

# Agricultural Land Use Inventory Strathcona Regional District

Summer 2017



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**British Columbia Ministry of Agriculture  
Strengthening Farming Program**

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- BC Ministry of Agriculture,
- Strathcona Regional District, and
- Partnership for Water Sustainability in BC

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Disclaimer: The Governments of Canada and British Columbia are committed to working with industry partners. Opinions expressed in this document are those of the BC Ministry of Agriculture and not necessarily those of the Government of Canada, the Strathcona Regional District, or the Partnership for Water Sustainability in BC.

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## *Acronyms*

AGRI	BC Ministry of Agriculture
ALR	Agricultural Land Reserve
ALUI	Agricultural Land Use Inventory
AUE	Animal Unit Equivalent
GIS	Geographic Information Systems
SRD	Strathcona Regional District

## Executive Summary

In the summer of 2017 the BC Ministry of Agriculture and its partners conducted an Agricultural Land Use Inventory (ALUI) in Strathcona Regional District. The ALUI was funded in part by *Growing Forward 2*, a federal-provincial territorial initiative.

ALUIs can be used to understand the type and extent of agricultural activities within the Agricultural Land Reserve (ALR). The ALUI data quantifies how much land is currently used for agriculture, how much land is unavailable for agriculture, and how much land may have potential for agricultural expansion. The data provides baseline information to help track trends in agricultural land use and to measure changes over time. The data also serves as a key input into an Agricultural Water Demand Model that estimates current and future agricultural water needs.

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

Included in the inventory were all parcels:

- completely or partially within the ALR, or
- classified by BC Assessment as having “Farm” status for tax assessment, or
- containing an active water licence for farming or irrigation purposes, or
- zoned by local government bylaws to permit agriculture and indicating signs of agriculture or aquaculture on aerial photography

There are 19,170 ha of ALR within Strathcona Regional District. Of this area:

- 88% or 16,875 ha was inventoried and forms the “effective ALR”
- 10% or 1,824 ha was outside of legally surveyed parcels and was not included in the ALUI
- 2% or 472 ha was on Indian Reserves and was not included in the ALUI

The 16,875 ha of inventoried ALR is considered the “**effective ALR**” as it is within legally surveyed parcels and may be subject to local and/or regional planning decisions.

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

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

The majority of the effective ALR (94%) was in a natural or semi-natural state. The remainder of the effective ALR was farmed (3% or 541 ha) or was anthropogenically modified in vegetation, buildings, and roads (3% or 408 ha). An additional 120 ha of land outside the ALR was farmed bringing the total farmed land cover area to 661 ha.

There were 577 ha of cultivated crops in Strathcona Regional District (495 ha in the ALR and 83 ha outside the ALR). Forage & pasture was the most common crop accounting for 68% of all cultivated land. There were 224 ha of forage, 124 ha of pasture, 38 ha used for both forage and pasture, and 4 ha in unused forage/pasture<sup>1</sup>. Other significant crops included barley (57 ha), cranberries (34 ha), forestry stock (33 ha), and raspberries (32 ha). Also recorded were tree fruits (8 ha), vegetables (6 ha), tree plantations (6 ha), grapes (5 ha), and floriculture (1 ha).

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<sup>1</sup> Unused forage/pasture fields have not been cut or grazed this growing season, but could be brought into use at any time.

Irrigation information was captured by crop type and irrigation type to aid in developing an agricultural water demand model. Irrigation was not overly common in the region with just over one quarter (26%) of the cultivated land being irrigated.

### **Livestock**

Livestock activities were recorded, but were difficult to measure using a windshield survey. Livestock findings are reported as a range of animal unit equivalents for each parcel where animals or related structures were observed.

Equines were the most abundant livestock type in Strathcona Regional District and accounted for 39% of the estimated animal unit equivalents (AUEs). Beef accounted for 15% of the AUEs while sheep / goats and poultry each accounted for 13%. Most livestock occurrences are “small” scale with less than 25 AUEs. There was also 1 “medium” scale equine activity with 25 -100 AUES.

Aquaculture is significant with the Region. Sixty-eight aquaculture activities (shellfish, finfish, and mixed marine) were recorded. Aquaculture activities were included in the ALUI if they occurred within legally surveyed parcels. Deepwater, offshore sites are not accounted for in this inventory.

### **ALR Utilization**

Parcels in the ALR were categorized as “Used for farming” or “Not used for farming” based on the proportion of the parcel in cultivated crops, farm infrastructure, and/or the scale of livestock production. “**Used for farming**” parcels have the majority of their area in agricultural use or have a significant intensity of farming activity. Refer to the glossary for the full definition. Of all ALR parcels, 7% were “Used for farming” while 93% were “Not used for farming”.

### **ALR Availability**

Parcel availability for farming was assessed based on the extent of existing land uses and land covers and their compatibility with agriculture. Parcels considered “Not used for farming” were further categorized as available or unavailable for farming. “Unavailable for farming” parcels either had a land use making agricultural development improbable (e.g. golf course, school, etc.) or had little land with potential for farming. Of the **privately owned** ALR parcels:

- 48 parcels (7%) were used for farming
- 143 parcels (20%) were available for farming
- 510 parcels (73%) were unavailable for farming

Of the unavailable for farming parcels, 34% has a residential use, and another 34% were severely limited by soil and topography limitations.

A parcel is considered to be “Available for farming” if it is not already “Used for farming”, has at least 50% of its area and at least 0.4 ha in land with potential for farming, and does not have a land use that excludes agriculture. Available for farming parcels provide an initial selection of parcels that may be available for agricultural expansion. Detailed investigation is required to determine the land costs, land suitability, and trade-offs associated with converting these natural areas to agriculture. Of the **privately owned and available** ALR parcels:

- 45 parcels (38%) are less than 4 ha in size
- 89 parcels (62%) are greater than 4 ha in size

## *Agrologist Comments*

Strathcona Regional District encompasses a large area that spans the center of Vancouver Island, a portion of the mainland central coast and the 15 Discovery Islands in between. Its current territory has a land area of 18,329.948 km<sup>2</sup> (7,077.232 sq mi) and a 2016 census population of 44,671 inhabitants. The largest community is Campbell River with a population of 32,588.

Early First Nations inhabitants the Coast Salish now reside on the south/central Island, later the Laichwiltach people from the Kwaguilth First Nations from the north Island now reside in Campbell River and Cape Mudge on Quadra Island. On the West Coast there are 14 first nations part of the Nuuchah-nulth Tribal Council. Their territory extends from the Brooks Peninsula to Port Renfrew in the south. The Homalco First Nation from Bute inlet and the surrounding area relocated their community to Campbell River in the late 1970's and early 1980's.

In 1792 both the Spanish and English sent ships to chart and explore this area. In 1859-1861 Captain Richards of HMS Plumper was sent to the area by the Royal Canadian Navy. The large river was named for the surgeon onboard, Dr. Samuel Campbell. Logging began in the area began in the 1860's. It was not until late into the 1880's when Europeans began to settle along the coast of the Campbell River area. Aquaculture, mining, logging, fishing and tourism are the main economic drivers in the region today.

Land based agriculture has not played a large role in the early settlement or current economy largely due to the remote, rugged and sparsely populated land base. The Discovery Islands attracted settlers wanting to embrace a more subsistence life style. These settlers by necessity raised livestock and grew crops to supplement fishing, hunting and logging. Many of these early farming settlements can be found today thriving on Quadra and Cortes Island as small mixed farms and vineyards.

According to the Campbell River Agriculture Plan, 2011, there is significant opportunity and latent potential for agriculture in Campbell River. With over 5000 hectares of land in the ALR, favourable climates, good soils, and attractive land prices, the Campbell River area is well-positioned to dramatically increase the amount and variety of what is currently being produced in the area. This represents opportunity for an emerging agriculture industry.

This region has long been known for the quantity and quality of its seafood. More opportunities for land based agriculture and food businesses are likely to follow.

Jill Hatfield P.Ag.  
Regional Agrologist

# 1. General Information

## 1.1 OVERVIEW

Strathcona Regional District includes land on Northern Vancouver Island as well as on the adjacent mainland. The Regional District is comprised of five incorporated municipalities: (Campbell River, Gold River, Sayward, Tahsis, Zeballos) and four Electoral Areas (A – D).

- Electoral Area A is known as Kyuquot-Nootka/Sawyard,
- Electoral Area B includes Cortes Island,
- Electoral Area C is referred to as the Discovery Islands-Mainland Inlets and
- Electoral Area D is Oyster Bay-Buttle Lake.

The natural environment is generally characterized by remote inlets and vast forested hills.

Figure 1. General location map



## 1.2 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.

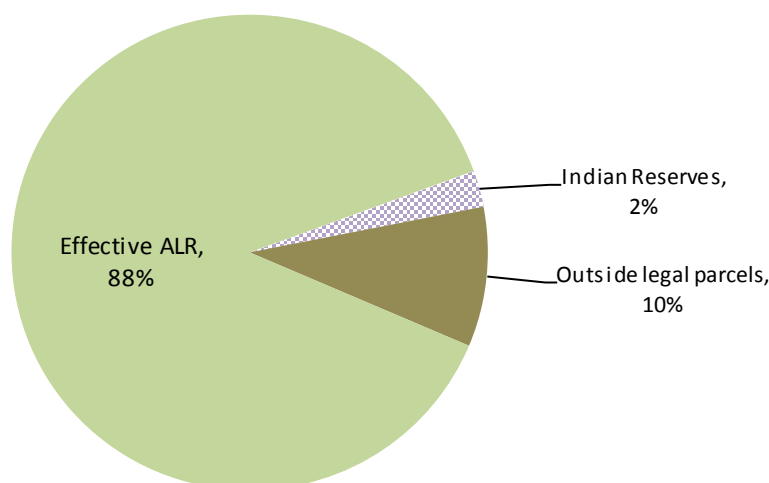
In 2017, there were 19,170 ha<sup>2</sup> of ALR within Strathcona Regional District (see Figure 3). This is approximately 1% of the regions' total land area, and 8% of the land in legally surveyed parcels.

The ALR area includes:

- 16,875 ha of inventoried parcels
- 1,824 ha outside of legally surveyed parcels in unsurveyed Crown land, rights-of-ways and waterbodies
- 472 ha of land on Indian Reserves

The 16,875 ha of ALR on inventoried parcels is considered the '**effective ALR**' as these areas are within legally surveyed parcels and are subject to local and/or regional planning decisions. Analysis of ALR land outside of legally surveyed parcels and of ALR land on Indian Reserves is not included in this report.

Figure 2. Proportion of ALR by category



*Figure 2 shows the proportion of different categories of ALR land in Strathcona Regional District.*

*In total, 88% of the ALR is considered "effective ALR" and forms the basis of this report. The remaining area is outside of legally surveyed parcels in unsurveyed Crown land (10%), or on Indian Reserves (2%). These lands are not included in this report.*

<sup>2</sup> Provincial Agricultural Land Commission (ALC) Agricultural Land Reserve Polygons. Calculated in GIS.

