land, and 6% occur on organic soils. See Tables 9, 15, and 16 for details.

Irrigation use was captured by crop type and irrigation system type to aid in developing a water demand model for agriculture. Irrigation in the South Cariboo is rare with only 22% (712 ha) of the cultivated crops being irrigated. Hydrophytic grass, or riparian meadows, account for 395 ha (55% of the crops under irrigation) and exclusively utilize sub-surface irrigation systems. See Table 19 and Map 4 for details.

Natural pasture and rangeland is a critical component to the beef industry in the South Cariboo. A total of 21,058 ha of natural pasture & rangeland was recorded in the inventory area. This includes 7,532 ha (36%) on Crown owned parcels and 13,526 ha (64%) on privately owned parcels. The majority of all natural pasture and rangeland is in “treed closed” land cover, which is defined as an area having greater than 60% in treed cover. Treed land cover generally offers lower forage yields to grazing livestock than open grasslands. See Table 20, Table 21 and Map 4 for details.

Livestock activities were recorded, but are very difficult to measure using a windshield survey methodology. Livestock may not be visible if they are in barns, are on another land parcel, or on Crown range tenures. The inventory data does not identify animal movement between parcels that make up a farm unit, but reports livestock at the parcel where the animals or related structures are observed. No

actual livestock numbers were obtainable through the inventory, so the results were reported as a range in terms of animal unit equivalents for each parcel.

Equine and beef are the most common livestock types in South Cariboo. There are 48 beef homesite operations in the inventory area including 4 large (>100 cattle), 13 medium (25 -100 cattle), 28 small (2 – 25 cattle), and 3 very small (1 cow) operations. There are 133 recorded equine homesite activities. Although equines are not important for food production, they contribute greatly to the rural life style. All recorded equine activities were “non-intensive” and only 2 had more than 25 animals. Also recorded were 15 very small poultry activities (<100 birds), 25 sheep/lamb/goat activities (all are very small or small scale), 4 llama/alpaca activities, 4 specialty – fur bearing, and 2 swine activities. See Tables 22 – 25 for more information.

ALR parcel size analysis was conducted on 1,188 parcels with 26,229 ha of ALR land. Of these parcels, 1,063 with 20,019 ha were under private ownership and 125 parcels with 6,138 ha were under Crown ownership.

On privately owned ALR parcels, the average parcel size is 20.6 ha, the median parcels size is 4 ha. Twenty-six percent (26%) of the privately owned ALR parcels are less than 1 ha, 46% are less than 4 ha, and 63% are less than 8 ha. Of the privately owned ALR parcels:

- 238 parcels (22%) are “Used for farming”,
- 114 parcels (11%) are “Used for grazing”, and
- 711 parcels (67%) are “Not used for farming or grazing”.

In general, the proportion of parcel “Used for farming” and “Used for grazing” increases as the parcel size increases. Although parcels of all sizes are “Used for farming”, Small parcels are far less likely to be farmed or grazed than larger parcels. See Figures 27 – 30 for more information.

This report provides some insight into the current status of agriculture. This baseline information can be used to inform decisions on how to best manage the agricultural land base in order to support and strengthen farming in the future.

Agrologist Comments

Agriculture has been ongoing in the South Cariboo area since the Cariboo Gold Rush in the late 1800's. The Cariboo was filled with roadhouses along the gold rush trail which served as stop overs for miners traveling to and from the gold fields in the North Cariboo. The roadhouses included mixed farms to supply many of the travelers' needs. These mixed farms included: Equine (driving and pack horses), Dairy (milk, cheese, and butter), Poultry (broilers and eggs), mixed livestock (beef, sheep and goats) and vegetable production. By 1887, several producers were located within the survey area. The British Columbia Directory for 100 Mile House included 3 dairy, 2 stock ranches, 1 stock breeder, 2 stagecoach men and 1 stockman from 100 Mile House to 111 Mile house se¹. The agriculture industry expanded during the early 1900's after the building of the Pacific Great Eastern Railway. The Forest Grove and Canim Lake areas produced cream that was sent on the rail to the creamery in Quesnel. In the south part of the survey area, a stockyard was built at Lone Butte. Here cattle were driven to the stockyards from around the area and then shipped by rail to Vancouver markets².

Today, the South Cariboo continues to reflect its agricultural history. Although dairy production has diminished, the survey area still includes a mix of farming types (Equine, beef, sheep, poultry, llama, rabbits, berries, and vegetables). In 2011, Statistics Canada indicated that Cariboo Regional District Area G, H, and L generated \$8,421,422.00 in gross farm cash receipts, \$839,210.00 in wages and salaries, and had \$303,010,838.00 in Farm Capital on 267 farms. These farms are supported by producer involved organizations such as the Lone Butte Farmers Institute, the South Cariboo Regional Cattlemen's Association, Interlake's Cattle Belles, BC Farm Women's Network, South Cariboo Agriculture Enterprise Centre and the Cariboo Chilcotin Coast Invasive Plant Committee. As well there is the Canim Valley 4H Club and the Lone Butte 4 H Club which encourage youth to be involved with agriculture in the area. 100 Mile House hosts the popular South Cariboo Farmers Market that generates value added revenue for producers and is an avenue for consumers to access local products. The area also hosts fall fairs in 100 Mile House and Lone Butte, a little Britches Rodeo in May, and many Guest Ranches that generate Agritourism revenue.

This report identifies 6,461 ha or 21% of ALR land that is "not used for farming" or grazed as of 2014 and is available for farming. The majority of this land is located on privately owned parcels and is covered with timber (74%). Potential future options for this land to be brought into production need to consider the costs/benefits of developing these lands into cultivated fields. Options such as silvopasture which incorporate the existing timber stands but increase forage production and overall productivity of the site (timber, non-timber forest products as well as forage/livestock gain) may be well suited to the area. When comparing "used for farming" and "not used for farming" parcels with significant amounts of natural treed land cover, it is important to note that the difference does not always reflect the presence of cultivation or improved land. In many cases it simply reflects that additional lands have been fenced to manage livestock grazing in forested areas.

Figure 32 of this report gave an indication of the number of privately owned parcels in the ALR by size and agricultural use including:

- 46% (493 parcels) are less than 4 ha (9.9 acre). Of the privately owned ALR parcels less than 4 ha, 10% are farmed and <1% are grazed
- 23% (247 parcels) are between 4 and 16 ha (39.5 acre). Of the privately owned ALR parcels 4 -16 ha, 17% are farmed and 7% are grazed

¹ http://www.vpl.ca/bccd/index.php/browse/title/1887/British_Columbia_Directory

² Helen Horn February 2015 personal communication

- 19% (207 parcels) are between 16 ha and 64 ha (158 acre). Of the privately owned ALR parcels 16 – 64 ha, 45% are farmed and 26% are grazed
- 11% (116 parcels) are greater than 64 ha (158 acre). Of the privately owned ALR parcels greater than 64 ha, 47% are farmed and 35% are grazed.

This finding is consistent with other interior regions of the province where the smaller the parcel size is, the less likely the parcel is to be farmed. The inventory also found that 89% of the total privately owned ALR area is on parcels greater than 16 hectares (Figure 28). The majority of the ALR area on private land is still in large tracts and is currently being farmed and/or grazed. Overall farm size could not be determined with this inventory as many beef and equine operations own and/or lease multiple parcels.

- *Of the total privately owned ALR area, 75% was used for farming and/or grazing*
- *Of the privately owned ALR area on parcels greater than 16 ha, 80% was used for farming and/or grazing*

With 46% of the privately owned ALR parcels under 4 ha, farming options for small lots need to be evaluated. Many of the typically high value, low acreage, production systems that are located in the southern portions of the province are not common in the Cariboo (e.g. large scale poultry, mushrooms, intensive vegetable, and grapes). Some of the farming options for the smaller parcels which are currently “not used for farming” are market gardens and/or greenhouses to meet the local produce demand in the south and central Cariboo areas. Potential parcels would need to be assessed for irrigation and soil amendment requirements. Livestock uses on small parcels require intensive management of grazing and nutrient management plans to be successful in the long-term³. Areas south of Horse Lake and near Canim Lake that are of Class 3 agricultural capability should be considered in future agriculture planning as they reflect a greater future capacity and ability to produce a variety of crops.

The survey area has variable requirements for irrigation. The area includes sub-regions of distinctly different precipitation patterns with the western portion of the survey area requiring irrigation and the eastern portion receiving sufficient rains to support dryland production. Historically, ranches used ditching with flood irrigation in the western portion and created fields on poorly drained soils in the eastern portion. Today these types of fields still exist and the survey attempted to capture them by labeling them as fields with sub-surface irrigation or riparian meadow fields. Over time as ranches expanded, sprinkler irrigation systems were added. These systems are designed for peak irrigation requirements and the systems are distributed and utilized over a larger area. The survey found that 22% of all cultivated crops were irrigated. Irrigation may have been under reported, as the spring of 2014 had above average precipitation for the area (therefore producers may have chosen not to use irrigation) and it is difficult to see handmove systems on fields when they are not running. Future irrigation requirements and use in the area will be dependent on climate change adaptation, site suitability, and cost/benefits of irrigation infrastructure.

³ http://www.agf.gov.bc.ca/resmgmt/publist/300Series/305104-3_Livestock_Poultry_-_Mgmt%20Practices_for_Small_Parcel.pdf

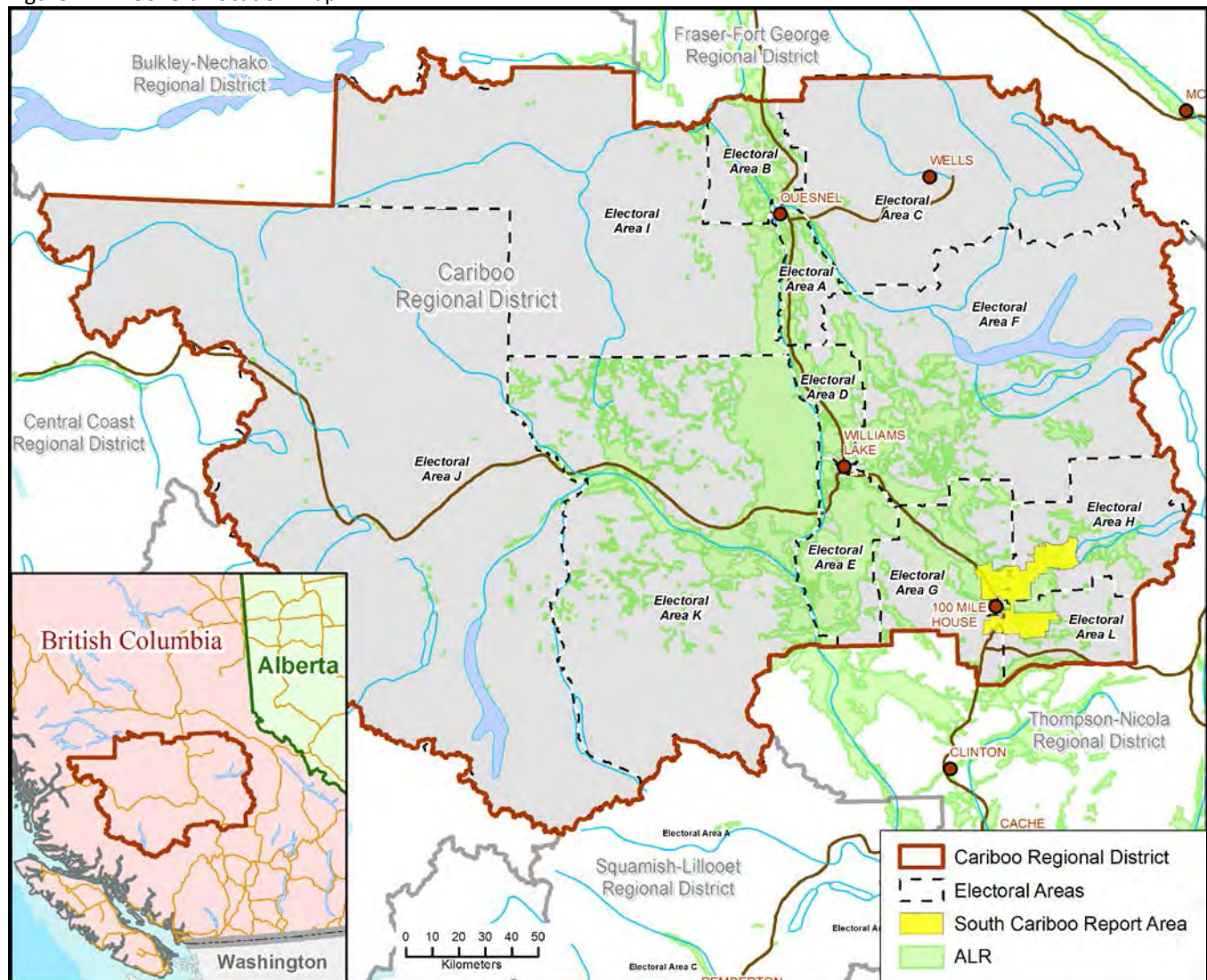
1. General Information

Cariboo Regional District is a regional government located in the central interior of BC that consists of 12 electoral areas (A through L) and 4 incorporated member municipalities. CRD is responsible for providing many services to the electoral areas, including land use planning and the development of Official Community Plans. The Agricultural Land Use Inventory (ALUI) will provide background information for updating Official Community Plans in the region.

The South Cariboo inventory area is defined by the South Cariboo Official Community Plan (OCP) boundaries. The OCP area is adjacent the District of 100 Mile and straddles the borders of Electoral Area G, Electoral Area H, and Electoral Area L.

The South Cariboo OCP has a total area of 64,564 ha⁴, with 60,402 ha in land and 4,162 ha in waterbodies.

Figure 1. General location map



⁴ Calculated in GIS.

AGRICULTURAL LAND RESERVE

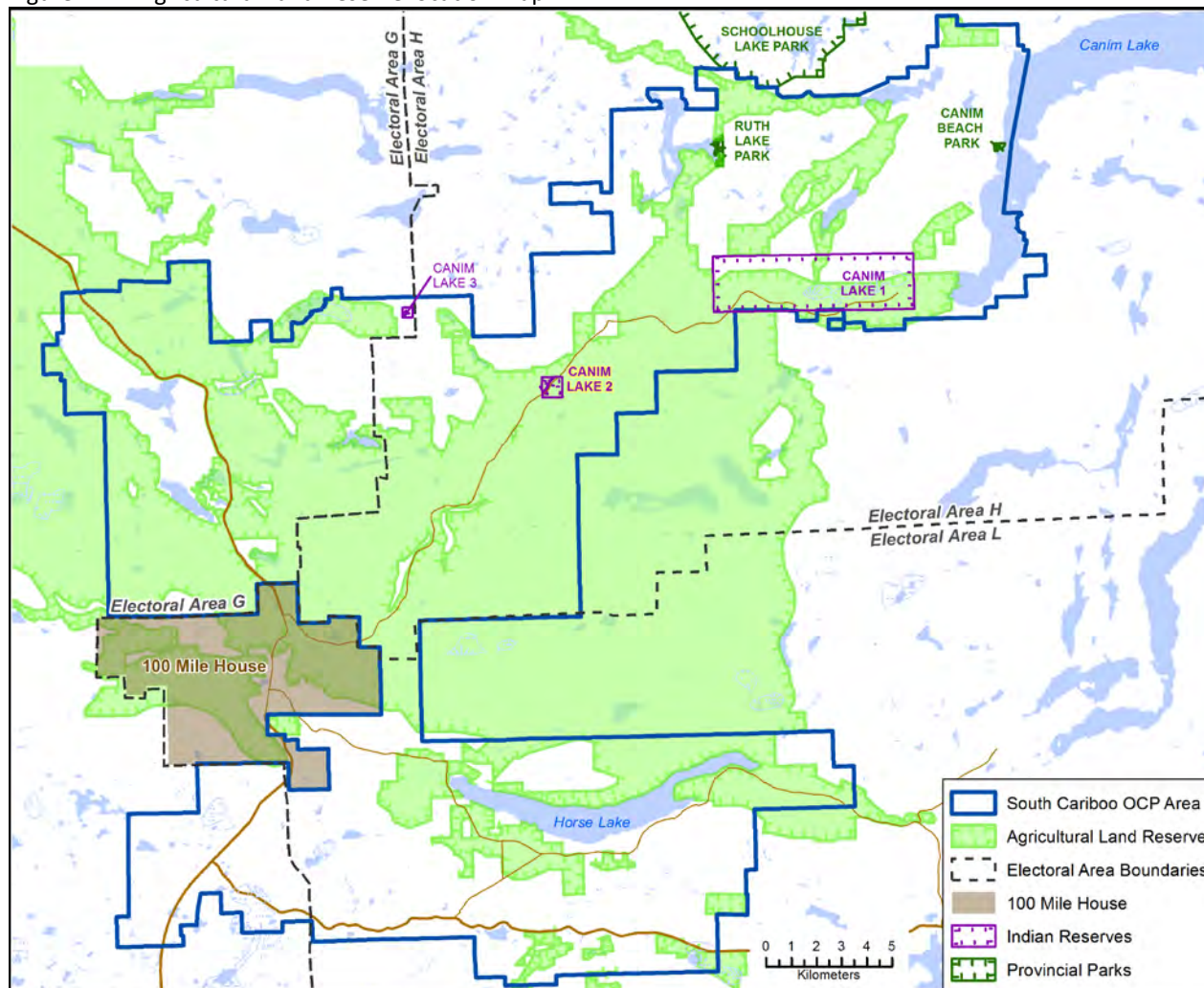
The Agricultural Land Reserve (ALR) is a provincial land use zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

There are 936,197 ha⁵ of ALR land within the Cariboo Regional District (see Figure 1). The South Cariboo OCP area contains 29,997 ha⁶ of ALR land, which is 3% of the ALR within Cariboo Regional District.

The total size of the area of interest is 64,564 ha⁷. Of this area, only 48,788 ha are in legally surveyed parcels. With 29,997³ ha in the ALR, 46% of the OCP area is in the ALR, and 61% of the legally surveyed parcel area is in the ALR. The ALR area includes:

- 26,414 ha in inventoried parcels
- 2,437 ha outside legally surveyed parcels (rights-of-way, water, unsurveyed Crown land, etc.)
- 1,144 ha on Canim Lake 1 and Canim Lake 2 Indian reserves (reported separately from the main inventory totals)
- 2 ha on legally surveyed parcels that each have less than 500 square meters in the ALR

Figure 2. Agricultural Land Reserve location map



⁵ Provincial Agricultural Land Commission (ALC) Annual Report 2012/13 Pg 31. <http://www.alc.gov.bc.ca>

⁶ Agricultural Land Commission, ALR mapping, Land and Resource Data Warehouse, 2013-10-31 (area calculated in GIS)

⁷ Calculated in GIS.

