

# *Growing Knowledge*



Ministry of  
Agriculture

## *Land Use Inventory Report*

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## **Comox Valley Regional District Summer 2013**



Photo credit: J. Hatfield, Ministry of Agriculture

**Strengthening Farming Program  
Ministry of Agriculture**

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## Acronyms

AGRI	BC Ministry of Agriculture
ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
ALUI	Agricultural Land Use Inventory
GIS	Geographic Information Systems
CVRD	Comox Valley Regional District

# Definitions

## General

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

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

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

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

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

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

## Land Cover

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

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

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

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

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

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

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

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

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

**Natural and Semi-natural – Grassland** – 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 grassland.

**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 fenced 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 – Shrubland** – 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 grasses, herbs or shrubs used for grazing domestic livestock. This land cover is considered “Used for grazing” and “Not used for farming” although usually these areas are extensions of more intensive farming areas.

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

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

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

## ***Livestock***

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

**Homesite** –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**.

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

**Non Homesite** – Refers to 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.

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

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

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

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

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

**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.

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

## ***Land Use***

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

**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.

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

**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.

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

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

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

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

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

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

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

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

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

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



## Executive Summary

In the summer of 2013, the BC Ministry of Agriculture conducted an Agricultural Land Use Inventory (ALUI) in Comox Valley Regional District. The ALUI was made possible by a partnership between Comox Valley Regional District (CVRD) and the British Columbia Ministry of Agriculture. The project was funded in part by Comox Valley Regional District (CVRD).

ALUIs can be used to understand which agricultural activities are occurring in the surveyed area. The data provides an estimate of the capacity for agricultural expansion as well as quantifies the amount of land within the Agricultural Land Reserve (ALR) that is unavailable for agriculture. The data can also be used to estimate agricultural water demand with the use an irrigation water demand model.

The ALUI for CVRD was conducted using a drive-by inventory that recorded land cover and land use on a per-parcel basis, as a “snapshot in time.” Included in the inventory were

- 1) all parcels completely or partially within the ALR;
- 2) all parcels classified as having “farm” status by BC Assessment.
- 3) parcels zoned by local/regional governments to permit agriculture and greater than 1 acre<sup>1</sup>

The ALR in Comox Valley consists of 23,429 hectares. Ninety-six percent (96%) of this or 22,593 hectares was surveyed as part of this inventory. The remaining 4% or 836 hectares of ALR was not surveyed as it was in designated road rights of ways, water & foreshore, or had an average elevation of greater than 100 meters. An additional 9,638 hectares of land outside the ALR was surveyed, bringing the total survey area to 32,232 hectares on 2,444 parcels.

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

In the ALR by land cover, 5,624 hectares (24%) was farmed (both actively and inactively), 968 hectares (4%) was anthropogenically modified, and 16,002 hectares (68%) was in a natural or semi-natural state. The remaining 836 hectares (4%) was not included in the inventory and is considered unavailable for farming. An additional 375 hectares of land outside the ALR was farmed.

In the ALR by parcel land use, 7,165 hectares (30%) were defined as “Used for farming,” and 15,428 hectares (66%) were “Not used for farming”. In this analysis, farm residential uses and farm roads, were included in the “Used for farming” subtotal. The remaining 836 hectares (4%) was not surveyed, and was not considered to be available for farming. Refer to the definitions section for the “Used for farming” criteria.

The inventory provided insight into ALR land available and with potential for farming by looking at land cover, land use, and physical site limitations. Of the 23,249 hectares of ALR land in Comox Valley, 5,437 (23%) is actively farmed. Another 104 hectares (<1%) supports farming (e.g. houses, farm roads, farm buildings, etc). There are 2,087 hectares (9%) of the ALR unavailable for farming due to existing land use or land cover (e.g. it was in wetlands, waterbodies, non-farm residential uses, etc.) with the largest land use being protected area / park / reserve (1,129 hectares). There are 343 hectares (1%) with limited potential for agriculture due to physical site limitations (e.g. topography, soils, flooding, small size). That leaves 14,622 hectares (62%) of the ALR that is available and has potential

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<sup>1</sup> One acre is approximately 0.404 hectares.



to be farmed. The majority (94%) of the land that is available and has potential for farming is currently in natural and semi-natural vegetation.

In total, there were 5,753 hectares of cultivated field crops (5,427 hectares in the ALR and 326 hectares outside the ALR). The top crop types were forage & pasture with 4,952 hectares or 86% of all cultivated land, vegetables with 218 hectares or 4% of all cultivated land, and berries with 172 hectares or 3%. In the forage & pasture category there were 3,185 hectares of cultivated forage crops, 1,182 hectares of cultivated pasture, and 379 hectares of land in both forage & pasture. In the vegetable category, potatoes and mixed vegetables were the top crops in terms of area. In the berries category, cranberries followed by blackberries were the top crops in terms of area. Of the 5,753 hectares of cultivated field crops in Comox Valley Regional District, 385 hectares were on Denman Island and 138 hectares were on Hornby Island. In addition to the cultivated field crops, there were 38 greenhouse activities comprising 9 hectares of land; nearly all greenhouses were less than 1 hectare in size.

Irrigation use was captured by crop type and irrigation system type, to aid in developing a water demand model for agriculture. There is little irrigation use in Comox Valley with only 28% of all cultivated crops being irrigated. Giant gun systems were the most commonly used (825 hectares) and were found primarily on forage & pasture and vegetable crops. Sprinkler systems were the next most common (467 hectares) and were used on a variety of crops. Subsurface systems (212 hectares) and trickle systems (116 hectares) were also used. Only 3% of the crops on Denman Island and only 7% of the crops on Hornby Island were irrigated.

Livestock activities were also recorded, but are very difficult to measure using a windshield survey method. Livestock may be in barns, may be mobile, and may utilize more than one land parcel. 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. In CVRD, equine was the most common type of livestock activity with 364 out of 704 activities (52%), followed by poultry with 134 out of 704 activities (19%), and beef with 91 activities (13%). All equine activities were “non-intensive” while 18 or 53% of the dairy activities were “intensive”. There are 18 other “intensive” livestock activities including 7 beef, 7 poultry, 1 swine, and 2 specialty (1 bison, and 1 water buffalo) activities. No actual livestock numbers were obtainable through the survey, so the results were reported as a range in terms of animal unit equivalents for each parcel. In addition to the livestock activities, 7 inland aquaculture facilities were recorded. Four were associated with finfish and 3 were associated with shellfish.

Further analysis of ALR lands was conducted on 1,809 parcels with 22,421 hectares or 95.6% of the ALR in CVRD. Of the 1,809 parcels in the ALR, 460 (25%) were “Used for farming” and 1,349 parcels (75%) are “Not used for farming”. Of the 1,349 parcels “Not used for farming”, 17% are less than 1 hectare and 51% are less than 4 hectares. Although parcels of all sizes are “Used for farming”, small parcels are less likely to be farmed.

## **Summary**

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

## Agrologist Comments

The First Nations referred to the Comox Valley by the Salish word “K’omoks” meaning “abundance”. In 1860 Richard C. Mayne wrote about the large prairie areas covered in grass and ferns; within 3 years 60 European settlers arrived. The 1894 census showed 1,800 acres of land cleared in the Comox Valley, Denman and Hornby Islands. By 1900 these farms were producing grain, silage corn, milk and other dairy products, beef, sheep, hogs, poultry (meat and eggs), peas, potatoes, apples, pears, plums and prunes.

The long agricultural history was helped by the Comox Valley Farmers Institute and the Comox Valley Exhibition. Both organizations have played a significant role in supporting and promoting farming for over 100 years. In 1992 the Comox Valley Farmers Market was developed. In 2010 the Hornby/Denman Growers and Producer’s Alliance was formed. These organizations work together to support farmers and ensure agriculture remains a strong part of the region’s future.

A hallmark of the Comox Valley, Denman and Hornby Island agriculture is the diversity of crops and products produced. They range from the traditional dairy, blueberries and potatoes to water buffalo cheese, specialty bison meat and single malt whiskey. The growing consumer base in combination with experience and culinary tourism is adding value to farmers, improving farm profitability and developing the Comox Valley’s reputation as a destination for food connoisseurs.

However, the issue of profitability is a concern for farmers on the North Island. In the Comox Valley the revenue generated per hectare is approx. \$2,200, while in the Fraser Valley the revenue per hectare is \$12,500. One reason for the difference is that farmers in the region have to pay more for inputs coming onto the Island. Farmers also pay extra transport costs to get their products off Island and face challenges with the limited consumer base on the North Island. These issues are magnified for Hornby and Denman Island farmers.

Wildlife is another issue for farmers in the region. The Comox Valley has one of the largest overwintering populations of trumpeter swans on the pacific coast. Up to 3,000 of these nationally protected waterfowl plus Canada geese, widgeon and deer feed on farmer’s fields during the October to April period. This causes damage to perennial grass fields and results in spring crop loss for farmers. A pilot compensation and mitigation project was initiated in the Comox Valley through the Comox Valley Farmers Institute.

While it would be expected that the marine influenced Comox Valley, Denman and Hornby Islands provide a moist growing environment this is not often the case during the growing season. The rainfall amounts for May to September are approximately 50 mm, similar to Kelowna BC. Without irrigation this limits the productivity of many crops and parcels of land. Limited irrigation options are available as fisheries concerns compete for scarce summer water resources. To grow agriculture in the region irrigation water availability needs to become a priority.

While many areas of the province have exhausted their available agricultural land base the Comox Valley, with 68% of its land in the Agricultural Land Reserve and in a natural or semi natural state, has a large reservoir of land available to build a strong and viable agriculture sector into the future.

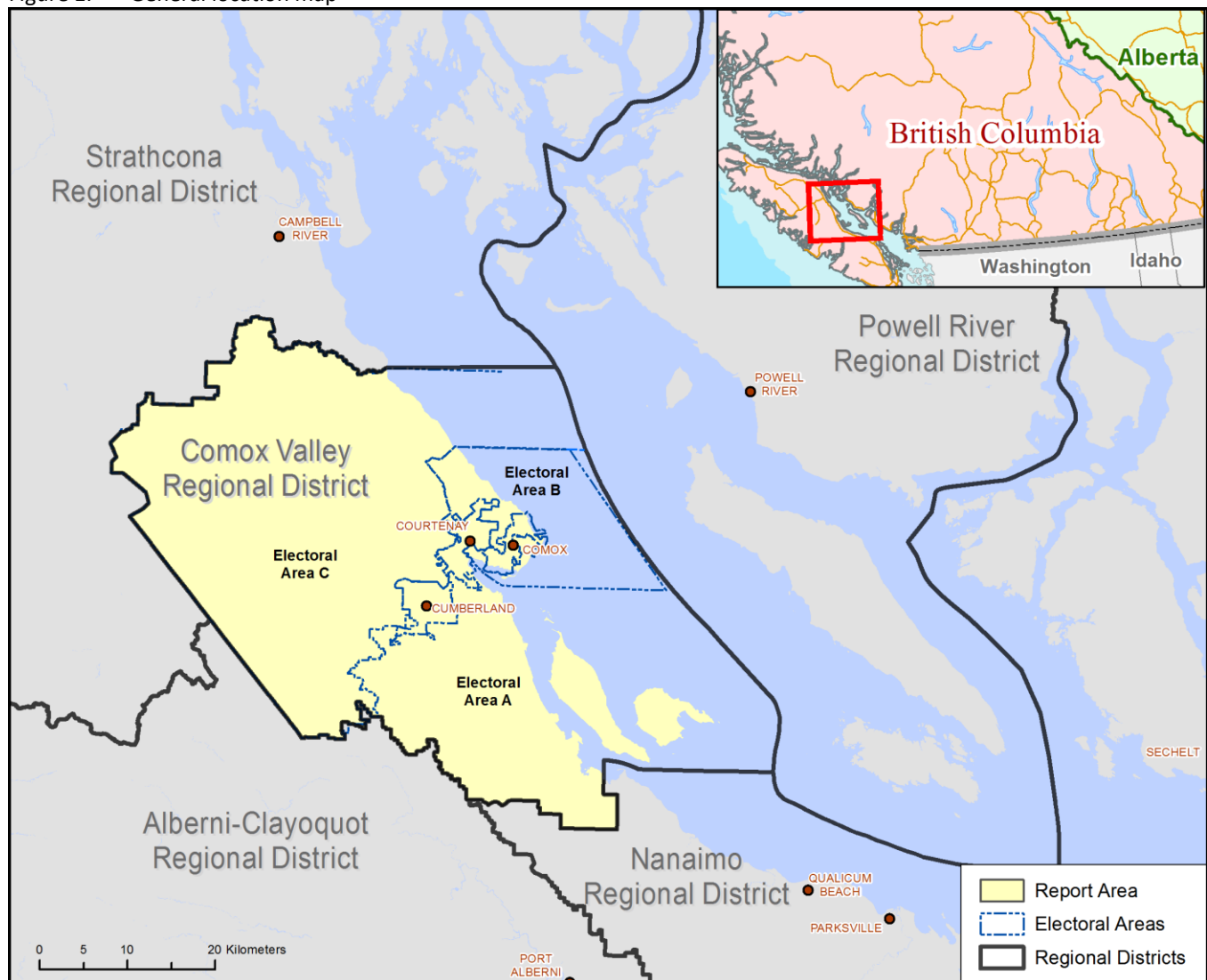
## General Information

Comox Valley Regional District (CVRD) is located on Central Vancouver Island. The regional district was formed in 2008 when Comox-Strathcona Regional District was split into two separate regional districts (Comox and Strathcona). The division resulted in CVRD having only 8% of the former Comox-Strathcona land area, but 58% of its population.

CVRD contains the municipalities of Courtney, Comox and Cumberland as well as electoral areas A, B, and C. Electoral Area A is known as “Baynes Sound – Denman/Hornby Islands”, Electoral Area B is known as “Lazo North”, and Electoral Area C is known as “Puntledge – Black Creek”.

Comox Valley Regional District is bordered by Strathcona Regional District, Alberni-Clayoquot Regional District, Regional District of Nanaimo, and the Strait of Georgia. The region has a total area including land and water of 252,566 hectares<sup>2</sup>.

Figure 1. General location map



<sup>2</sup> Calculated in GIS.