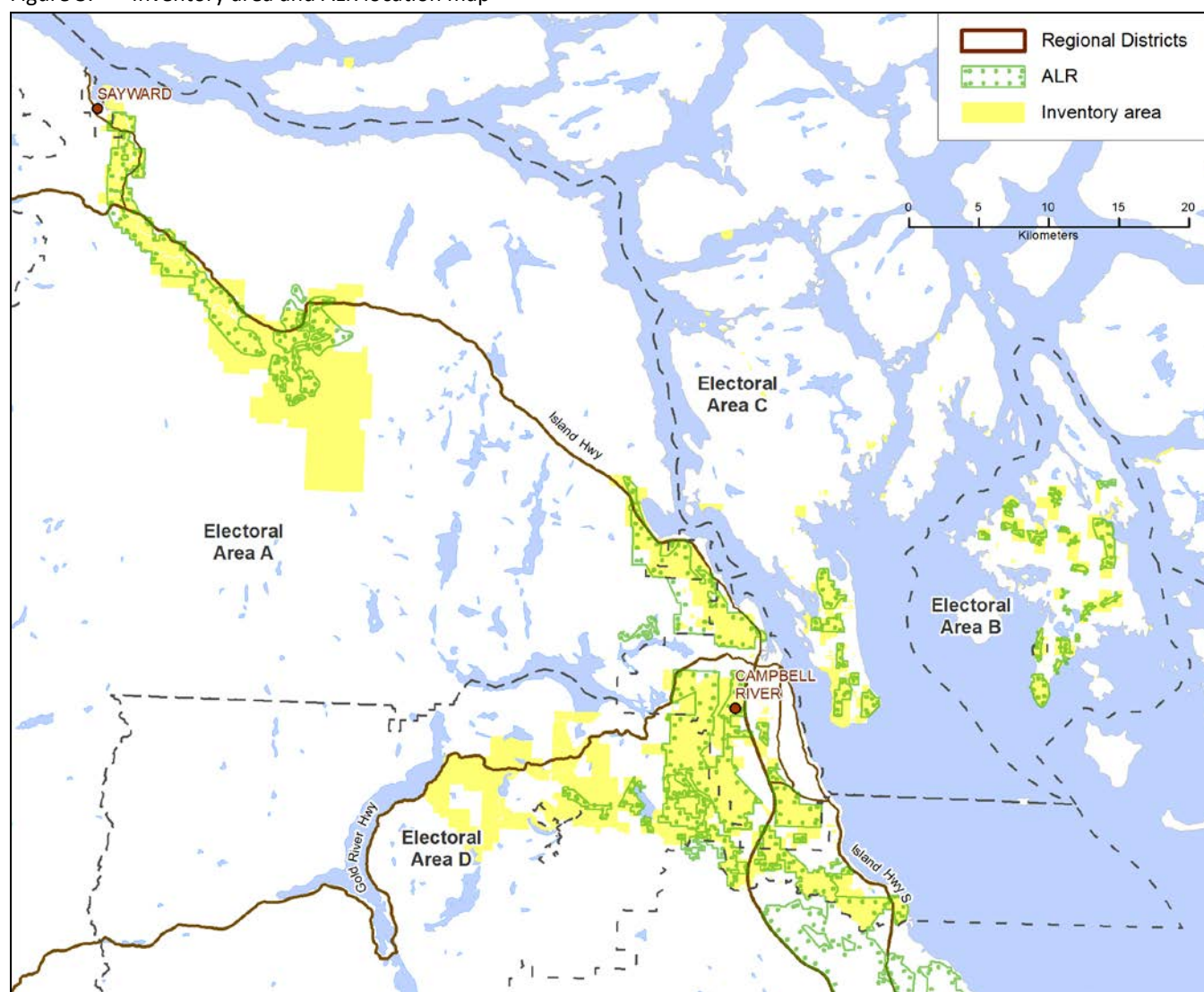
### 1.3 INVENTORY AREA

The inventory area encompassed 1,066 parcels with a combined area of 22,680 ha. Included were all parcels:

- completely or partially within the ALR, or
- classified by BC Assessment as having “Farm” status for property tax assessment, or
- zoned to permit agriculture by local government bylaws and/or exhibiting signs of agriculture or aquaculture on aerial photography, or
- containing an active water licence for farming or irrigation purposes

The amount of ALR included in the inventory area is 16,875 ha. Another 5,805 ha of inventoried land was outside of the ALR on parcels that met one of the other inventory criteria.

Figure 3. Inventory area and ALR location map



## 2. Land Cover and Farmed Area

### 2.1 LAND COVER AND FARMED AREA

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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. Refer to Section 4 for information on land use.

Land cover is surveyed by separating the parcel into polygons of 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 multiple 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 than land use, which is assigned on a parcel basis.

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.

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

Table 1. Land cover and farmed area

Land cover*		In ALR (ha)	% of effective ALR*	Outside ALR (ha)	Total area (ha)
Actively farmed	Cultivated field crops	492	3%	81	572
	Farm infrastructure	41	< 1%	37	77
	Greenhouses	5	< 1%	1	6
Inactively farmed	Unmaintained field crops	3	< 1%	2	5
<b>FARMED SUBTOTAL</b>		<b>541</b>	<b>3%</b>	<b>120</b>	<b>661</b>
Anthropogenic (not farmed)	Residential footprint	96	< 1%		
	Managed vegetation	94	< 1%		
	Transportation	92	< 1%		
	Non Built or Bare	74	< 1%		
	Settlement	43	< 1%		
	Waterbodies	8	< 1%		
<b>ANTHROPOGENIC SUBTOTAL</b>		<b>408</b>	<b>3%</b>		
Natural & Semi-natural	Vegetated	15,252	90%		
	Wetlands & waterbodies	657	4%		
	Natural bare areas	16	< 1%		
<b>NATURAL &amp; SEMI-NATURAL SUBTOTAL</b>		<b>15,926</b>	<b>94%</b>		
<b>TOTAL ALR INVENTORIED</b>		<b>16,875</b>	<b>100%</b>		

\* Refer to the glossary for terms used in this table.

Table 1 shows the extent of different land cover types across the effective ALR in Strathcona Regional District.

There were 541 ha of “Farmed” land cover within the ALR. An additional 120 ha of “Farmed” land cover was identified outside of the ALR.

Figure 4. Land cover in the effective ALR

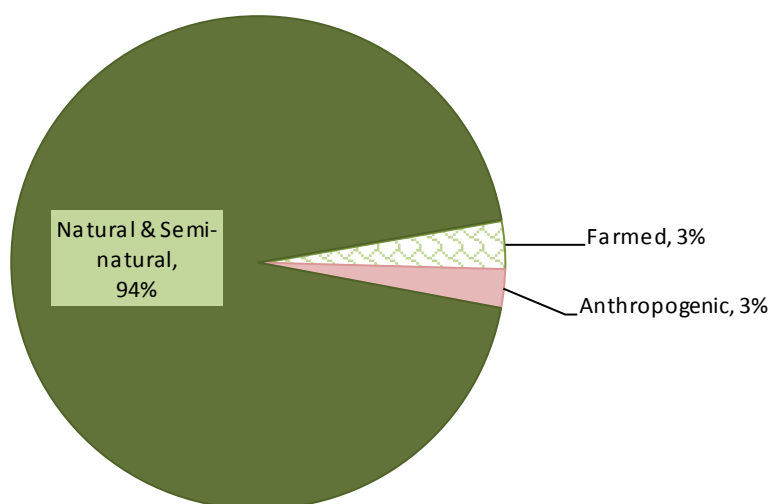


Figure 4 shows the proportion of different land cover categories across the effective ALR.

Ninety-four percent (94%) is in “Natural & semi-natural” while 3% is in “Farmed” land cover.

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

## 3. Farming Activities

### 3.1 CULTIVATED FIELD CROPS

Cultivated field crops were captured in a geographic information system (GIS) at the field or land cover level by crop type (e.g. vegetables, forage or pasture, berries). The total land area was then evaluated for each crop.

Included with cultivated field crops is fallow farmland 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.

Forage & pasture was the main crop type in Strathcona Regional District

- **Forage** is a cultivated crop that is cut and made into silage or hay for livestock feed.
- **Pasture** is a cultivated crop that is used for grazing only and is not cut.
- **Forage & pasture** is grazed for 1 - 3 months per year and is also cut for silage or hay.

Other significant crop types include:

- Berries: cranberries, raspberries, blueberries
- Cereals: barley
- Nursery & tree plantations: forestry stock, ornamentals & shrubs, Christmas trees
- Vegetables: mixed vegetables
- Grapes

Figure 5. Main field crop types by percentage

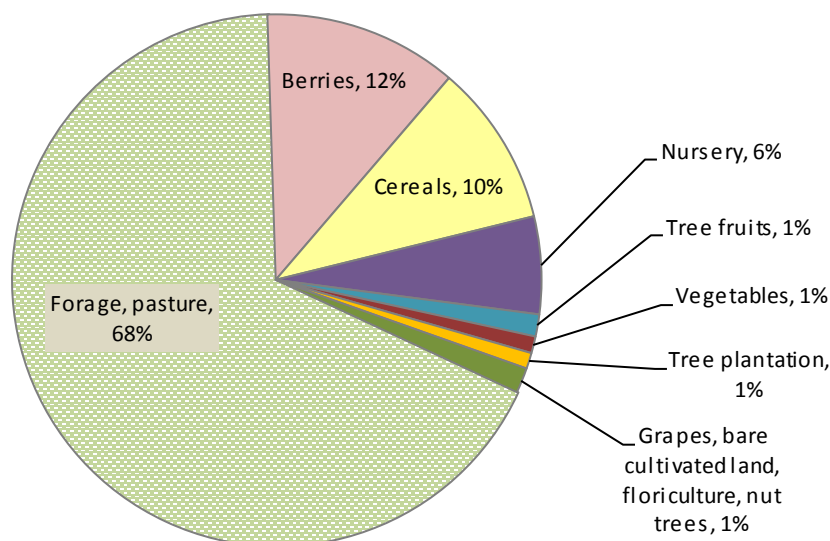


Figure 5 shows the proportion of crop types in Strathcona Regional District.

Forage, pasture fields account for 68% of the crops.

Forage, pasture, berries and cereals account for 90% of all cultivated crops.

Table 2. Cultivated crop type by area

Crop type	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of effective ALR			
Forage, pasture	316	2%	74	390	68%
Berries	65	< 1%	3	68	12%
Cereals	57	< 1%	-	57	10%
Nursery	34	< 1%	< 1	34	6%
Tree fruits	5	< 1%	2	8	1%
Vegetables	3	< 1%	3	6	1%
Tree plantation	5	< 1%	< 1	6	1%
Grapes	5	< 1%	-	5	1%
Bare cultivated land	3	< 1%	-	3	< 1%
Floriculture	1	< 1%	< 1	1	< 1%
Nut trees	< 1	< 1%	-	< 1	< 1%
<b>TOTAL</b>	<b>495</b>	<b>3%</b>	<b>83</b>	<b>577</b>	<b>100%</b>

Table 2 shows the total area of cultivated crops produced in Strathcona Regional District.

There were 390 ha in forage or pasture, followed by 68 ha in berries, 57 ha in cereals, and 34 ha in nursery crops. Included in this table are 5 ha of unmaintained crops.