INVENTORY AREA

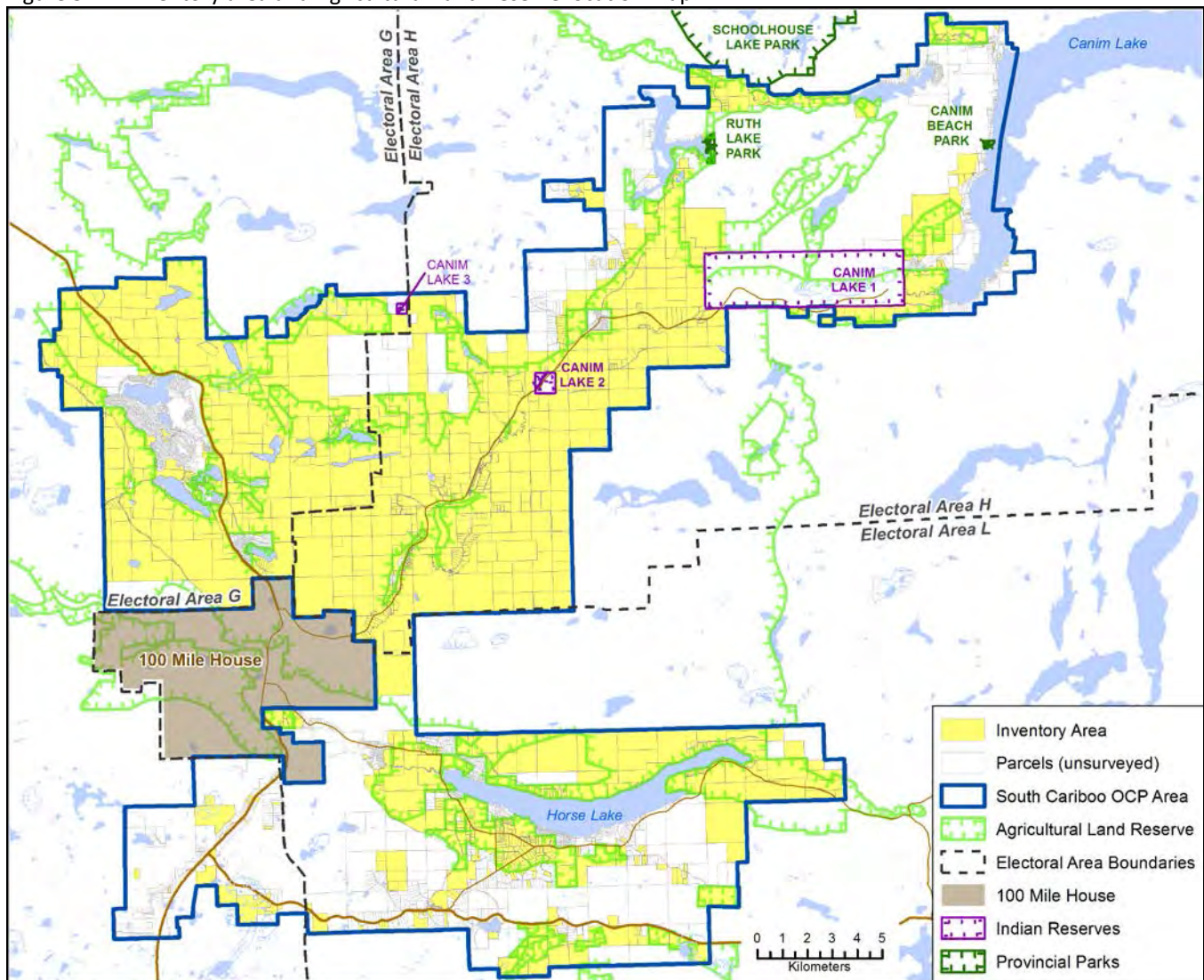
The total inventory area encompasses 1,503 parcels with a combined area of 34,108 ha, or 70% of South Cariboo's legally surveyed parcel area. Included are all parcels:

- completely or partially within the Agricultural Land Reserve
- classified by BC Assessment as having "Farm" status for property tax assessment
- zoned by local government bylaws to permit agriculture and exhibiting signs of agriculture on aerial photography
- with an active water licence for farming or irrigation purposes

The amount of ALR land included in the inventory area is 26,414 ha located on 1,346 parcels. This area is 88% of the ALR within South Cariboo.

Also surveyed was 1,823 ha of land on Canim Lake 1 and Canim Lake 2 Indian reserves. These reserves were inventoried as Canim Lake 1 is 67% within the ALR (1079 ha of ALR) and Canim Lake 2 is 100% within the ALR (65 ha). Land inventoried on reserves is not included in main inventory totals due to differences in levels of governance, planning, and decision making process. Findings on Indian reserves are presented in Appendix D.

Figure 3. Inventory area and Agricultural Land Reserve location map



PARCEL OWNERSHIP

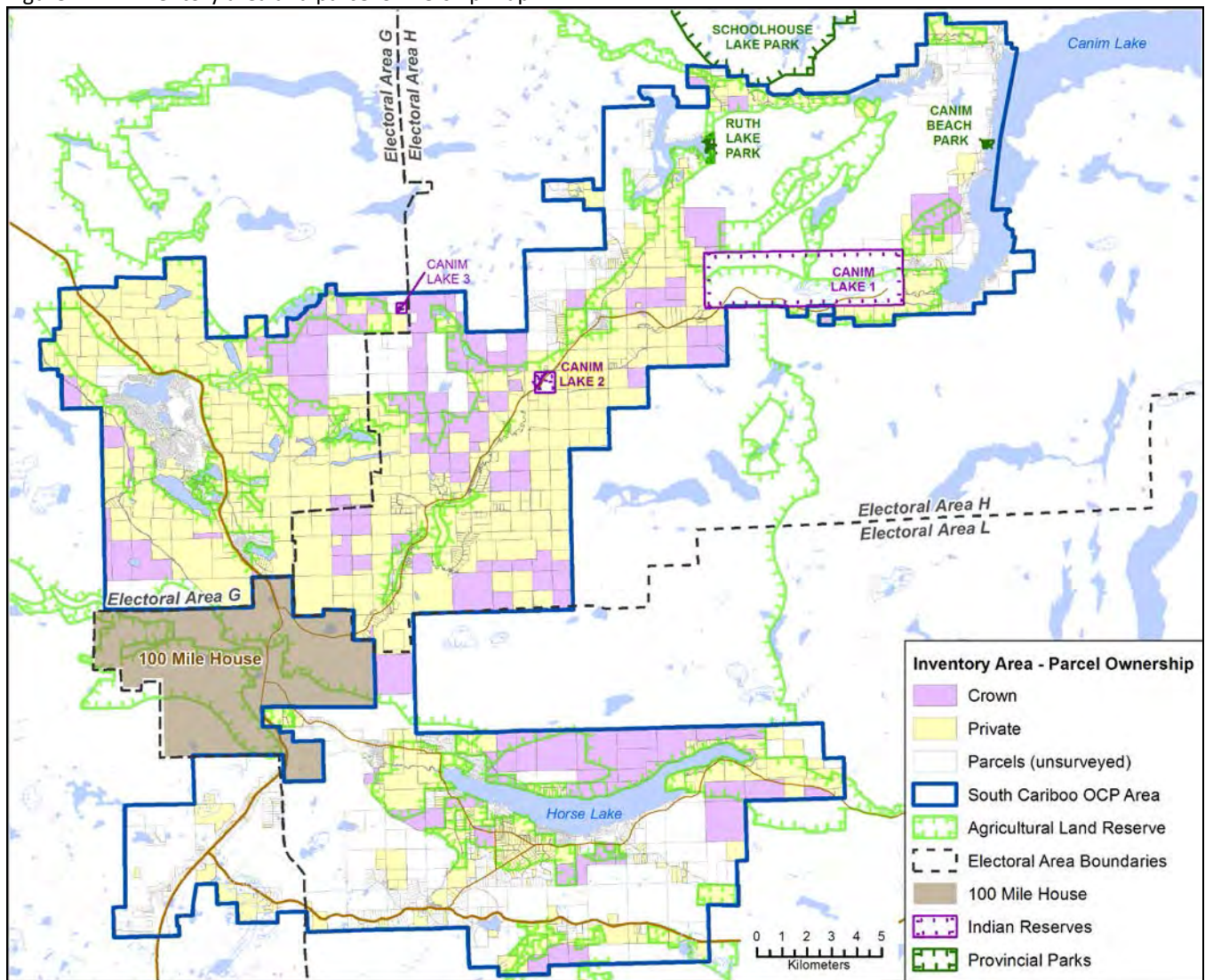
Crown owned land is separated from privately owned land throughout this report. The agricultural activities likely to occur on Crown owned land are limited and may be subject to specific restrictions.

Of the 1,503 parcels surveyed as part of this inventory:

- 146 parcels are Crown owned. This includes:
 - 9,507 ha or 28% of the entire survey area
 - 6,209 ha in the ALR or 21% of the entire ALR area
 - 3,208 ha outside the ALR
- 1,357 parcels are privately owned. This includes:
 - 24,601 ha or 72% of the entire survey area
 - 20,205 ha in the ALR or 67% of the entire ALR area
 - 4,396 ha outside the ALR

Parcels owned by Cariboo Regional District are included in the private ownership category as they are not subject to the same restrictions as Crown provincial or Crown federal parcels. Indian reserves are excluded from the above totals.

Figure 4. Inventory area and parcel ownership map



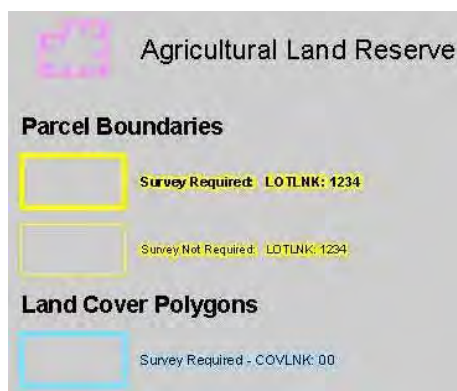
2. Methodology

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 South Cariboo land use inventory was conducted in the summer of 2014 by BC Ministry of Agriculture agrologists with the assistance of a GIS technician⁸. The survey crew visited each property and observed land use, land cover, and agriculture activity from the road. Where visibility was limited, data was interpreted from aerial photography in combination with local knowledge. The technician entered the survey data into a database on a laptop computer.



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

- The legal parcel boundaries (cadastre)⁹
- 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



⁸ Technician provided by Cariboo Regional District.

⁹ Cadastre mapping (2013) provided by Cariboo Regional District.

DESCRIPTION OF THE DATA

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

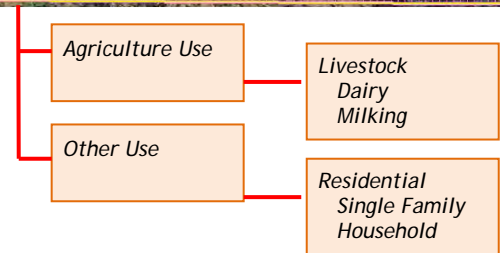
Once acquired through the survey, the data was brought into a Geographic Information System (GIS) to facilitate analysis and mapping. Digital data, in the form of a tabular database and GIS spatial layers (for maps), may be available with certain restrictions through a terms of use agreement.

General land use:

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

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

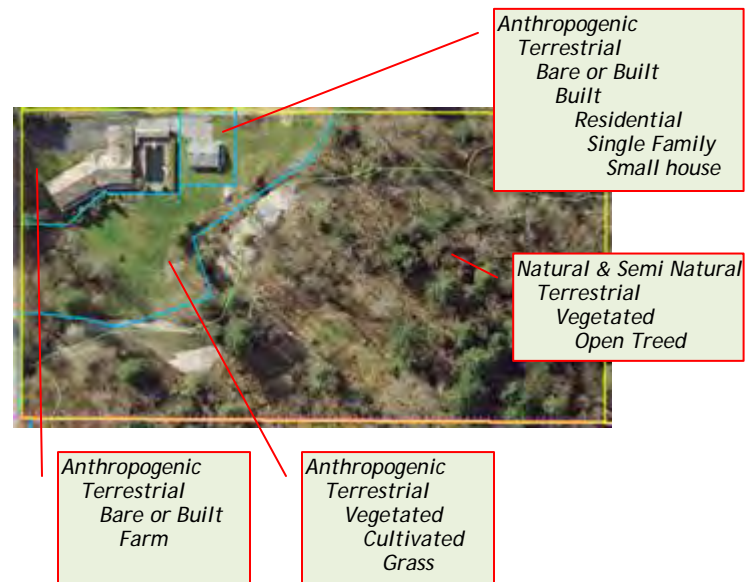
In addition, the availability of non-farm use properties for future farming was assessed based on the amount of potential land for farming on the property and the compatibility of existing uses with future farming activities.



Land cover:

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

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



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

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

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

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

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

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

PRESENTATION OF THE DATA

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

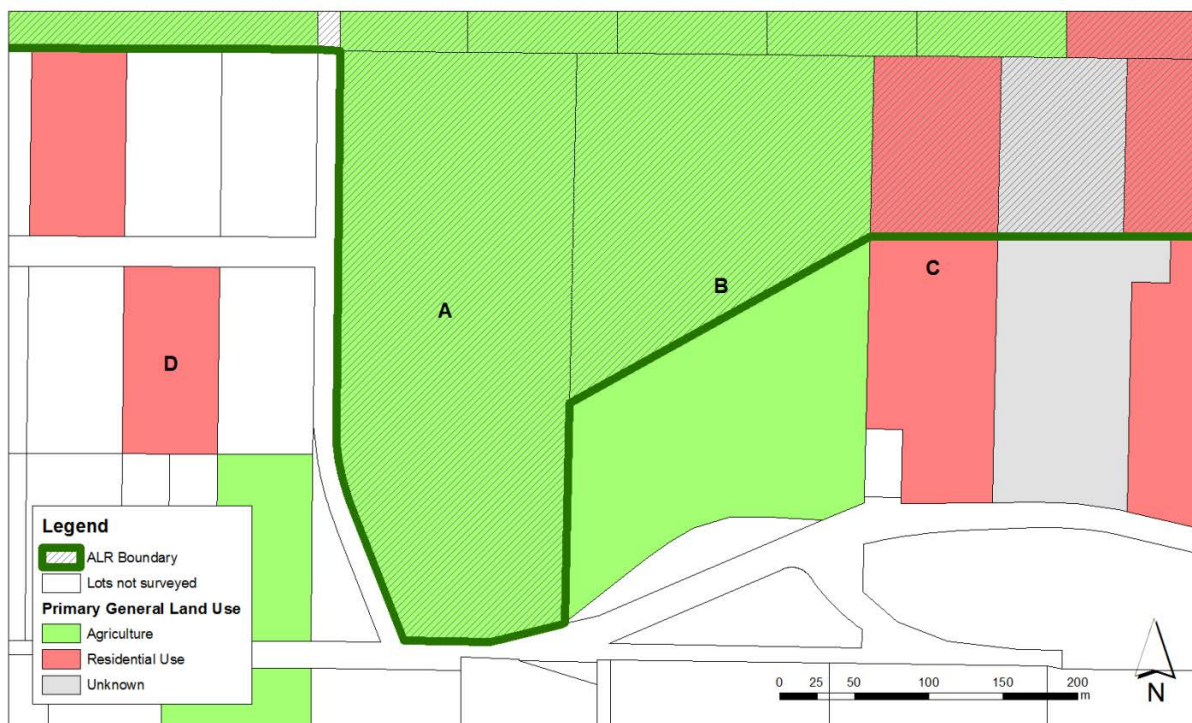
DETERMINATION OF PARCELS WITHIN THE ALR

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

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

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

Figure 5. Parcel inclusion in the ALR



3. Land Cover and Farmed Area

Land cover describes the biophysical material at the surface of the earth and is distinct from land use which describes how people utilize the land.

Land use is surveyed by assigning the parcel up to two land uses. Some examples of land use are residential, commercial, and industrial. Refer to Section 4 of this report for more information on land use.

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

Four 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
- **Crop barns:** permanent enclosed structures with non-translucent walls for growing crops such as mushrooms or bean sprouts

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 or rangeland are fenced areas with uncultivated (not sown) natural or semi-natural vegetation used for grazing domestic livestock. These areas are considered “Grazed” rather than “Farmed” although these areas are usually 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” land cover.

Land cover on Indian reserves is presented in Appendix D.

Table 1. Land cover and farmed area

Land cover*		ALR		Outside ALR (ha)	Inventory area		
		In ALR (ha)	% of ALR		Total area (ha)	Privately owned (ha)	Crown owned (ha)**
Actively farmed	Cultivated field crops	2,670	9%	478	3,148	3,141	7
	Farm infrastructure	187	< 1%	65	252	252	<1
	Greenhouses	<1	< 1%	<1	<1	<1	-
Inactively farmed	Unmaintained field crops	20	< 1%	<1	20	20	-
	Unused forage or pasture	26	< 1%	<1	27	27	-
FARMED SUBTOTAL		2,904	10%	543	3,447	3,440	7
Anthropogenic (not farmed)	Managed vegetation	130	< 1%	32	162	161	1
	Non Built or Bare	65	< 1%	3	69	54	15
	Residential footprint	165	< 1%	40	205	205	<1
	Settlement	12	< 1%	6	18	17	<1
	Transportation	43	< 1%	9	52	11	41
	Built up - Other	10	< 1%	1	11	11	-
SUBTOTAL		425	1%	92	516	460	57
Natural & Semi-natural	Natural pasture or rangeland	15,858	53%	5,200	21,058	13,526	7,532
	Vegetated	6,351	21%	1,591	7,942	6,201	1,742
	Wetlands	614	2%	216	830	702	128
	Natural bare areas	-	-	<1	<1	<1	-
	Waterbodies	262	< 1%	52	315	273	41
SUBTOTAL		23,085	77%	7,059	30,144	20,701	9,443
TOTAL		26,414	88%	7,694	34,108	24,601	9,507
Surveyed	Indian reserves	1,144	4%	679	1,823		
Not surveyed	Outside parcels	2,437	8%				
	Parcels with < 100 sq m of ALR	2	< 1%				
SUBTOTAL		3,583	12%				
TOTAL		29,997	100%				

* See the glossary for terms used in this table.

** Crown owned. This total does not include land in Indian reserves.

Table 1 shows the extent of different land cover types across the entire inventory area. There are 3,447 ha of land in "Farmed" land cover and 21,058 ha of land in "natural pasture or rangeland".

Land cover on inventoried Indian reserves is presented in Appendix D. Refer to Map 1 for more information.

Figure 6. Land cover and farmed area in the ALR

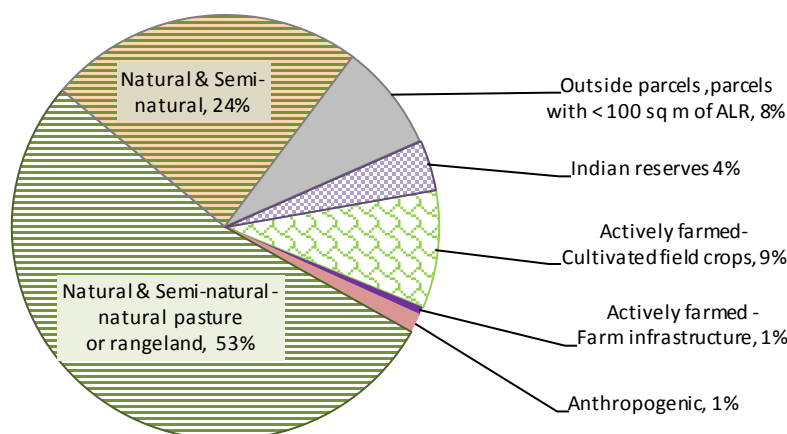


Figure 6 shows the proportion of different land cover types across the ALR in South Cariboo.

Of the ALR land, 53% is in "natural pasture or rangeland" while 9% is in cultivated field crops.

Land used in support of farming such as farm residences, vegetative buffers or roadways is not included as actively farmed land cover.