## AGRICULTURAL LAND RESERVE

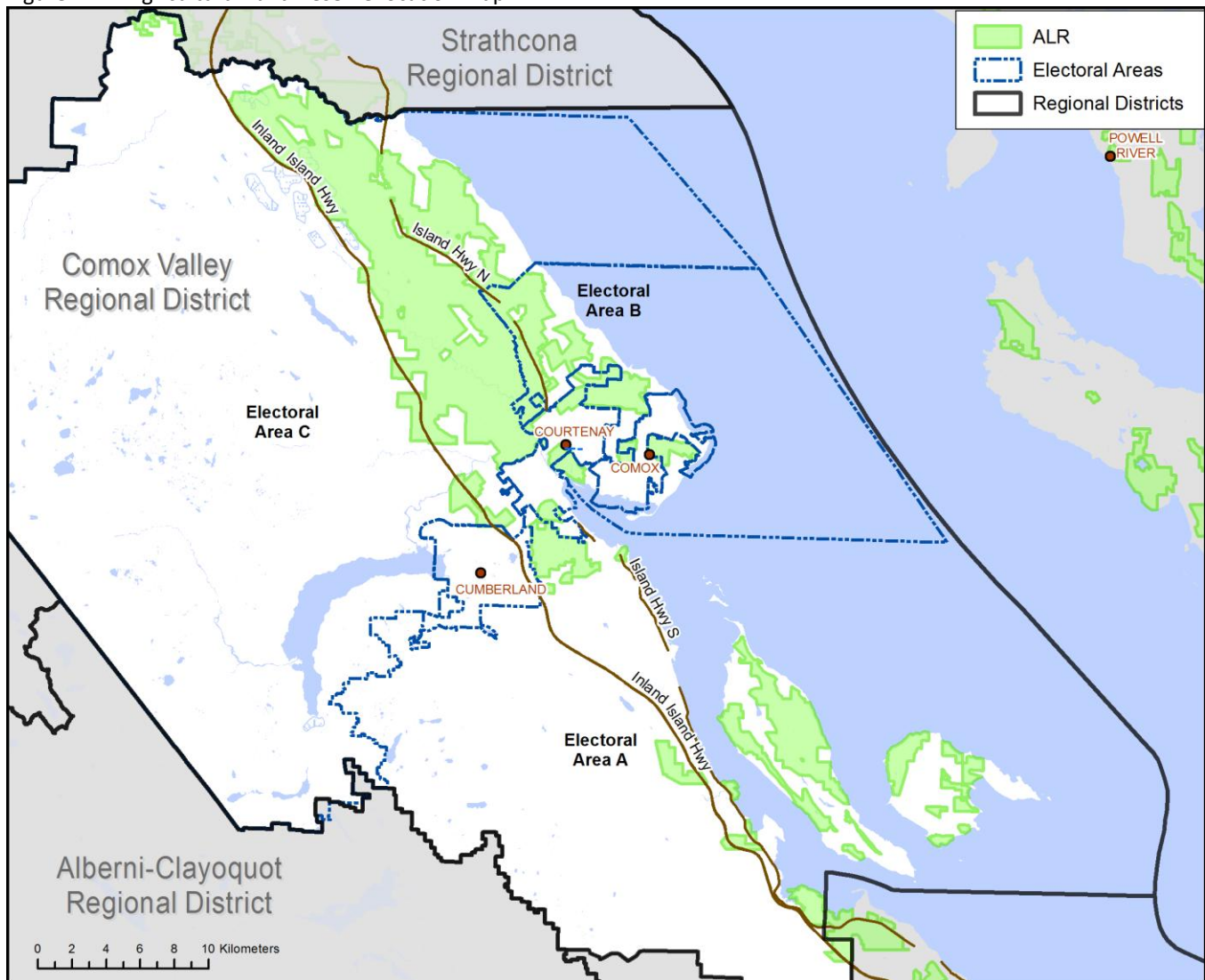
The Agricultural Land Reserve (ALR) is a provincial land use zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

In 2012 there were 23,429 hectares<sup>3</sup> of ALR land within Comox Valley Regional District (see Figure 2).

The land area of CVRD is 170,654 hectares<sup>4</sup>. With 23,429 hectares<sup>3</sup> in the ALR, 14% of the regional districts total land area is in the ALR. This area includes:

- 22,593 hectares in surveyed parcels
- 836 hectares outside surveyed parcels
  - 580 hectares of designated rights-of-way
  - 232 hectares of water & foreshore
  - 24 hectares with an average parcel elevation of greater than 100 meters

Figure 2. Agricultural Land Reserve location map



<sup>3</sup> Provincial Agricultural Land Commission (ALC) Annual Report 2012/13 Pg 16, 31. [http://www.alc.gov.bc.ca/publications/2012-13%20ALC\\_Annual%20Report\\_Final.pdf](http://www.alc.gov.bc.ca/publications/2012-13%20ALC_Annual%20Report_Final.pdf)

<sup>4</sup> Calculated in GIS.



## INVENTORY AREA

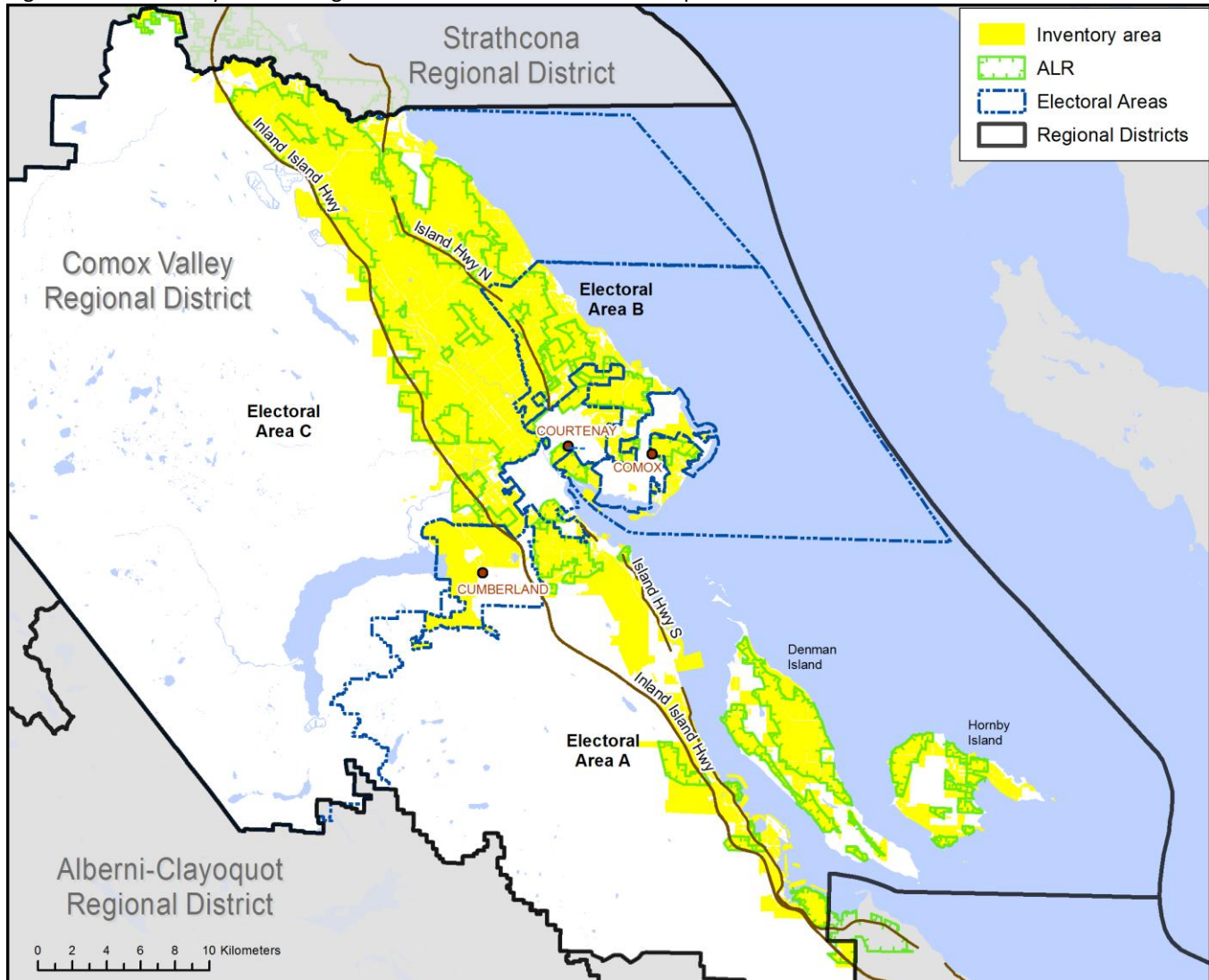
The total inventory area encompasses 2,444 parcels with a combined area of 32,232 hectares, or nearly 19% of the land area in CVRD. Included are all parcels:

- completely or partially within the Agricultural Land Reserve
- classified by BC Assessment as having “Farm” status for property tax assessment
- zoned by local/regional governments to permit agriculture and greater than 1 acre<sup>5</sup>

The amount of ALR land included in the inventory area is 22,593 hectares located on 1,864 parcels. This area is 96% of the ALR within CVRD. The remaining 4% of the ALR was excluded from the inventory as it is outside surveyed land parcels in designated rights-of-way or water and foreshore. Included in the inventory area is 141 hectares of land on Pentledge 2 and Comox 1 Indian reserves.

The findings on Denman and Hornby Islands are included in the Comox Valley Regional District totals. As Denman and Hornby each have a unique character, findings on the Islands are also presented in separate subset tables and charts.

Figure 3. Inventory area and Agricultural Land Reserve location map



<sup>5</sup> One acre is approximately 0.404 hectares.

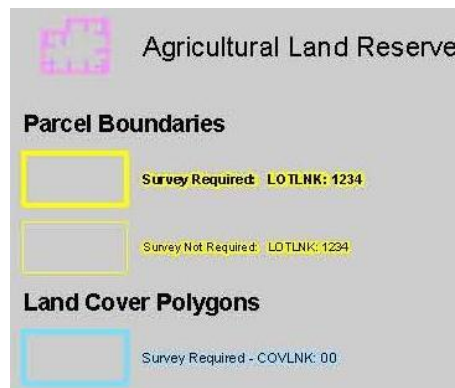
# Agricultural Land Use Inventory

## 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 Comox Valley Regional District land use inventory was conducted in the summer of 2013 by a professional agrologist assisted by a GIS 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 provided the basis for the survey and included:

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



<sup>6</sup> Cadastre mapping (2012) was provided through the Integrated Cadastral Information Society.

## DESCRIPTION OF THE DATA

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

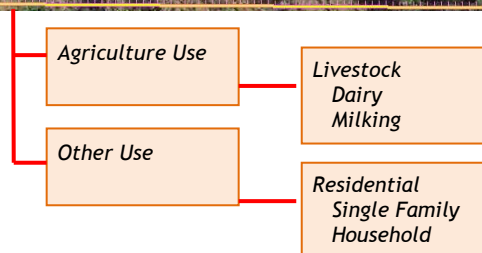
Once acquired through the survey, the data was brought into a Geographic Information System (GIS) to facilitate analysis and mapping. Digital data, in the form of a tabular database and GIS spatial layers (for maps), may be available with certain restrictions through a terms of use agreement.

### *General land use:*

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

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

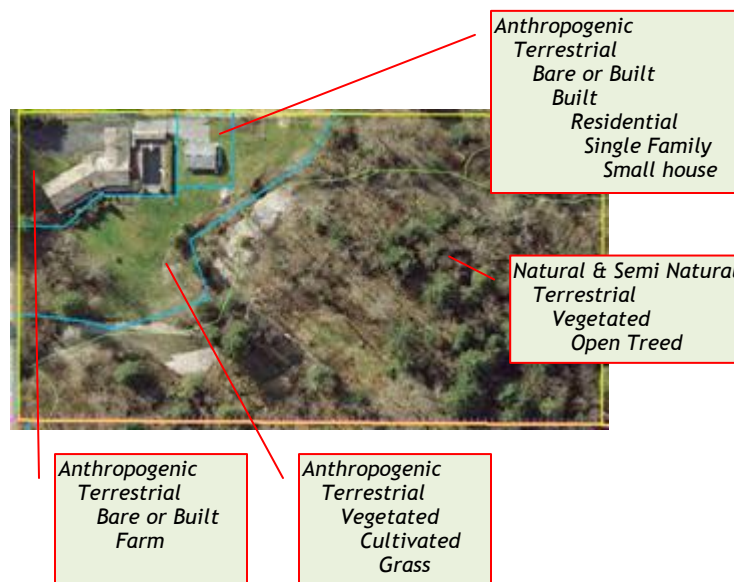
In addition, the availability of non-farm use properties for future farming was assessed based on the amount of potential land for farming on the property and the compatibility of existing uses with future farming activities.



### *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***

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The data is presented in the form of summarized tables and charts. In order to maintain data precision, absolute data values are preserved thorough out the analysis and summarization processes. During the final formatting of the summarized tables and charts, data values are rounded to the nearest whole number. This can result in the tables and charts not appearing to add up correctly.

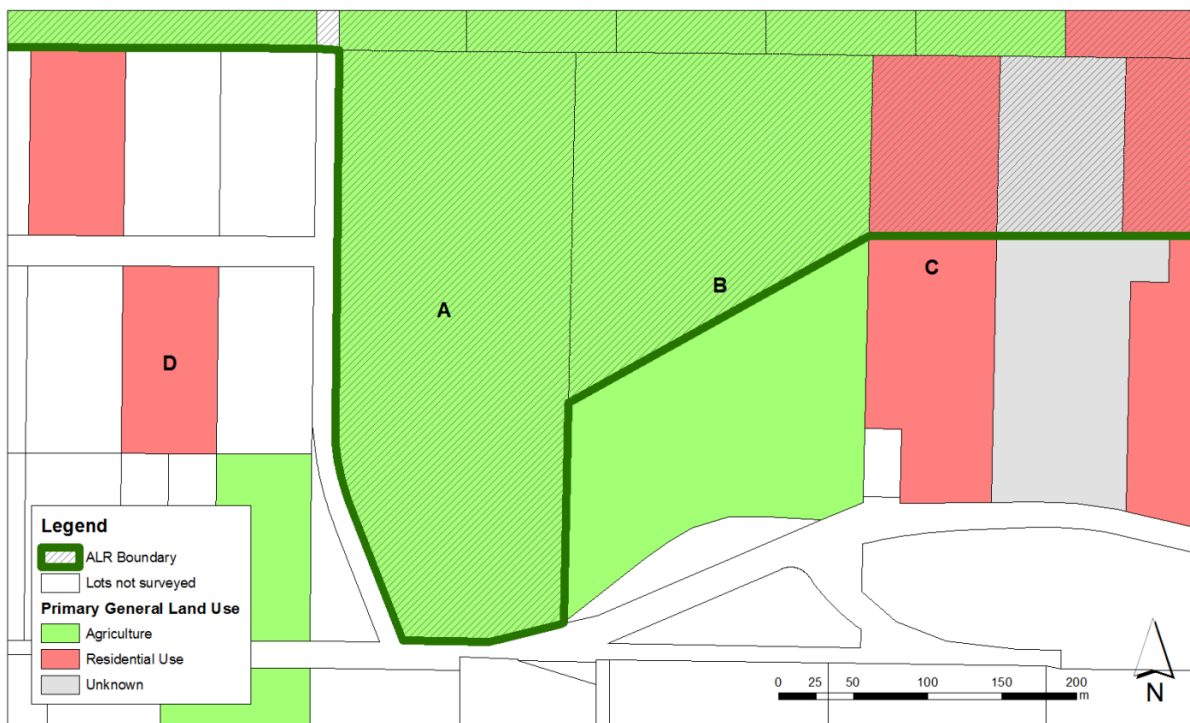
## DETERMINATION OF PARCELS WITHIN THE ALR

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

Figure 4 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 4. Parcel inclusion in the ALR



## 1. Land Cover and Farmed Area

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

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

Land cover is surveyed by separating the parcel into homogeneous components and assigning each a description such as landscape lawn, natural open treed, anthropogenic wetland, blueberries, road, 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 and rangeland are fenced areas with uncultivated (not sown) natural or semi-natural grasses, herbs or shrubs used for grazing domestic livestock. These areas are considered “Grazed” and not “Farmed” although usually these areas are extensions of more intensive farming areas.

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

Land cover on each of Denman and Hornby Islands is presented as a subset of the total inventory area.