Figure 6. Forage and pasture fields by size and type

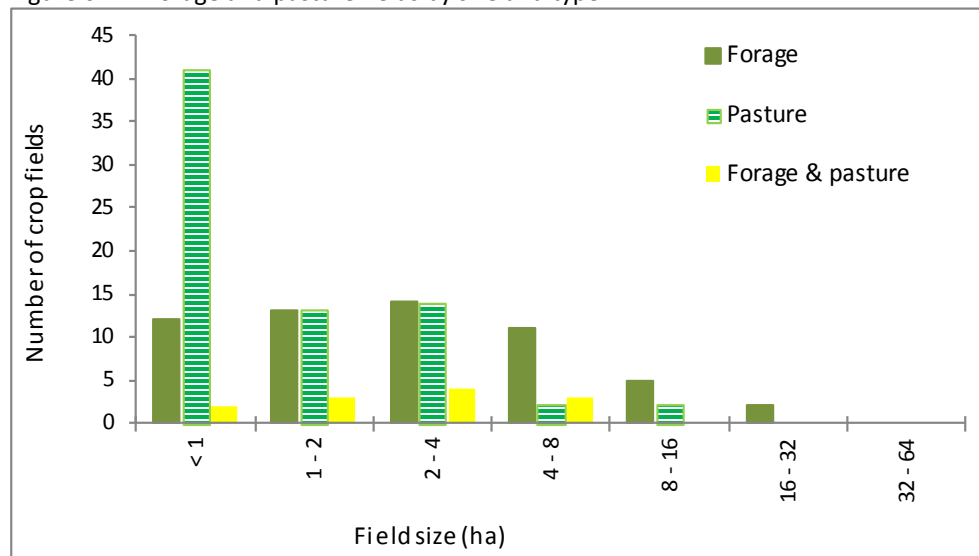


Figure 6 compares the field size distribution of forage and pasture fields. Smaller field sizes (<1 ha) are more likely to be associated with pasture than forage.

Pasture fields have an average field size of 1.6 ha while forage fields have an average field size of 3.8 ha.

## Top Cultivated Crops

Table 3. All cultivated crops by area (including unmaintained crops)

Cultivated field crop	In ALR (ha)	% of effective ALR	Outside ALR (ha)	Total area (ha)	% of cultivated land
Forage	197	1%	26	224	39%
Pasture	87	< 1%	37	124	22%
Barley	57	< 1%	-	57	10%
Forage & pasture	30	< 1%	9	38	7%
Cranberries	33	< 1%	1	34	6%
Forestry stock	33	< 1%	< 1	33	6%
Raspberries	31	< 1%	< 1	32	5%
Mixed vegetables	3	< 1%	2	5	1%
Grapes	5	< 1%	-	5	1%
Trees (plantation)	4	< 1%	-	4	1%
Tree fruits	2	< 1%	2	4	< 1%
Unused forage/pasture*	2	< 1%	2	4	< 1%
Bare cultivated land	2	< 1%	-	2	< 1%
Apples	2	< 1%	< 1	2	< 1%
Blueberries	-	-	1	1	< 1%
Mixed fruits	1	< 1%	< 1	1	< 1%
Cover grass	1	< 1%	-	1	< 1%
Cut flowers	< 1	< 1%	< 1	< 1	< 1%
Christmas trees	-	-	< 1	< 1	< 1%
Ornamentals and shrubs	< 1	< 1%	< 1	< 1	< 1%
Other crop types	1	< 1%	1	3	< 1%
<b>TOTAL</b>	<b>495</b>	<b>3%</b>	<b>83</b>	<b>577</b>	<b>100%</b>

\* Unused forage/pasture has been cultivated, but not cut or grazed this year.

Table 3 details the top 20 individual crops that account for 99.5% of cultivated land in Strathcona Regional District.

Figure 7. Top 10 crops by area

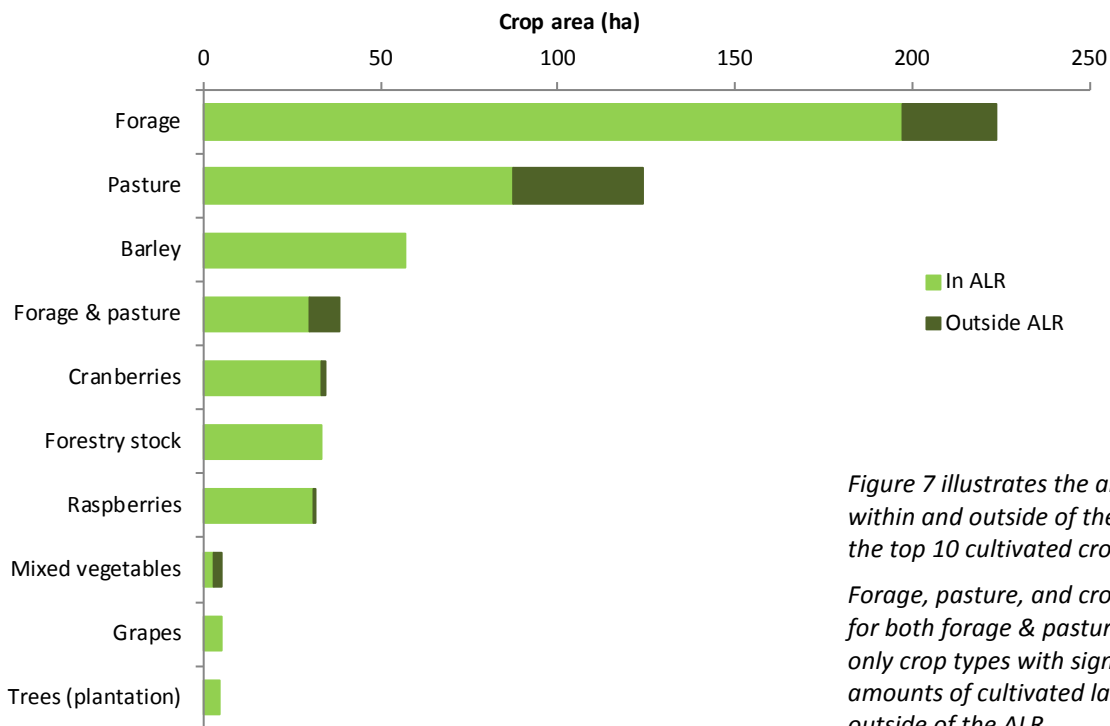


Figure 7 illustrates the area within and outside of the ALR for the top 10 cultivated crops.

Forage, pasture, and crops used for both forage & pasture are the only crop types with significant amounts of cultivated land outside of the ALR

## 3.2 IRRIGATION

Irrigation is the application of water to soil or plants and may be used to assist in the growing of agricultural crops, the maintenance of managed vegetation, and the control of soil erosion or dust. The availability of water delivery infrastructure and good quality water for irrigation are often requirements for growing high-value crops. Insufficient water sources or water delivery infrastructure can limit the potential to increase agricultural production through irrigation.

Irrigation information was recorded at the field or land cover level by system type (e.g. 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 temporarily set aside for wildlife or other purposes, and land under preparation for planting.

Crop and irrigation data from the Agricultural Land Use Inventory are key inputs into an Agricultural Water Demand Model (AWDM). The AWDM is a water management planning tool that estimates current and future agricultural water needs based on climate change scenarios and water management practices.

Table 4. Crop type and irrigation

Cultivated field crop	Irrigation system in use (ha)			Total area irrigated (ha)	% of crop area irrigated
	Sprinkler	Giant gun	Trickle		
Berries	36	-	32	68	100%
Cereals	-	57	-	57	100%
Tree fruits	< 1	-	5	6	75%
Grapes	-	-	5	5	100%
Vegetables	2	-	2	5	77%
Forage, pasture	4	-	< 1	5	1.35%
Nursery	4	-	< 1	4	11%
Bare cultivated land	1	-	-	1	36%
Floriculture	< 1	-	-	< 1	100%
<b>TOTAL CROP AREA IRRIGATED</b>	<b>49</b>	<b>57</b>	<b>45</b>	<b>151</b>	<b>26%</b>

Table 4 shows the total area of crops under irrigation by crop type. Forage and pasture crops are the predominant crop types in Strathcona Regional District, (refer to Table 2 ), however, these crops utilize very little irrigation. Only 1% of forage and pasture crops were irrigated.

All berries, cereals, grapes, and most tree fruits in the region were irrigated. In total, 151 ha or 26% of the cultivated crop area (577 ha) was irrigated.

### 3.3 LIVESTOCK

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Livestock activities are challenging to measure using a windshield survey. Livestock are often confined to structures making it difficult 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. This inventory reports on livestock homesites where the animals or related structures were observed.

#### **Homesite**

**Homesite** refers to the location of the main ranch or main barn of a livestock operation or farm unit<sup>3</sup>. Other types of farm infrastructure, such as corrals, paddocks, barns, and feeding/watering facilities, as well as the farm residence, are often at this location. The homesite is the primary location of the farm unit where most livestock management occurs.

**Non Homesite** refers to a location where livestock were observed, but do not permanently reside. Non-homesites are often used only for pasturing and are secondary to an operation's primary (or homesite) location. Non homesite locations are not included in this report.

#### **Intensity**

"**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, the livestock were not visible, and the specific type of livestock could not be determined.

#### **Scale**

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

- "**Very Small**" Approximately 1 cow or horse or bison, 3 hogs, 5 goats, sheep or deer, 50 turkeys, 100 chickens (1 animal unit equivalent). Estimated AUE: 1
- "**Small**" LESS THAN 25 cows or horses or bison, 75 hogs, 125 goats, sheep or deer, 1250 turkeys, 2500 chickens (2 - 25 animal unit equivalents). Estimated AUE: 13
- "**Medium**" LESS THAN 100 cows or horses or bison, 300 hogs, 500 goats, sheep or deer, 5000 turkeys, 10,000 chickens (25 - 100 animal unit equivalents). Estimated AUE: 63
- "**Large**" MORE THAN 100 cows or horses or bison, 300 hogs, 500 goats, sheep or deer, 5000 turkeys, 10,000 chickens (over 100 animal unit equivalents). Estimated AUE: 150

**Estimated animal unit equivalents** are calculated using the midpoint of each scale range described above. This number enables the relative importance of each livestock type to be compared. The actual number of animals may be under estimated, especially for large operations.

**Number of activities.** Each occurrence of livestock on a parcel is counted as one activity. A small mixed farm with 1-2 cows and a large commercial milking operation are each counted as one activity. If two types of livestock are recorded on the same parcel, each is identified as a unique activity.

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<sup>3</sup> The farm unit includes all the property owned, rented, or leased by a farm and may incorporate more than one parcel.

Table 5. Livestock activities

Livestock group	Estimated animal unit equivalents	Count of activities
Equine	460	48
Beef	170	14
Sheep / goat	150	20
Poultry	150	39
Unknown livestock	100	8
Swine	70	5
Dairy	40	3
Llama / alpaca	30	3
Specialty livestock*	< 1	1
<b>TOTAL</b>	<b>1,170</b>	<b>141</b>

\* In Strathcona Regional District, specialty livestock includes peacocks (ratites)

Table 5 details the number of estimated animal unit equivalents by livestock type. These activities occur both within and outside of the ALR.

Equine activities have the highest estimated AUEs.