4. 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 “Used for farming”, even if one is a dairy farm and the other is in blueberries. Another example is “commercial” land use; if one parcel is a hotel, another is a retail store, and a third is a gas station, all area considered to have “commercial” land use.

Up to two general land uses (e.g. residential, commercial, protected area) are recorded for each 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 that do not meet the “**Used for farming**” criteria, but have a significant portion of their area in natural pasture or rangeland and have evidence of active domestic livestock grazing 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. 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.

Land use is not assessed for land on Indian reserves.

Table 2. Parcel ownership summary

Parcel land use		ALR		Outside ALR (ha)	Total area (ha)	% of inventory area	Number of parcels	% of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area						
PRIVATELY OWNED SUBTOTAL		20,205	67 %	4,396	24,601	72 %	1,357	90 %	18
CROWN OWNED SUBTOTAL		6,209	21 %	3,298	9,507	28 %	146	10 %	65
TOTAL		26,414	88 %	7,694	34,108	100 %	1,503	100 %	
Surveyed	Indian reserves	1,144	4 %						
Not surveyed	Outside parcels	2,437	8 %						
	Parcels with < 100 sq m of ALR	2	<1 %						
SUBTOTAL		3,583	12 %						
TOTAL		29,997	100 %						

Table 2 summarizes the area and number of parcels in Crown and private ownership in South Cariboo. Eighty-eight percent of the South Cariboo’s ALR was inventoried; 67% of the ALR area is in privately owned parcels while 21% is on Crown owned parcels. Another 4% of the ALR is Indian reserves (Canim Lake1 and 2) on Crown Federal parcels.

PRIVATELY OWNED PARCELS

Table 3. Land use and farming use on privately owned parcels

Parcel land use*		ALR		Outside ALR (ha)	Total area (ha)	Number of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area				
Used only for farming - no other use		3,722	12 %	575	4,297	95	45
Used for farming - Mixed use	Residential	5,071	17 %	1,173	6,244	211	30
	Forestry	443	1 %	26	469	4	117
	Gravel extraction	131	<1 %	< 1	131	2	65
	Recreation & leisure	13	<1 %	11	24	1	24
USED FOR FARMING SUBTOTAL		9,379	31 %	1,786	11,165	313	
Used only for grazing - no other use		3,587	12 %	1,015	4,602	80	58
Used for grazing - Mixed use	Residential	1,529	5 %	491	2,020	56	36
	Forestry	107	<1 %	19	126	4	32
	Protected area / park / reserve	59	<1 %	27	86	2	43
	Transportation	47	<1 %	< 1	47	1	47
	Land in transition	-	-	65	65	1	65
USED FOR GRAZING SUBTOTAL		5,328	18 %	1,617	6,946	144	
Not used for farming/ grazing	Residential	3,247	11 %	627	3,874	691	6
	No apparent use	737	2 %	181	917	165	6
	Forestry	620	2 %	89	709	16	44
	Utilities	395	1 %	66	461	7	66
	Recreation & leisure	386	1 %	18	404	7	58
	Gravel extraction	96	<1 %	< 1	96	2	48
	Institutional & community	10	<1 %	< 1	10	5	2
	Garbage dumps	5	<1 %	< 1	5	2	3
	Protected area / park / reserve	2	<1 %	12	14	2	7
	Commercial & service	< 1	<1 %	< 1	1	2	< 1
	Transportation	< 1	<1 %	-	< 1	1	< 1
NOT USED FOR FARMING/ GRAZING SUBTOTAL		5,497	18 %	994	6,491	900	
TOTAL		20,205	67 %	4,397	24,601	1,357	

* See "Land Use" in the glossary for terms in this table.

Table 3 shows that 11,165 ha or 33% of the inventory area is on privately owned parcels that are "Used for farming". Ninety-five of these parcels or 13% of the inventory area are exclusively "Used for farming" with no other use.

One privately owned parcel with the mixed use used for farming and recreation & leisure is associated with the New 108 Resort.

There are 6,946 ha (20% of the inventory area) on privately owned parcels that are "Used for grazing". Over half of these parcels (80 or 56%) are exclusively "Used for grazing" with no other apparent use. "Used for grazing" parcels are large with an average overall parcel size of 48 ha.

There are two parcels with the mixed use "Used for grazing" and "protected area / park / reserve" that are associated with the CRD greenbelt and are leased to Blue Goose Cattle Co for grazing.

Refer to Map 2 for more information.

Table 4. Parcel use and land cover in the ALR on privately owned parcels

Parcel Land Use		Land Cover Category						Total	
		Farmed *		Anthropogenic (not farmed)		Natural & Semi-natural			
		In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area
Used only for farming - no other use		704	2 %	< 1	<1 %	3,017	10 %	3,722	12 %
Used for farming - mixed use	Residential	1,831	6 %	44	<1 %	3,196	11 %	5,071	17 %
	Forestry	59	<1 %	-	-	383	1 %	443	1 %
	Gravel extraction	43	<1 %	10	<1 %	77	<1 %	131	<1 %
	Recreation & leisure	7	<1 %	-	-	6	<1 %	13	<1 %
USED FOR FARMING SUBTOTAL		2,644	9 %	55	<1 %	6,680	22 %	9,379	31 %
Used only for grazing - on other use		32	<1 %	1	<1 %	3,553	12 %	3,587	12 %
Used for grazing - mixed use	Residential	91	<1 %	25	<1 %	1,413	5 %	1,529	5 %
	Forestry	< 1	<1 %	< 1	<1 %	107	<1 %	107	<1 %
	Protected area / park / reserve	-	-	-	-	59	<1 %	59	<1 %
	Transportation	-	-	-	-	47	<1 %	47	<1 %
USED FOR GRAZING SUBTOTAL		123	<1 %	27	<1 %	5,178	17 %	5,328	18 %
Not used for farming or grazing		130	<1 %	291	<1 %	5,076	17 %	5,497	18 %
SUBTOTAL		2,898	10 %	373	1 %	16,933	56 %	20,205	67 %

* Some parcels that are "Not used for farming" 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 glossary.

Table 4 combines land use and ALR land cover on privately owned parcels in South Cariboo. For example, privately owned parcels with the mixed use "Used for farming" and "Residential" have a total of 1,831 ha in "Farmed" land cover, 44 ha in "Anthropogenic" (not farmed) land cover, and 3,196 ha in "Natural & Semi-natural" land cover.

Although 9,379 ha or 31% of South Cariboo's ALR is on privately owned parcels that are "Used for farming" (refer to Table 3), only 2,898 ha or 10% of the ALR is actually in "Farmed" land cover. Many "Used for farming" parcels have significant areas left as "Natural & Semi-natural" land cover.

In total, there are 6,680 ha of ALR land in "Natural & Semi-natural" land cover on privately owned "Used for farming" parcels. Of this area, 6,058 ha (91%) are in "natural pasture or rangeland" land cover.

CROWN OWNED PARCELS

Table 5. Land use and farming use by parcel on Crown owned parcels

Parcel land use*		ALR		Outside ALR (ha)	Total area (ha)	Number of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area				
Used only for grazing - no other use		60	<1 %	6	67	6	11
Used for grazing - Mixed use	Forestry	4,795	16 %	2,268	7,063	86	82
	Utilities	121	<1 %	220	342	3	114
	Gravel extraction	40	<1 %	65	105	2	52
	Recreation & leisure	39	<1 %	75	115	1	115
USED FOR GRAZING SUBTOTAL		5,056	17 %	2,635	7,691	98	
Not used for farming/ grazing	Forestry	725	2 %	355	1,080	15	72
	No apparent use	349	1 %	300	650	25	26
	Transportation	34	<1 %	4	39	6	6
	Gravel extraction	23	<1 %	-	23	1	23
	Recreation & leisure	21	<1 %	3	24	1	24
SUBTOTAL		1,153	4 %	662	1,815	48	
TOTAL		6,209	21 %	3,298	9,507	146	

* See "Land Use" in the glossary for terms in this table.

Table 5 details the land use on Crown owned parcels in South Cariboo. In total 7,691 ha of South Cariboo's inventory area is on Crown owned parcels that are "Used for grazing".

Parcels that are "Used for grazing" include 6 parcels exclusively used for grazing, 86 parcels that are also used for forestry, 3 parcels that are used for utilities, 2 parcels used for gravel extraction, and 1 parcel with recreation & leisure use that is associated with a provincial forest rec site.

Refer to Map 2 for more information.

Table 6. Parcel use and land cover in the ALR on Crown owned parcels

Parcel Land Use		Land Cover Category						Total	
		Farmed *		Anthropogenic (not farmed)		Natural & Semi-natural			
		In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area	In ALR (ha)	% of ALR area
Used for grazing-mixed use	Forestry	4	<1 %	3	<1 %	4,787	16 %	4,795	16 %
	Utilities	< 1	<1 %	-	-	121	<1 %	121	<1 %
	No apparent use	< 1	<1 %	-	-	60	<1 %	60	<1 %
	Gravel extraction	< 1	<1 %	< 1	<1 %	39	<1 %	40	<1 %
	Recreation & leisure	-	-	-	-	39	<1 %	39	<1 %
USED FOR GRAZING SUBTOTAL		5	<1 %	3	<1 %	5,047	17 %	5,056	17 %
Not used for farming or grazing		1	<1 %	48	<1 %	1,104	4 %	1,153	4 %
SUBTOTAL		7	<1 %	51	<1 %	6,151	21 %	6,209	21 %

* Some parcels that are "Not used for farming" 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 glossary.

Table 6 combines land use and land cover on Crown owned parcels in the ALR in South Cariboo.

There is little "Farmed" or "Anthropogenic (not farmed)" land cover on Crown owned parcels. The 51 ha of "Anthropogenic" (not farmed) land cover on Crown owned parcels is comprised of railroads (34 ha), gravel extraction (13 ha), roads (3 ha), and managed vegetation (1 ha).

5. Availability of Land for Farming

There is currently a strong demand for local agricultural products that is expected to increase with population growth¹⁰. 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. Lands suitable for agricultural development may not be available and agricultural sectors that require large land bases, such as dairy or berry, may find it difficult to access sufficient land. 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 farm expansion. Properties currently “Not used for farming” but with an existing use compatible with agriculture, such as residential, are considered available for farming. In both cases, it is assumed that existing non-farm land uses will be maintained and will not be displaced by agriculture expansion.

Properties that are currently “Not used for farming” and with an established non-farm use that is incompatible with agriculture (e.g. a golf course, a school, or small lot residential) are considered to be unavailable for farming. These properties usually have little land available and tend to have very high land values. It is uneconomical for a farmer to acquire and convert these properties to farmland given the limited farming potential.

In the South Cariboo OCP area, properties in the ALR and “Used for farming” have an average assessed land and improvement value of \$22,069 per ha.

Properties in the ALR that are considered “Unavailable for farming” have an average assessed land and improvement value of \$395,839 per ha.

(Calculated using 2012 BC Assessment)

Land is further assessed for its farming potential based on physical and environmental characteristics. It is assumed that removing built structures and fill piles, filling in water bodies or remediating slopes/soils to create land with cultivation potential would likely not occur. In addition, areas with operational constraints such as a very small size are considered not to have potential for cultivation. 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 cultivation.

Availability of land is not assessed for land on Indian reserves.

¹⁰ 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)	Inventory area		
		In ALR (ha)	% ALR Area		Total area (ha)	Privately owned (ha)	Crown owned (ha)*
Actively farmed	Cultivated field crops	2,670	9 %	478	3,148	3,141	7
	Farm infrastructure	187	<1 %	65	252	252	< 1
	Greenhouses	< 1	<1 %	< 1	< 1	< 1	-
ACTIVELY FARMED		2,858	10 %	542	3,400	3,393	7
Supporting farming	Residential footprint	31	<1 %	9	40	40	-
	Transportation	3	<1 %	1	4	4	-
SUPPORTING FARMING		33	<1 %	11	44	44	-
Unavailable for farming due to existing land use	Gravel extraction	83	<1 %	-	83	60	23
	Residential	53	<1 %	10	63	63	-
	Institutional & community	6	<1 %	< 1	6	6	-
	Forestry	6	<1 %	3	9	9	-
	Garbage dumps	5	<1 %	-	5	5	-
	Transportation	5	<1 %	-	5	< 1	5
	Commercial & service	< 1	<1 %	< 1	1	1	-
Unavailable for farming due to existing land cover	Wetlands	614	2 %	216	829	702	128
	Waterbodies	262	<1 %	52	314	273	41
	Residential footprint	120	<1 %	29	148	148	< 1
	Transportation	35	<1 %	8	43	7	36
	Built up - Other	14	<1 %	4	18	18	< 1
	Natural bare areas	-	-	< 1	< 1	< 1	-
UNAVAILABLE FOR FARMING		1,203	4 %	322	1,525	1,292	234
Available for farming	Natural pasture or rangeland	15,858	53 %	5,200	21,058	13,525	7,532
	Natural & Semi-natural - Vegetation	6,279	21 %	1,586	7,864	6,133	1,732
	Anthropogenic - Managed vegetation	110	<1 %	30	140	139	1
	Unused forage or pasture	26	<1 %	< 1	27	27	-
	Anthropogenic - Non Built or Bare	26	<1 %	3	29	28	1
	Unmaintained field crops	20	<1 %	< 1	20	20	-
AVAILABLE FOR CULTIVATION		22,319	74 %	6,819	29,138	19,872	9,266
TOTAL		26,414	88 %	7,694	34,108	24,601	9,507
Surveyed	Indian reserves	1,144	4 %				
Not surveyed	Outside parcels	2,437	8 %				
	Parcels with < 100 sq m of ALR	2	<1 %				
SUBTOTAL		3,583	12 %				
TOTAL		29,997	100 %				

* In Crown ownership. This total does not include land in Indian reserves.

Table 7 shows that 2,858 ha or 10% of the ALR is actively used for farming; 4% is unavailable for farming due to existing land use or land cover; and 74% is available for cultivation. Of the 22,319 ha of the ALR that is available for cultivation, 53% (15,858 ha) is currently utilized as natural pasture or rangeland.

Land that is available for cultivation may have other factors that limit the potential for soil bound agriculture. Operational constraints such as very small size or awkward shape as well as agricultural capability may limit the potential for available land be brought into agricultural production.

Refer to Maps 2 and 3 for more information.

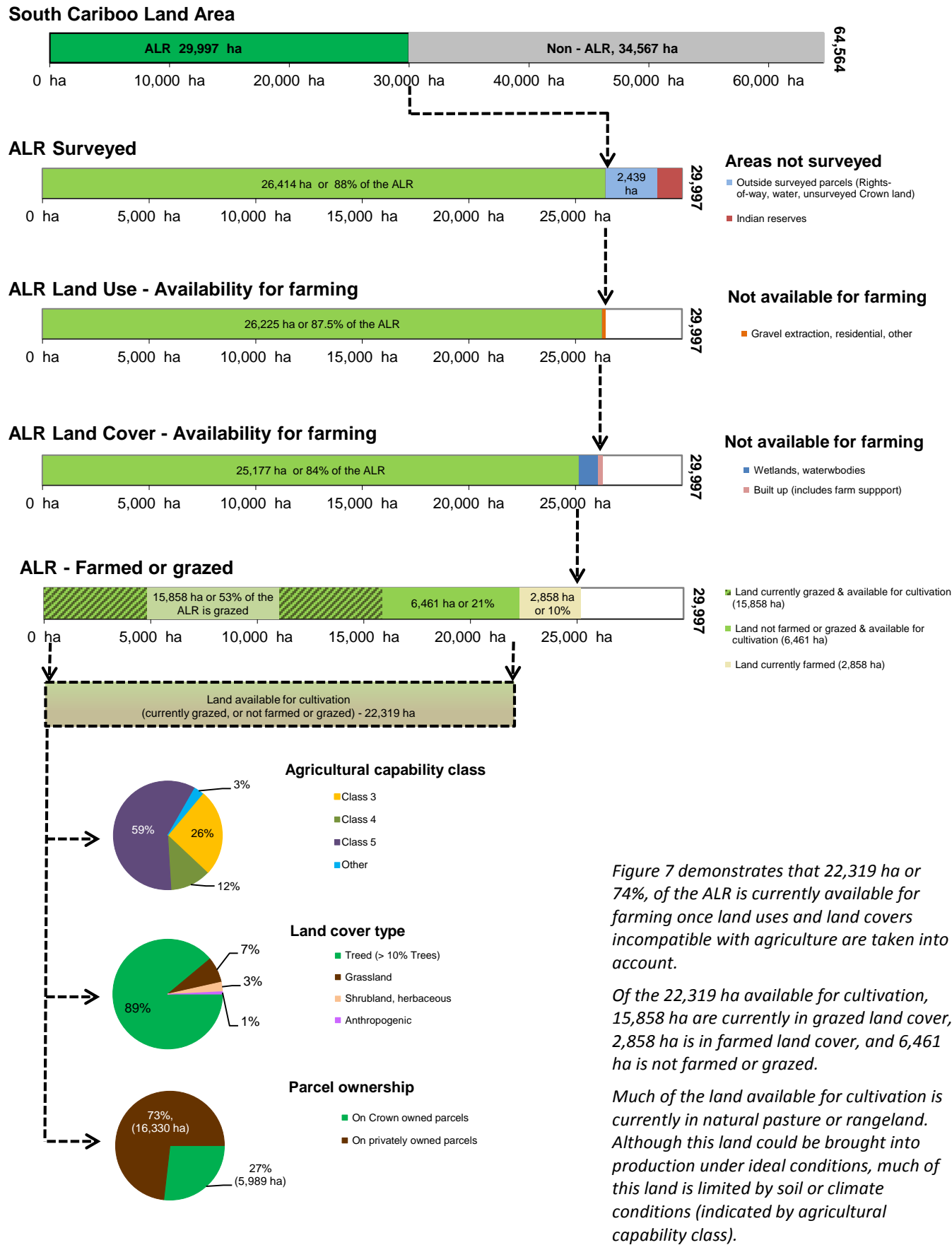
Table 8. ALUI identified site limitations on ALR land that is available for cultivation

Available for farming - land cover type	Site limitations in the ALR			Total ALR area (ha)
	Soils &/or topography	Flooding &/ or drainage	Operational	
Natural pasture or rangeland	85	467	32	584
Natural & Semi-natural - Vegetation	87	138	45	270
Anthropogenic - Non Built or Bare	18	-	-	18
Anthropogenic - Managed vegetation	-	-	4	4
TOTAL	190	605	80	875

Table 8 details the site limitations in the ALR identified as part of the agricultural land use inventory. These limitations will likely reduce the potential of some types of agriculture.

Two thirds (67% or 584 ha) of the ALR land with identified site limitations is currently utilized for natural pasture or rangeland.

Figure 7. Availability of ALR lands for farming



AGRICULTURAL CAPABILITY

Not all lands that are available for agriculture have the same capability or suitability for producing soil based agricultural products. The main factors limiting agricultural capacity in British Columbia are climate and topography. Soils are also a key limiting factor.

The “Land Capability Classification for Agriculture in British Columbia”¹¹ is used to determine agricultural capability. The classification describes seven land capability classes for agriculture (Class 1 through 7). Class 1 land is considered the best possible land for agricultural as it has minimal limitations and has the potential to support the widest range of crops. As the class number increases, the range of crops suited to the soil and climate conditions decreases. Class 7 lands have severe limitations and are considered to have no potential for soil bound agriculture. Agricultural capability classes are summarized in Appendix C.