Table 1. Land cover and farmed area

Land cover*		ALR		Outside ALR (ha)	Total area (ha)	% of inventory area
		In ALR (ha)	% of ALR			
Actively farmed	Cultivated field crops	5,240	22%	297	5,537	17%
	Farm infrastructure	190	1%	47	237	< 1%
	Greenhouses	7	< 1%	1	8	< 1%
Inactively farmed	Unused forage or pasture	168	< 1%	29	197	< 1%
	Unmaintained field crops	18	< 1%	1	19	< 1%
	Unmaintained greenhouses	<1	< 1%	<1	<1	< 1%
<b>FARMED SUBTOTAL</b>		<b>5,624</b>	<b>24%</b>	<b>375</b>	<b>5,998</b>	<b>19%</b>
Anthropogenic (not farmed)	Managed vegetation	597	3%	240	838	3%
	Residential footprint	219	< 1%	116	335	1%
	Waterbodies	53	< 1%	11	64	< 1%
	Non Built or Bare	38	< 1%	17	55	< 1%
	Transportation	31	< 1%	48	79	< 1%
	Settlement	20	< 1%	103	123	< 1%
	Built up - Other	9	< 1%	3	12	< 1%
	Utilities	1	< 1%	1	2	< 1%
<b>SUBTOTAL</b>		<b>968</b>	<b>4%</b>	<b>539</b>	<b>1,507</b>	<b>5%</b>
Natural and Semi-natural	Vegetated	15,267	65%	2,880	18,146	56%
	Wetlands	525	2%	51	577	2%
	Natural pasture	125	< 1%	110	235	< 1%
	Waterbodies	85	< 1%	9	93	< 1%
	Natural bare areas	-	-	<1	<1	< 1%
<b>SUBTOTAL</b>		<b>16,002</b>	<b>68%</b>	<b>3,050</b>	<b>19,052</b>	<b>59%</b>
Unknown	Not surveyed	<1	< 1%	5,674	5,674	18%
<b>TOTAL</b>		<b>22,593</b>	<b>96%</b>	<b>9,638</b>	<b>32,232</b>	<b>100%</b>
Not surveyed	Rights-of-way	580	2%			
	Water & foreshore	232	1%			
	Average elevation >100 m	24	< 1%			
<b>SUBTOTAL</b>		<b>836</b>	<b>4%</b>			
<b>TOTAL</b>		<b>23,429</b>	<b>100%</b>			

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

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

In CVRD, 5,998 hectares of land is in "Farmed" land cover although 216 of those hectares are "Inactively farmed" in unmaintained field crops, unused forage or pasture, and unmaintained greenhouses.

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

Figure 5. Land cover and farmed area in the ALR

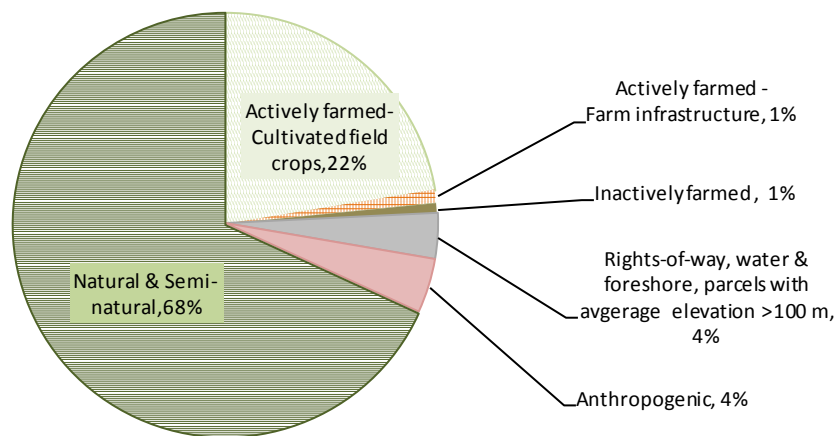


Figure 5 shows the proportion of different land cover types across the ALR in Comox Valley.

Of the ALR land in Comox Valley Regional District, 23% is “Actively Farmed” while 1% is in unmaintained field crops, unused forage or pasture, and unmaintained greenhouses (“Inactively Farmed”).

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

Indian reserve land cover subset

Table 2. Land cover and farmed area on Indian reserves

First Nation	Reserve name	Land Cover Category			Total surveyed area (ha)
		Farmed (ha)	Anthropogenic (not farmed) (ha)	Natural & Semi-natural (ha)	
Comox	Comox 1	-	18	42	60
	Pentledge 2	14	10	58	81
TOTAL		14	27	100	141

Table 2 shows that on Comox 1 and Pentledge 2 reserves, there are 14 hectares in “Farmed” land cover, 27 hectares in anthropogenic (not farmed) land cover, and 100 hectares in natural and semi-natural land cover. Refer to Maps B1 and B2 in Appendix B for more information.

## Denman Island land cover subset

Table 3. Land cover and farmed area on Denman Island

Land cover*		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area
		In ALR (ha)	% of ALR			
Actively farmed	Cultivated field crops	359	16%	20	379	1%
	Farm infrastructure	9	< 1%	1	11	< 1%
	Greenhouses	<1	< 1%	-	<1	< 1%
Inactively farmed	Unused forage or pasture	4	< 1%	1	6	< 1%
<b>FARMED SUBTOTAL</b>		<b>373</b>	<b>16%</b>	<b>23</b>	<b>396</b>	<b>1%</b>
Anthropogenic (not farmed)	Managed vegetation	58	2%	9	66	< 1%
	Residential footprint	20	< 1%	8	28	< 1%
	Settlement	2	< 1%	-	2	< 1%
	Waterbodies	1	< 1%	<1	2	< 1%
	Built up - Other	<1	< 1%	<1	<1	< 1%
	Transportation	<1	< 1%	<1	<1	< 1%
	Non Built or Bare	-	-	<1	<1	< 1%
<b>SUBTOTAL</b>		<b>81</b>	<b>3%</b>	<b>19</b>	<b>99</b>	<b>&lt; 1%</b>
Natural and Semi-natural	Vegetated	1,725	75%	686	2,412	7%
	Wetlands	106	5%	10	115	< 1%
	Natural pasture or rangeland	22	< 1%	16	38	< 1%
	Waterbodies	2	< 1%	<1	3	< 1%
<b>SUBTOTAL</b>		<b>1,855</b>	<b>80%</b>	<b>712</b>	<b>2,568</b>	<b>8%</b>
Unknown	Not surveyed	-	-	131	131	< 1%
<b>TOTAL</b>		<b>2,308</b>	<b>100%</b>	<b>886</b>	<b>3,194</b>	<b>10%</b>

Table 3 shows the extent of different land cover types across Denman Island.

On Denman Island, there are 396 hectares of "Farmed" land cover, although 6 of these hectares are "Inactively farmed" in unused forage or pasture.

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

Figure 6. Land cover and farmed area in the ALR on Denman Island

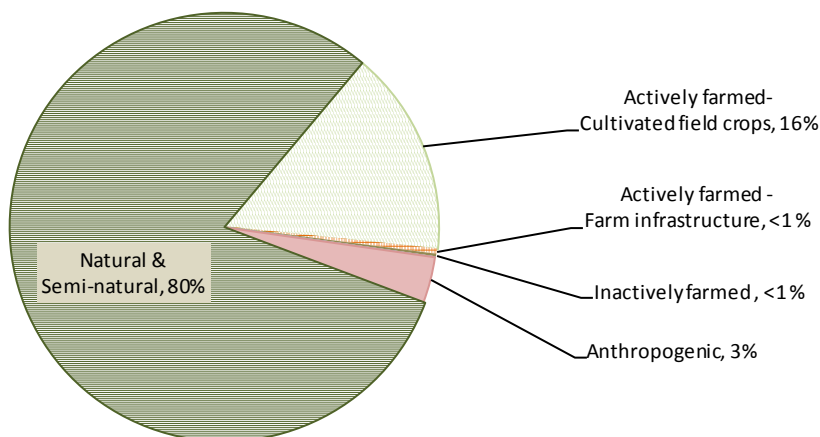


Figure 6 shows the proportion of different land cover types across the ALR on Denman Island.

Of the ALR land, 80% is in natural and semi-natural land cover, 16% is actively farmed, and 3% is in anthropogenic (not farmed) land cover.

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

## Hornby Island land cover subset

Table 4. Land cover and farmed area on Hornby Island

Land cover*		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area
		In ALR (ha)	% of ALR			
Actively farmed	Cultivated field crops	111	13%	9	121	< 1%
	Farm infrastructure	5	< 1%	<1	6	< 1%
	Greenhouses	<1	< 1%	<1	<1	< 1%
Inactively farmed	Unused forage or pasture	16	2%	<1	16	< 1%
	Unmaintained field crops	2	< 1%	-	2	< 1%
<b>FARMED SUBTOTAL</b>		<b>134</b>	<b>15%</b>	<b>10</b>	<b>144</b>	<b>&lt; 1%</b>
Anthropogenic (not farmed)	Managed vegetation	84	10%	14	98	< 1%
	Residential footprint	18	2%	7	25	< 1%
	Waterbodies	2	< 1%	<1	2	< 1%
	Settlement	1	< 1%	<1	2	< 1%
	Built up - Other	<1	< 1%	-	<1	< 1%
	Transportation	<1	< 1%	2	2	< 1%
	Non Built or Bare	<1	< 1%	<1	<1	< 1%
<b>SUBTOTAL</b>		<b>106</b>	<b>12%</b>	<b>23</b>	<b>129</b>	<b>&lt; 1%</b>
Natural and Semi-natural	Vegetated	623	71%	186	809	3%
	Wetlands	7	< 1%	<1	7	< 1%
	Natural pasture or rangeland	3	< 1%	-	3	< 1%
	Waterbodies	3	< 1%	1	4	< 1%
<b>SUBTOTAL</b>		<b>636</b>	<b>73%</b>	<b>187</b>	<b>824</b>	<b>3%</b>
Unknown	Not surveyed	<1	< 1%	289	289	< 1%
<b>TOTAL</b>		<b>876</b>	<b>100%</b>	<b>510</b>	<b>1,386</b>	<b>4%</b>

Table 4 shows the extent of different land cover types across Hornby Island.

There are 144 hectares of land in "Farmed" land cover although 18 of these hectares are "Inactively farmed" in unmaintained field crops and unused forage or pasture.

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

Figure 7. Land cover and farmed area in the ALR on Hornby Island

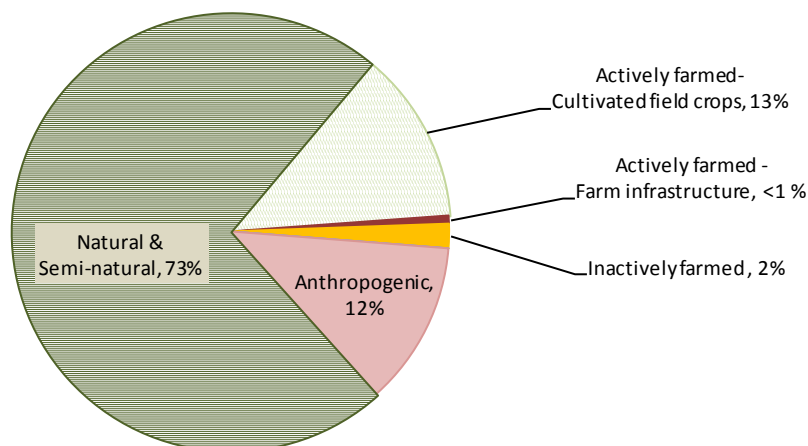


Figure 7 shows the proportion of different land cover types across the ALR on Hornby Island.

Of the ALR land, 73% is in natural & semi-natural land cover, 13% is actively farmed, and 12% is in anthropogenic (not farmed) land cover.

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



## 2. Land Use and Farm Use

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. If one parcel is a hotel and the other is a retail store, they are both considered as “Commercial” land use.

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

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

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.

Table 5. Land use and farming use by parcel

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						
Used only for farming - no other use		1,639	7 %	57	1,696	5 %	102	4 %	17
Used for farming - Mixed use	Residential	5,262	22 %	387	5,649	18 %	479	20 %	12
	Wildlife management	175	<1 %	8	183	<1 %	7	<1 %	26
	Recreation & leisure	61	<1 %	10	71	<1 %	3	<1 %	24
	Recreation & leisure - golf	27	<1 %	< 1	27	<1 %	1	<1 %	27
	Commercial & service	1	<1 %	3	4	<1 %	3	<1 %	1
	Industrial	-	-	2	2	<1 %	1	<1 %	2
<b>USED FOR FARMING SUBTOTAL</b>		<b>7,165</b>	<b>30 %</b>	<b>467</b>	<b>7,632</b>	<b>24 %</b>	<b>596</b>	<b>24 %</b>	
Not used for farming	Residential	6,667	28 %	1,114	7,780	24 %	1,355	55 %	6
	No apparent use	4,514	19 %	878	5,392	17 %	293	12 %	18
	Protected area / park / reserve	1,304	6 %	1,083	2,388	7 %	37	2 %	65
	Forestry	1,219	5 %	3,958	5,178	16 %	51	2 %	102
	Utilities	673	3 %	1,373	2,045	6 %	30	1 %	68
	Recreation & leisure	296	1 %	28	324	1 %	13	<1 %	25
	Wildlife management	279	1 %	111	390	1 %	15	<1 %	26
	Gravel extraction	181	<1 %	60	241	<1 %	5	<1 %	48
	Transportation	161	<1 %	77	238	<1 %	11	<1 %	22
	Recreation & leisure - golf	76	<1 %	279	355	1 %	10	<1 %	36
	Institutional & community	44	<1 %	2	46	<1 %	16	<1 %	3
	Industrial	12	<1 %	6	18	<1 %	5	<1 %	4
	Commercial & service	2	<1 %	93	96	<1 %	5	<1 %	19
	Transportation - airport	-	-	108	108	<1 %	2	<1 %	54
<b>NOT USED FOR FARMING SUBTOTAL</b>		<b>15,428</b>	<b>66 %</b>	<b>9,171</b>	<b>24,599</b>	<b>76 %</b>	<b>1,848</b>	<b>76 %</b>	
<b>TOTAL</b>		<b>22,593</b>	<b>96 %</b>	<b>9,639</b>	<b>32,232</b>	<b>100 %</b>	<b>2,444</b>	<b>100 %</b>	
Not surveyed	Rights-of-way	580	2 %						
	Water & foreshore	232	1 %						
	Average parcel elevation >100 m	24	<1 %						
<b>SUBTOTAL</b>		<b>836</b>	<b>4 %</b>						
<b>TOTAL</b>		<b>23,429</b>	<b>99 %</b>						

\* See "Land Use" in the Definitions section for terms in this table.

Table 5 shows that 7,165 hectares or 30% of the ALR in CVRD is on parcels "Used for farming".

Most "Used for farming" parcels are also used for other purposes with only 102 parcels or 7% of the ALR area exclusively "Used for farming."

One parcel with the mixed use "Used for farming" and "Recreation & leisure – golf" is associated with Sunnydale Golf and Country Club.

Of the "Not used for farming" parcels, 6,667 hectares or 28% of the ALR area is on parcels associated with "Residential" land use.

There are 1,304 hectares of "Not used for farming" parcels with the land use "protected area / park / reserve".

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

Table 6. Parcel use and land cover in the ALR

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		1,076	5 %	31	<1 %	532	2 %	1,639	7 %
Used for farming - mixed use	Residential	3,446	15 %	158	<1 %	1,658	7 %	5,262	22 %
	Wildlife management	127	<1 %	1	<1 %	47	<1 %	175	<1 %
	Recreation & leisure	31	<1 %	1	<1 %	29	<1 %	61	<1 %
	Recreation & leisure - golf	21	<1 %	< 1	<1 %	5	<1 %	27	<1 %
	Commercial & service	< 1	<1 %	< 1	<1 %	< 1	<1 %	1	<1 %
SUBTOTAL		4,701	20 %	193	<1 %	2,272	10 %	7,165	30 %
Not used for farming		923	4 %	775	3 %	13,730	59 %	15,428	66 %
SUBTOTAL		5,624	24 %	968	4	16,001	68 %	22,593	96 %
Not surveyed	Rights-of-way							580	2 %
	Water & foreshore							232	1 %
	Average parcel elevation >100 m							24	<1 %
	SUBTOTAL							836	4 %
TOTAL ALR							23,429	99 %	

\* 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 Definitions section of this report.

Table 6 combines land use and land cover on ALR land in CVRD. For example, parcels with the mixed use "Used for farming" and "Residential" have a total of 3,446 hectares in "Farmed" land cover, 158 hectares in "Anthropogenic" (not farmed) land cover, and 1,658 hectares in "Natural & Semi-natural" land cover.

Although 7,165 hectares or 30% of CVRD's ALR is on parcels "Used for farming" (refer to Table 5), only 4,701 hectares or 20% of the ALR is actually in "Farmed" land cover as many "Used for farming" parcels are also used for other purposes. In fact, the majority of the "Farmed" land cover in the ALR (15%) is on parcels also used for "Residential" purposes.