### Estimated Animal Unit Equivalents (AUEs)

Figure 8. Proportion of livestock activities by estimated animal unit equivalents

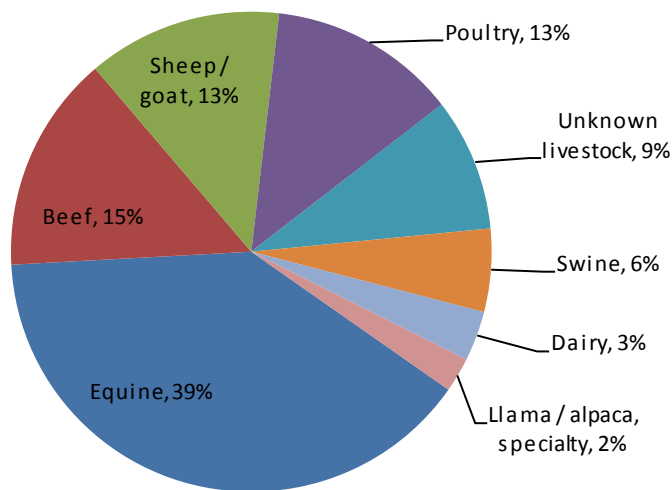


Figure 8 illustrates the proportion of livestock in Strathcona Regional District by estimated animal unit equivalents.

Equine accounts for 39% of the AUEs while beef, sheep / goat, and poultry combined account for another 41% of the AUEs.

Figure 9. Estimated animal unit equivalents by livestock type and intensity

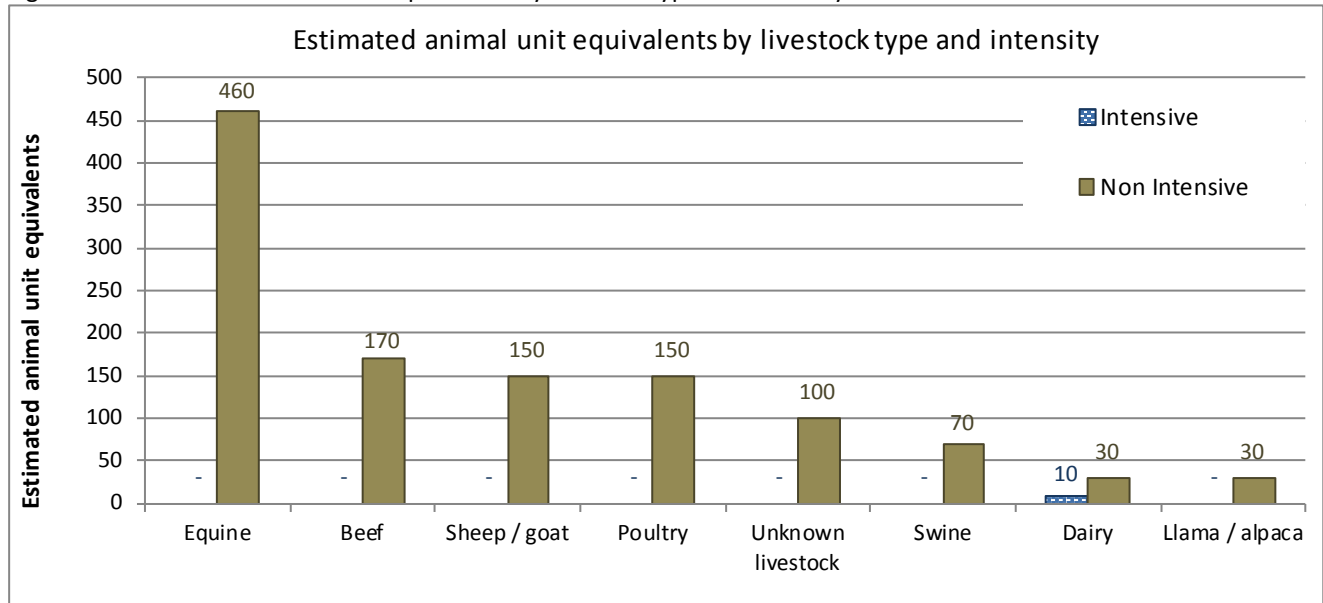


Figure 9 illustrates the number of estimated animal unit equivalents by livestock type and intensity. Nearly all livestock are found in “non-intensive” facilities.

Dairy had 1 activity with approximately 10 AUEs using an intensive facility with specialized infrastructure designed for confined feeding at higher stocking densities.

Figure 10. Estimated animal unit equivalents by livestock type and scale

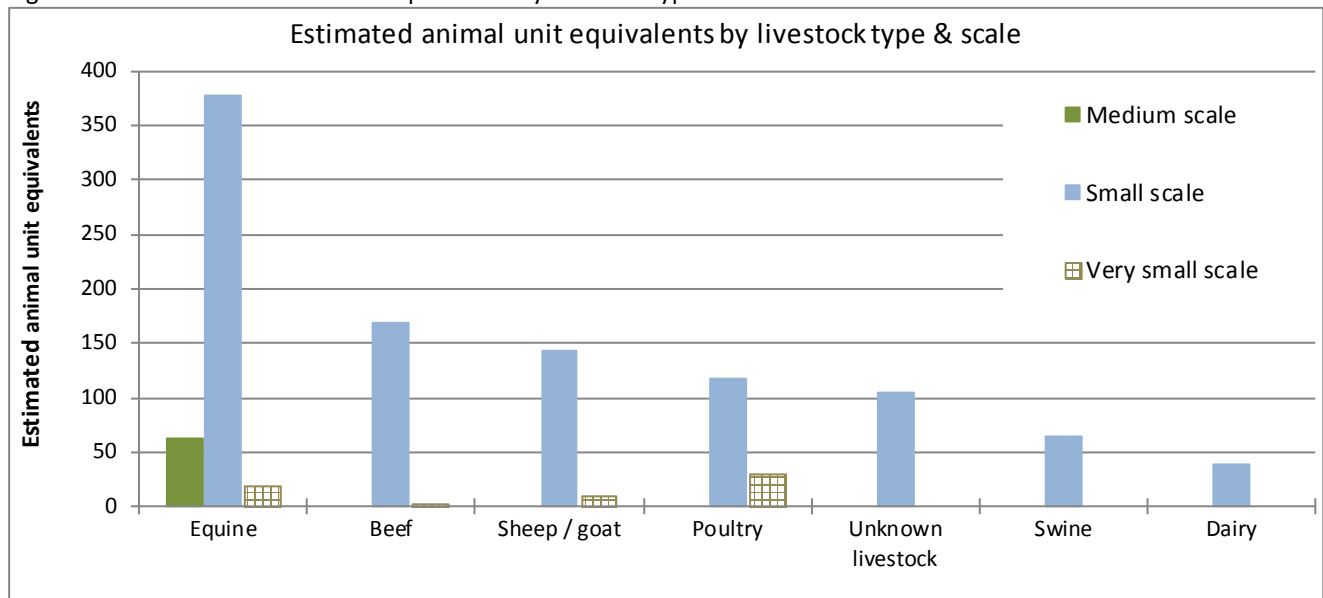


Figure 10 illustrates the number of estimated animal unit equivalents by livestock type and scale. Although the greatest AUEs are associated with equines (refer to Table 5), most animals occur on a “small” scale with less than 25 equine.

Equine was the only livestock type to occur on a “medium” scale with greater than 25 animal unit equivalents.

## Number of livestock activities (occurrences)

Figure 11. Number of livestock activities by livestock type and scale

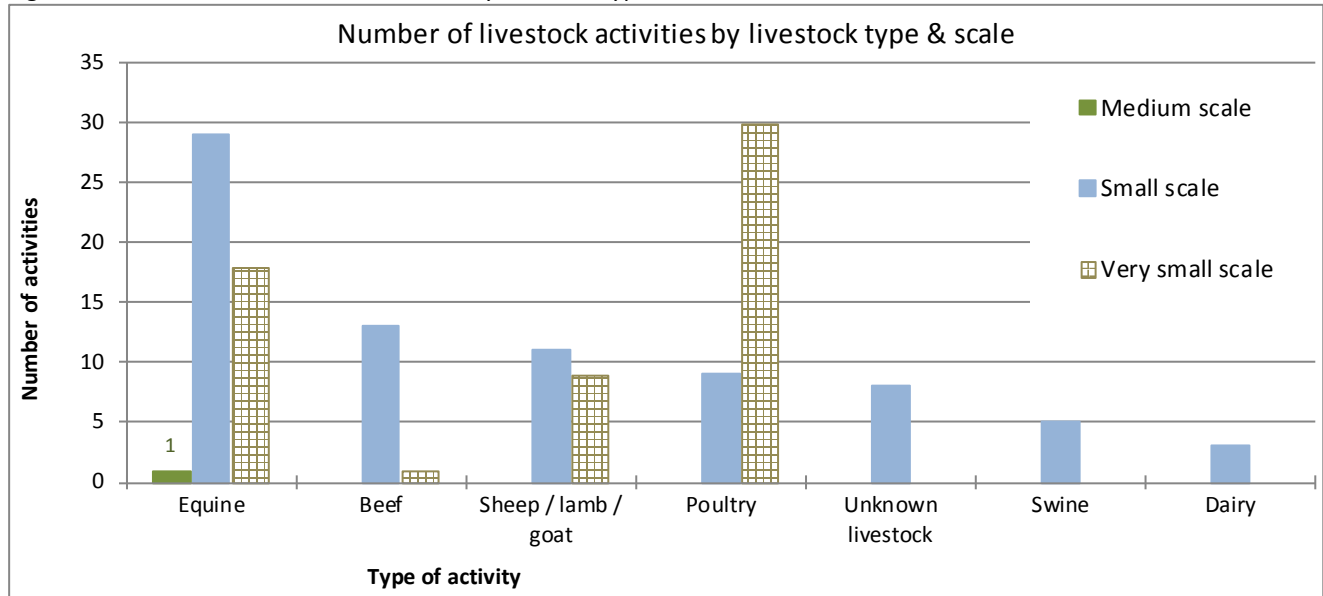


Figure 11 shows the number of livestock activities in Strathcona Regional District. Equine and poultry activities are the most frequently occurring, however, the majority of the poultry activities are “very small” scale with less than 100 birds (1 AUE).

There was 1 “medium” scale equine activity with greater than 25 animals.

### 3.4 AQUACULTURE

Aquaculture is the farming of fish, shellfish, and aquatic plants in fresh or salt water environments. In British Columbia, there are three main species groups that are currently cultured: salmon and other finfish, shellfish, and marine plants. Hatcheries used for conservation purposes are not considered as aquaculture.

Aquaculture is a large scale commercial industry in British Columbia. In 2015, the BC aquaculture sector produced 96,000 tonnes of fish and shellfish generating \$497.2 million in farmgate value<sup>4</sup>.

The ALUI scale system used to describe aquaculture activities is based on the volume of product generated and the method of distribution. The scale system includes 3 levels:

- **“Small”** scale can generate a limited amount of product for sale. Management requires less than one full time worker.
- **“Medium”** scale can generate product for sale to small local markets. Product can be distributed without utilizing a commercial distribution network.
- **“Large”** scale can generate bulk product for of farm sales. Usually requires the utilization of a commercial distribution network.

The majority of aquaculture activities in Strathcona Regional District occur outside of parcel boundaries on ocean foreshore or deepwater sites. These sites were not captured as part of the land use inventory. Only land based aquaculture sites and nearshore operations within parcel boundaries were inventoried.