Associated with each capability class is a subclass that identifies limitations or special management practices that are needed to improve the land capability. Limitations include factors such as topography, stoniness, soil moisture deficiency and low fertility. Management practices can include improving drainage, irrigation, removing stones, and fertilization.

Although Class 6 and 7 lands have limited capability for soil bound agriculture, they may be agriculturally productive where topography and climate allow. Class 6 & 7 lands can additionally be utilized for non-soil based agriculture such as greenhouse production.

Agricultural capability in the South Cariboo is currently digitized at a scale of one to fifty-thousand. The agricultural land use inventory is digitized and surveyed at a scale of one to five thousand or less. This means that the agricultural capability data is more generalized than the ALUI data. Capability class can be used as a general indication of the soils and conditions in a particular area, but it does not definitively indicate the capability of a particular land parcel.

Agricultural capability classes were generalized to the dominant class type, and the class with the highest capability on a land cover was assigned to the land cover polygon. Land cover type was then summarized according to agricultural capability class.

¹¹ Ministry of Agriculture and Food, Ministry of Environment, Land Capability Classification For Agriculture in British Columbia (1983)
<http://www.alc.gov.bc.ca/alc/content.page?id=C553220B18A34F46B9CBB53E629DC4#>

Table 9. Agricultural capability on actively farmed cultivated crops

Agricultural capability class & subclass		Area in actively cultivated crops		
		In ALR (ha)	Outside ALR (ha)	Total area (ha)
Organics	W - excess groundwater	146	20	167
SUBTOTAL		146	20	167
Class 3	C - adverse climate	1,363	56	1,420
	X - cumulative conditions	82	< 1	82
SUBTOTAL		1,445	57	1,502
Class 4	T - topography	199	4	203
	C - adverse climate	147	27	174
	X - cumulative conditions	21	< 1	21
	P - stoniness	12	4	16
	M - soil moisture deficiency	7	-	7
SUBTOTAL		386	36	421
Class 5	MP - soil moisture deficiency / stoniness	171	71	243
	PT - stoniness &/or topography	276	62	338
	W - excess groundwater	129	10	139
	M - soil moisture deficiency	68	1	70
	C - adverse climate	35	215	250
SUBTOTAL		680	360	1,040
Class 6	T - topography	13	2	15
SUBTOTAL		13	2	15
Class 7	TR - topography / shallow soil	< 1	3	3
SUBTOTAL		< 1	3	3
TOTAL		2,670	478	3,148

Table 10 details the agricultural capability class and subclass on cultivated land in the South Cariboo OCP area.

Of the 2,670 ha of actively farmed cultivated crops in the ALR, (refer to Table 7), 1,445 ha 54% are on Class 3 land.

Cultivated crops were also identified on organic soils, Class 4, Class 6, and Class 7 lands.

Figure 8. Agricultural capability on actively farmed cultivated crops in the ALR

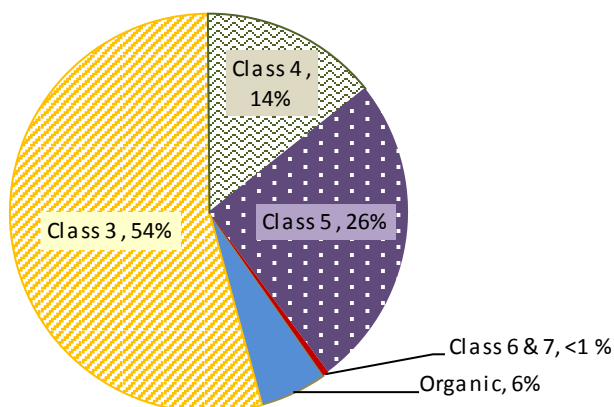


Figure 8 shows the proportion of each agricultural capability class on actively farmed cultivated crops in the ALR.

Over half (54%) of the cultivated land in the ALR occurs on Class 3 land, 14% occurs on Class 4 land, and 26% occurs on Class 5 land.

Table 10. Agricultural capability on land available for cultivation

Agricultural capability class & subclass		Land available for cultivation		
		In ALR (ha)	Outside ALR (ha)	Total area (ha)
Organics	W - excess groundwater	114	29	143
SUBTOTAL		114	29	143
Class 3	C - adverse climate	4,535	173	4,708
	X - cumulative conditions	1,211	36	1,247
SUBTOTAL		5,746	209	5,955
Class 4	C - adverse climate	1,434	342	1,776
	M - soil moisture deficiency	47	-	47
	P - stoniness	596	357	953
	T - topography	545	183	727
	W - excess groundwater	5	-	5
	X - cumulative conditions	49	< 1	50
SUBTOTAL		2,676	882	3,558
Class 5	C - adverse climate	324	1,278	1,602
	M - soil moisture deficiency	194	2	197
	MP - soil moisture deficiency / stoniness	1,325	339	1,663
	P - stoniness &/or topography	10,909	3,123	14,032
	TM - topography / soil moisture deficiency	-	< 1	< 1
	W - excess groundwater	404	40	444
	X - cumulative conditions	-	2	2
SUBTOTAL		13,156	4,784	17,940
Class 6	T - topography	559	419	978
SUBTOTAL		559	419	978
Class 7	TR - topography / shallow soil	66	496	562
SUBTOTAL		66	496	562
Unknown	Unknown	3	< 1	3
SUBTOTAL		3	< 1	3
TOTAL		22,319	6,819	29,138

Table 10 details the agricultural capability class and subclass of land in South Cariboo that is available for cultivation.

Of the 22,319 ha in the ALR that is available for cultivation (refer to Table 7), all has some type of agricultural capability limitation. In some areas, these limitations can be overcome with special management practices.

Figure 9. Agricultural capability on land available for cultivation in the ALR

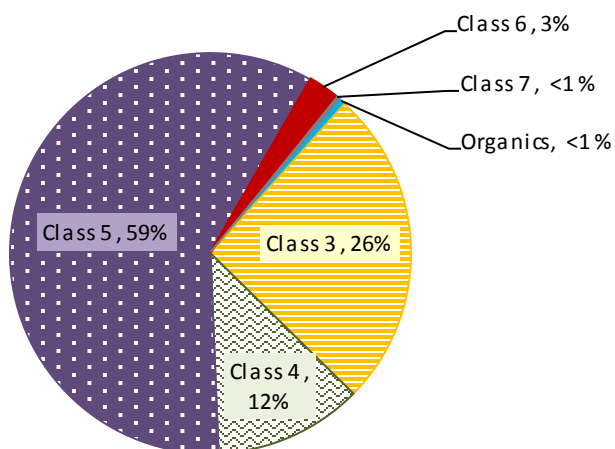


Figure 9 shows the proportion of land available for cultivation in the ALR by agricultural capability class.

The majority of all available ALR land is Class 5 (59%), however, there is also 26% of the available land in Class 3.

Table 11. ALR land available for cultivation by agricultural capability class on privately owned parcels

Available for cultivation - land cover type	Agricultural capability class							Total ALR area (ha)
	Class 3	Class 4	Class 5	Class 6	Class 7	Organics	Unknown class	
Natural pasture or rangeland	3,330	1,555	5,750	176	45	88	1	10,947
Natural & Semi-natural - Vegetation	1,664	494	2,819	213	10	1	1	5,202
Anthropogenic - Managed vegetation	47	34	20	8	-	< 1	-	109
Unused forage or pasture	10	-	16	-	-	-	-	26
Anthropogenic - Non Built or Bare	11	11	4	-	-	-	-	26
Unmaintained field crops	20	-	-	-	-	-	-	20
TOTAL	5,082	2,094	8,609	397	56	90	3	16,330

Table 11 shows that of the 16,330 ha of privately owned ALR land that is available for cultivation, 5,082 ha (31%) is agricultural capability Class 3, 2,094 ha (13%) is Class 4 land and 8,609 ha (52%) is Class 5 land.

Table 12. ALR land available for cultivation by agricultural capability class on Crown owned parcels

Available for cultivation - land cover type	Agricultural capability class						Total ALR area (ha)
	Class 3	Class 4	Class 5	Class 6	Class 7	Organic	
Natural pasture or rangeland	352	444	3,994	97	-	24	4,911
Natural & Semi-natural - Vegetation	312	138	552	64	10	< 1	1,076
Anthropogenic - Managed vegetation	< 1	-	-	< 1	-	-	1
Anthropogenic - Non Built or Bare	-	-	< 1	-	-	-	< 1
TOTAL	664	582	4,547	162	10	24	5,989

Table 12 shows that of the 5,989 ha of Crown owned ALR land that is available for cultivation, 664 ha (11%) is agricultural capability Class 3, 582 ha (10%) is Class 4 and 4,547 ha (76%) is Class 5 land.

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 generally exclude dairy, hogs, and vegetable greenhouses. A dairy cow, for example, produces sufficient manure per year to fertilize 0.4 ha of forage production which means a dairy operation consisting of 50 cows would require access to 20 ha 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. In addition, working farms require sufficient space to operate in order to avoid odour, dust, and noise conflicts with nearby non-farm land uses.

On Parcels “Used For Farming”

Parcels “Used for farming” do not always utilize 100% of their land area. Land not farmed but available and with potential for cultivation can offer opportunities to expand farming activities.

Table 13. Land use and cover on parcels “Used for farming” with ALR land available for farming

Parcel Ownership	Mixed land use on “Used for farming” parcels	Number of parcels	Land not farmed but with potential for farming			Land currently farmed			% potential increase to total ALR farmed area
			In ALR (ha)	Outside ALR (ha)	Total area (ha)	In ALR (ha)	Outside ALR (ha)	Total area (ha)	
PRIVATE	Residential	162	3,074	441	3,516	1,809	171	1,980	108 %
	Used for farming only	64	2,922	194	3,116	692	49	741	102 %
	Forestry	4	381	26	407	59	< 1	59	13 %
	Gravel extraction	2	79	-	79	43	-	43	3 %
	Recreation & leisure	1	6	6	12	7	5	12	<1 %
TOTAL		233	6,463	667	7,130	2,610	226	2,836	226 %

Table 13 demonstrates the potential to increase the amount of cultivated land on parcels that are already “Used for farming”. This increase would come from expanding farm operations toward a more complete utilization of the available parcel area.

All “Used for farming” parcels with land available for cultivation occur on privately owned parcels.

Figure 10. ALR land cover that is available for cultivation on “Used for farming” parcels

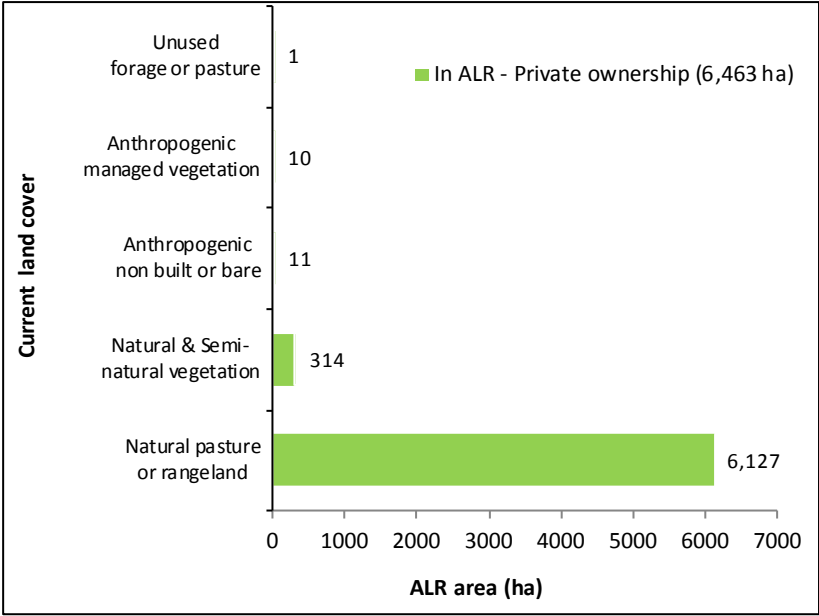


Figure 10 indicates that privately owned land currently in “Natural pasture or rangeland” could provide the greatest gains in cultivated land on parcels that are already “Used for farming”. These gains in cultivated land would have to be measured against the loss of natural pasture or rangeland.

Potential site limitations such as topography or poor soils are not considered when assessing the availability of land for cultivation.

Figure 11. Vegetation type on natural pasture or rangeland in the ALR and on parcels “Used for farming”

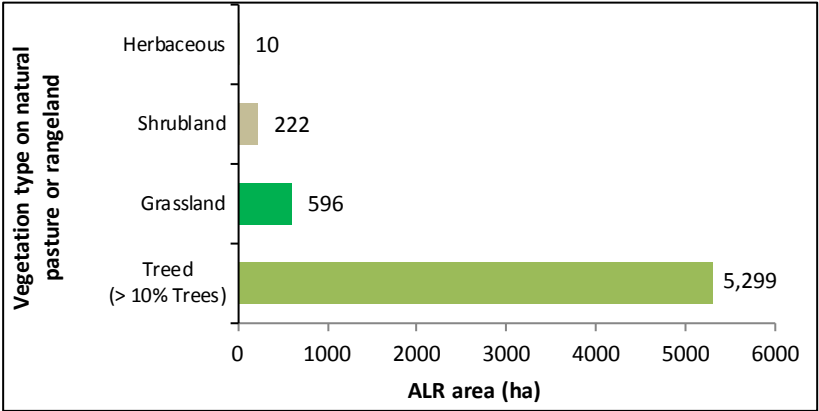


Figure 11 details the types of vegetation on natural pasture or rangeland in the ALR that are available for cultivation in the South Cariboo OCP area.

The majority of the grazed land cover is “treed”. Dense tree cover offers less forage material for grazing cattle than open grassland areas.

Potential site limitations such as topography or poor soils are not considered when assessing the availability of land for cultivation.

On Parcels “Not Used For Farming”

This section includes parcels that are “Used for grazing”.

Table 14. Land use and cover on parcels “Not used for farming” with ALR 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	Used for grazing - no other use	74	3,352	672	4,024	117 %
		Residential	48	1,354	239	1,592	47 %
		Forestry	4	101	18	119	4 %
		Protected area / park / reserve	2	54	9	63	2 %
		Transportation	1	47	< 1	47	2 %
	Subtotal		129	4,908	937	5,845	172 %
	Not used for farming or grazing	Residential	462	2,869	270	3,139	100 %
		No apparent use	151	701	55	756	25 %
		Forestry	14	592	82	674	21 %
		Utilities	3	390	6	396	14 %
		Recreation & leisure	7	369	18	386	13 %
		Gravel extraction	1	35	-	35	1 %
		Institutional & community	2	3	-	3	<1 %
	Protected area / park / reserve	2	1	5	7	<1 %	
	Subtotal		642	4,959	437	5,396	174 %
TOTAL PRIVATELY OWNED ALR			771	9,867	1,374	11,241	345 %
CROWN	Used for grazing	Used for grazing - no other use	6	56	5	62	2 %
		Forestry	85	4,660	950	5,610	163 %
		Utilities	3	121	45	166	4 %
		Gravel extraction	2	40	63	103	1 %
		Recreation & leisure	1	38	< 1	39	1 %
	Subtotal		97	4,915	1,064	5,979	172 %
	Not used for farming or grazing	Forestry	15	707	214	921	25 %
		No apparent use	25	347	83	430	12 %
		Recreation & leisure	1	20	3	23	<1 %
	Subtotal		41	1,074	300	1,374	38 %
TOTAL CROWN OWNED ALR			138	5,989	1,364	7,353	210 %
TOTAL			909	15,856	2,737	18,594	555 %

Table 14 illustrates potential to increase the amount of cultivated land on parcels that are “Not used for farming”. This increase would come from prioritizing agriculture over other non-farm land uses and the full utilization of the available parcel area for farming. It is assumed that existing non-farm land uses would be maintained.

The greatest potential to increase cultivated land could come from privately owned parcels that are:

- “Used only for grazing” or
- “Not used for farming or grazing” and used for “residential” purposes.

Crown owned parcels with the mixed use “Used for grazing” and “forestry” also offer significant potential for increasing actively farmed land.

Figure 12. ALR land cover that is available for cultivation on “Not used for farming” parcels

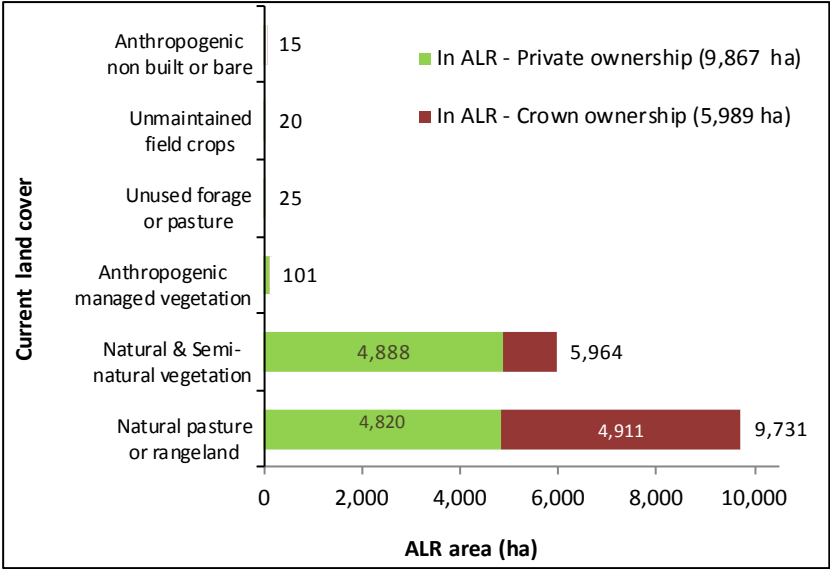


Figure 12 indicates that developing Crown and privately owned land currently used for natural pasture or rangeland could provide the greatest gains in cultivation on “Not used for farming” parcels.

These gains in cultivation would have to be measured against the loss of natural pasture and rangeland.

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

Figure 13. Vegetation type on natural pasture or rangeland in the ALR and on parcels “Not used for farming”

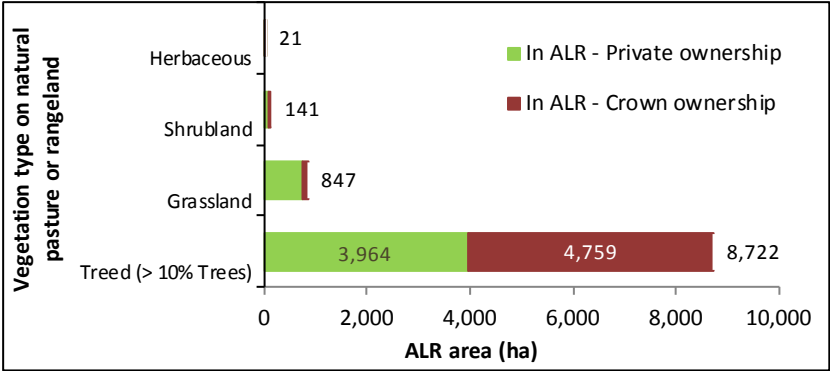


Figure 13 details the land cover type on ALR land in natural pasture & rangeland that is available for cultivation.

The majority of grazed land cover is “treed”. Dense tree cover offers less forage material for grazing cattle than open grassland areas.