## Denman Island land use subset

Table 7. Land use and farming use by parcel on Denman Island

Parcel land use*		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area	Number of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area					
Used only for farming - no other use		16	<1 %	1	17	<1 %	2	< 1
Used for farming & Residential		395	17 %	35	430	1 %	25	12
<b>USED FOR FARMING SUBTOTAL</b>		<b>411</b>	<b>18 %</b>	<b>36</b>	<b>447</b>	<b>1 %</b>	<b>27</b>	
Not used for farming	Residential	757	33 %	179	935	3 %	116	56
	Protected area / park / reserve	462	20 %	285	747	2 %	13	6
	Forestry	324	14 %	170	493	2 %	9	4
	No apparent use	201	9 %	176	378	1 %	32	15
	Recreation & leisure	128	6 %	27	155	<1 %	3	1
	Institutional & community	15	<1 %	< 1	15	<1 %	5	2
	Wildlife management	7	<1 %	14	21	<1 %	1	< 1
	Utilities	3	<1 %	< 1	3	<1 %	1	< 1
<b>NOT USED FOR FARMING SUBTOTAL</b>		<b>1,897</b>	<b>82 %</b>	<b>849</b>	<b>2,746</b>	<b>9 %</b>	<b>180</b>	
<b>TOTAL</b>		<b>2,308</b>	<b>100 %</b>	<b>886</b>	<b>3,194</b>	<b>10 %</b>	<b>207</b>	

\* See "Land Use" in the Definitions section for terms in this table.

Table 7 shows that 447 hectares or 18% of the ALR on Denman Island is on parcels "Used for farming" while 1,897 hectares or 82% of the ALR is on parcels "Not used for farming".

There are 462 hectares of ALR land associated with the land use "protected area / park / reserve". This area is associated with Denman Island Provincial park and protected area, Denman Conservancy Association, and Morrison Marsh Nature Reserve.

## Hornby Island land use subset

Table 8. Land use and farming use by parcel on Hornby Island

Parcel land use*		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area	Number of parcels	Average parcel size (ha)
		In ALR (ha)	% of ALR area					
Used only for farming - no other use		99	11 %	< 1	99	<1 %	11	9
Used for farming & Residential		12	1 %	-	12	<1 %	2	6
<b>USED FOR FARMING SUBTOTAL</b>		<b>110</b>	<b>13 %</b>	<b>&lt; 1</b>	<b>111</b>	<b>&lt;1 %</b>	<b>13</b>	
Not used for farming	Residential	518	59 %	177	695	2 %	112	6
	No apparent use	132	15 %	18	150	<1 %	27	6
	Protected area / park / reserve	66	8 %	313	379	1 %	4	95
	Recreation & leisure	45	5 %	2	47	<1 %	1	47
	Recreation & leisure - golf	5	<1 %	< 1	5	<1 %	1	5
<b>NOT USED FOR FARMING SUBTOTAL</b>		<b>766</b>	<b>87 %</b>	<b>509</b>	<b>1,275</b>	<b>4 %</b>	<b>145</b>	
<b>TOTAL</b>		<b>876</b>	<b>100 %</b>	<b>510</b>	<b>1,386</b>	<b>4 %</b>	<b>158</b>	

\* See "Land Use" in the Definitions section for terms in this table.

Table 8 shows that of the ALR on Hornby Island, 110 hectares or 13% is on parcels "Used for farming" and 766 hectares or 87% is on parcels "Not used for farming".

### 3. Availability of Land for Farming

The demand for locally grown agricultural products is anticipated to grow as the population grows <sup>7</sup>. 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 farming regardless of any existing non-farm use. In addition, properties with an existing use compatible with agriculture, such as residential, are considered available for farming since the existing land use can be maintained.

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

*In Comox Valley Regional District properties in the ALR and “Used for farming” have an average assessed value of \$78,745 per hectare, while properties in the ALR but unavailable for farming have an average assessed value of \$793,180 per hectare.*

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

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

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

Table 9. Status of the land base with respect to farming

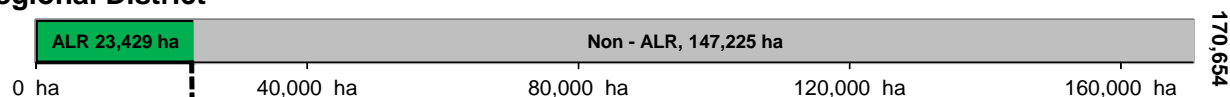
Land status		ALR		Outside ALR (ha)	Total area (ha)	% inventory area
		In ALR (ha)	% ALR Area			
Actively farmed	Cultivated field crops	5,240	22 %	297	5,537	17 %
	Farm infrastructure	190	<1 %	47	237	<1 %
	Greenhouses	7	<1 %	1	8	<1 %
<b>ACTIVELY FARMED</b>		<b>5,437</b>	<b>23 %</b>	<b>345</b>	<b>5,782</b>	<b>18 %</b>
Anthropogenic areas supporting farming	Residential footprint	59	<1 %	18	77	<1 %
	Artificial Waterbodies	33	<1 %	4	37	<1 %
	Transportation	12	<1 %	4	16	<1 %
	Built up - Other	< 1	<1 %	-	< 1	<1 %
<b>SUPPORTING FARMING</b>		<b>104</b>	<b>&lt;1 %</b>	<b>26</b>	<b>130</b>	<b>&lt;1 %</b>
Unavailable for farming due to existing land use	Protected area / park / reserve	1,129	5 %	782	1,912	6 %
	Recreation & leisure - golf	77	<1 %	279	356	1 %
	Wildlife management	36	<1 %	< 1	36	<1 %
	Recreation & leisure	33	<1 %	< 1	33	<1 %
	Residential	24	<1 %	13	37	<1 %
	Transportation	< 1	<1 %	< 1	< 1	<1 %
	Institutional & community	< 1	<1 %	-	< 1	<1 %
	Utilities	< 1	<1 %	-	< 1	<1 %
	Transportation - airport	-	-	108	108	<1 %
Unavailable for farming due to existing land cover	Wetlands	497	2 %	48	545	2 %
	Residential footprint	145	<1 %	59	204	<1 %
	Waterbodies	102	<1 %	9	111	<1 %
	Built up - Other	25	<1 %	17	42	<1 %
	Transportation	18	<1 %	21	39	<1 %
	Utilities	1	<1 %	1	2	<1 %
	Natural bare areas	-	-	< 1	< 1	<1 %
<b>UNAVAILABLE FOR FARMING</b>		<b>2,087</b>	<b>9 %</b>	<b>1,338</b>	<b>3,425</b>	<b>11 %</b>
Site limitations	Riparian &/or Drainage	252	1 %	29	282	<1 %
	Operational	42	<1 %	15	57	<1 %
	Flooding	26	<1 %	< 1	26	<1 %
	Topography &/or soils	21	<1 %	7	28	<1 %
	Buffer	1	<1 %	< 1	2	<1 %
<b>LIMITED POTENTIAL FOR FARMING</b>		<b>343</b>	<b>1 %</b>	<b>52</b>	<b>394</b>	<b>1 %</b>
Available & with potential for farming	Natural & Semi-natural - Vegetation	13,771	59 %	2,350	16,120	50 %
	Anthropogenic - Managed vegetation	506	2 %	118	624	2 %
	Unused forage or pasture	168	<1 %	29	197	<1 %
	Natural pasture or rangeland	125	<1 %	110	235	<1 %
	Anthropogenic - Non Built or Bare	34	<1 %	16	50	<1 %
	Unmaintained field crops	18	<1 %	1	19	<1 %
	Unmaintained greenhouses	< 1	<1 %	< 1	< 1	<1 %
<b>AVAILABLE &amp; WITH POTENTIAL FOR FARMING</b>		<b>14,622</b>	<b>62 %</b>	<b>2,624</b>	<b>17,247</b>	<b>54 %</b>
Availability & potential for farming unknown		< 1	<1 %	5,254	5,254	16 %
<b>TOTAL</b>		<b>22,593</b>	<b>96 %</b>	<b>9,639</b>	<b>32,232</b>	<b>100 %</b>
Not surveyed	Rights-of-way	580	2 %			
	Water & foreshore	232	1 %			
	Average parcel elevation >100 m	24	<1 %			
<b>SUBTOTAL</b>		<b>836</b>	<b>4 %</b>			
<b>TOTAL</b>		<b>23,429</b>	<b>100 %</b>			

Table 9 shows that 5,437 hectares or 23% of the ALR is actively used for farming; <1% is used in support of farming (farm residences, roads, etc); 9% is unavailable for farming; 1% has limited potential for farming; and 62% is available and has potential for farming.

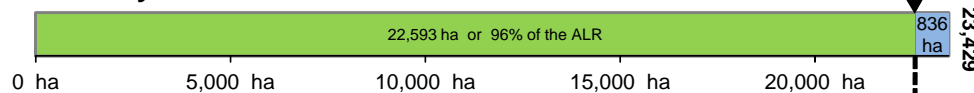
Refer to Map B5 in Appendix B for more information.

Figure 8. Availability and potential of ALR lands for farming

## Regional District



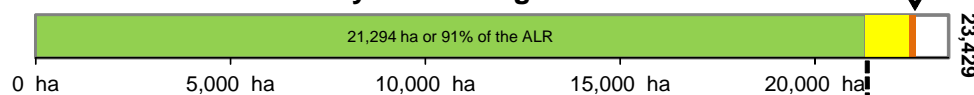
## ALR Surveyed



## Areas not surveyed

■ Outside surveyed parcels (Rights-of-way, water & foreshore, avg parcel elevation > 100 m)

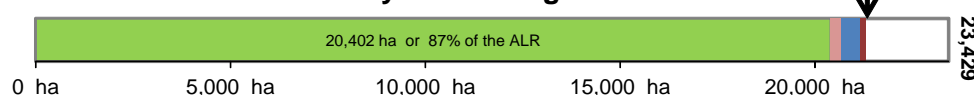
## ALR Land Use - Availability for farming



## Not available for farming

■ Protected area / park / reserve  
■ Other

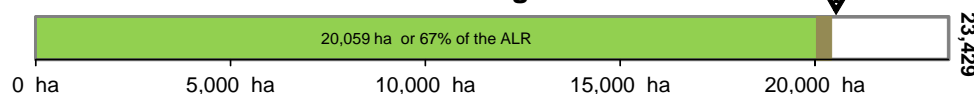
## ALR Land Cover - Availability for farming



## Not available for farming

■ Built up (includes farm support)  
■ Wetlands  
■ Waterbodies

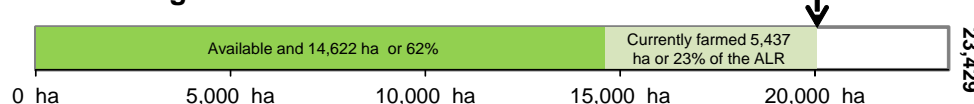
## ALR Land Cover - Potential for farming



## Limited potential for farming

■ Limitations: slope, soils, drainage, size, etc.

## ALR - Farming status



■ Land not farmed but with potential  
■ Land currently farmed

Land not farmed but available & with potential for farming, 14,622 ha



## Land not farmed but available & with potential for farming

■ On parcels "Used for farming"  
■ On parcels "Not used for farming"

Figure 8 demonstrates that 20,059 hectares, or 67%, of CVRD's ALR is currently available for farming once road rights-of-way, protected areas, parks, and other land uses, land covers, and site limitations incompatible with agriculture are taken into account. Of those 20,059 hectares, 5,437 hectares are actively farmed and 14,622 hectares are available and have potential for farming.

Refer to Map B6 in Appendix B for more information.



## Denman Island land availability subset

Table 10. Status of the land base with respect to farming on Denman Island

Land status		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area
		In ALR (ha)	% ALR Area			
Actively farmed	Cultivated field crops	359	16 %	20	379	1 %
	Farm infrastructure	9	<1 %	1	11	<1 %
	Greenhouses	< 1	<1 %	-	< 1	<1 %
<b>ACTIVELY FARMED</b>		<b>368</b>	<b>16 %</b>	<b>22</b>	<b>390</b>	<b>1 %</b>
Anthropogenic areas supporting farming	Residential footprint	6	<1 %	1	7	<1 %
	Artificial Waterbodies	< 1	<1 %	< 1	< 1	<1 %
	Built up - Other	< 1	<1 %	-	< 1	<1 %
<b>SUPPORTING FARMING</b>		<b>6</b>	<b>&lt;1 %</b>	<b>1</b>	<b>8</b>	<b>&lt;1 %</b>
Unavailable for farming due to existing land use / land cover	Protected area / park / reserve	438	19 %	282	720	2 %
	Residential	< 1	<1 %	-	< 1	<1 %
	Wetlands	80	3 %	6	86	<1 %
	Residential footprint	13	<1 %	7	21	<1 %
	Waterbodies	2	<1 %	2	4	<1 %
	Built up - Other	2	<1 %	< 1	2	<1 %
	Transportation	< 1	<1 %	< 1	< 1	<1 %
<b>UNAVAILABLE FOR FARMING</b>		<b>536</b>	<b>23 %</b>	<b>297</b>	<b>834</b>	<b>3 %</b>
Site limitations	Drainage	11	<1 %	25	36	<1 %
	Topography &/or soils	6	<1 %	2	9	<1 %
	Operational	3	<1 %	2	5	<1 %
<b>LIMITED POTENTIAL FOR FARMING</b>		<b>20</b>	<b>&lt;1 %</b>	<b>30</b>	<b>50</b>	<b>&lt;1 %</b>
Available & with potential for farming	Natural & Semi-natural - Vegetation	1,296	56 %	510	1,805	6 %
	Anthropogenic - Managed vegetation	55	2 %	8	64	<1 %
	Natural pasture	22	<1 %	16	38	<1 %
	Unused forage or pasture	4	<1 %	1	6	<1 %
	Anthropogenic - Non Built or Bare	-	-	< 1	< 1	<1 %
<b>AVAILABLE &amp; WITH POTENTIAL FOR FARMING</b>		<b>1,377</b>	<b>60 %</b>	<b>535</b>	<b>1,913</b>	<b>6 %</b>
<b>TOTAL</b>		<b>2,308</b>	<b>100 %</b>	<b>886</b>	<b>3,194</b>	<b>10 %</b>

Table 10 shows that 368 hectares or 16% of the ALR on Denman Island is actively used for farming; <1% is used in support of farming (farm residences, roads, etc); 23% is unavailable for farming; and 60% is available and has potential for farming.

Refer to Map B5 in Appendix B for more information.