Table 6. Inland and nearshore aquaculture activities

Aquaculture type	Scale	Number of activities
Finfish	Medium scale	6
	Large scale	5
SUBTOTAL		11
Mixed marine	Medium scale	5
SUBTOTAL		5
Shellfish	Small scale	3
	Medium scale	43
	Large scale	6
SUBTOTAL		52
TOTAL ACTIVITIES		68

*Table 6 summarizes the inland aquaculture activities recorded in Strathcona Regional District. There were 11 finfish activities, 5 mixed marine activities, and 52 shellfish activities.*

*All except for one of these activities occur outside of ALR boundaries.*

<sup>4</sup> Ministry of Agriculture. Fast Stats 2015: British Columbia's Agrifood and Seafood Sector. <http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/industry-and-sector-profiles/fast-stats/faststatsbc-2015.pdf>

## 4. ALR Utilization

### 4.1 PARCEL INCLUSION IN THE ALR

The following analysis is parcel based. It is important to note that the ALR boundaries do not always align with parcel boundaries and many parcels have only a portion of their area in the ALR.

Figure 12 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.

To achieve an accurate picture of the ALR within Strathcona Regional District, only parcels that meet the following criteria are included in this section of the report:

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

In total, 751 parcels, with 16,474 ha or 98% of the effective ALR met the above criteria and are included in the following section. “Effective ALR” is the total ALR area excluding land outside of legally surveyed parcels and excluding land on Indian reserves.

Of the 751 ALR parcels:

- 701 have private ownership or Crown Municipal ownership and,
- 50 have Crown provincial or federal ownership

Figure 12. Example of parcel inclusion in the ALR

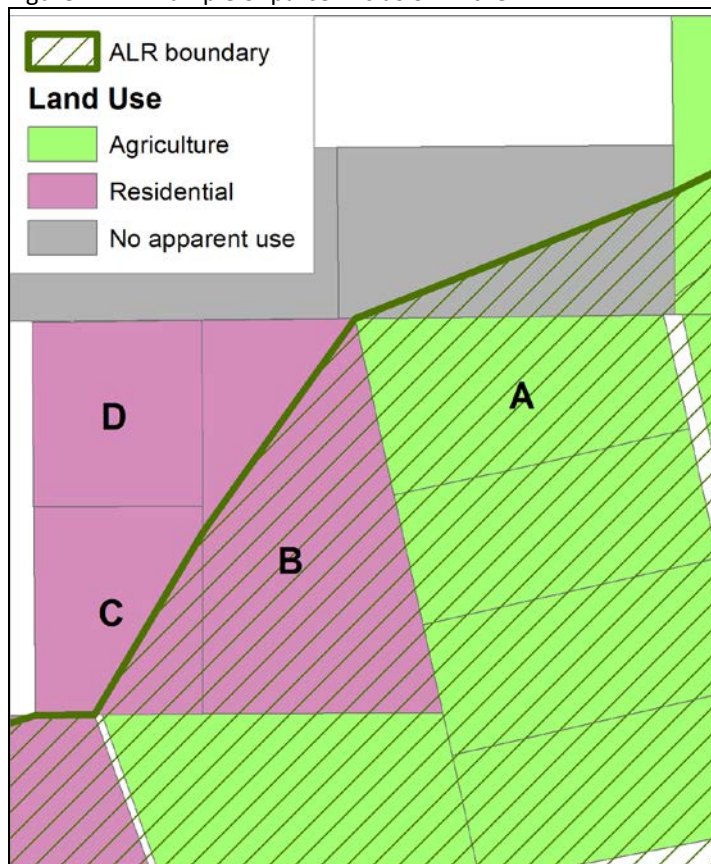


Figure 12 illustrates the distinction between parcels considered to be within or outside the ALR:

**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.

## 4.2 LAND USE AND FARM USE

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

Evaluation of land uses are based on the overall economic importance and/or the extent of the land use.

**Used for farming** – Parcels where the majority of the parcel area is utilized for farming or parcels which exhibit significant evidence of intensive farming. Refer to the glossary for a complete definition. Many “Used for farming” parcels are also used for other purposes such as residential. This report does not attempt to determine which use is primary.

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

Table 7. Land use and farm use in the ALR

Parcel land use*		Number of ALR parcels	% of ALR parcels	Average parcel size	Median parcel size (ha)
Used only for farming - no other use		15	2 %	19.7	12.0
Used for farming - Mixed use	Residential	32	4 %	12.6	8.5
	Forestry	2	<1 %	48.5	48.5
<b>USED FOR FARMING SUBTOTAL</b>		<b>49</b>	<b>7 %</b>	<b>16.2</b>	<b>10.0</b>
Not used for farming	No apparent use	246	33 %	32.4	16.4
	Residential	242	32 %	7.1	3.4
	Transportation & utilities	86	11 %	17.3	15.6
	Forestry	83	11 %	253.7	43.3
	Industrial	13	2 %	13.9	9.0
	Protected area / park / reserve	9	1 %	28.6	16.2
	Gravel extraction	8	1 %	34.0	19.4
	Commercial & service	8	1 %	4.4	3.6
	Recreation & leisure	3	<1 %	18.1	10.2
	Land in transition	2	<1 %	34.9	34.9
	Institutional & community	1	<1 %	26.2	26.2
	Dumps & deposits	1	<1 %	2.4	2.4
<b>NOT USED FOR FARMING SUBTOTAL</b>		<b>702</b>	<b>93 %</b>	<b>47.2</b>	<b>11.1</b>
<b>TOTAL</b>		<b>751</b>	<b>100 %</b>	<b>45.2</b>	<b>10.7</b>

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

Table 7 shows the number of ALR parcels that are “Used for farming” and “Not used for farming” by existing land use in Strathcona Regional District.

In total, 7% of the ALR parcels (49 parcels) are “Used for farming” and 93% (702 parcels) are “Not used for farming”.

Figure 13 provides more information on “Used for farming” ALR parcels and Figure 14 provides more information on “Not used for farming” ALR parcels.

Figure 13. Land use on “Used for farming” ALR parcels

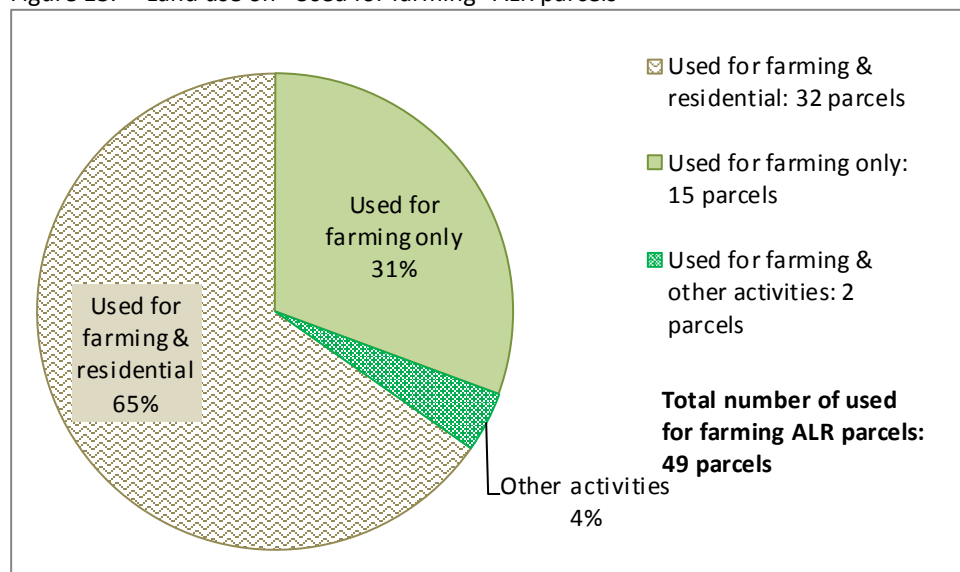


Figure 13 illustrates the proportion of “Used for farming” ALR parcels by their land use.

Nearly two-thirds (65%) of the ALR parcels that are “Used for farming” are also used for residential purposes.

Figure 14. Land use on “Not used for farming” ALR parcels

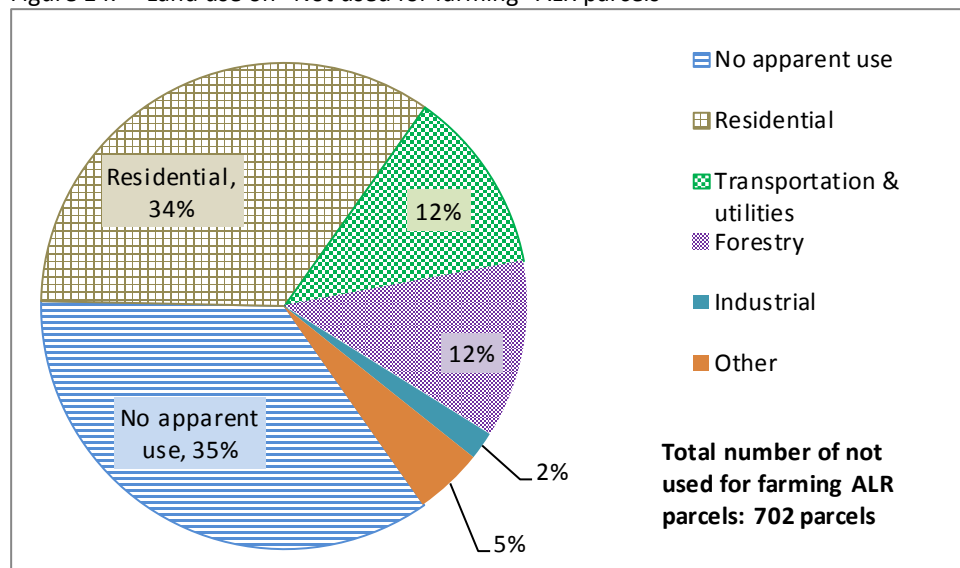


Figure 14 illustrates the proportion of “Not used for farming” ALR parcels by their land use.

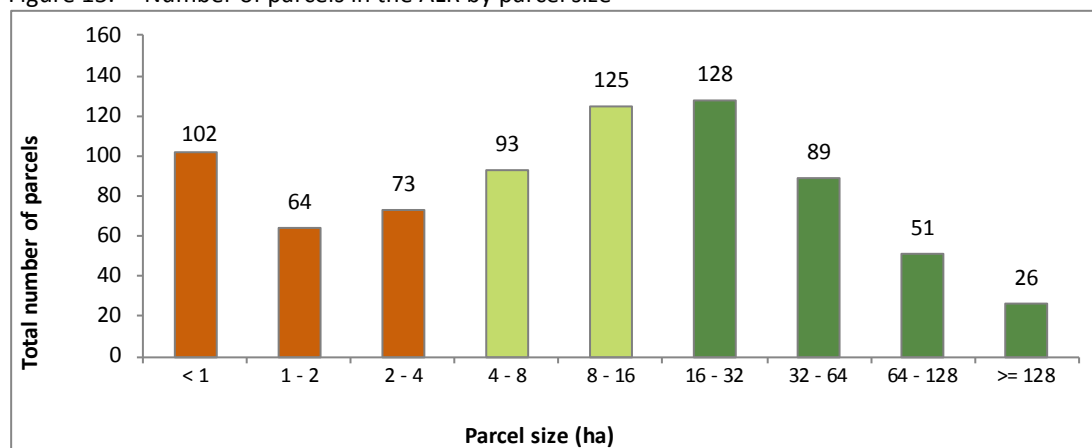
Thirty-five percent (35%) of the “Not used for farming” ALR parcels have a residential use, and 35% have no apparent use.