Figure 14. Vegetation type on natural & semi natural vegetation in the ALR and on parcels “Not used for farming”

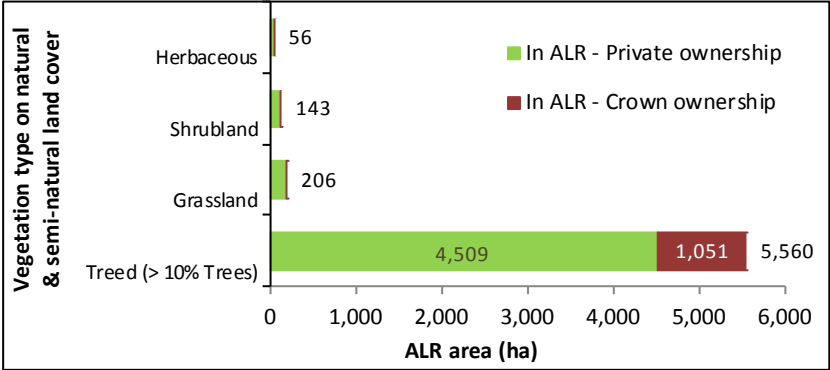


Figure 14 details the land cover type on ALR on land in “Natural & Semi-natural” vegetation that is available for cultivation.

The majority of the non-grazed, “Natural & semi-natural” land cover is “treed”. If this land were to be cultivated, the existing vegetation would need to be cleared.

Figure 15. Size of areas available for cultivation on privately owned “Not used for farming” parcels with ALR land available for cultivation

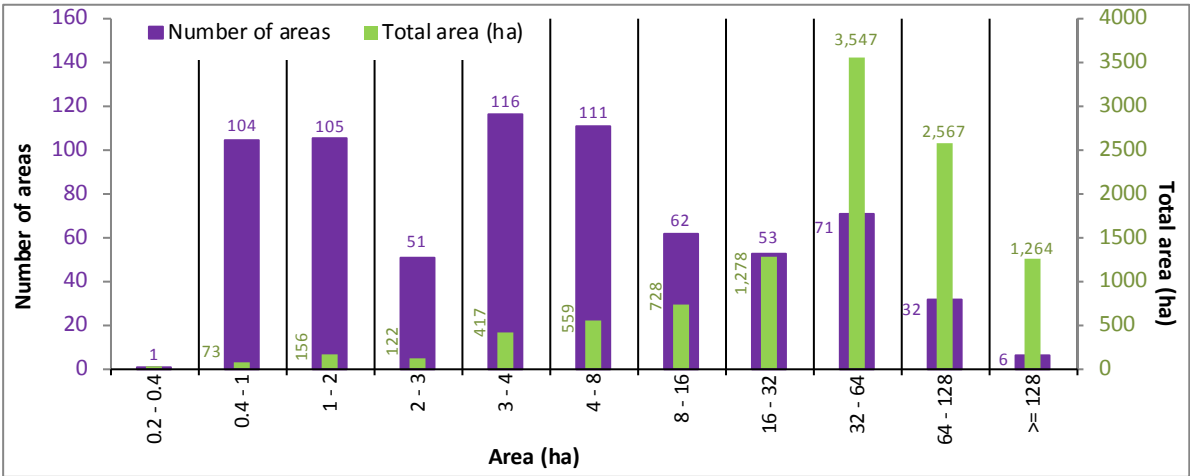


Figure 15 illustrates the number of areas available for cultivation on privately owned parcels in the South Cariboo OCP area. The area of all adjacent available and cultivated land covers on a parcel are summed to arrive at the total area that could potentially be farmed. An area is available if it is free from built structures, cover limitations, incompatible land uses, cultivated crops, and is greater than 0.4 ha (1 acre). A single ‘area’ may be comprised of multiple land covers on the same parcel.

Over half of the areas available for farming (378 of 713 or 53%) are less than 4 ha in size. Fewer options are available to efficiently farm small parcels. In general, areas should be at least 4 ha to provide the widest range of farming options.

There are 335 areas greater than 4 ha and available for cultivation in South Cariboo. These areas have a total of 9,943 ha, or 88% of the 11,241 ha available (refer to Table 14).

6. Farming Activities

CULTIVATED FIELD CROPS

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

Included with cultivated field crops is fallow farmland, 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 during the survey season. Excluded are crops grown in crop cover structures such as greenhouses or mushroom barns.

Cultivated field crops in South Cariboo are described by five crop groupings:

- **Forage & pasture:** grass, mixed grass/legume, hydrophytic grass
- **Fallow:** cultivated land that has not been seeded or planted for one or more growing season
- **Nursery:** Ornamentals and shrubs
- **Berries:** mixed
- **Vegetables**

Hydrophytic grass occurs on organic soils with a high water table and include species such as Reed canary and Meadow foxtail. Fields of harvested hydrophytic grass are often referred to as riparian meadows.

Crops recorded on Canim Lake 1 and 2 Indian reserves are reported separately from the main inventory totals. Crop findings on Indian reserves are presented in Appendix D.

Table 15. Main field crop types by area

Type	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land	Number of parcels with crop type
	In ALR (ha)	% of ALR				
Forage & pasture	2,712	9%	475	3,187	99.8%	400
Fallow land	3	< 1%	-	3	< 1%	1
Nursery	-	-	2	2	< 1%	1
Berries	< 1	< 1%	1	2	< 1%	3
Vegetables	1	< 1%	< 1	1	< 1%	8
TOTAL	2,717	9%	478	3,195	100%	413

Table 15 shows that “forage & pasture” is the only significant crop type found in South Cariboo.

Other crop types recorded were: 1 fallow field, 1 nursery field, 3 berry fields, and 8 vegetable fields. These fields have a combined area of 8 ha. The one fallow field is 3 ha and the 1 nursery operation is 2 ha, while all other non-forage & pasture crops are less than 1 ha.

Crops recorded on Canim Lake 1 and 2 are not included in these totals.

Refer to Map 4 for more information.

Forage & pasture crops

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

- **Forage (intensively managed):** Management includes weed control & fertilizer / manure applications and crop is cut 4-8 times per year. Often there is no fencing and crop growth is vigorous, even and thick.
- **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. Includes hydrophytic grass or riparian meadows.

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

Table 16. Forage & pasture crops by management type and area

Forage & pasture crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Forage (managed)	Grass	375	1%	11	386	12%
Forage (managed)	Mixed grass / legume	644	2%	131	775	24%
Forage (unmanaged)	Grass	7	< 1%	3	10	< 1%
Forage (unmanaged)	Mixed grass / legume	126	< 1%	12	139	4%
Forage (unmanaged)	Grass hydrophytic	223	< 1%	120	343	11%
Subtotal		1,375	5%	277	1,652	52%
Pasture (unmanaged)	Grass	673	2%	155	829	26%
Pasture (unmanaged)	Mixed grass / legume	132	< 1%	7	139	4%
Subtotal		805	3%	162	968	30%
Forage & pasture (managed)	Grass	7	< 1%	33	40	1%
Forage & pasture (managed)	Mixed grass / legume	478	2%	3	481	15%
Subtotal		485	2%	35	520	16%
Unused	Grass	18	< 1%	< 1	19	< 1%
Unused	Mixed grass / legume	8	< 1%	< 1	8	< 1%
Unmaintained / abandoned	Mixed grass / legume	20	< 1%	< 1	20	< 1%
Subtotal		46	< 1%	< 1	47	1%
TOTAL		2,712	9%	475	3,187	99.8%

Table 16 shows there are 1,652 ha in forage crops, 968 ha in pasture crops, and 520 ha in forage & pasture in South Cariboo. Grass is the main pasture crop type, while mixed grass/ legume is the main forage crop type.

Refer to Map 4 for more information.

Figure 16. Forage & pasture fields by size and type

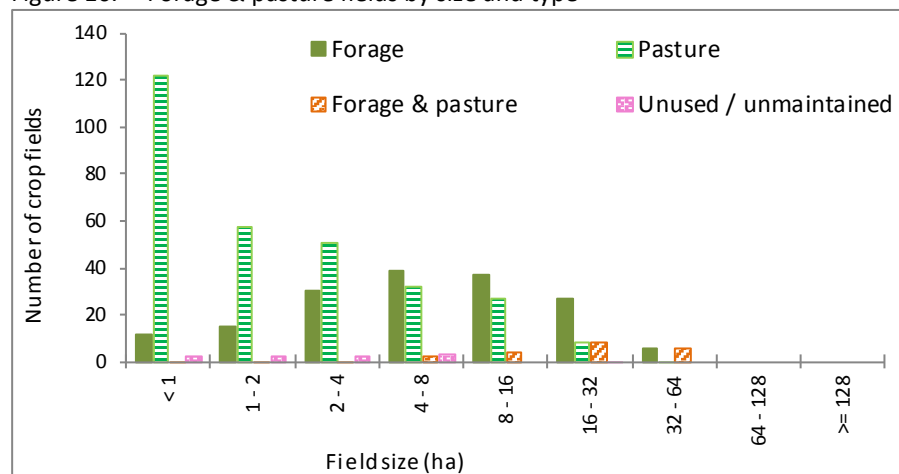


Figure 17 shows the field sizes of forage & pasture crops.

Although forage crops comprise a greater area than pasture crops (refer to Table 16), pasture fields are more numerous. Pasture fields are most likely to be < 1 ha.

There are 298 pasture fields with an average crop area of 3 ha, a median crop area of 1 ha, and an average parcel size of 31 ha.

In comparison, there are 166 forage fields with an average crop area of 10 ha, a median crop area of 7 ha, and an average parcel size of 51 ha.

All Crop types

Table 17. All crop types by area

Cultivated field crop	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Forage (managed)	1,019	3%	141	1,160	36%
Pasture (unmanaged)	805	3%	162	968	30%
Forage & pasture (managed)	485	2%	35	520	16%
Forage (unmanaged)	356	1%	135	492	15%
Unused forage/pasture	26	< 1%	< 1	27	< 1%
Unmaintained forage/pasture	20	< 1%	< 1	20	< 1%
Fallow land*	3	< 1%	-	3	< 1%
Ornamentals and shrubs	-	-	2	2	< 1%
Mixed vegetables	< 1	< 1%	< 1	< 1	< 1%
Mixed berries	< 1	< 1%	1	2	< 1%
Vegetables	< 1	< 1%	-	< 1	< 1%
TOTAL	2,717	9%	478	3,195	100%

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

Table 17 shows the 11 individual crops/management practices that account for all the cultivated land in South Cariboo.

Figure 17. All crop types by area

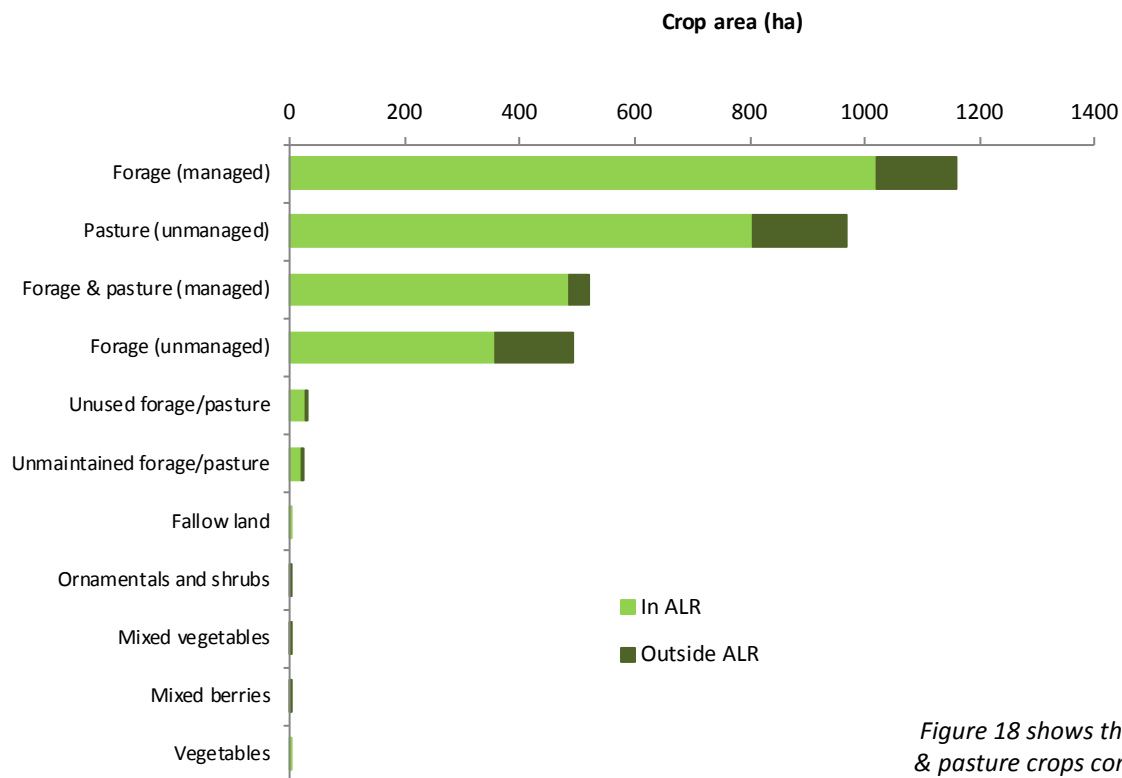


Figure 18 shows that forage & pasture crops comprise all significant crops.

GREENHOUSES

Greenhouses are structures covered with translucent material and of sufficient size for a person to work inside¹². 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 18. Greenhouses by area¹³

Greenhouses		ALR		Outside ALR (ha)	Total area (sq m)	% of greenhouse area
		In ALR (sq m)	% of ALR			
Poly greenhouse	Nursery	3,584	<0.1	1,094	4,678	77%
	Vegetables	826	<0.1	< 1	826	14%
	Mixed	438	<0.1	-	438	7%
	Unknown	-	-	156	156	3%
TOTAL		4,847	< 1%	1,251	6,098	100%

Table 18 details the greenhouses recorded in South Cariboo.

In total, there are 6,098 square meters (0.6 ha) in greenhouse footprints.

¹² Source: *Guide for Bylaw Development in Farming Areas*, 2013. Ministry of Agriculture.

¹³ The areas reported in this table exclude external yards, parking, warehouses and other infrastructure related to the greenhouse or crop barn 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 farmland, land set temporarily set aside for wildlife or other purposes, and land under preparation for planting. Also included are crops grown in greenhouses and crop barns. In addition, individual cultivated field crops are evaluated for percent of crop area under irrigation.

Table 19. All crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)				Total area irrigated (ha)	% of crop area irrigated
	Surface	Sub-surface	Sprinkler	Trickle		
Forage & pasture	2	395	312	-	709	22%
Berries	-	-	1	< 1	2	100%
Vegetables	-	-	1	-	1	100%
Nursery	-	-	-	-	-	-
Fallow land	-	-	-	-	-	-
TOTAL FIELD CROP AREA IRRIGATED	2	395	313	< 1	712	22%

Table 19 outlines the type of irrigation systems used on the cultivated field crops in South Cariboo.

A total of 712 ha were irrigated: 2 ha used surface irrigation, 395 ha were irrigated using sub-surface systems and 313 ha used sprinkler systems. Sub-surface irrigation occurs exclusively on hydrophytic grass or riparian meadows.

Only 22% of the total cultivated area in South Cariboo is irrigated.

Refer to Map 1 for more information.

Figure 18. Irrigation systems by percentage of cultivated land

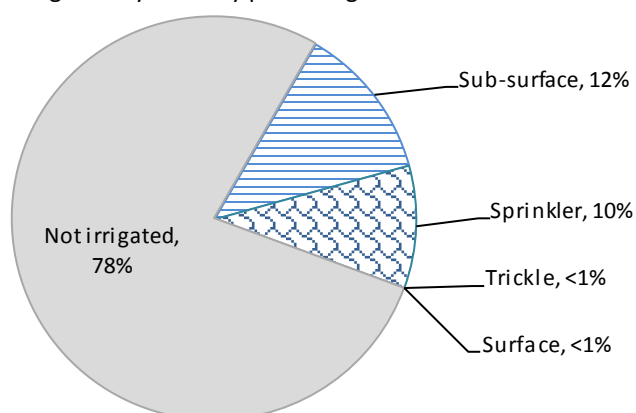


Figure 19 shows that only 22% of the cultivated land in South Cariboo is irrigated.

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 not suited 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 were 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 20. Natural pasture and rangeland by parcel ownership

Parcel ownership		ALR		Outside ALR (ha)	Total area (ha)	% of surveyed area	% of rangeland & natural pasture
		In ALR (ha)	% of ALR				
Crown	Rangeland (natural)	4,356	15%	2,431	6,787	20%	32%
	Pasture (natural)	555	2%	190	745	2%	4%
Subtotal		4,911	16%	2,621	7,532	22%	36%
Private	Rangeland (natural)	430	1%	381	811	< 1%	4%
	Pasture (natural)	10,516	35%	2,198	12,714	< 1%	60%
Subtotal		10,947	36%	2,579	13,526	< 1%	64%
TOTAL		15,858	53%	5,200	21,058	22%	100%

Table 20 shows that of the natural pasture and rangeland in the South Cariboo inventory area, 36% or 7,532 ha is on Crown owned parcels while 64% or 13,526 ha is on privately owned parcels.

Natural pasture or rangeland occurring outside of legally surveyed parcels is not accounted for as part of the inventory.

Refer to Maps 3 & 4 for more information.

Table 21. Natural pasture and rangeland by vegetation type

Natural pasture and rangeland		ALR		Outside ALR (ha)	Total area (ha)	% of surveyed area	% of rangeland & natural pasture
		In ALR (ha)	% of ALR				
Rangeland	Treed - closed	4,360	15%	2,510	6,870	20%	33%
	Treed - open	259	< 1%	213	471	1%	2%
	Grassland	82	< 1%	60	142	< 1%	< 1%
	Shrubland	40	< 1%	21	61	< 1%	< 1%
	Treed - regenerating	35	< 1%	5	40	< 1%	< 1%
	Herbaceous	10	< 1%	4	14	< 1%	< 1%
Subtotal		4,786	16%	2,812	7,599	22%	36%
Natural pasture	Treed - closed	5,945	20%	1,258	7,203	21%	34%
	Treed - open	2,705	9%	699	3,404	10%	16%
	Grassland	1,361	5%	274	1,635	5%	8%
	Treed - regenerating	717	2%	79	796	2%	4%
	Shrubland	322	1%	37	359	1%	2%
	Herbaceous	21	< 1%	41	62	< 1%	< 1%
Subtotal		11,072	37%	2,388	13,459	39%	64%
TOTAL		15,858	53%	5,200	21,058	62%	100%

Table 21 details the vegetation type on areas used for rangeland and natural pasture.

“Treed – closed” is the most abundant land cover type on both rangeland and natural pasture.

Vegetation type is important for natural pasture or rangeland as open grasslands offers a higher grazing yield than densely treed areas.

Figure 19. Natural pasture and rangeland areas by size

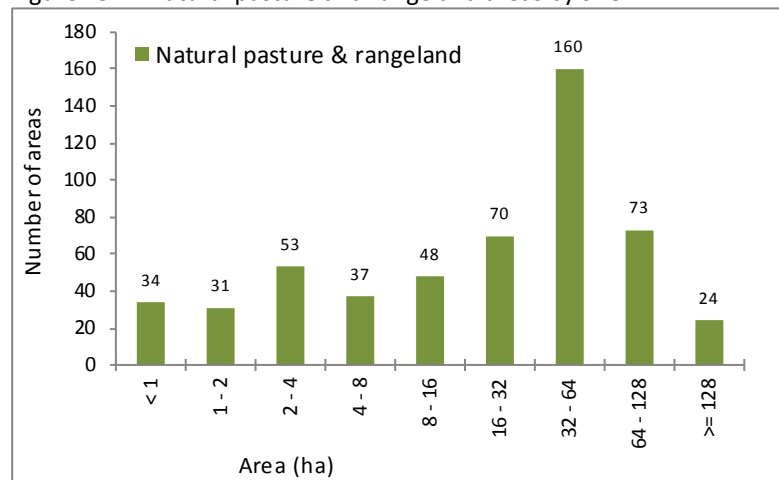


Figure 20 shows that natural pasture & rangeland areas occur across a variety of parcel sizes.