## Hornby Island land availability subset

Table 11. Status of the land base with respect to farming on Hornby Island

Land status		ALR		Outside ALR (ha)	Total area (ha)	% of CVRD inventory area
		In ALR (ha)	% ALR Area			
Actively farmed	Cultivated field crops	111	13 %	9	121	<1 %
	Farm infrastructure	5	<1 %	< 1	6	<1 %
	Greenhouses	< 1	<1 %	< 1	< 1	<1 %
<b>ACTIVELY FARMED</b>		<b>116</b>	<b>13 %</b>	<b>10</b>	<b>126</b>	<b>&lt;1 %</b>
Anthropogenic areas supporting farming	Residential footprint	2	<1 %	< 1	2	<1 %
	Transportation	< 1	<1 %	< 1	< 1	<1 %
<b>SUPPORTING FARMING</b>		<b>2</b>	<b>&lt;1 %</b>	<b>&lt; 1</b>	<b>2</b>	<b>&lt;1 %</b>
Unavailable for farming due to existing land use / land cover	Protected area / park / reserve	66	8 %	313	379	1 %
	Recreation & leisure - golf	5	<1 %	< 1	5	<1 %
	Residential footprint	16	2 %	7	23	<1 %
	Wetlands	7	<1 %	< 1	7	<1 %
	Waterbodies	4	<1 %	< 1	5	<1 %
	Built up - Other	1	<1 %	< 1	2	<1 %
	Transportation	< 1	<1 %	2	2	<1 %
<b>UNAVAILABLE FOR FARMING</b>		<b>100</b>	<b>11 %</b>	<b>322</b>	<b>422</b>	<b>1 %</b>
Site limitations	Topography &/or soils	3	<1 %	2	5	<1 %
	Operational	1	<1 %	< 1	2	<1 %
	Drainage	< 1	<1 %	< 1	< 1	<1 %
<b>LIMITED POTENTIAL FOR FARMING</b>		<b>4</b>	<b>&lt;1 %</b>	<b>3</b>	<b>7</b>	<b>&lt;1 %</b>
Available & with potential for farming	Natural & Semi-natural - Vegetation	561	64 %	166	727	2 %
	Anthropogenic - Managed vegetation	72	8 %	8	80	<1 %
	Unused forage or pasture	16	2 %	< 1	16	<1 %
	Natural pasture	3	<1 %	-	3	<1 %
	Unmaintained field crops	2	<1 %	-	2	<1 %
	Anthropogenic - Non Built or Bare	< 1	<1 %	< 1	< 1	<1 %
<b>AVAILABLE &amp; WITH POTENTIAL FOR FARMING</b>		<b>654</b>	<b>75 %</b>	<b>174</b>	<b>828</b>	<b>3 %</b>
<b>TOTAL</b>		<b>876</b>	<b>100 %</b>	<b>510</b>	<b>1,386</b>	<b>4 %</b>

Table 11 shows that 116 hectares or 13% of the ALR on Hornby Island is actively used for farming; <1% is used in support of farming (farm residences, roads, etc); 11% is unavailable for farming; and 75% is available and has potential for farming.

Refer to Map B5 in Appendix B for more information.

## CHARACTERISTICS OF NOT FARMED BUT AVAILABLE LANDS

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

### On Parcels “Used For Farming”

Table 12. Land use and cover on parcels “Used for farming” with land available for farming but not farmed

Mixed land use on “Used for farming” parcels	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)	
Residential	411	1,531	153	1,684	3,217	167	3,384	28 %
Agriculture	68	481	13	494	826	28	854	9 %
Wildlife management	5	42	1	43	73	< 1	73	<1 %
Recreation & leisure	3	30	7	37	31	2	33	<1 %
Commercial & service	1	< 1	< 1	< 1	< 1	< 1	< 1	<1 %
Industrial	1	-	< 1	< 1	-	2	2	-
<b>TOTAL</b>	<b>489</b>	<b>2,083</b>	<b>175</b>	<b>2,259</b>	<b>4,147</b>	<b>199</b>	<b>4,346</b>	<b>38 %</b>

Table 12 demonstrates that the largest potential increase in farmed land on parcels that are already “Used for farming” could come from properties that currently have “Residential” use.

Figure 9. Land cover available for farming but not farmed on ALR parcels “Used for farming”

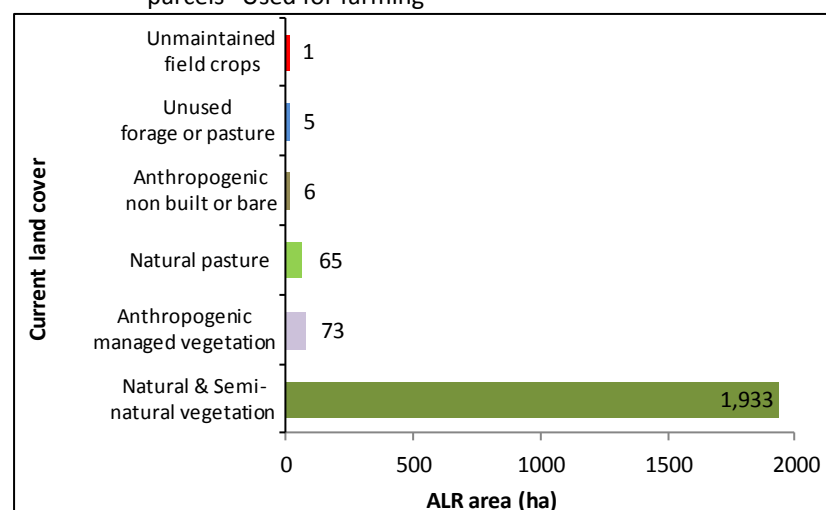


Figure 9 indicates that clearing land covered with natural & semi-natural vegetation would provide the greatest gains in farmed land on parcels that are already “Used for farming”.

Figure 10. Natural & semi-natural land cover available for farming but not farmed on ALR parcels “Used for farming”

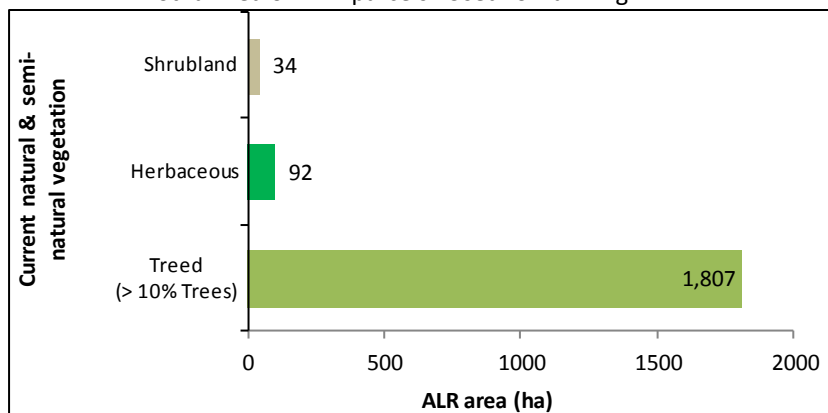


Figure 10 illustrates the types of natural and semi-natural land cover available for farming but not farmed on parcels already “Used for farming”.

Nearly all available land (87%) on “Used for farming” parcels is in treed land cover. This would have to be removed before the parcel could be used for most types of agriculture.

## On Parcels “Not Used For Farming”

Table 13. Land use and cover on parcels “Not used for farming” with land available for farming

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)	
Not used for farming	Residential	1135	5,618	917	6,535	103 %
	No apparent use	243	4,101	544	4,645	75 %
	Forestry	47	1,201	435	1,636	22 %
	Utilities	27	642	276	918	12 %
	Recreation & leisure	10	248	27	275	5 %
	Wildlife management	11	211	42	253	4 %
	Gravel extraction	5	160	49	209	3 %
	Protected area / park / reserve	4	157	5	161	3 %
	Transportation	8	152	66	218	3 %
	Institutional & community	11	39	< 1	40	<1 %
	Industrial	2	9	4	13	<1 %
	Commercial & service	4	2	83	85	<1 %
TOTAL		1,507	12,539	2,447	14,986	231 %

Table 13 illustrates that for parcels currently “Not used for farming”, the greatest potential for increasing actively farmed land would come from parcels with “Residential” use and parcels with “No apparent use”.

Figure 11. Land cover available for farming but not farmed on ALR parcels “Not used for farming”

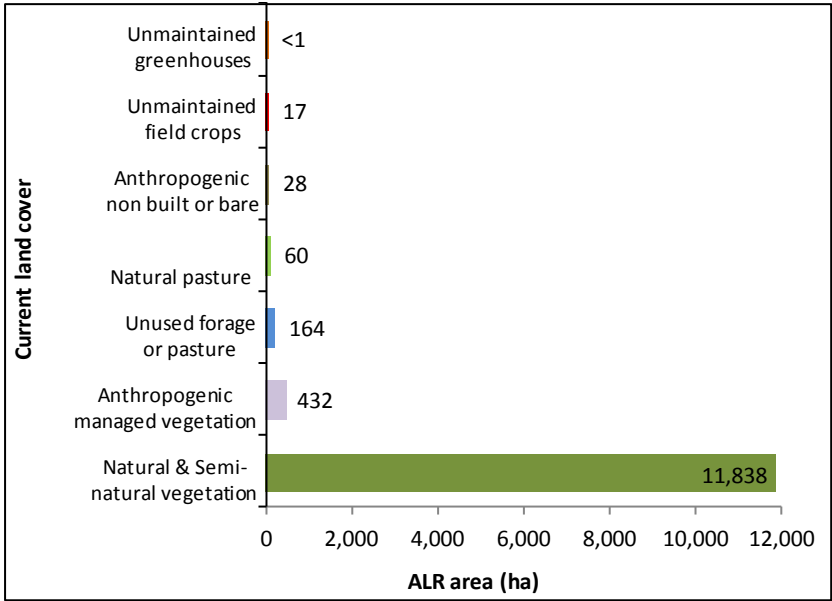


Figure 11 indicates that clearing land covered with natural & semi-natural vegetation would provide the greatest gains in farmed land on parcels “Not used for farming”.

Figure 12. Natural & semi-natural land cover available for farming but not farmed on ALR parcels “Not used for farming”

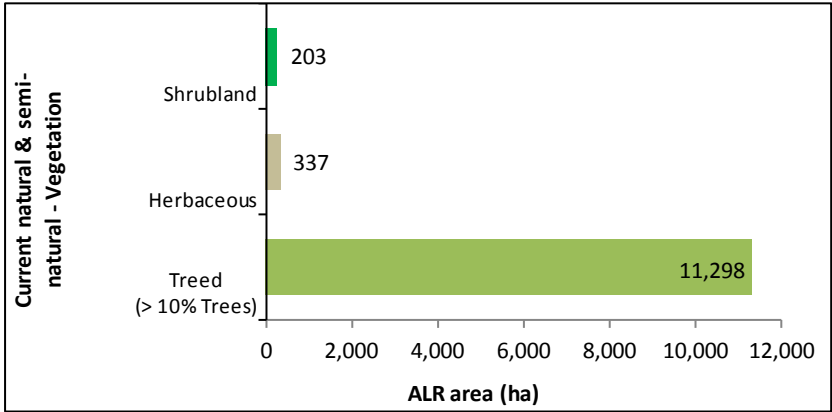


Figure 12 illustrates the types of natural and semi-natural land cover available for farming but not farmed on parcels already “Used for farming”.

Nearly all available land (90%) on “Not used for farming” parcels is in treed land cover. This would have to be removed before the parcel could be used for most types of agriculture.

Figure 13. Size of areas available for farming but not farmed on parcels “Not used for farming”

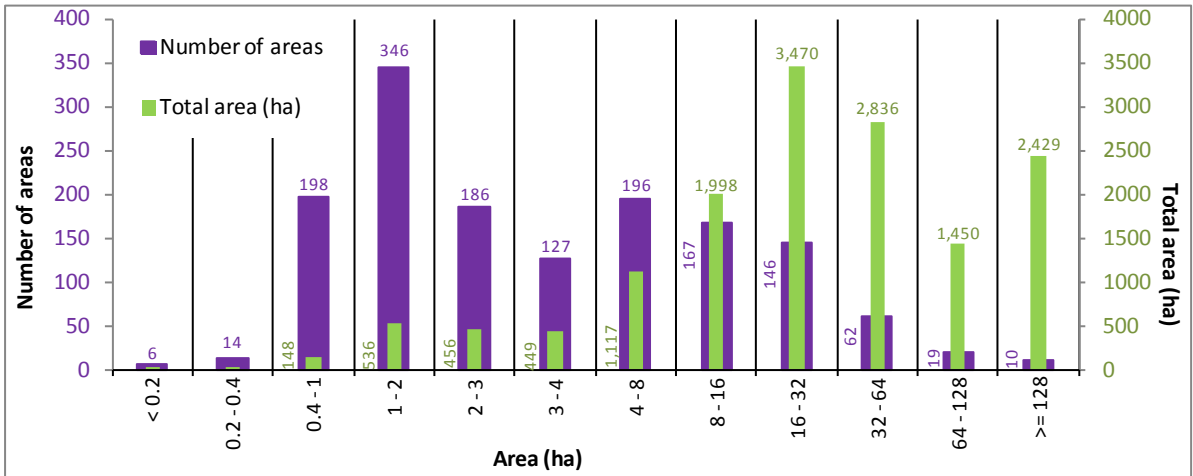


Figure 13 demonstrates that the majority of areas available for farming (564 of 1,477 or 38%) are less than 2 hectares in size. Fewer options are available to efficiently farm small parcels. In general, areas should be 4 hectares or more to provide the widest range of farming options.

There are 600 areas greater than 4 hectares and available for farming but not farmed in Comox Valley Regional District. These areas have a total of 13,300 hectares, or 89% of the 14,896 hectares available (refer to Table 13).



## 4. Farming Activities

### **CULTIVATED FIELD CROPS**

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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 Comox Valley Regional District are described by eleven crop groupings:

- **Forage & pasture:** grass, legumes, forage corn
- **Vegetables:** potatoes, mixed vegetables (a variety of vegetable types cultivated together), sweet corn, pumpkins, miscellaneous vegetables (may includes peppers, leeks, tomatoes, asparagus, eggplant, shallots, green onions, okra)
- **Berries:** cranberries, blackberries, blueberries, mixed berries, raspberries
- **Other:** bare cultivated land (land that is tilled or plowed, but with no visible crop), fallow land ( cultivated land that has not been seeded or planted for one or more growing seasons) and land in crop transition
- **Nursery & tree plantations:** Nursery (ornamentals & shrubs, cedar hedging, mixed), Plantation (Fibre/pulp/veneer trees, Christmas trees, holly)
- **Turf**
- **Cereals:** barley, oats
- **Grapes**
- **Tree fruits:** apples, mixed fruit
- **Nut trees:** hazelnut/filbert, walnut
- **Floriculture:** cut flowers, lavender, mixed

Table 14. Main field crop types by area

Type	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Forage & pasture	4,683	20%	270	4,952	86%
Vegetables	208	< 1%	10	218	4%
Berries	156	< 1%	16	172	3%
Other*	167	< 1%	2	170	3%
Nursery & tree plantations	80	< 1%	12	92	2%
Turf	40	< 1%	-	40	< 1%
Cereals	38	< 1%	< 1	38	< 1%
Grapes	21	< 1%	6	27	< 1%
Tree fruits	17	< 1%	9	26	< 1%
Nut trees	15	< 1%	< 1	15	< 1%
Floriculture	2	< 1%	< 1	3	< 1%
<b>TOTAL</b>	<b>5,427</b>	<b>23%</b>	<b>326</b>	<b>5,753</b>	<b>100%</b>

\* Other. Includes fallow land (cultivated land that has not been seeded or planted for one or more growing season) and land in crop transition.

Table 14 shows the 11 main field crop types produced on the 5,753 hectares of cultivated land in CVRD.

“Forage & pasture” is the dominant type of cultivated field crop accounting for 86% of all cultivated land and 20% of the ALR.

Vegetables are the second most common type of cultivated crop accounting for 4% of all cultivated land and <1% of the ALR.

Refer to Map B7 in Appendix B for more information.

Figure 14. Main field crop types by percentage

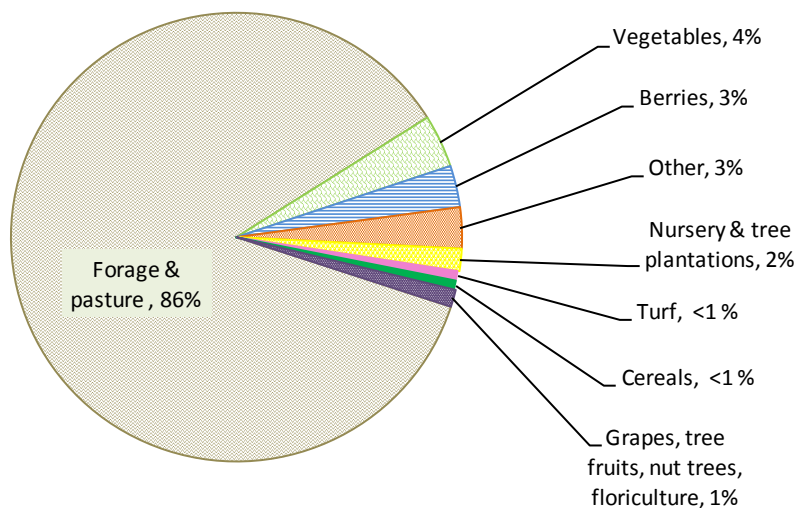


Figure 14 shows the proportion of main field crop types across the cultivated land in Comox Valley Regional District.