### 4.3 PARCEL SIZE AND FARM USE

Parcel size must be considered when determining the agricultural potential of a parcel. Larger parcels usually allow farmers greater flexibility to expand or change their type of operation as the economy and markets change. Some types of agriculture can be successful on small parcels, (e.g. intensive market gardens, nurseries, poultry), however, the number of viable farming options generally decreases with a reduced parcel size. Small parcels may also be suitable for start-up farmers and established farmers wanting to expand through leases.

A farming operation may utilize more than one parcel as a farm unit<sup>5</sup>, however, it is generally more efficient to run a farm on fewer large parcels than on many small parcels. Smaller parcels generally cost more per hectare than larger parcels and can easily be disassembled from larger farm units and sold. Larger parcels accommodate equipment more efficiently and reduce the need to move farm equipment on public roads. Furthermore, smaller parcels are more impacted by bylaws designed to reduce potential land use conflicts, such as setbacks from lot lines and road allowances.

Figure 15. Number of parcels in the ALR by parcel size



The average ALR parcel size in Strathcona Regional District is 45.2 ha and the median parcel size is 10.7 ha.

Figure 15 illustrates that of the 751 parcels in the ALR:

- 14% (102 parcels) are less than 1 ha
- 32% (239 parcels) are less than 4 ha.
- 12% (93 parcels) are between 4 and 8 ha.
- 17% (125 parcels) are between 8 and 16 ha.
- 39% (294 parcels) are greater than 16 ha.

Table 8. Number of parcels in the ALR by farm use

Parcel status with respect to farming	Number of ALR parcels	% of ALR parcels
Used for farming	49	7 %
Not used for farming	702	93 %
<b>TOTAL</b>	<b>751</b>	<b>100 %</b>

Table 8 demonstrates that of the 751 parcels in the ALR, only 7% are considered "Used for farming".

<sup>5</sup> The farm unit includes all the property owned, rented, or leased by a farm and may incorporate more than one parcel.

Figure 16. Number of parcels in the ALR by farm use and parcel size

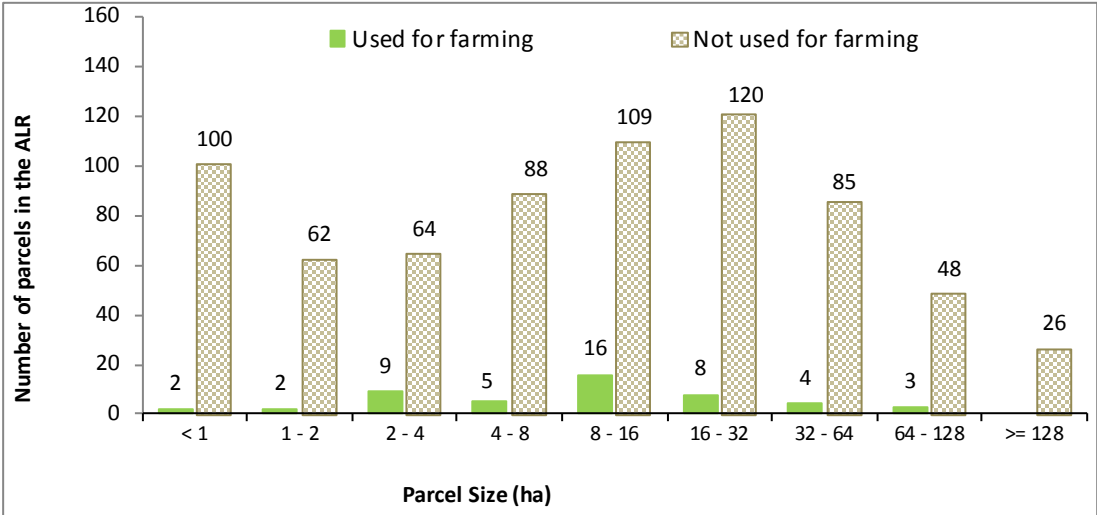


Figure 16 compares the size distribution of ALR parcels by their farm use. High proportions of “Not used for farming” parcels are found across all parcel size categories. Of the parcels less than 1 ha, 98% are “Not used for farming”.

Figure 17. Proportion of parcels in the ALR by farm use and parcel size

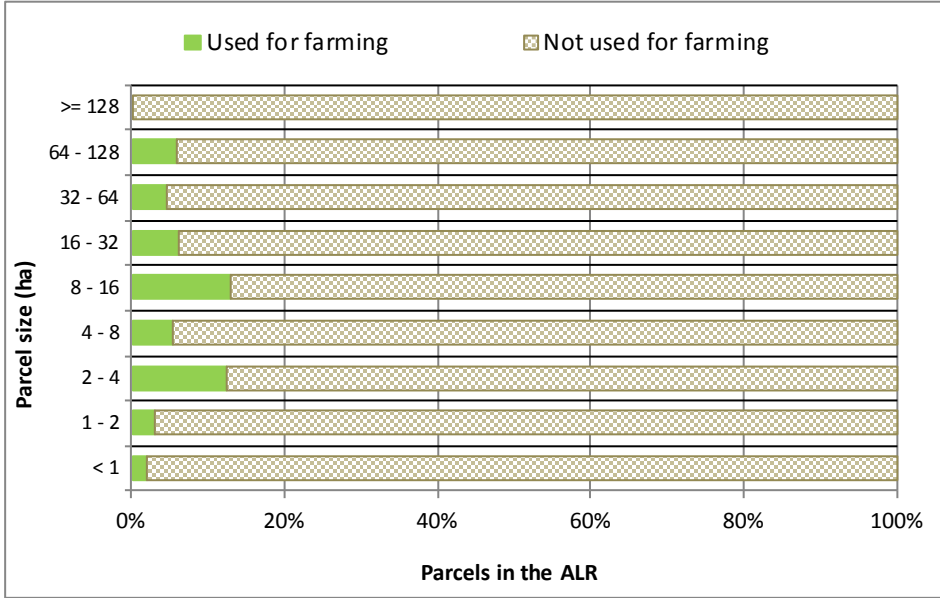


Figure 17 shows the proportion of parcels used and not used for farming by parcel size. There are 26 parcel >=128 ha that are “Not used for farming”; 18 of these parcels are associated with forestry use. The other 8 parcels have no apparent use and are primarily characterized by steep slopes with soil & topography limitations.

## 5. ALR Availability for Farming

### 5.1 PARCEL AVAILABILITY OVERVIEW

There is a strong demand for agricultural goods produced in British Columbia that is expected to increase with population growth. An available agricultural land base will be important to meet future agricultural needs. This section presents analysis on **privately owned ALR** parcels that are available and unavailable for farming. Crown lands are not considered in this section as they offer little opportunity for capital investment and intensive agricultural development.

**Used for farming** – Parcels where the majority of the parcel area is utilized for farming or parcels which exhibit significant intensity of farming. Refer to the glossary for a complete definition.

**Not used for farming** – Parcels that do not meet the “Used for farming” definition. Includes parcels that are *available* and *unavailable* for farming.

**Unavailable for farming** – “Not used for farming” parcels where future agricultural development is improbable due to a conflicting land use or due to limited land with potential for farming. Land uses such as golf courses, parks, schools, and small residential lots that utilize the majority of the parcel are considered incompatible with agriculture. These properties are serving an established purpose, may be altered in a way that is incompatible with agriculture, or may have very high land values from the built infrastructure. Parcels with little to no land available for farming are also considered “Unavailable for farming”. E.g. A parcel completely covered by trees and a steep slope is considered “Unavailable for farming” due to limited farming potential on the slope. It is usually uneconomical for a farmer to acquire and convert these properties to farmland.

**Available for farming** – “Not used for farming” parcels where agricultural activity may be possible. These parcels have no apparent land use, or have an existing land use that is considered compatible with agriculture. Available for farming parcels must have at least 50% of their parcel area and least 0.4 ha in land cover that has potential for farming. Areas considered to have **potential for farming** include:

- Natural and semi-natural vegetation that is free from physical limitations such as steep slopes, rocky soils and riparian areas. Although some crops can thrive in areas with physical limitations (e.g. grapes on steep slopes), it is assumed these areas will not be utilized for farming purposes. Natural areas that are grazed are considered to have potential for more intensive farming.
- Anthropogenic managed vegetation (managed for landscaping, dust or soil control). E.g. Very large lawns or rough grass areas (> 0.4 ha) may be available for conversion to agriculture. Parks and golf courses are not considered to have potential for farming.

Built structures, wetlands and waterbodies are considered to have no potential for farming. It is assumed these areas would not likely be removed or filled in to create land with cultivation potential.

Available for farming parcels reflect the maximum amount of land that may be available for cultivation. It should be noted that these parcels may be providing value that was not accounted for in the ALUI. For example, parcels may be providing ecological goods and services such as soil stabilization, water purification, or wildlife habitat. Available for farming parcels provide an initial selection of parcels that may be available for agricultural expansion. Detailed investigation is required to confirm the suitability and trade-offs associated with converting these areas to agriculture.

Table 9. Farm availability status of privately owned parcels in the ALR

Parcel availability with respect to farming	Number of parcels	% of parcels in the ALR	Total ALR area (ha)*	% ALR area (ha)
Used for farming	48	7 %	680	5 %
Available for farming	143	20 %	1,719	12 %
Unavailable for farming	510	73 %	12,500	84 %
<b>TOTAL</b>	<b>701</b>	<b>100 %</b>	<b>14,899</b>	<b>100 %</b>

\* The entire ALR area or parcel area may not be farmed or available for farming.

Table 9 details the number of privately owned ALR parcels by their availability for farming.

73% of these parcels are unavailable for available for agricultural production.

Figure 18. Availability status of privately owned parcels in the ALR by parcel count

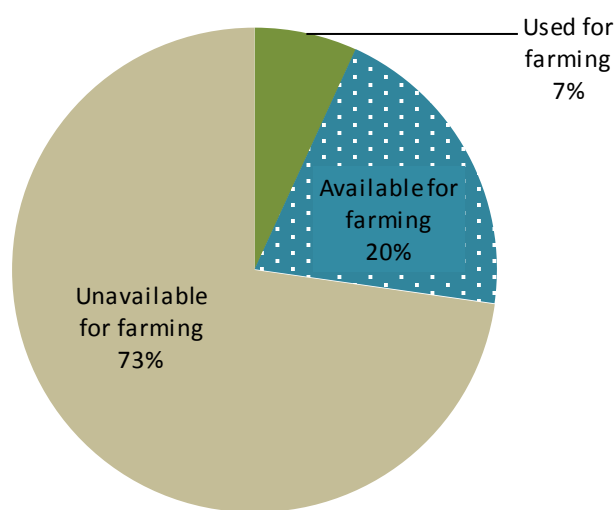


Figure 18 illustrates the proportion of privately owned ALR parcels by their availability for farming.

Twenty (20%) of the ALR parcels are "Available for farming" while 73% are "Unavailable for farming".