Nearly half (48% or 257) of all areas used for natural pasture or rangeland are greater than 32 hectares.

Natural pasture and rangeland was recorded on 530 parcels where the average parcel size is 50 ha. It is important to note that rangelands typically utilize more than one parcel.

Range activities occurring outside of legally surveyed parcels are beyond the scope of this report.

LIVESTOCK

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

Livestock activities on Indian reserves are reported separately from the inventory totals.

"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 were present but the livestock were not visible and therefore the specific type of livestock could not be determined.

"Homesite" refers to the location of the main ranch or main barn of a livestock operation or farm unit¹⁴. Often, other types of farm infrastructure, such as corrals, paddocks, barns, and feeding/watering facilities, as well as the farm residence, are also at this location. This is the primary location of the farm unit where most livestock management occurs.

"Non Homesite" refers to a location where livestock are present but related infrastructure is minimal. Often pasture fencing and watering are the only apparent infrastructure improvements. This location is often used only for pasturing livestock and is secondary to an operation's primary (or homesite) location.

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, 5000 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, 5000 turkeys, 10,000 chickens (over 100 animal unit equivalents).

¹⁴ Farm unit includes all the property belonging to a farm and may incorporate more than one parcel.

Table 22. Livestock and equine activities

Livestock group	Livestock detail	By parcel		Total activities	By activity type	
		Main type	Secondary type		Intensive	Non Intensive
Beef	Beef total	48	3	51	1	50
Poultry	Chicken	4	9	13	-	13
	Turkey	-	1	1	-	1
	Duck	-	1	1	-	1
	Poultry total	4	11	15	-	15
Swine	Swine total	-	2	2	-	2
Sheep / lamb / goat	Sheep / lamb	15	6	21	1	20
	Goat	2	2	4	-	4
	Sheep / lamb / goat total	17	8	25	1	24
Llama / alpaca	Llama	1	-	1	-	1
	Alpaca	3	-	3	-	3
	Llama / alpaca total	4	-	4	-	4
Fur bearing	Fur bearing total	4	-	4	-	4
Equine	Horse	115	11	126	-	126
	Miniature horse	3	-	3	-	3
	Equine total	122	11	133	-	133
TOTAL		199	35	234	2	232

Table 22 shows equine is the most common type of livestock activity accounting for 133 of 234 or 57% of all livestock and equine activities. Beef is the second most common livestock type with 51 activities or 22% followed by sheep / lamb / goat with 25 activities.

The majority of all livestock activities are “non-intensive”. There are 2 intensive operations, one is a beef activity associated with Pincott Ranches and the other is a sheep activity associated with Tatton Lake Ranch.

Table 23. Beef activities

Scale of beef activity	By parcel		Total number of activities	By activity type		By location	
	Main type	Secondary type		Intensive	Non Intensive	Homesite	Non homesite
Very small scale (1 cow)	2	1	3	-	3	3	-
Small scale (2 -25 cattle)	27	2	29	-	29	28	1
Medium scale (25 -100 cattle)	15	-	15	-	15	13	2
Large scale (> 100 cattle)	4	-	4	1	3	4	-
TOTAL	48	3	51	1	50	48	3

Table 23 details the 51 beef activities recorded in the South Cariboo OCP area. Three activities are “very small” scale and are not significant beef operations. Another 3 activities are “non-homesites” and are secondary to the animals main “homesite”.

Of the 48 animal “homesites”, 3 are “very small” scale, 28 are “small” scale, 13 are “medium” scale, and 3 are “large” scale. The one “large” scale intensive activity is associated with a feedlot/stockyard at Pincott Ranches.

Table 24. Sheep / lamb / goat activities

Activity	Scale	By parcel		Total number of activities	By activity type		By location	
		Main type	Secondary type		Intensive	Non intensive	Homesite	Non homesite
Goat	Very small scale (< 5 goats)	1	1	2	-	2	2	-
	Small scale (5 - 125 goats)	1	1	2	-	2	2	-
	Subtotal	2	2	4	-	4	4	-
Sheep / lamb	Very small scale (< 10 sheep)	3	6	9	-	9	9	-
	Small scale (10 - 250 sheep)	12	-	12	1	11	12	-
	Subtotal	15	6	21	1	20	21	-
	TOTAL	17	8	25	1	24	25	-

Table 24 details the 25 sheep / lamb/ goat activities. In total, there are 4 goat activities and 21 sheep activities. All activities are “very small” or “small” scale.

Eight of the 25 sheep / lamb / goat activities are “secondary” types of livestock, indicating that sheep / lamb / goat activities frequently occur on parcels with another type of livestock.

Table 25. Equine activities

Scale of equine activity	By parcel		Total number of activities	By activity type		By location	
	Main Type	Secondary Type		Intensive	Non intensive	Homesite	Non homesite
Very small scale (1 horse)	52	6	58	-	58	58	-
Small scale (2-25 horses)	68	5	73	-	73	73	-
Medium scale (2-25 horses)	2	-	2	-	2	2	-
TOTAL	122	11	133	-	133	133	-

Table 25 details the 133 equine activities. Although equine activities are numerous, nearly all are “very small” scale (1 equine) or “small scale” scale (2 -25 equine) with only 2 “medium” (25 -100 equine) scale activities.

Of the 2 “medium” scale activities, one has a covered riding ring and the other is associated with a beef operation.

Table 26. Equine homesite infrastructure

Type of equine infrastructure	Number of parcels
Non intensive facilities	110
Riding ring -uncovered	16
Riding ring -covered	7
TOTAL	133

Table 26 details the largest or most intensive type of infrastructure recorded on parcels with equine “homesite” activities.

Most equine activities are very small or small scale (refer to Table 25) and have non intensive types of infrastructure.

Non intensive infrastructure includes field & pasture fencing, corrals & paddocks, and barns and open shelters.

There are 16 equine activities that have a covered riding ring as the most prominent type of infrastructure. This type of intensive infrastructure generally indicates a commercial operation.

In addition, one of the “small” scale equine activities is associated with a guest ranch & resort.

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

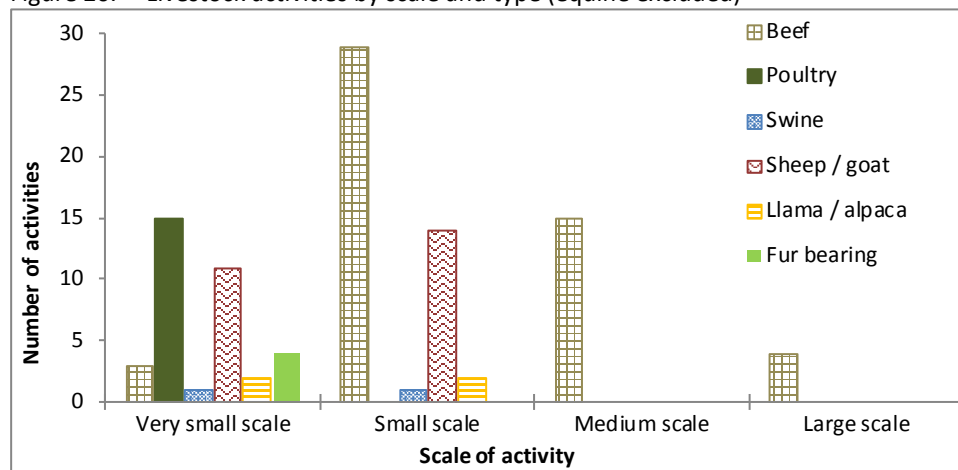


Figure 21 illustrates the scale of livestock activities in South Cariboo (equine activities excluded).

Most livestock activities in South Cariboo occur on a “small” or “very small” scale.

Beef is the only livestock type with “medium” or “large” scale activities.

Figure 21. Livestock and equine activities by scale

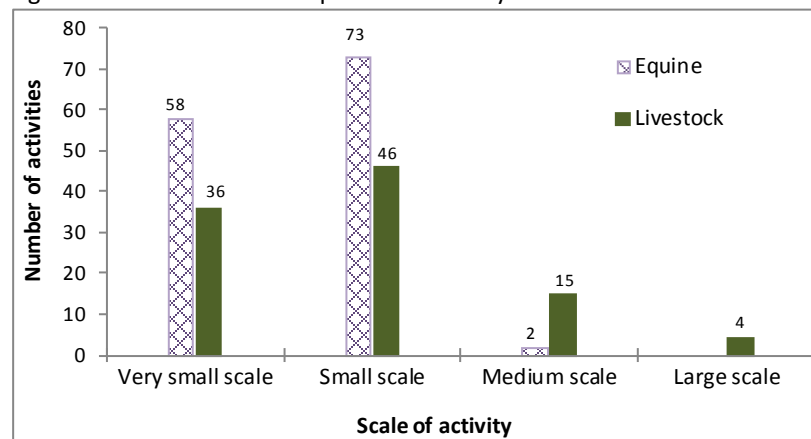


Figure 25 compares the scale of equine and other livestock activities.

Although equine is the most numerous of all equine and livestock activities, nearly all equine occurrences are “small” or “very small” scale.

There are 19 “medium” or “large” livestock occurrences, while there are only 2 “medium” scale equine occurrences.

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

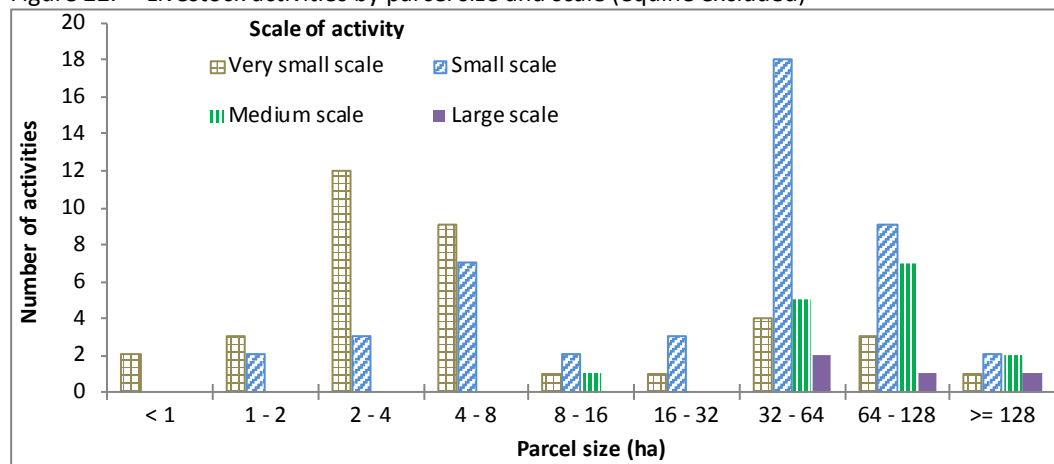


Figure 23 illustrates the distribution of livestock activities (equine excluded) by scale across parcel size categories.

All “large” scale activities occur on parcels greater than 32 ha and all “medium” scale activities occur on parcels greater than 8 ha. All activities on parcels less than 8 ha, are “small” or “very small” scale.

“Small” scale livestock activities occur on all parcel size categories greater than 1 ha.

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

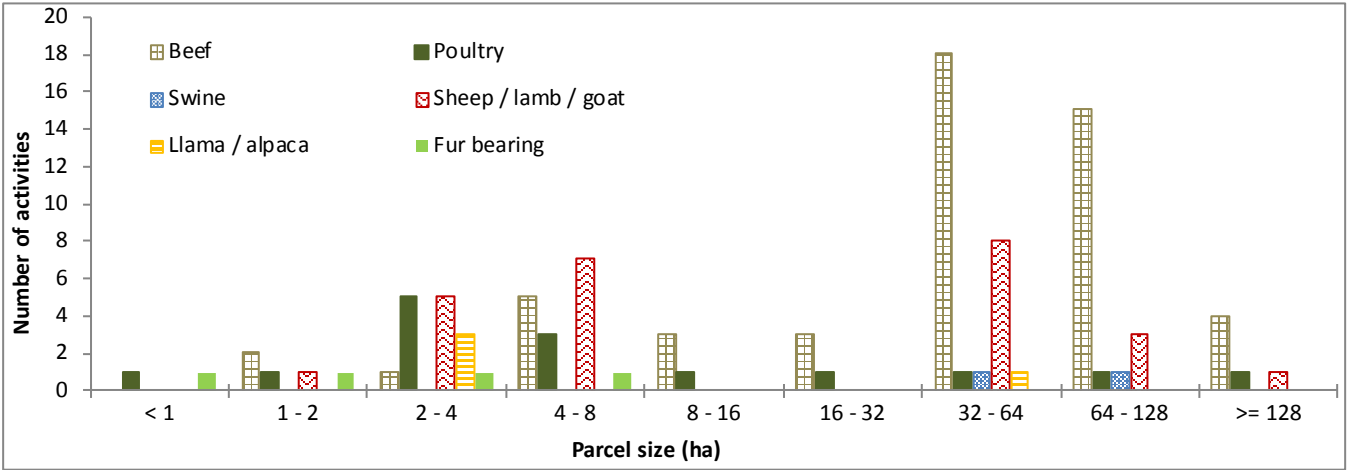


Figure 24 compares the distribution of livestock types across parcel size categories.

Poultry activities occurs across all parcels sizes including parcels <1 hectare. Beef activities occur across all parcel sizes greater than 1 ha.

Although the two swine activities are “very small” and “small” scale, both occur on parcels greater than 32 ha.

Figure 24. Livestock and equine activities by parcel size

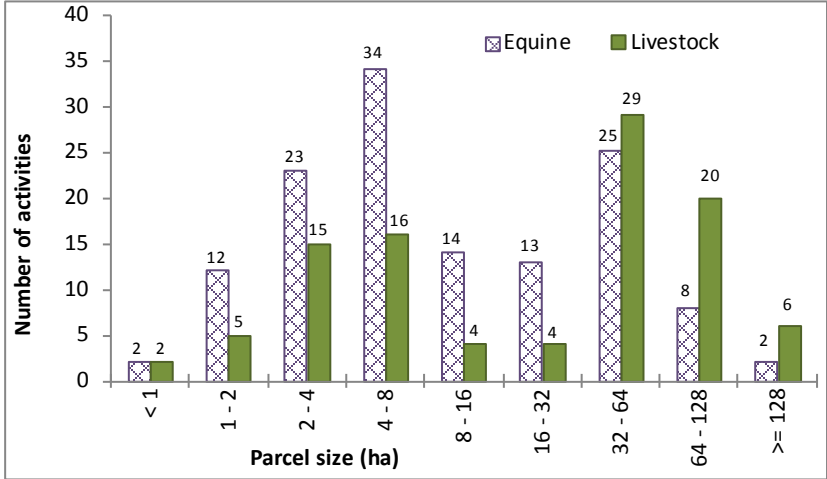


Figure 25 compares the distribution of equine and livestock activities across parcel size categories.

Both equine and livestock activities occur on all parcel size categories less than 128 ha including on parcels < 1 hectare.

Over half (53%) of all equine activities occur on parcels less than 8 ha while the majority of other livestock activities (63%) occur on parcels greater than 8 ha.

7. 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.

PARCEL INCLUSION IN THE ALR

The inventory area included 26,414 ha of ALR on 1,346 parcels which is 88% of the ALR within the South Cariboo OCP area. Another 1,144 ha or 4% of the ALR was inventoried on Indian reserves. ALR land on Indian reserves is not included in the following section as Indian reserves function differently from municipalities and electoral areas in terms of governance and decision making.

The remaining 8% of the ALR was excluded from the inventory as it was outside of legally surveyed parcels or in parcels with $< 100 \text{ m}^2$ in the ALR.

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

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

In total, 1,188 parcels, with 26,229 or 87.4% of the ALR land meet the above criteria and were included in the further analysis of the ALR. This includes 36 parcels that have less than 50% of their area in the ALR but each has greater than 10 ha of ALR land. These 36 parcels have a combined ALR area of 942 ha.

Of these 1,188 parcels considered to be in the ALR, 1,063 parcels with 20,091 ha of ALR land are privately owned and 125 parcels with 6,138 ha are Crown owned.

Figure 25. Parcel inclusion in the ALR



Figure 26 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 ha in the ALR
- lot D is completely outside the ALR.

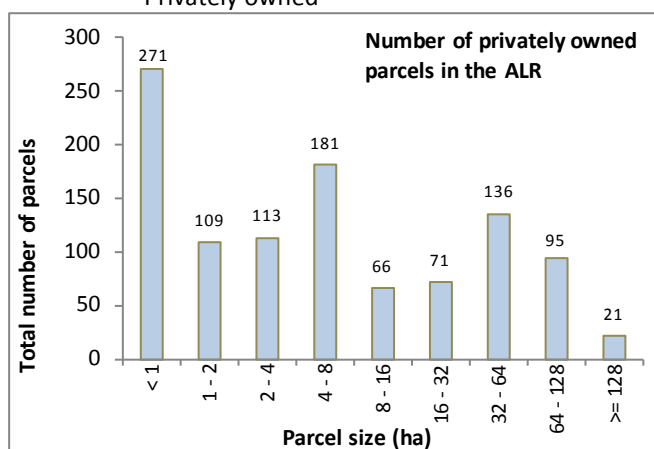
PARCEL SIZE & FARMING IN THE ALR

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, (e.g. intensive market gardens, greenhouse operations, 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 unit¹⁵, 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

Figure 26. Number of parcels in the ALR by parcel size – Privately owned



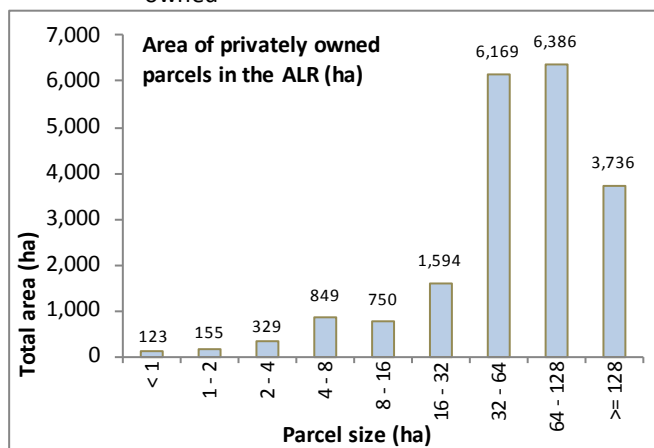
The average privately owned ALR parcel size in South Cariboo is 20.6 ha and the median parcel size is 4.1 ha.

Figure 27 illustrates that of the 1,063 privately owned parcels in the ALR:

- 26% (271 parcels) are less than 1 ha
- 46% (493 parcels) are less than 4 ha.
- 17% (181 parcels) are between 4 and 8 ha.
- 6% (66 parcels) are between 8 and 16 ha.
- 30% (323 parcels) are greater than 16 ha.