“Forage & pasture” combined with “Vegetables” combined with “Berries” comprise 93% of all cultivated land.

Figure 15. All cultivated field crops by size

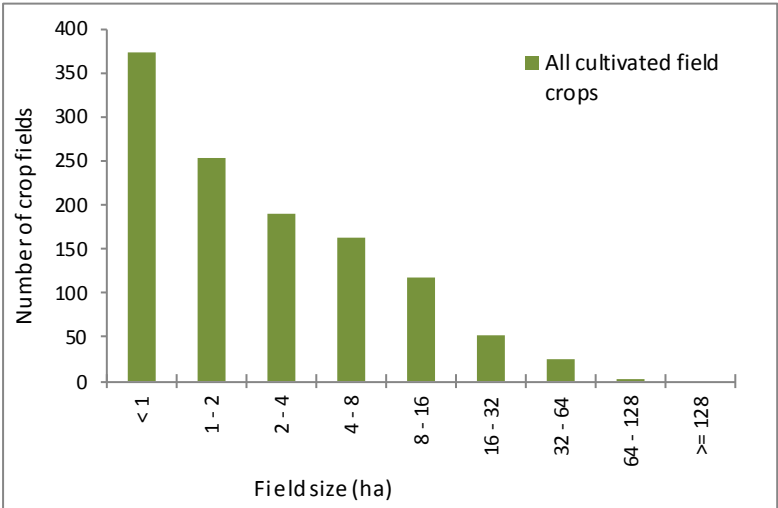


Figure 15 illustrates the number and size distribution of fields used for cultivated field crops.

In CVRD, cultivated fields are most likely to be less than 1 hectare in size.

There are 1,174 individual crop fields with an average area of 5 hectares and a median area of 2 hectares.

Field crops occur on 1,072 parcels with an average parcel size of 12 hectares and a median parcel size of 5 hectares.

Refer to Table A1 in Appendix A for more information.

Figure 16. Forage & pasture, vegetable, and berry fields by size

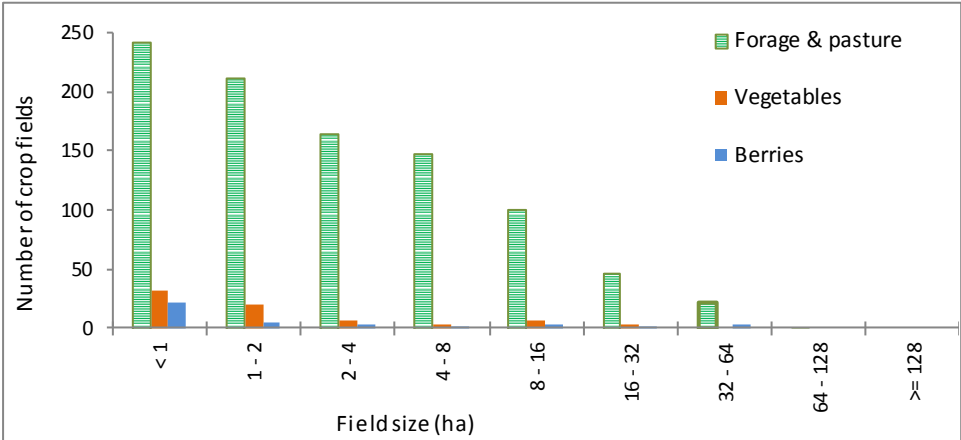


Figure 16 compares the top three main crop types by field sizes.

“Forage & pasture” crops dominate all field size categories.

The majority of all “Vegetable” and “Berry” fields are less than 2 hectares.

Refer to Table A1 in Appendix A for more information.

## Forage & pasture crops

Forage is a cultivated crop that is cut and made into silage or hay for livestock feed. 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.

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 15. Forage & pasture crops by area

Forage & pasture crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Forage (intensively managed)	Grass	964	4%	< 1	964	17%
Forage (managed)	Grass	894	4%	27	921	16%
Forage (managed)	Forage corn	367	2%	< 1	367	6%
Forage (unmanaged)	Grass	908	4%	24	933	16%
Forage (unmanaged)	Legume	2	< 1%	-	2	< 1%
Subtotal		<b>3,134</b>	<b>13%</b>	<b>52</b>	<b>3,185</b>	<b>55%</b>
Pasture (managed)	Grass	114	< 1%	2	116	2%
Pasture (unmanaged)	Grass	889	4%	168	1,057	18%
Pasture^	Grass	9	< 1%	< 1	10	< 1%
Subtotal		<b>1,012</b>	<b>4%</b>	<b>171</b>	<b>1,182</b>	<b>21%</b>
Forage & pasture (managed)	Grass	360	2%	19	379	7%
Subtotal		<b>360</b>	<b>2%</b>	<b>19</b>	<b>379</b>	<b>7%</b>
Unused	Grass	168	< 1%	29	197	3%
Unmaintained / abandoned	Grass	9	< 1%	< 1	9	< 1%
Subtotal		<b>177</b>	<b>&lt; 1%</b>	<b>29</b>	<b>206</b>	<b>4%</b>
<b>TOTAL</b>		<b>4,683</b>	<b>20%</b>	<b>270</b>	<b>4,952</b>	<b>86%</b>

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

Table 15 shows there is significantly more forage than pasture in Comox Valley. Grass is the main forage & pasture crop type.

Refer to Map B8 in Appendix B for more information.

Figure 17. Forage & pasture fields by size

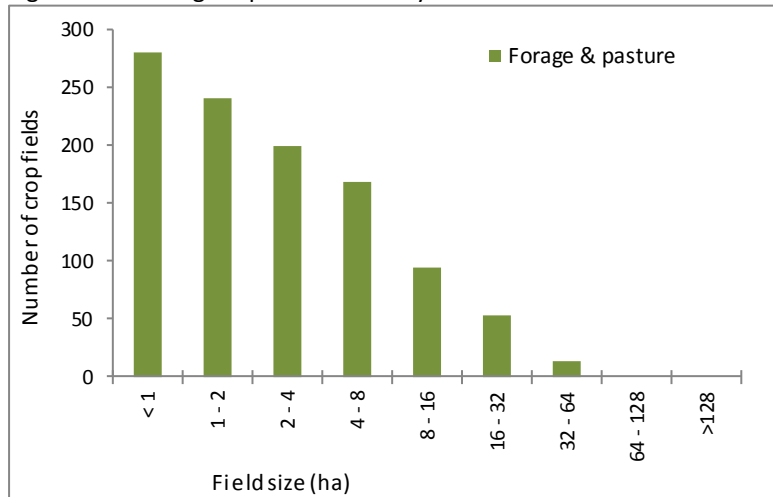


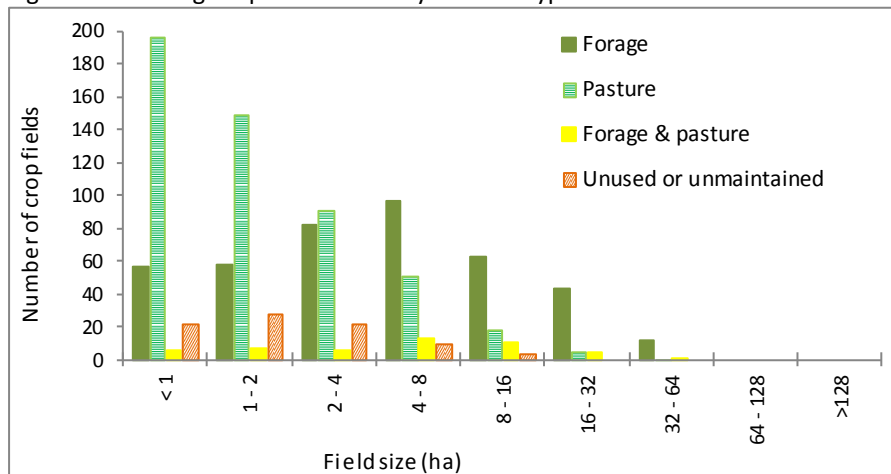
Figure 17 shows that “Forage & pasture” fields occur on a variety of field sizes. Nearly half (49%) of all “Forage & pasture” fields are less than 2 hectares.

In CVRD, there are 1,052 individual “Forage & pasture” fields with an average crop area of 5 hectares and a median area of 2 hectares.

Forage & pasture crops occur on 934 parcels with an average parcel size of 12 hectares and a median size of 5 hectares.

Refer to Table A2 in Appendix A for more information.

Figure 18. Forage & pasture fields by size and type



Despite the area in forage being much greater than the area in pasture, (refer to Table 15), there is a similar number of forage and pasture fields in Comox Valley.

Figure 18 illustrates that forage fields tend to be larger than pasture fields. This is mainly due to harvesting equipment requirements and fencing costs.

There are 413 forage fields with an average crop area of 8 hectares, a median crop area of 4 hectares, and an average parcel size of 20 hectares.

In comparison, there are 508 pasture fields with an average crop area of 2 hectares, median crop area of 1 hectare, and an average parcel size of 8 hectares.

Refer to Table A2 in Appendix A for more information.

## Vegetable crops

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

Vegetables in Comox Valley are described by five crop groupings:

- **Potatoes**
- **Mixed vegetables:** a variety of vegetable types cultivated in a field
- **Sweet corn**
- **Pumpkins**
- **Misc. Vegetables:** May include peppers, leeks, tomatoes, asparagus, eggplant, shallots, green onions, okra.

Table 16. Vegetable crops by area

Vegetable crops	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Potatoes	139	< 1%	1	141	2%
Mixed vegetables*	61	< 1%	9	69	1%
Sweet corn	6	< 1%	-	6	< 1%
Pumpkins	2	< 1%	-	2	< 1%
Misc. vegetables**	< 1	< 1%	-	< 1	< 1%
<b>TOTAL</b>	<b>208</b>	<b>&lt; 1%</b>	<b>10</b>	<b>218</b>	<b>4%</b>

\* Refers to a field of a variety of vegetable types

\*\* May includes peppers, leeks, tomatoes, asparagus, eggplant, shallots, green onions, okra.

Table 16 presents the different vegetable crops in Comox Valley.

Potatoes are the most common vegetable crop with 141 hectares, or 2% of all cultivated land.

Mixed vegetables are the second most common with 69 hectares or 1% of all cultivated land.

Refer to Map B9 in Appendix B for more information.

Figure 19. Vegetable fields by size

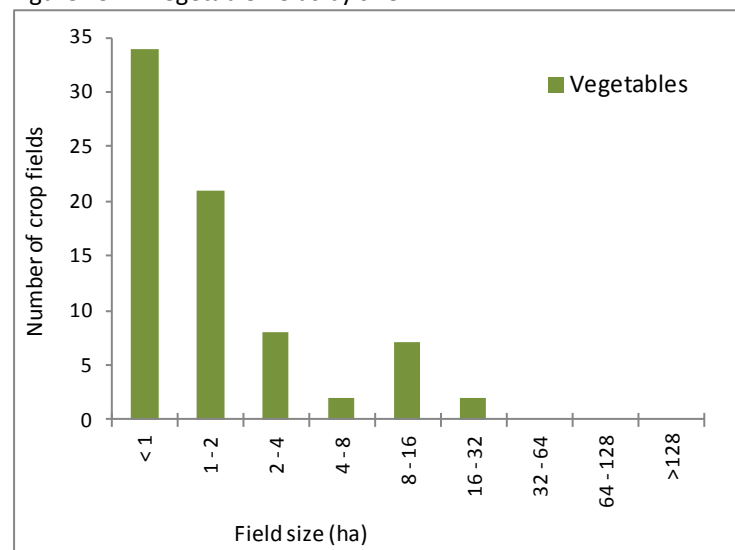


Figure 19 shows that vegetable fields are most likely to be less than 1 hectare in size.

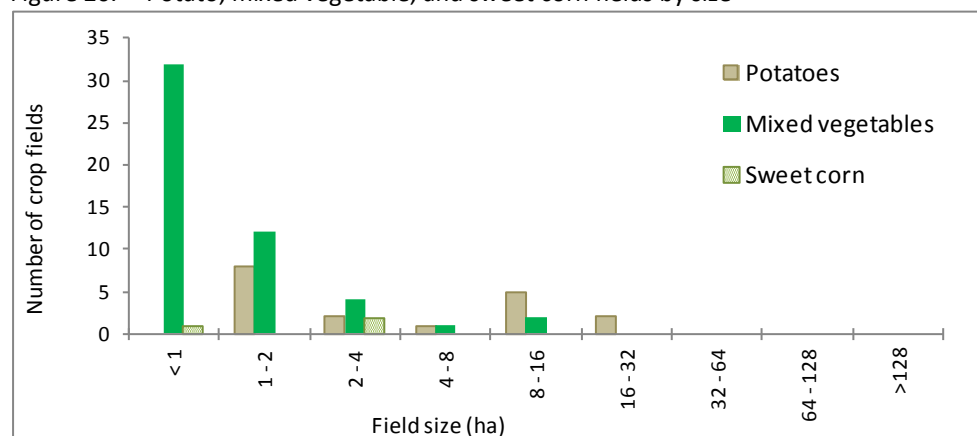
In Comox Valley, there are 74 individual vegetable crop fields with an average crop area of 3 hectares and a median crop area of 1 hectare.

Vegetable fields occur on 69 parcels with an average parcel area of 13 hectares and a median parcel area of 5 hectares.

Refer to Table A3 in Appendix A for more information.



Figure 20. Potato, mixed vegetable, and sweet corn fields by size



Although potatoes have double the total area of mixed vegetables (refer to Table 16), Figure 20 shows that there are far more mixed vegetable fields.

In Comox Valley there are 18 individual potato fields with an average crop area of 8 hectares, a median crop area of 3 hectares and an average parcel size of 17 hectares.

In comparison, there are 51 mixed vegetable fields with an average crop area of 1 hectare, a median crop area of 0.7 hectares, and an average parcel size of 12 hectares.

Refer to Table A3 in Appendix A for more information.

## Berry crops

Berry crops are primarily perennials. Perennial berry crops do not change frequently as they require several years to mature and some crop types require extensive land preparation. Strawberries are a perennial plant which is usually rotated or grown on different land each year to minimize build-up of crop-specific pest and disease problems. Since this inventory is a snapshot in time, the strawberry crops seen during the survey year may not be present in the same location the following year.

Two plant age categories are described:

- **Young:** Plants are young and have not reached peak production
- **Mature:** Plants are mature and are capable of reaching peak production

Table 17. Berry crops by area

Berry crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Cranberries	Mature	72	< 1%	8	80	1%
Blackberries	Mature	64	< 1%	-	64	1%
Blueberries	Mature	7	< 1%	4	11	< 1%
Mixed berries	Mature	5	< 1%	4	10	< 1%
Currants	Mature	5	< 1%	-	5	< 1%
Mixed berries	Unmaintained	2	< 1%	-	2	< 1%
Raspberries	Mature	< 1	< 1%	-	< 1	< 1%
<b>TOTAL</b>		<b>156</b>	<b>&lt; 1%</b>	<b>16</b>	<b>172</b>	<b>3%</b>

Table 17 shows that Comox Valley has 172 hectares in berry crops.

Cranberries are the most significant berry type with 80 hectares, followed by blackberries with 64 hectares.

Refer to Map B10 in Appendix B for more information.