Figure 19. Parcel size distribution of privately owned parcels in the ALR by availability status

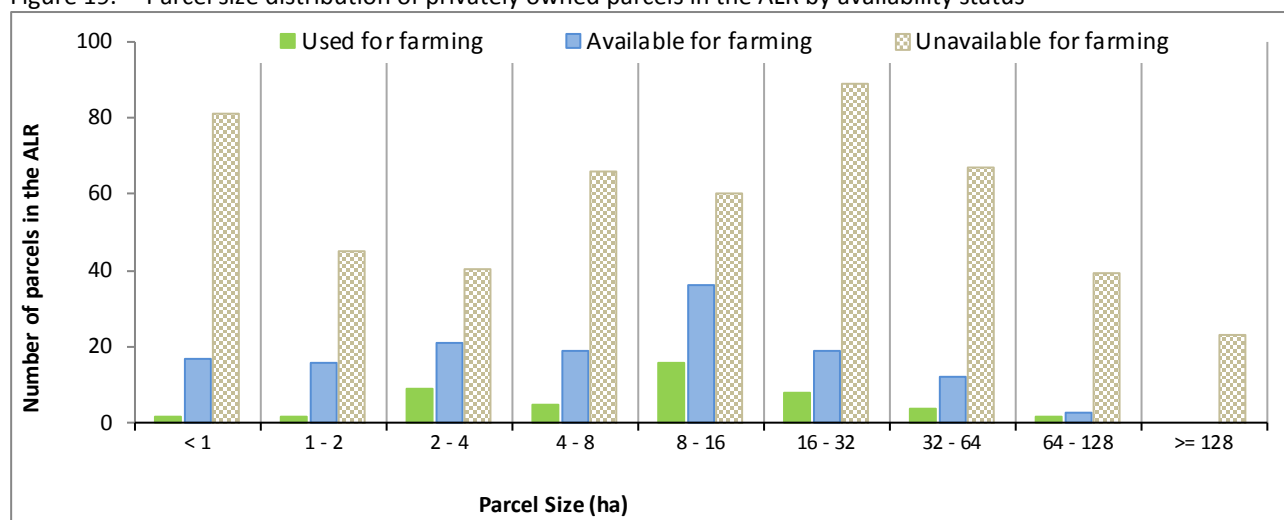


Figure 19 shows the size distribution of privately owned ALR parcels by their availability status. There is a high proportion of parcels that are unavailable for farming across most parcel sizes.

## 5.2 AVAILABLE FOR FARMING PARCELS – PRIVATELY OWNED

**Privately owned ALR parcels** that are “Available for farming” offer the greatest potential for agricultural expansion. For a parcel to be considered available for farming it:

- Must not already be “Used for farming”
- Must not have an existing use that excludes agricultural development (e.g. parks, golf courses)
- Must have at least 50% of the parcel area and at least 0.4 ha in land with potential for farming

Parcels that have no apparent land use may provide the simplest opportunities to increase agricultural use. These parcels generally have little to no development and generally have low improvement values<sup>6</sup>.

Figure 20. Land use and parcel size distribution on “Available for farming” parcels in the ALR

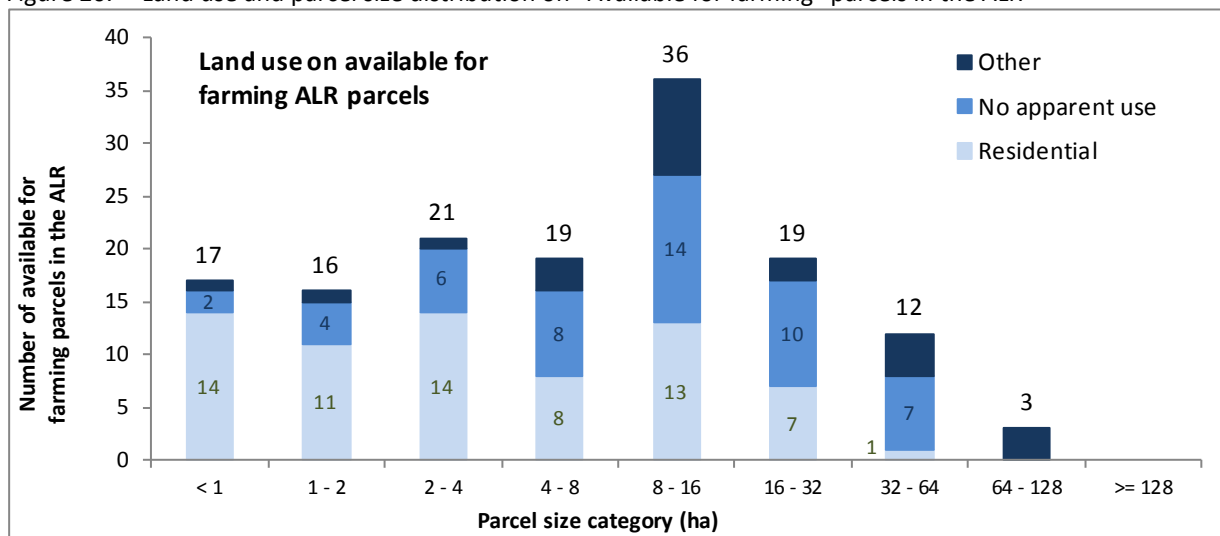
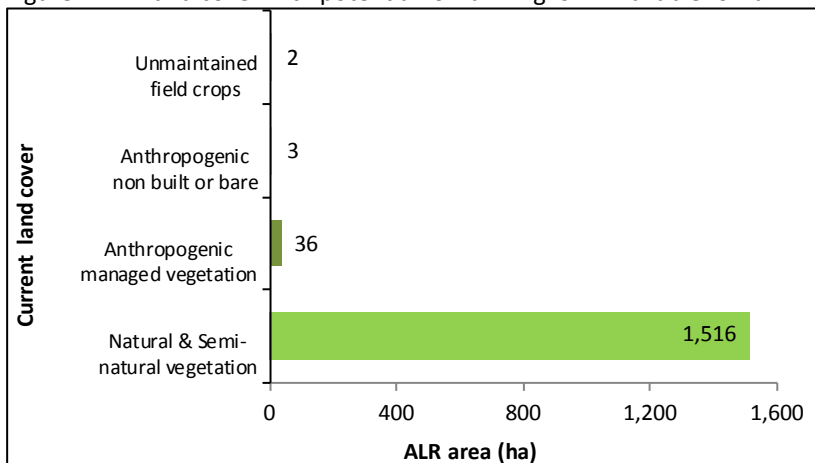


Figure 20 shows the existing land uses on the 143 ALR parcels that are privately owned and “Available for farming”. In total, 48% of the available parcels have a residential land use, 36% have no apparent use, and the remaining 16% have other uses including forestry and transportation. Of the available parcels:

- 23% (33 parcels) are less than 2 ha
- 38% (54 parcels) are less than 4 ha
- 62% (89 parcels) are greater than 4 ha
- 24% (34 parcels) are greater than 16 ha

Figure 21. Land cover with potential for farming on “Available for farming” parcels in the ALR



ALR land in natural & semi-natural vegetation offers the greatest opportunities to increase cultivation on “Available for farming” parcels.

Gains in cultivated land would have to be measured against the potential loss of ecological values such as wildlife habitat and societal values such as natural views and privacy.

Most of the available natural & semi-natural vegetation (91% or 1,417 ha) is currently treed and would require clearing if cultivation were to occur.

<sup>6</sup> BC Assessment defines and “Improvement” as any building, fixture, or structure on the land.

### 5.3 UNAVAILABLE FOR FARMING PARCELS – PRIVATELY OWNED

Parcels that are unavailable for farming have an existing land use that excludes agricultural development (e.g. golf courses, schools, small lot residential), or lack sufficient land cover that has potential for farming. Parcels that do not meet the minimum parcel availability criteria (>50% of the parcel area and >0.4 ha in land cover with potential for farming) are considered unavailable for farming. Examples of parcels not meeting the minimum availability criteria include:

- A parcel completely covered in trees and a steep slope. There is no available land as sloped areas are considered to have limited potential for farming.
- A parcel with 0.3 ha of available land.
- A parcel with 45% if its total area in land with potential for farming.

Figure 22. Land use and parcel size distribution on “Unavailable for farming” parcels in the ALR

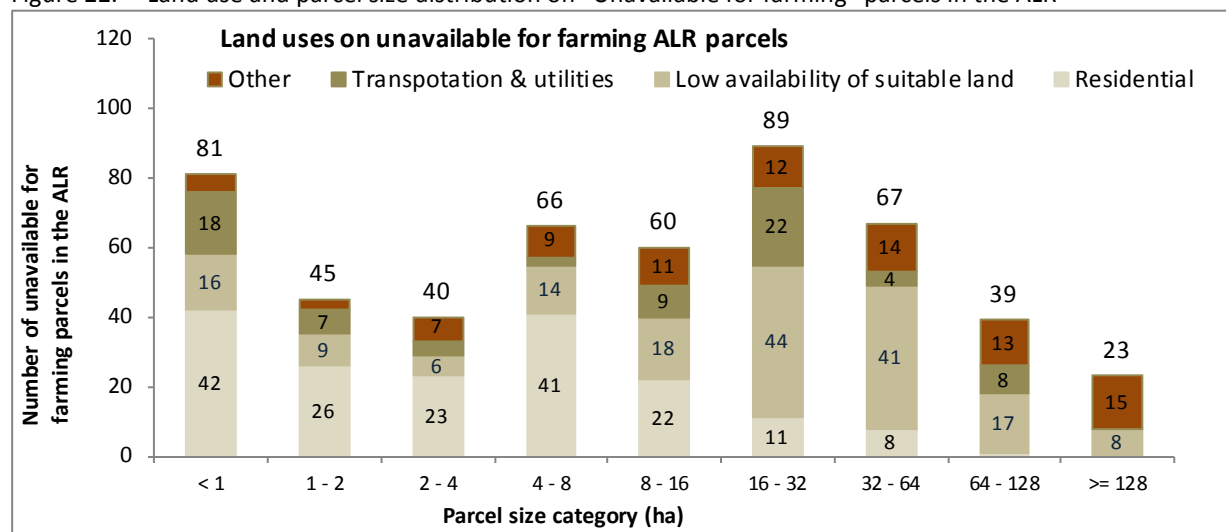


Figure 22 shows the number of privately owned ALR parcels that are “Unavailable for farming”. These parcels have an existing land use or low availability of suitable land that presents a significant barrier to farming. Unavailable for farming parcels occur across all parcel sizes.

Larger parcels with low availability of suitable land are generally limited by soil and topography challenges.