Refer to Map 5 for more information.

Figure 27. Total area in the ALR by parcel size – Privately owned



In South Cariboo, nearly all of the privately owned ALR areas are in larger parcels.

Figure 28 illustrates that of the 20,091 ha on privately owned parcels in the ALR:

- <1% (123 ha) is on parcels less than 1 hectare.
- 3% (607 ha) is on parcels less than 4 ha.
- 4% (849 ha) is on parcels between 4 and 8 ha.
- 4% (750 ha) is on parcels between 8 and 16 ha.
- 89% (17,885 ha) is on parcels greater than 16 ha.

¹⁵ 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 27. Number of farmed and not farmed parcels in the ALR – Privately owned

Parcel status with respect to farming	Number of parcels	% of parcels in the ALR
Used for farming	238	22 %
Used for grazing	114	11 %
Not used for farming or grazing	711	67 %
TOTAL	1063	100 %

Table 27 demonstrates that of the 1,063 privately owned parcels in the ALR, only 238 parcels or 22% are "Used for farming".

Figure 28. Number of farmed and not farmed parcels in the ALR by parcel size – Privately owned

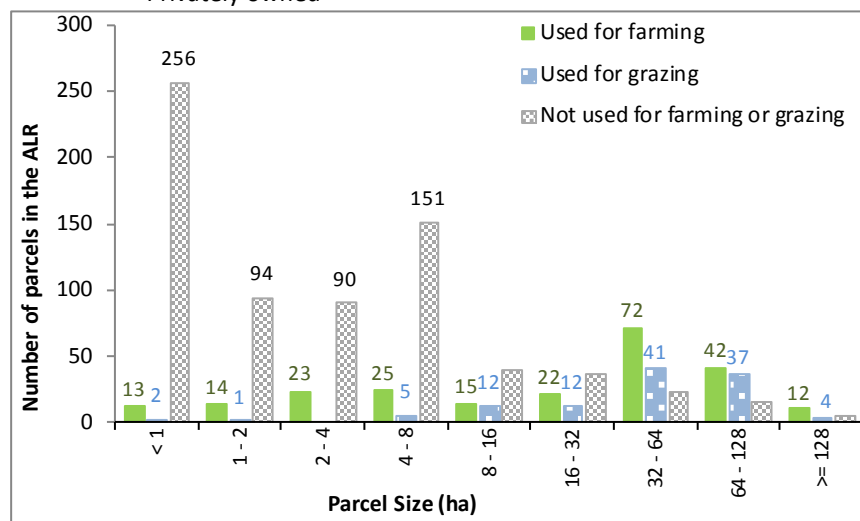


Figure 29 compares the distribution of "Used for farming" parcels with other parcels in the ALR.

The largest proportion of "Not used for farming or grazing" parcels occur on parcels less than 8 ha.

- Of the parcels less than 1 ha, 94% are not used for farming or grazing.
- Of the parcels less than 8 ha, 89% are not used for farming or grazing.

Small parcels are less likely to be utilized for farming or grazing.

Figure 29. Number of farmed and not farmed parcels in the ALR by parcel size (line chart) – Privately owned

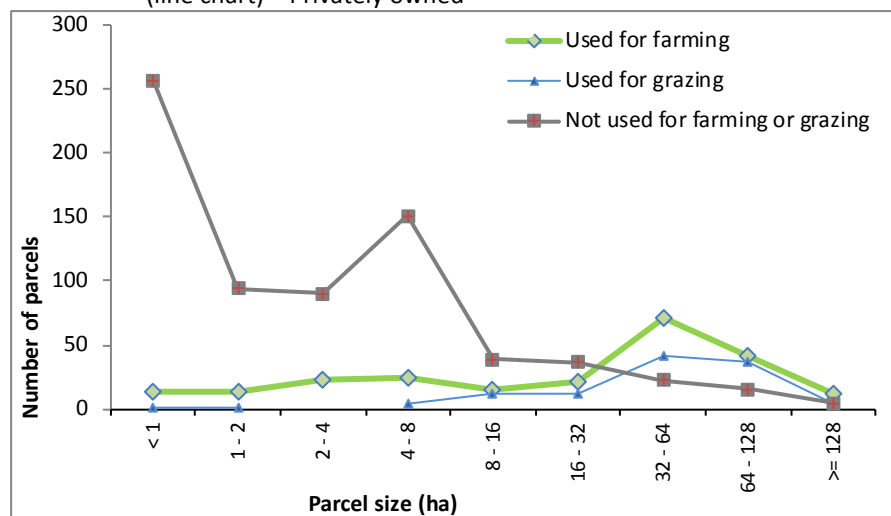


Figure 30 illustrates that although parcels of all sizes are "Used for farming" and "Used for grazing", small parcels have a much greater likelihood of not being "Used for farming" or grazing.

Figure 30. Proportion of parcels farmed and not farmed by parcel size in the ALR – Privately owned

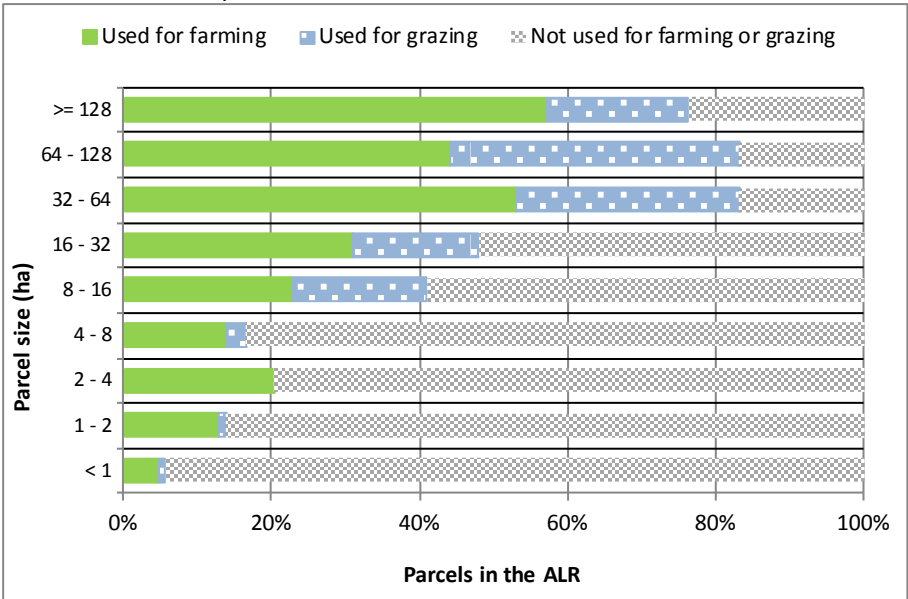


Figure 31 shows that the proportion of parcels “Used for farming” generally increases as the parcel size increases. The proportion of parcels “Used for grazing” also increases with larger parcel sizes.

Only 5% of parcels less than 1 ha are “Used for farming”.

Of the 323 privately owned parcels larger than 16 ha, 242 or 75% are “Used for farming” or “Used for grazing”.

Figure 31. Proportion of land cover by parcel size in the ALR – Privately owned -

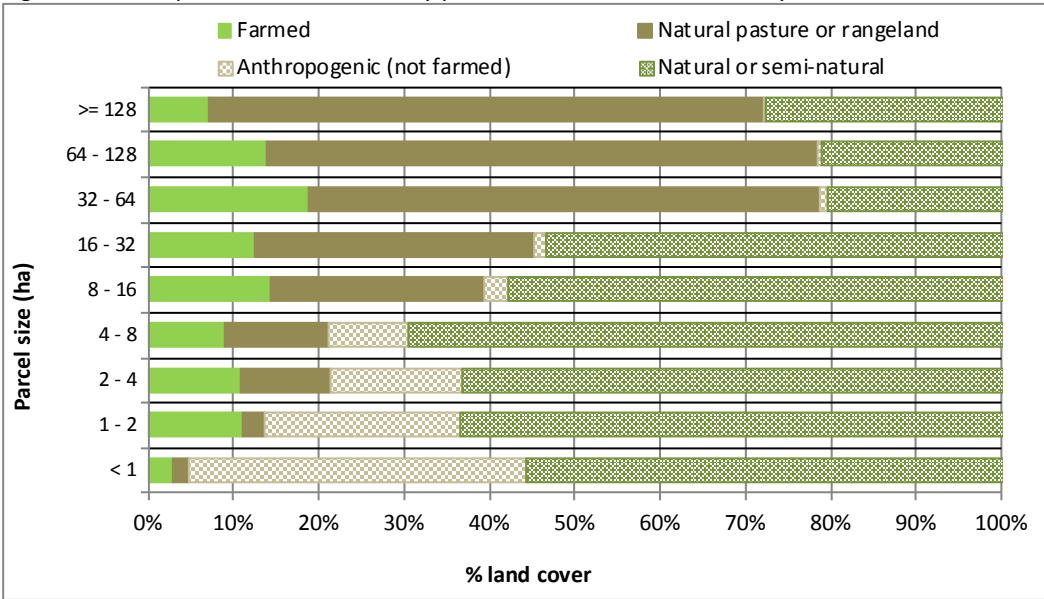
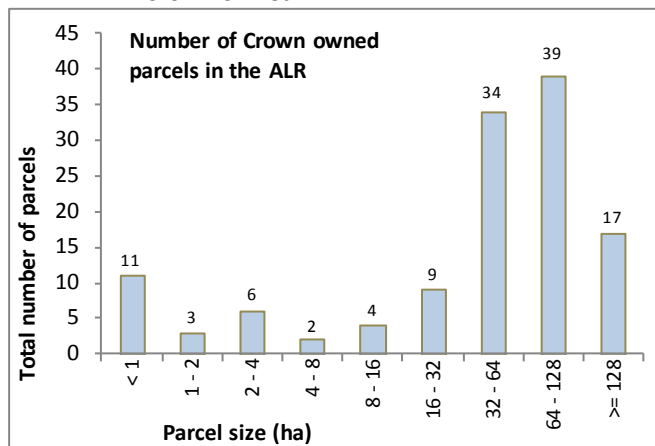


Figure 32 shows that the proportion of natural pasture or rangeland cover generally increases as the parcel size increases.

The largest proportions of “anthropogenic” (not farmed) land cover occurs on parcels less than 1 ha.

Crown Owned

Figure 32. Number of parcels in the ALR by parcel size – Crown owned



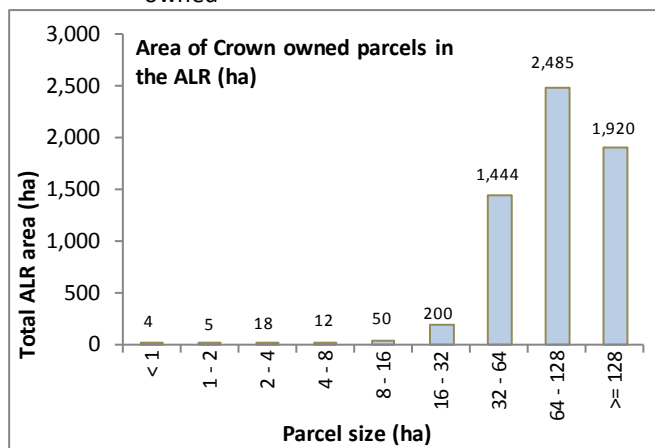
The average Crown owned ALR parcel size in South Cariboo is 65.6 ha and the median parcel size is 57.9 ha.

Figure 33 illustrates that of the 125 Crown owned parcels in the ALR:

- 9% (11 parcels) are less than 1 hectare.
- 16% (20 parcels) are less than 4 ha.
- 2% (2 parcels) are between 4 and 8 ha.
- 3% (4 parcels) are between 8 and 16 ha.
- 78% (99 parcels) are greater than 16 ha.

Refer to Map 5 for more information.

Figure 33. Total area in the ALR by parcel size – Crown owned



In South Cariboo, nearly all of the Crown owned ALR area is in larger parcels.

Figure 34 illustrates that of the 6,138 ha on Crown owned parcels in the ALR:

- <1% (4 ha) is on parcels less than 1 hectare.
- <1% (27 ha) is on parcels less than 4 ha.
- <1% (12 ha) is on parcels between 4 and 8 ha.
- 1% (50 ha) is on parcels between 8 and 16 ha.
- 98% (6,049 ha) is on parcels greater than 16 ha.

Table 28. Number of farmed and not farmed 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	84	67 %
Not used for farming or grazing	41	33 %
TOTAL	125	100 %

Table 28 demonstrates that of the 125 Crown owned parcels in the ALR, 84 or 67% are “Used for grazing”.

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, odour, or dust from neighbouring farm operations.

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

In the following analysis cabins/cottages, mobile homes, single-family houses, duplexes, townhouses, apartments, motels, 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.

Average land improvement values of South Cariboo properties with residences in the ALR were as follows:

- Estate single family house \$ 533,391
- large single family house \$ 275,983
- medium single family house \$173,520
- small single family house \$87,894
- single mobile home \$66,747

(Calculated using 2012 BC Assessment database - Last improvement value)

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 two Crown owned parcel associated with Canim Lake 1 and 2 Indian reserves that are within the ALR and have residences. Thirty-two houses were recorded on Canim Lake 1 reserve and 4 houses were recorded on Canim Lake 2 reserve. These parcels are not included in further analysis of residential use in the ALR.

Privately owned parcels

Table 29. Farming and residences in the ALR – Privately owned

Parcel status	With residence		Without residence		Total number of parcels
	Number of parcels	% of parcels	Number of parcels	% of parcels	
Used for farming	159	15%	79	7%	238
Used for grazing	16	2%	68	6%	84
Not used for farming/grazing but available	431	41%	154	14%	585
Not used for farming/grazing and unavailable	138	13%	18	2%	156
TOTAL	744	70%	319	30%	1,063

Table 29 shows that 744 parcels or 70% of the privately owned ALR parcels have residences.

Of the ALR parcels with residences, 569 or 76% are “Not used for farming or grazing”.

Figure 34. Total area in residential footprint by parcel size

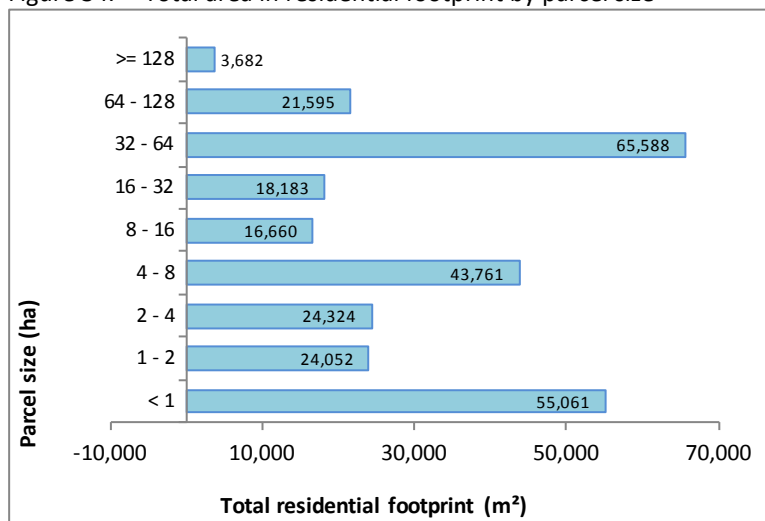


Figure 35 illustrates that there are over 27 ha (272,905 m²) of ALR land in residential footprints distributed across all parcel sizes.

Figure 35. Proportion of parcels with residences by parcel size

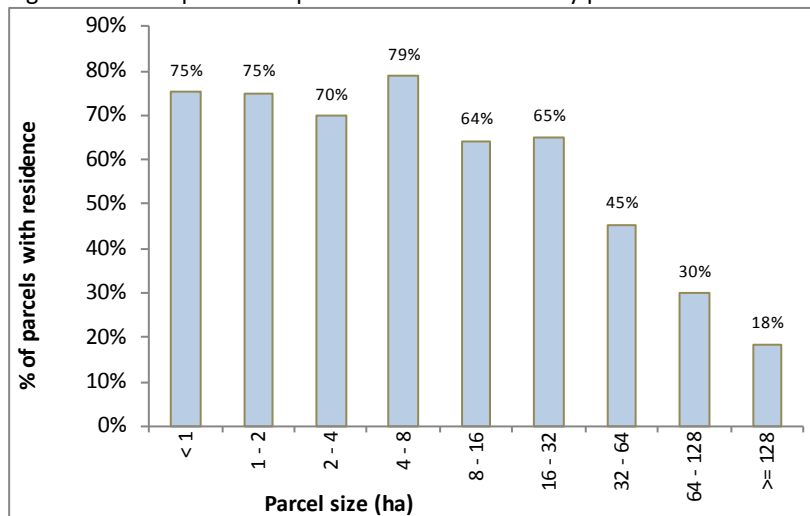


Figure 36 shows that there is a high proportion of parcels with residences across parcel sizes less than 32 ha in the ALR.

Appendix A – Maps

See the Cariboo Regional District, South Cariboo, 2014 ALUI Maps

<http://www2.gov.bc.ca/gov/topic.page?id=EE5F36F0026F43BEB740F05ED13CD3C6>

- Map 1. Land cover & farmed area
- Map 2. Land use & farmed area
- Map 3. Availability of land for farming
- Map 4. Farming activities - Cultivated crops, livestock, irrigation, grazed land
- Map 5. ALR parcel size

Maps are 36 x 36 inches.

Appendix B – Riparian Zones

Lakes and riparian areas are important aquatic resources in the Cariboo Regional District (CRD). In 2004 CRD developed a Shoreland Management Policy¹⁶ to help ensure that shoreland development would not threaten the health and water quality of the regions abundant lakes and watercourses. The policy requires, in part, that lake sensitivity to trophic changes be considered as part of rezoning and development applications. The policy allows for riparian covenants and requires a 15 meter vegetated buffer between most land developments and waterbodies. This riparian buffer can help to protect water quality and fish and wildlife habitat from additional nutrients and degradation. The buffer area is to remain in a primarily undisturbed state.

Riparian management areas, riparian management zones, and riparian reserve zones are terms defined by the BC Forest and Range Practices Act¹⁷. A riparian management zone, by definition, is established to conserve fish, wildlife or biodiversity, and to protect the riparian reserve zone. The BC Forest and Range Practices Act details the required width of the riparian management zones for lakes, streams, and wetlands based on the attributes of each water feature and its adjacent terrestrial ecosystem. Lakes, streams, and wetlands in riparian management areas each have several classifications which are detailed in the *BC Forest & Range Practices Act – Forest Practices & Planning Regulation* excerpt on page 56.

A riparian buffer was created using the required setbacks for riparian reserve zones¹⁷ and the CRD's 15 meter vegetated buffer requirement. See Table B1 for details. Land cover within the riparian buffer was then summarized by riparian class and land cover category.

Table B1. Buffer distance by riparian class type

Riparian Class	Buffer distance (m)
Lake 1 (L1)	15
Stream Class 1 (S1)	50
Stream Class 2 (S2)	30
Stream Class 3 (S3)	20
Swamp Class 1(w1)	15
Swamp Class 5 (w5)	15

Table B1 lists the buffer distance applied to each riparian class to create the riparian buffer zone.