Figure 21. Berry fields by size

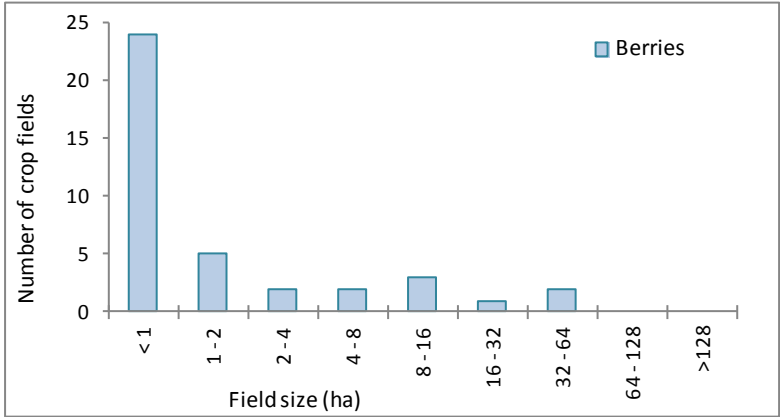


Figure 21 shows that most berry fields are less than 1 hectare in size.

Comox Valley has 39 individual berry fields with an average crop area of 4 hectares and a median crop area of 0.5 hectares.

Berry crops occur on 35 parcels with an average parcel size of 27 hectares and a median parcel size of 6 hectares.

Refer to Table A4 in Appendix A for more information.

Figure 22. Cranberry, blackberry, and blueberry fields by size

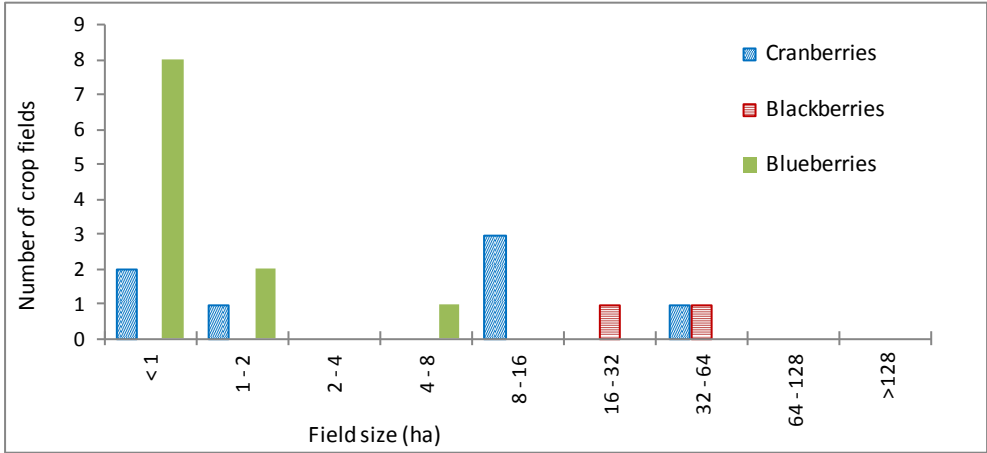


Figure 22 shows that the 7 cranberry fields in Comox Valley are a variety of sizes, including 2 which are less than 1 hectare.

There are 2 blackberry fields, both of which are large with field sizes of 21 and 43 hectares.

The majority of the blueberry fields (8 out of 11) are less than 1 hectare.

Refer to Table A4 in Appendix A for more information.

## Denman Island field crop subset

Table 18. Main field crop types by area on Denman Island

Type	ALR		Outside ALR (ha)	Total area (ha)
	In ALR (ha)	% of ALR		
Forage & pasture	341	15%	16	358
Tree fruits	7	< 1%	3	10
Nut trees	7	< 1%	< 1	7
Vegetables	4	< 1%	< 1	5
Grapes	2	< 1%	2	4
Nursery & tree plantations	2	< 1%	-	2
Berries	< 1	< 1%	-	< 1
<b>TOTAL</b>	<b>363</b>	<b>16%</b>	<b>22</b>	<b>385</b>

Table 18 shows the 7 main field crop types produced on the 385 hectares of cultivated land on Denman Island

“Forage & pasture” is the dominant type of cultivated field crop accounting for 93% of Denman Island’s cultivated land and 15% of its ALR.

Refer to Map B7 in Appendix B for more information.

Figure 23. Main field crop types by percentage on Denman Island

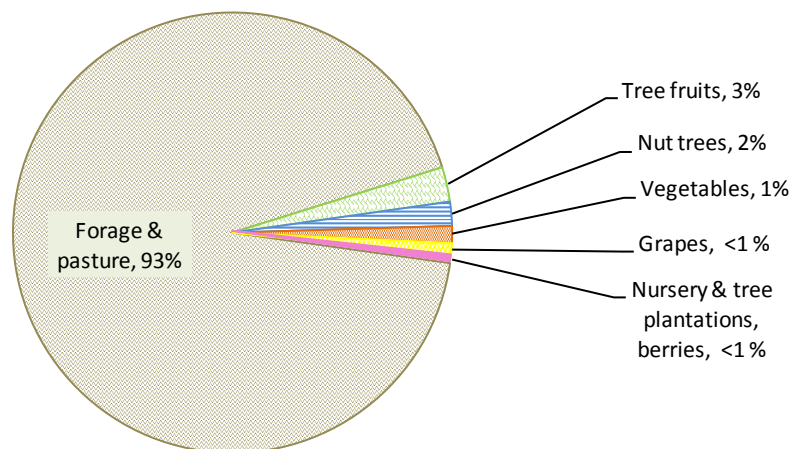


Figure 23 shows the proportion of main field crop types across the cultivated land on Denman Island.

“Forage & pasture” combined with “tree fruits” and “nut trees” comprise 98% of all cultivated land.

Table 19. Forage & pasture crops by area on Denman Island

Forage & pasture crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Forage (managed)	Grass	13	< 1%	-	13	3%
Forage (unmanaged)	Grass	68	3%	2	71	18%
Subtotal		<b>82</b>	<b>4%</b>	<b>2</b>	<b>84</b>	<b>22%</b>
Pasture (unmanaged)	Grass	54	2%	10	64	17%
Subtotal		<b>54</b>	<b>&lt; 1%</b>	<b>10</b>	<b>64</b>	<b>17%</b>
Forage & pasture (managed)	Grass	201	9%	3	204	53%
Subtotal		<b>201</b>	<b>9%</b>	<b>3</b>	<b>204</b>	<b>53%</b>
Unused	Grass	4	< 1%	1	6	1%
Subtotal		<b>4</b>	<b>&lt; 1%</b>	<b>1</b>	<b>6</b>	<b>1%</b>
<b>TOTAL</b>		<b>260</b>	<b>9%</b>	<b>14</b>	<b>274</b>	<b>93%</b>

Table 19 details the types of forage & pasture crops on Denman Island.

Most crops (204 hectares) are used for both forage and pasture.

Refer to Map B8 in Appendix B for more information.

## Hornby Island field crop subset

Table 20. Main field crop types by area on Hornby Island

Type	ALR		Outside ALR (ha)	Total area (ha)
	In ALR (ha)	% of ALR		
Forage & pasture	119	14%	5	124
Vegetables	4	< 1%	1	5
Grapes	2	< 1%	2	4
Berries	2	< 1%	-	2
Tree fruits	1	< 1%	< 1	1
Floriculture	< 1	< 1%	1	1
Nut trees	1	< 1%	-	1
<b>TOTAL</b>	<b>129</b>	<b>15%</b>	<b>9</b>	<b>138</b>

Table 20 shows the 7 main field crop types produced on the 138 hectares of cultivated land on Hornby Island.

“Forage & pasture” is the dominant type of cultivated field crop accounting for 90% of Hornby’s cultivated land and 14% of its ALR.

Refer to Map B7 in Appendix B for more information.

Figure 24. Main field crop types by percentage on Hornby Island

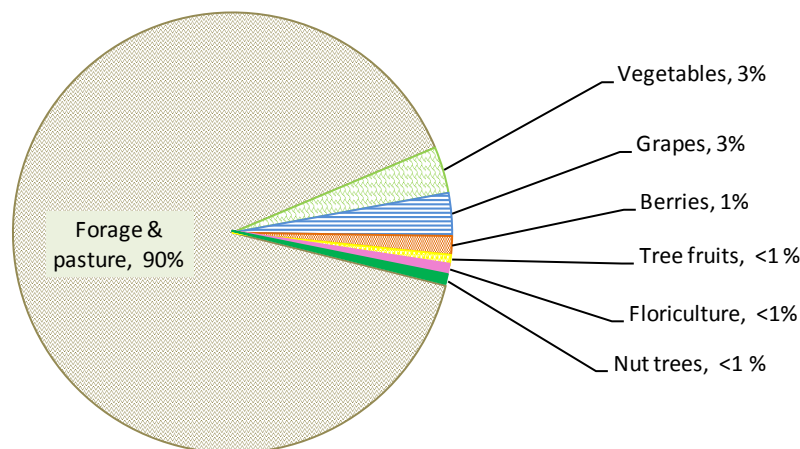


Figure 24 shows the proportion of main field crop types across the cultivated land on Hornby Island.

“Forage & pasture” combined with “vegetables” and “grapes” comprise 96% of all cultivated land.

Table 21. Forage & pasture crops by area on Hornby Island

Forage & pasture crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Forage (managed)	Grass	16	2%	< 1	16	12%
Forage (unmanaged)	Grass	16	2%	< 1	16	12%
Subtotal		<b>33</b>	<b>4%</b>	<b>&lt; 1</b>	<b>33</b>	<b>24%</b>
Pasture (unmanaged)	Grass	39	4%	5	44	32%
Subtotal		<b>39</b>	<b>4%</b>	<b>5</b>	<b>44</b>	<b>32%</b>
Forage & pasture (managed)	Grass	32	4%	-	32	23%
Subtotal		<b>32</b>	<b>4%</b>	<b>-</b>	<b>32</b>	<b>23%</b>
Unused	Grass	16	2%	< 1	16	11%
Subtotal		<b>16</b>	<b>2%</b>	<b>&lt; 1</b>	<b>16</b>	<b>11%</b>
<b>TOTAL</b>		<b>119</b>	<b>14%</b>	<b>5</b>	<b>124</b>	<b>90%</b>

Table 21 details the types of forage & pasture crops on Hornby Island. There are 33 hectares in forage, 44 hectares in pasture, 32 hectares used for both forage & pasture, and 16 hectares of unused forage or pasture.

Refer to Map B8 in Appendix B for more information.

## Top 20 Individual Crops

Table 22. Top 20 crop types by area

Cultivated field crop	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Forage (managed)	1,260	5%	27	1,287	22%
Pasture (unmanaged)	889	4%	168	1,057	18%
Forage (intensively managed)	964	4%	< 1	964	17%
Forage (unmanaged)	910	4%	24	934	16%
Forage & pasture (managed)	360	2%	19	379	7%
Unused forage/pasture	168	< 1%	29	197	3%
Potatoes	139	< 1%	1	141	2%
Fallow land*	126	< 1%	< 1	126	2%
Pasture (managed)	114	< 1%	2	116	2%
Cranberries	72	< 1%	8	80	1%
Mixed vegetables	61	< 1%	8	68	1%
Blackberries	64	< 1%	-	64	1%
Crop transition	41	< 1%	2	43	< 1%
Turf	40	< 1%	-	40	< 1%
Fibre/pulp/veneer trees	35	< 1%	-	35	< 1%
Barley	32	< 1%	-	32	< 1%
Grapes	21	< 1%	6	27	< 1%
Christmas trees	16	< 1%	8	24	< 1%
Ornamentals and shrubs	20	< 1%	2	22	< 1%
Mixed fruits	6	< 1%	5	12	< 1%
<b>TOTAL</b>	<b>5,338</b>	<b>23%</b>	<b>310</b>	<b>5,649</b>	<b>98%</b>

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

Table 22 shows the top 20 individual crops that account for 98% of the cultivated land in Comox Valley Regional District.

Figure 25. Top 20 crop types by area

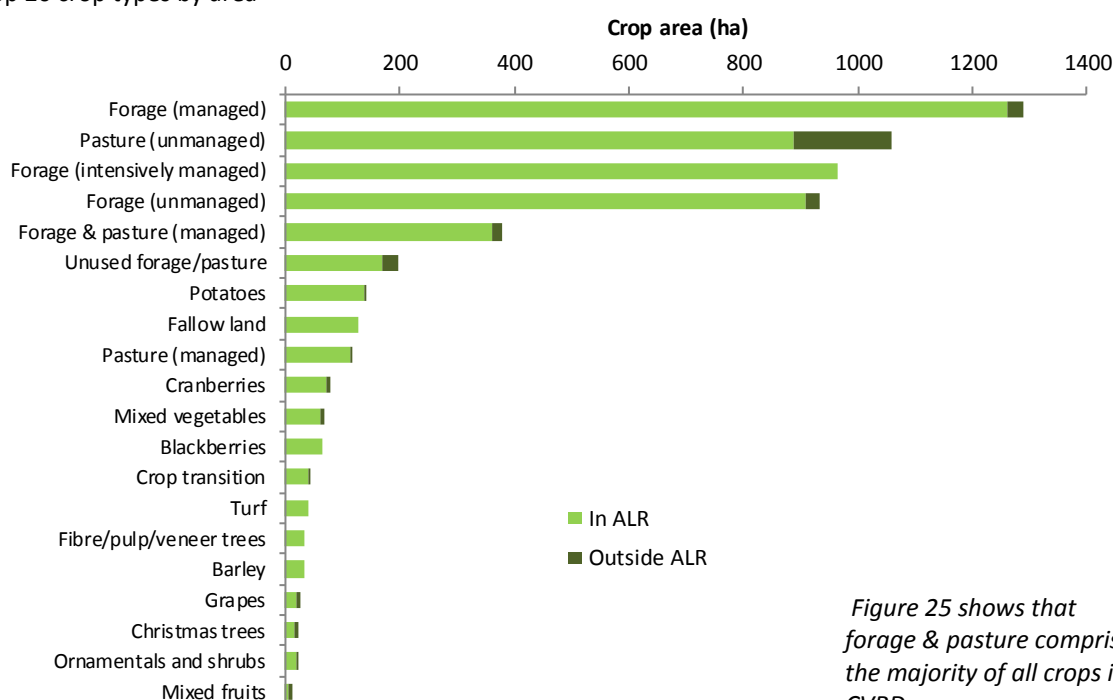


Figure 25 shows that forage & pasture comprise the majority of all crops in CVRD.

## GREENHOUSES & CROPS BARNs

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

Crop barns are permanent structures with non-translucent walls that are used for growing crops such as mushrooms.

Table 23. Greenhouses by area<sup>9</sup>

Greenhouses		ALR		Outside ALR (ha)	Total area (ha)	% of greenhouse area
		In ALR (ha)	% of ALR			
Glass greenhouse - unknown type		0.1	<0.1	-	0.1	2%
Subtotal		0.1	<0.1	-	0.1	2%
Poly greenhouse	Nursery	3.1	<0.1	0.3	3.4	38%
	Vegetables	1.7	<0.1	0.8	2.5	28%
	Empty	1.1	<0.1	-	1.1	12%
	Floriculture	0.5	<0.1	<0.1	0.5	6%
	Unknown	0.4	<0.1	0.2	0.5	6%
	Mixed	0.1	<0.1	<0.1	0.2	2%
	Abandoned / Unused	0.5	<0.1	0.1	0.6	6%
Subtotal		7.5	<0.1	1.4	8.8	98%
TOTAL		7.6	<0.1	1.4	9.0	100%

Table 23 shows that 7.6 hectares of ALR land is covered by greenhouses.

Glass greenhouses make up 0.1 hectare of ALR land while poly greenhouses make up 7.5 hectares.

No crop barns were recorded in Comox Valley.