Figure 23. Land uses on “Unavailable for farming” parcels in the ALR

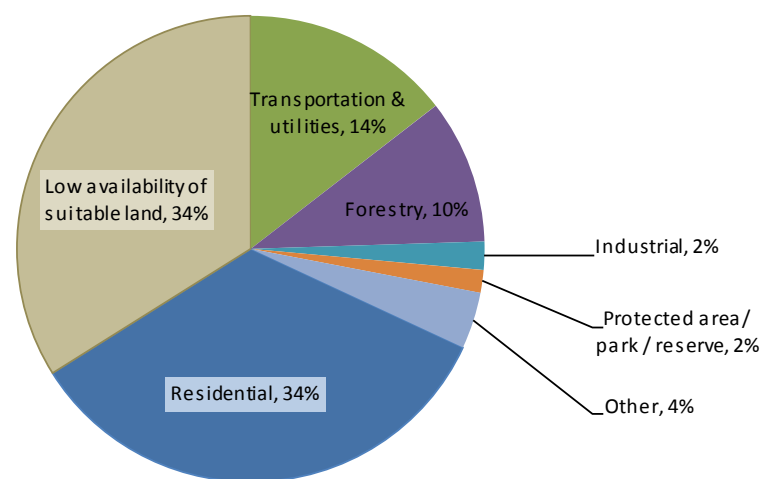


Figure 23 shows the proportion of land uses occurring on ALR parcels considered “Unavailable for farming”.

Residential use occurs on 34% of the unavailable for farming parcels.

Another 34% of the parcels have no apparent use, but have low availability of suitable land. These parcels are generally covered by land with soil and topography limitations.

## 6. Farming Outside the ALR

### 6.1 FARMING OUTSIDE THE ALR

Farming outside of the ALR contributes to the economy and to the general agricultural landscape. However, agriculturally zoned lands outside of the ALR do not receive the same level of protection as lands within the ALR. Agricultural activities outside of the ALR are more subject to restrictions and complaints related to noise, nuisance and disturbances.

Figure 24. Distribution of farmed land cover

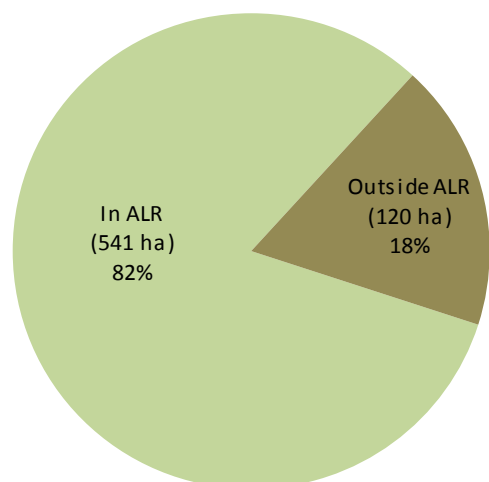


Figure 24 shows that 18% of the farmed land cover in Strathcona Regional District occurs outside of the ALR (refer to Table 1 for more information).

In total, 120 ha of farmed land cover was identified outside the ALR.

This area is comprised of 83 ha of cultivated crops and 37 ha of farm infrastructure.

Table 10. Crops outside the ALR

Cultivated Crops	Outside ALR (ha)
Forage & pasture	74
Berries	3
Vegetables	3
Tree fruits	2
Trees (plantation)	<1
Nursery	<1
Floriculture	<1
<b>TOTAL</b>	<b>83</b>

Table 10 details the cultivated crops identified outside the ALR. Forage & pasture is the primary crop type.

Table 11. Livestock activities outside the ALR

Livestock group	Number of activities outside the ALR				Total activities
	Very small scale	Small scale	Medium scale	Large scale	
Equine	8	16	-	-	24
Beef	1	7	-	-	8
Poultry	11	5	-	-	16
Sheep / goat	5	5	-	-	10
Unknown livestock	-	3	-	-	3
Swine	-	2	-	-	2
Dairy	-	1	-	-	1
<b>TOTAL</b>	<b>25</b>	<b>39</b>	<b>-</b>	<b>-</b>	<b>64</b>

Table 11 shows the number and type of livestock activities recorded outside of the ALR.

Of the identified 64 livestock activities, all are “small” or “very small” scale with less than 25 animals.

These activities are associated with an estimated 530 AUEs.

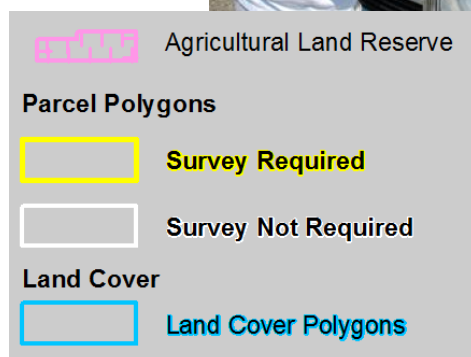
## 7. Methodology

### 7.1 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:

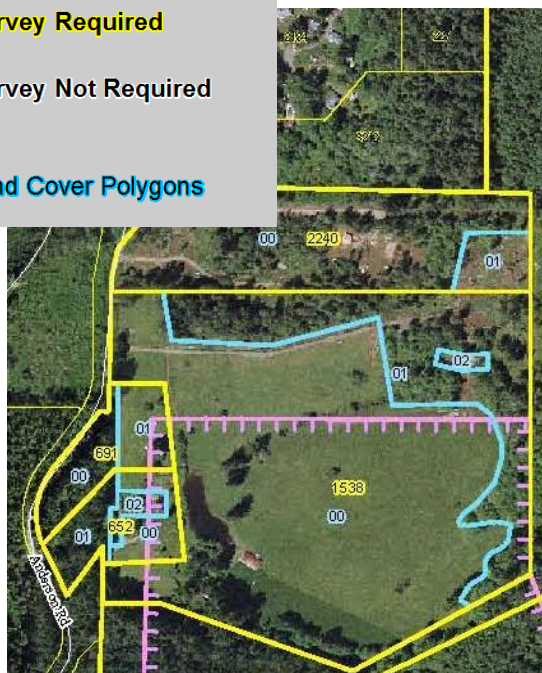
- AgFocus – A Surveyor's Guide to Conducting an Agricultural Land Use Inventory
- AgFocus – Field Guide to Conducting an Agricultural Land Use Inventory
- AgFocus – A GIS Analyst's Guide to Agricultural Land Use Inventory Data

The Strathcona Regional District Agricultural Land Use Inventory was conducted in the summer of 2017 by a Professional Agrologist, a data technician, and a driver. 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 provide the basis for the survey and include:

- Legal parcel boundaries (cadastre)<sup>7</sup>
- Unique identifier for each legal parcel
- Preliminary land cover polygon boundaries (digitized prior to field survey using aerial photography)
- Unique identifier for each preliminary land cover polygon
- The boundary of the Agricultural Land Reserve (ALR)
- Base features such as streets, street names, watercourses and contours
- Aerial photography



<sup>7</sup> Cadastre mapping was provided through the Integrated Cadastral Information Society.

## 7.2 DESCRIPTION OF THE DATA

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

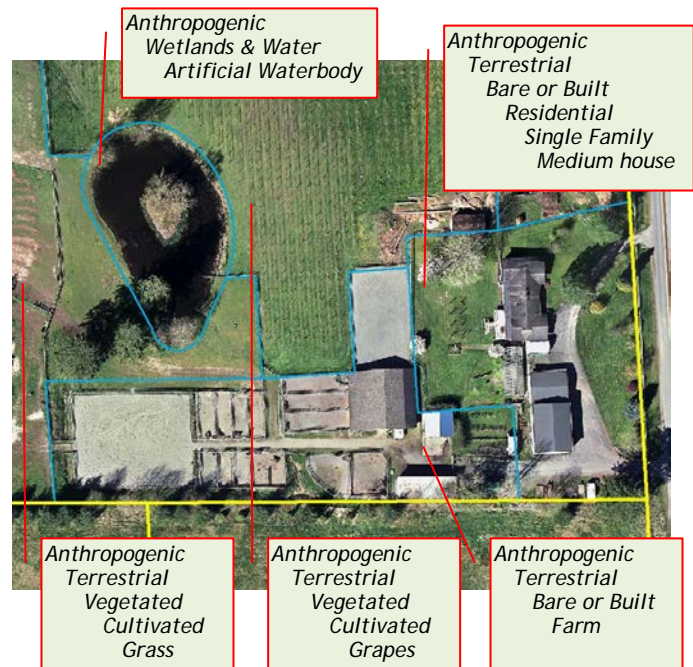
Once acquired through the survey, the data was brought into a Geographic Information System (GIS) to facilitate analysis and mapping. Digital data, in the form of a tabular database and GIS spatial layers (for maps), may be available with certain restrictions through a terms of use agreement.

### *Land 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.

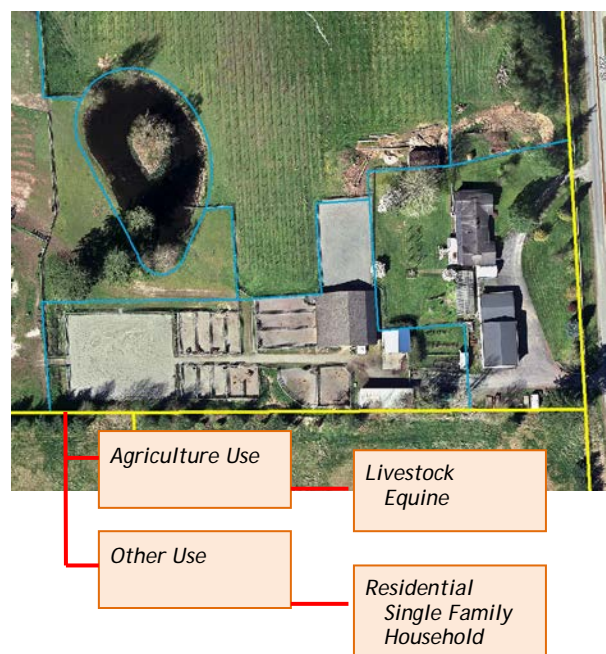


### *General land use:*

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 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.

*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 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.

*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.

### 7.3 PRESENTATION OF THE DATA

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

## Appendix A – 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 measure 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.

**Effective ALR** – The **Agricultural Land Reserve** area that is in legally surveyed parcels and under the jurisdiction of the area of interest. The effective ALR is the total ALR area excluding ALR on Indian reserves and ALR outside of legally surveyed parcels. Effective ALR can be used to compare land cover categories across different jurisdictions.

**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.

**Greenhouses** – See **Crop cover structures**.

**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 – Dumps & deposits** – Parcels with landfills, green waste, or outdoor composting facilities. Also includes parcels with significant fill deposits.

**Land use – First Nations** – Parcels designated for ceremonial use, food & material harvesting, or cultural landforms. These parcels are outside of federally designated Indian reserves.

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

**Land use – Land in transition** – Parcels with developed land in transition. Includes construction sites, large scale tree removal, and demolished buildings.

**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.

**Limited potential for farming** – See **potential for farming**.

**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. See descriptions below. Includes regenerating lands, and old farm fields.

**Natural and Semi-natural – Grass** – Land cover dominated by naturally occurring grasses with some sedges or rushes. May include non-native naturalized species. If greater than 50% cover is grass, the land is categorized as grass.

**Natural and Semi-natural – Herbaceous** – Land cover dominated by low, non woody plants such as ferns, grasses, horsetails, clovers and dwarf woody plants. If greater than 10% crown cover is trees, the land is categorized as treed.

**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 vegetation 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 and Semi-natural – Vegetation** – Land covered by **Natural and Semi-natural** vegetation including, grasses, herbs, shrubs, and trees. **Natural pasture or rangeland** is reported separately.

**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** – 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 25% parcel area built up with crop cover structures (excluding unmaintained structures)
- at least 23% parcel area in cultivated field crops (excluding unused forage or pasture) or farm infrastructure and small scale 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)

**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.