¹⁶ Cariboo Regional District, Shoreland Management Policy, <http://www.cariboord.bc.ca/services/planning/shoreland-management-policy/shoreland-management-policy-2>

¹⁷ Ministry of Forests, Lands, and Natural Resource Operations, Forest & Range Practices Act, http://www.bclaws.ca/Recon/document/ID/freeside/14_2004

Table B2. Land cover in riparian areas by riparian class type

Riparian Class		Land Cover Category			Total area (ha)
		Farmed (ha)	Anthropogenic (not farmed) (ha)	Natural & Semi-natural (ha)	
Lake	Lake 1 (L1)	11	4	401	416
SUBTOTAL		11	4	401	416
Streams	Swamp Class 1 (S2)	14	7	203	223
	Stream Class 2 (S2)	62	5	428	496
	Stream Class 3 (S2)	15	2	322	339
SUBTOTAL		91	14	952	1,058
Wetlands	Swamp Class 5(W1)	51	4	331	385
SUBTOTAL		51	4	331	385
TOTAL		153	22	1,685	1,860

Table B3. Land cover type in riparian areas

Land cover*		Total area (ha)
Farmed	Cultivated field crops	146
	Farm infrastructure	7
	Unused forage or pasture	<1
FARMED SUBTOTAL		153
Anthropogenic (not farmed)	Managed vegetation	11
	Non Built or Bare	2
	Residential footprint	6
	Settlement	<1
	Transportation	1
Built up - Other		<1
SUBTOTAL		22
Natural and Semi-natural	Natural pasture or rangeland	694
	Vegetated	326
	Wetlands	386
	Natural bare areas	<1
	Waterbodies	279
SUBTOTAL		1,685
TOTAL		1,860

* See "Land Cover" in the definitions section for terms used in this table.

Riparian Areas Information and Definitions

BC Forest & Range Practices Act – Forest Practices & Planning Regulation

Excerpt

http://www.bclaws.ca/Recon/document/ID/freeside/14_2004

"riparian class" means the riparian class of a stream, wetland or lake as determined under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*];

"riparian management area" means an area described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*], that consists of a riparian management zone and a riparian reserve zone;

"riparian management zone" means an area described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*], that

- (a) is a portion of the riparian management area, and
- (b) is established to
 - (i) conserve the fish, wildlife habitat, biodiversity and the water values of the riparian management zone, and
 - (ii) protect the riparian reserve zone, if any, within the riparian management area;

"riparian reserve zone" means an area described under Division 3 [*Riparian areas*] of Part 4 [*Practice requirements*], that

- (a) is a portion of a riparian management area, and
- (b) is established to protect fish, wildlife habitat, biodiversity and the water values of the riparian reserve zone;

Division 3 — Riparian Areas

Stream riparian classes

47 (1) In this section, **"active flood plain"** means the level area with alluvial soils, adjacent to streams, that is flooded by stream water on a periodic basis and is at the same elevation as areas showing evidence of

- (a) flood channels free of terrestrial vegetation,
 - (b) rafted debris or fluvial sediments, recently deposited on the surface of the forest floor or suspended on trees or vegetation, or
 - (c) recent scarring of trees by material moved by flood waters.
- (2) A stream that is a fish stream or is located in a community watershed has the following riparian class:

- (a) S1A, if the stream averages, over a one km length, either a stream width or an active flood plain width of 100 m or greater;
- (b) S1B, if the stream width is greater than 20 m but the stream does not have a riparian class of S1A;
- (c) S2, if the stream width is not less than 5 m but not more than 20 m;
- (d) S3, if the stream width is not less than 1.5 m but is less than 5 m;
- (e) S4, if the stream width is less than 1.5 m.
- (3) A stream that is not a fish stream and is located outside of a community watershed has the following riparian class:
- (a) S5, if the stream width is greater than 3 m;
- (b) S6, if the stream width is 3 m or less.
- (4) Subject to subsections (5) and (6), for each riparian class of stream, the minimum riparian management area width, riparian reserve zone width and riparian management zone width, on each side of the stream, are as follows:

Riparian Class	Riparian Management Area (metres)	Riparian Reserve Zone (metres)	Riparian Management Zone (metres)
S1-A	100	0	100
S1-B	70	50	20
S2	50	30	20
S3	40	20	20
S4	30	0	30
S5	30	0	30

S6	20	0	20
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- (5) If the width of the active flood plain of a stream exceeds the specified width for the riparian management zone, the width of the riparian management zone extends to the outer edge of the active flood plain.
- (6) The minister may specify a riparian reserve zone for a stream with a riparian class of S1-A if the minister considers that a riparian reserve zone is required.
- (7) The riparian reserve zone for a stream begins at the edge of the stream channel bank and extends to the width described in subsection (4) or (6).
- (8) The riparian management zone for a stream begins at
 - (a) the outer edge of the riparian reserve zone, or
 - (b) if there is no riparian reserve zone, the edge of the stream channel bank,
 and extends to the width described in subsection (4) or (5).

[am. B.C. Reg. 580/2004, s. 36.]

Wetland riparian classes

48 (1) Wetlands have the following riparian classes:

- (a) W1, if the wetland is greater than 5 ha in size;
- (b) W2, if the wetland is not less than 1 ha and not more than 5 ha in size and is in one of the following biogeoclimatic zones or subzones:
 - (i) Ponderosa Pine;
 - (ii) Bunch Grass;
 - (iii) Interior Douglas-fir, very dry hot, very dry warm or very dry mild;
 - (iv) Coastal Douglas-fir;
 - (v) Coastal Western Hemlock, very dry maritime, dry maritime or dry subarctic;
- (c) W3, if the wetland is not less than 1 ha and not more than 5 ha in size and is in a biogeoclimatic zone or subzone other than one referred to in paragraph (b);
- (d) W4, if the wetland is
 - (i) not less than 0.25 ha and less than 1 ha in size and is in a biogeoclimatic zone or subzone referred to in paragraph (b) (i), (ii) or (iii), or

(ii) not less than 0.5 ha and less than 1 ha in size and is in a biogeoclimatic zone or subzone referred to in paragraph (b) (iv) or (v).

(2) Despite subsection (1), an area is to be treated as a single wetland with a riparian class of W5 if

(a) the area contains

(i) two or more W1 wetlands located within 100 m of each other,

(ii) a W1 wetland and one or more non-W1 wetlands, all of which are within 80 m of each other, or

(iii) two or more non-W1 wetlands located within 60 m of each other, and

(b) the combined size of the wetlands, excluding the upland areas, is 5 ha or larger.

(3) Subject to subsections (4) and (5), for each riparian class of wetland, the minimum riparian management area width, riparian reserve zone width and riparian management zone width for the wetland are as follows:

Riparian Class	Riparian Management Area (metres)	Riparian Reserve Zone (metres)	Riparian Management Zone (metres)
W1	50	10	40
W2	30	10	20
W3	30	0	30
W4	30	0	30
W5	50	10	40

(4) No riparian reserve zone or riparian management zone extends onto any enclosed upland areas in a W1 wetland if the wetland is

- (a) located in a boreal, subboreal or hyper-maritime climate, and
 - (b) greater than 1 000 ha in size.
- (5) If the minister considers it necessary for a riparian reserve zone or riparian management zone to extend onto an enclosed upland area, the minister may require either or both of the following:
- (a) a riparian reserve zone of a width of 10 m or less;
 - (b) a riparian management zone of a width of 40 m or less.
- (6) The riparian reserve zone for a wetland begins at the edge of the wetland and extends to the width described in subsection (3) or (5).
- (7) The riparian management zone for a wetland begins at
- (a) the outer edge of the riparian reserve zone, or
 - (b) if there is no riparian reserve zone, the edge of the wetland,
- and extends to the width described in subsection (3) or (5).

[am. B.C. Regs. 580/2004, s. 37; 62/2005, s. 7.]

Lake riparian classes

49 (1) Lakes have the following riparian classes:

- (a) L1-A, if the lake is 1 000 ha or greater in size;
- (b) L1-B, if
 - (i) the lake is greater than 5 ha but less than 1 000 ha in size, or
 - (ii) the minister designates the lake as L1-B;
- (c) L2, if the lake is not less than 1 ha and not more than 5 ha in size and is located in a biogeoclimatic zones or subzone that is
 - (i) Ponderosa Pine,
 - (ii) Bunch Grass,
 - (iii) Interior Douglas-fir, very dry hot, very dry warm or very dry mild,
 - (iv) Coastal Douglas-fir, or
 - (v) Coastal Western Hemlock, very dry maritime, dry maritime or dry submarine;
- (d) L3, if the lake is not less than 1 ha and not more than 5 ha in size and is in a biogeoclimatic zone or subzone other than one referred to in paragraph (c);

(e) L4, if the lake is

- (i) not less than 0.25 ha and not more than 1 ha in size and is in a biogeoclimatic zone or subzone referred to in paragraph (c) (i), (ii) or (iii), or
- (ii) not less than 0.5 ha and not more than 1 ha in size and is in a biogeoclimatic zone or subzone referred to in paragraph (c) (iv) or (v).

(2) Subject to subsection (3), for each riparian class of lake, the minimum riparian management area width, riparian reserve zone width and riparian management zone width are as follows:

Riparian Class	Riparian Management Area (metres)	Riparian Reserve Zone (metres)	Riparian Management Zone (metres)
L1-A	0	0	0
L1-B	10	10	0
L2	30	10	20
L3	30	0	30
L4	30	0	30

(3) If the minister considers it necessary, the minister may specify a riparian management area and a riparian reserve zone for a lake with a riparian class of L1-A.

(4) The riparian reserve zone for a lake begins at the edge of the lake and extends to the width described in subsection (2) or (3).

(5) The riparian management zone for a lake begins at

- (a) the outer edge of the riparian reserve zone, or
- (b) if there is no riparian reserve zone, the edge of the lake, and extends to the width described in subsection (2) or (3).

Appendix C – Agricultural Capability

Agricultural capability classes are summarized from the “Land Capability Classification for Agriculture in British Columbia”¹⁸. Information on agricultural capability is also available from the Agricultural Land Commission¹⁹.

Agricultural Capability Classes

Class 1
Class 1 land is capable of producing the very widest range of crops. Soil and climate conditions are optimum, resulting in easy management.
Class 2
Class 2 land is capable of producing a wide range of crops. Minor restrictions of soil or climate may reduce capability but pose no major difficulties in management.
Class 3
Class 3 land is capable of producing a fairly wide range of crops under good management practices. Soil and/or climate limitations are somewhat restrictive.
Class 4
Class 4 land is capable of a restricted range of crops. Soil and climate conditions require special management considerations.
Class 5
Class 5 land is capable of production of cultivated perennial forage crops and specially adapted crops. Soil and/or climate conditions severely limit capability.
Class 6
Class 6 land is important in its natural state as grazing land. These lands cannot be cultivated due to soil and/or climate limitations.
Class 7
Class 7 land has no capability for soil bound agriculture.

NOTE: if class contains value X , it is an urban area with no agricultural capability. If class contains value O# (where # = a number value) - it is an organic soil classification

Agricultural Capability Subclasses

A & M	Soil moisture deficiency	N	Salinity
C	Adverse climate (excluding precipitation)	P	Stoniness
D	Undesirable soil structure	R	Shallow soil over bedrock and/or bedrock outcroppings
E	Erosion	T	Topography
F	Low fertility	W	Excess water (groundwater)
I	Inundation (flooding by streams, etc.)	S & X	Cumulative and minor adverse conditions

¹⁸Ministry of Agriculture and Food, Ministry of Environment, Land Capability Classification For Agriculture in British Columbia (1983)
<http://www.alc.gov.bc.ca/alc/content.page?id=CE6EED0FBDBE4701AE0B3A0BF72CBC05>

¹⁹ Agricultural Land Commission, Agricultural Capability Classification in BC
<http://www.alc.gov.bc.ca/alc/content.page?id=CE6EED0FBDBE4701AE0B3A0BF72CBC05>

Appendix D – Indian reserves

Land cover on Indian reserves

Table D1. Land cover and farmed area on Canim Lake 1 and 2 Indian reserves

Land cover*		ALR		Outside ALR (ha)	Total area (ha)
		In ALR (ha)	% of ALR		
Actively farmed	Cultivated field crops	110	< 1%	-	110
	Farm infrastructure	<1	< 1%	-	<1
FARMED SUBTOTAL		110	< 1%	-	110
Anthropogenic (not farmed)	Managed vegetation	14	< 1%	<1	14
	Non Built or Bare	1	< 1%	-	1
	Residential footprint	7	< 1%	-	7
	Settlement	5	< 1%	<1	5
	Transportation	8	< 1%	-	8
SUBTOTAL		35	1%	<1	35
Natural & Semi-natural	Natural pasture or rangeland	9	< 1%	-	9
	Vegetated	975	3%	679	1,654
	Wetlands	4	< 1%	-	4
	Waterbodies	11	< 1%	<1	11
SUBTOTAL		999	3%	679	1,678
TOTAL		1,144	5%	679	1,823

* See the glossary for terms used in this table.

Table D1 shows the extent of different land cover types across Canim Lake 1 and Canim Lake 2 Indian reserves.

Table D2. Land cover and farmed area on Indian reserves by reserve name

First Nation	Land Cover Category			Total surveyed area (ha)
	Farmed (ha)	Anthropogenic (not farmed) (ha)	Natural & Semi-natural (ha)	
Canim Lake 1 First Nation	110	33	1,615	1,759
Canim Lake 2 First Nation	<1	2	63	65
TOTAL	110	35	1,678	1,823

Table D2 shows that nearly all of the “Farmed” land cover on Indian reserves occurs on Canim Lake 1 “Farmed” land cover includes cultivated crops and farm infrastructure.

Cultivated crops on Indian reserves

Table D3. Main field crop types by area on Canim Lake 1 and 2 Indian reserves

Cultivated crops on Indian reserves		ALR		Outside ALR (ha)	Total area (ha)
		In ALR (ha)	% of ALR		
Canim Lake 1	Vegetables	< 0.1	< 1%	-	< 0.1
Canim Lake 1	Forage & pasture	110	< 1%	-	110
Canim Lake 2	Pasture	< 0.1	< 1%	-	< 0.1
TOTAL		110	< 1%	-	110

Table D3 shows that 110 ha of forage & pasture was recorded on Canim Lake 1 reserve.

Also recorded was 0.05 ha of vegetables on Canim Lake 1 and 0.06 ha of pasture on Canim Lake 2 reserve.

Table D4. Forage & pasture crops on Canim Lake 1 & 2 Indian reserves

Reserve name	Forage & pasture crops		ALR		Outside ALR (ha)	Total area (ha)
			In ALR (ha)	% of ALR		
Canim Lake 1	Forage (managed)	Grass	26	< 1%	-	26
	Forage (managed)	Mixed grass / legume	53	< 1%	-	53
	Forage (unmanaged)	Grass hydrophytic	13	< 1%	-	13
	Pasture (unmanaged)	Grass	18	< 1%	-	18
Canim Lake 2	Pasture (unmanaged)	Grass	< 1	< 1%	-	< 1
TOTAL			110	< 1%	-	110

Table D4 details the forage & pasture crops on Canim Lake 1 & 2 Indian reserves. Nearly all cultivated crops recorded on Indian reserves are on Canim Lake 1.

Appendix E – Glossary

Actively farmed – Land cover considered **Farmed** but excludes unused / unmaintained field crops, and unmaintained greenhouses. Does not include natural pasture or rangeland.

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.

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.

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, and 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 family dwellings, multifamily dwellings, and mobile homes.

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

Anthropogenic – Settlement – Lands covered by built objects (structures) and their associated yards, roads, and 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, 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.

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.

BC Assessment – The Crown corporation which produces annual, uniform property assessments that are used to calculate local and provincial taxation. The database purchased from BC Assessment

contains information about property ownership, land use, and farm classification, which is useful for land use surveys.

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

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.

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

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 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 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.

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.

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

Grazed – Land in **natural pasture or rangeland** that is used for grazing domestic livestock. These areas are considered separate from **Farmed** land cover.

Homesite (livestock) – The homesite is the primary location of a farm unit or livestock operation where most livestock management occurs. It is the location of the main ranch or main barn of a **farm unit**.

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

Intensive livestock – Intensive livestock have specialized structures such as barns, feedlots, or stockyards designed for confined feeding at high stocking densities.

Land use – Institutional & community – Parcels with churches, cemeteries, hospitals, medical centers, education facilities, correctional facilities, or government and First Nation administration.

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

Land use – Protected area / park / reserve – Includes provincial parks, other parks, and ecological reserves. Areas may have passive recreation such as hiking, nature viewing, or camping.

Land use – Recreation & leisure – Parcels with intensive recreation (such as zoos, rinks, courts, walking/biking trails), or extensive recreation (such as horseback riding, wilderness camping sites, fishing, hunting, skiing, etc.). Golf course are reported separately.

Land use – Water management – Areas used to actively or inactively manage water. Includes reservoirs, managed wetlands, dykes and land which provides natural flood/erosion protection (land outside dyke).

Land use – Wildlife management – Areas used to actively or inactively manage wildlife. Includes wildlife reserves, breeding areas, fishing areas, and fish ladders/hatcheries.

Livestock operation scale – See **Scale of livestock operations**.

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 – Grass – Land cover dominated by herbaceous plants with long, narrow leaves characterized by linear venation; including grasses, sedges, rushes, and other related species.

Natural and Semi-natural – Herbaceous – Land cover dominated by 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 grass.

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

Natural and Semi-natural – Natural pasture – Smaller fenced areas usually 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 areas 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 – Shrubs – Land where 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 – Land where between 60 and 100% of crown cover is native trees.

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

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

Non homesite (livestock) – A location where livestock are present, but related infrastructure is minimal. Non homesites are used for pasturing and are secondary to the farm units primary (homesite) location.

Non intensive livestock – Non intensive livestock have the ability to graze on pasture and often utilize non intensive barns and corrals/paddocks.

Not used for farming – Parcels that do not meet the “Used 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.

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)

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. Areas less than 1 acre in size are considered to have limited potential for farming.

Unavailable for farming – “Not used for farming” parcels where future agricultural development is improbable because of a conflicting land use or land cover that utilizes the majority of the parcel area. For example, most residential parcels are considered unavailable 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.

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.

Used for farming – See final page of glossary.

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.

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 40% parcel area in cultivated field crops (excluding unused forage or pasture),
- at least 40% parcel area built up with farm infrastructure,
- at least 50% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure,
- at least 25% parcel area built up with crop cover structures (excluding unmaintained structures),
- at least 25% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and at least one small scale livestock, apiculture or aquaculture operations,
- at least 30% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and any livestock, apiculture or aquaculture operations,
- at least 23% parcel area in cultivated field crops (excluding unused forage or pasture) and at least 45% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure,
- at least 10% parcel area in crop cover structures (excluding unmaintained structures) and at least 30% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure,
- at least 15% parcel area and at least 15 ha in cultivated field crops (excluding unused forage or pasture),
- at least 20% parcel area and at least 10 ha in cultivated field crops (excluding unused forage or pasture),
- at least 25% parcel area and at least 5 ha in cultivated field crops (excluding unused forage or pasture),
- at least 10% parcel area and at least 2 ha built up with crop cover structures (excluding unmaintained structures),
- at least 20% parcel area and at least 1 ha built up with crop cover structures (excluding unmaintained structures),
- at least 50% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure or natural pasture and any livestock, apiculture or aquaculture operations,
- at least 25% parcel area or 5 ha in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and farm classification,
- at least 10% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and at least 40% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure or natural pasture and farm classification,
- at least 50% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure or natural pasture and farm classification,
- at least 20% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure or natural pasture and at least one small scale livestock, apiculture or aquaculture operations and farm classification.