Figure 26. Distribution of greenhouses by building type<sup>10</sup>

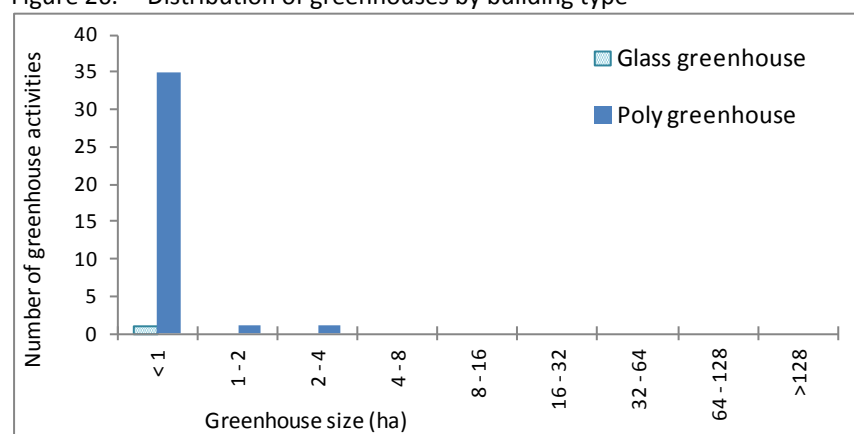


Figure 26 shows that there 37 poly greenhouse activities and 1 glass greenhouse activity in Comox Valley. Most poly greenhouses are less than 1 hectare.

<sup>8</sup> Source: *Guide for Bylaw Development in Farming Areas*, 2013. Ministry of Agriculture.

<sup>9</sup> 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.

<sup>10</sup> Multiple greenhouses of the same building type may be present on a single land cover. Each distinct greenhouse land cover is counted as one greenhouse activity.



## 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 24. Main crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)				Total area irrigated (ha)	% of crop area irrigated
	Sub-surface	Sprinkler	Giant gun	Trickle		
Forage & pasture	183	257	700	-	1,140	23%
Vegetables	30	65	115	3	213	97%
Berries	-	84	-	79	163	95%
Turf	-	40	-	-	40	100%
Grapes	-	-	-	27	27	100%
Nursery & tree plantations	-	21	-	2	23	25%
Cereals	-	-	10	-	10	25%
Tree fruits	-	< 1	-	3	3	12%
Floriculture	-	1	-	1	2	79%
Other	-	-	-	-	-	-
Nut trees	-	-	-	-	-	-
<b>TOTAL FIELD CROP AREA IRRIGATED</b>	<b>212</b>	<b>467</b>	<b>825</b>	<b>116</b>	<b>1,621</b>	<b>28%</b>
Greenhouses (maintained)	Flood and trickle irrigation				8	100%

Table 24 illustrates that 28% of all cultivated field crops are irrigated. The majority of all vegetable (97%) and berry (95%) crops are irrigated. All turf and grape crops are also irrigated.

Giant gun systems were used to irrigate 825 hectares, sprinkler systems irrigated 467 hectares, sub-surface irrigation was found on 212 hectares and trickles systems irrigated 116 hectares of cultivated land.

Giant gun systems were found primarily on forage & pasture and vegetable crops while sprinkler systems are found on a wider variety of crop types.

Refer to Map B11 in Appendix B for more information.

Figure 27. Irrigation systems by percentage of cultivated land

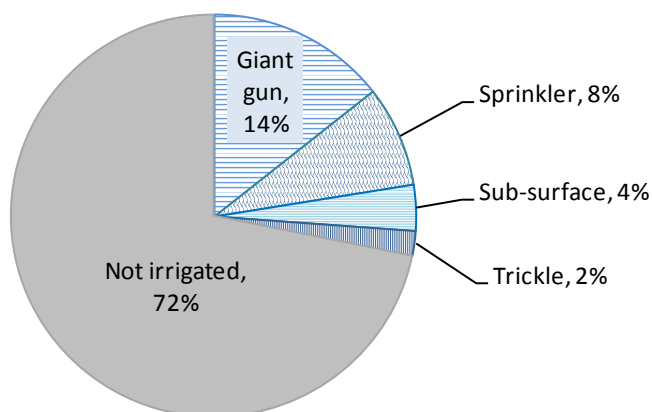


Figure 27 shows 28% of the cultivated land in CVRD is irrigated. Giant gun irrigation is the most widely used system found on 14% of all cultivated land followed by sprinkler systems on 8% of cultivated land, and sub-surface systems on 4%.

Little irrigation is found on Denman and Hornby Islands. Only 3% of the cultivated crops on Denman and 7% of the cultivated crops on Hornby are irrigated. Although forage & pasture is the main crop type on both Denman and Hornby Islands, no irrigation was found on this crop type.

Table 25. Top 20 field crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)				Total area irrigated (ha)	% crop area irrigated
	Sub-surface	Sprinkler	Giant gun	Trickle		
Forage (managed)	46	60	187	-	292	23%
Pasture (unmanaged)	-	2	15	-	17	2%
Forage (intensively managed)	137	193	424	-	754	78%
Forage (unmanaged)	-	3	-	-	3	< 1%
Forage & pasture (managed)	-	-	-	-	-	-
Unused forage/pasture	-	-	-	-	-	-
Potatoes	30	2	108	-	139	99%
Fallow land	-	-	-	-	-	-
Pasture (managed)	-	-	75	-	75	65%
Cranberries	-	80	-	-	80	100%
Mixed vegetables	-	57	7	3	67	98%
Blackberries	-	-	-	64	64	100%
Crop transition	-	-	-	-	-	-
Turf	-	40	-	-	40	100%
Fibre/pulp/veneer trees	-	-	-	-	-	-
Barley	-	-	10	-	10	30%
Grapes	-	-	-	27	27	100%
Christmas trees	-	-	-	-	-	-
Ornamentals and shrubs	-	19	-	2	21	96%
Mixed fruits	-	< 1	-	< 1	< 1	3%
<b>TOTAL</b>	<b>212</b>	<b>455</b>	<b>825</b>	<b>96</b>	<b>1,589</b>	

Table 25 outlines the type of irrigation systems used on the top 20 individual field crops in CVRD. Giant gun systems are primarily used on various types of forage & pasture as well as on potatoes. Trickle systems are primarily used on blackberries and grapes while sprinkler systems are used on a variety of crop types.

## LIVESTOCK

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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.

**"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 unit<sup>11</sup>. 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).

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<sup>11</sup> Farm unit includes all the property belonging to a farm and may incorporate more than one parcel.

Table 26. Livestock activities

Livestock group	Livestock detail *	By parcel		Total activities	By activity type	
		Main type	Secondary type		Intensive	Non Intensive
Beef	Beef total	81	10	91	7	84
Dairy	Dairy	32	1	33	18	15
	Dairy (Beef)	1	-	1	-	1
	Dairy total	33	1	34	18	16
Poultry	Chicken	64	37	101	6	95
	Chicken (Turkey)	-	2	2	-	2
	Goose (Chicken)	1	-	1	-	1
	Turkey	7	7	14	1	13
	Duck	4	5	9	-	9
	Goose (Duck)	-	1	1	-	1
	Goose	2	4	6	-	6
	Poultry total	78	56	134	7	127
Swine	Swine total	3	5	8	1	7
Sheep / lamb / goat	Sheep / lamb	26	16	42	-	42
	Goat	6	8	14	-	14
	Sheep / lamb / goat total	32	24	56	-	56
Llama / alpaca	Llama	2	4	6	-	6
	Llama (Alpaca)	1	-	1	-	1
	Alpaca	3	-	3	-	3
	Llama / alpaca total	6	4	10	-	10
Specialty livestock	Deer, fallow	1	-	1	-	1
	Game bird	1	-	1	1	-
	Ratite	2	1	3	-	3
	Bison / water buffalo	2	-	2	2	-
	Specialty livestock total	6	1	7	3	4
Equine	Horse	283	15	298	-	298
	Pony	1	1	2	-	2
	Miniature horse	1	1	2	-	2
	Donkey, ass	2	-	2	-	2
	Mixed equine	14	1	15	-	15
	Equine - unknown type	44	1	45	-	45
	Equine total	345	19	364	-	364
TOTAL		584	120	704	36	668

\* When livestock type appears in parentheses (), it indicates the livestock activity is a mixed herd or flock.

Table 26 shows equine is the most common type of livestock activity in CVRD accounting for 364 of 704 or 52% of all livestock activities. Poultry is the second most common livestock type with 134 activities or 19%, followed by beef with 91 activities or 13%.

Over half (18 out of 34) of all dairy activities in CVRD are intensive. There are also intensive beef, poultry, and specialty (bison, water buffalo, and game bird) livestock activities.

Refer to Maps B13 and B14 in Appendix B for more information.

Table 27. 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 )	8	3	11	-	11	11	-
Small scale ( 2 -25 cattle )	48	6	54	1	53	47	7
Medium scale ( 25 -100 cattle )	21	1	22	4	18	16	6
Large scale ( > 100 cattle )	4	-	4	2	2	2	2
<b>TOTAL</b>	<b>81</b>	<b>10</b>	<b>91</b>	<b>7</b>	<b>84</b>	<b>76</b>	<b>15</b>

Table 27 details the 91 beef activities in CVRD. Only 76 are located on “homesites” which indicates these 91 activities are associated with 76 beef operations.

Only 7 of the 91 activities are “intensive” and utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at higher stocking densities.

Refer to Map B13 in Appendix B for more information.

Table 28. Dairy activities

Scale of dairy 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)	1	1	2	-	2	2	-
Small scale (2 - 25 cattle)	3	-	3	-	3	2	1
Medium scale (25 - 100 cattle)	11	-	11	2	9	2	9
Large scale (> 100 cattle)	18	-	18	16	2	16	2
<b>TOTAL</b>	<b>33</b>	<b>1</b>	<b>34</b>	<b>18</b>	<b>16</b>	<b>22</b>	<b>12</b>

Table 28 details the 34 dairy activities in Comox Valley. Only 22 of these activities are on “homesites”.

The “homesites” of all “medium” and “large” scale activities are “intensive” operations. These are significant commercial operations that often use multiple parcels for grazing (“non-homesites”).

Refer to Map B13 in Appendix B for more information.

Table 29. Poultry activities

Poultry activity	Scale	By parcel		Total number of activities	By activity type	
		Main type	Secondary type		Intensive	Non intensive
Chicken	Very small scale ( < 100 birds )	55	37	92	-	92
	Small scale ( 2,500 - 10,000 birds )	7	3	10	5	5
	Medium scale ( > 10,000 birds )	1	-	1	1	-
Duck	Very small scale ( < 50 birds )	4	5	9	-	9
Goose	Very small scale ( < 50 birds )	3	5	8	-	8
Turkey	Very small scale ( < 50 birds )	6	5	11	-	11
	Small scale ( 1,250 - 5,000 birds )	1	2	3	1	2
<b>TOTAL</b>		<b>77</b>	<b>57</b>	<b>134</b>	<b>7</b>	<b>127</b>

Table 29 details the 134 poultry activities captured in CVRD. The majority of all activities are backyard flocks ("very small" scale) with less than 100 birds. There are likely more "very small" scale poultry activities in Comox Valley that were not visible as part of this inventory.

Of the 7 "intensive" activities, 6 are chicken, and 1 is turkey. There is 1 "medium" scale activity associated with broiler chickens and Windover Farm.

Poultry has a limited range of movement and all activities are considered to be "homesite" activities.

Refer to Map B14 in Appendix B for more information.

Table 30. 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 )	4	5	9	-	9	8	1
	Small scale ( 5 - 125 goats )	2	3	5	-	5	5	-
Sheep / lamb	Very small scale ( < 10 sheep )	19	12	31	-	31	31	-
	Small scale ( 10 - 250 sheep )	6	3	9	-	9	9	-
	Medium scale ( 250 - 1000 sheep )	2	-	2	-	2	1	1
<b>TOTAL</b>	<b>TOTAL</b>	<b>33</b>	<b>23</b>	<b>56</b>	<b>-</b>	<b>56</b>	<b>54</b>	<b>2</b>

Table 30 details the 56 sheep / lamb / goat activities in CVRD. Nearly all (54 of 56) are on "homesites", and all sheep / lamb / goat activities are "non-intensive"

Refer to Map B13 in Appendix B for more information.



Table 31. Equine activities

Scale of equine activity	Type of 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)		206	14	220	-	220	216	4
Small scale (2-25 horses)		138	5	143	-	143	137	6
Small scale (2-25 horses)	Boarding	1	-	1	-	1	1	-
<b>TOTAL</b>	<b>TOTAL</b>	<b>345</b>	<b>19</b>	<b>364</b>	<b>-</b>	<b>364</b>	<b>354</b>	<b>10</b>

Table 31 details the scale of the 364 equine activities in CVRD. All equine activities are “non-intensive” and are “very small” or “small” scale.

Refer to Map B13 in Appendix B for more information.

Figure 28. Livestock activities (excluding equine) by scale and type

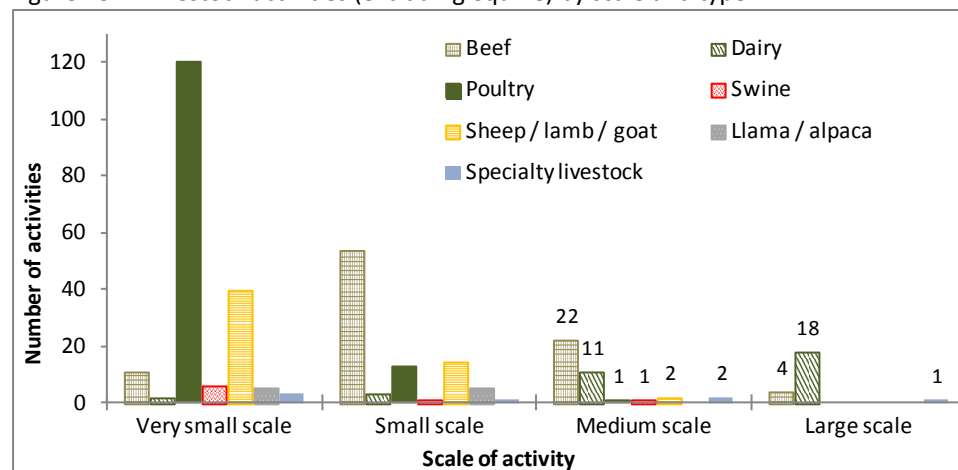


Figure 28 illustrates the scale of livestock activities (excluding equine) in CVRD.

The majority of all poultry activities (120 of 134) are “very small” scale.

There are 23 “large” scale activities in Comox Valley; 18 are dairy, 4 are beef, and 1 is specialty (bison).

Most large dairy activities (16 out of 18) are intensive. Dairy is a supply managed industry.

Refer to Tables A6, A7 and A8 in Appendix A for more information.

Figure 29. Livestock and equine activities by scale

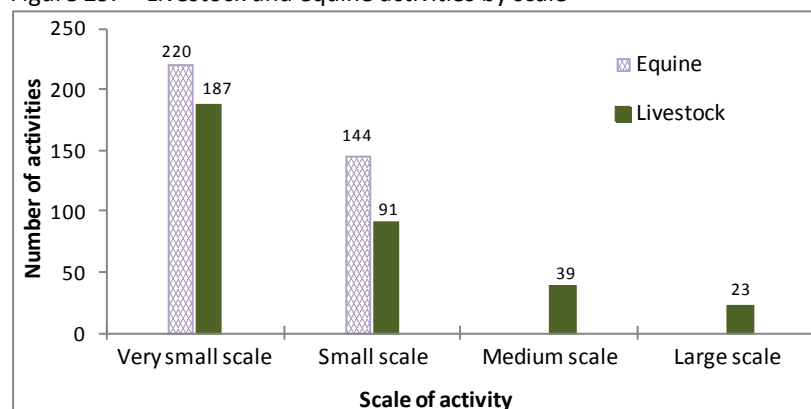


Figure 29 compares the scale of livestock and equine activities.

Even though 364 of the 704 livestock activities are equine, all are “small” or “very small” scale.

There are no “medium” or “large” scale equine activities while there are 39 “medium” and 23 “large” scale livestock activities.

Refer to Tables A6, A7, A8 and A9 in Appendix A for more information.

Figure 30. Livestock activities (excluding equine) by parcel size and scale

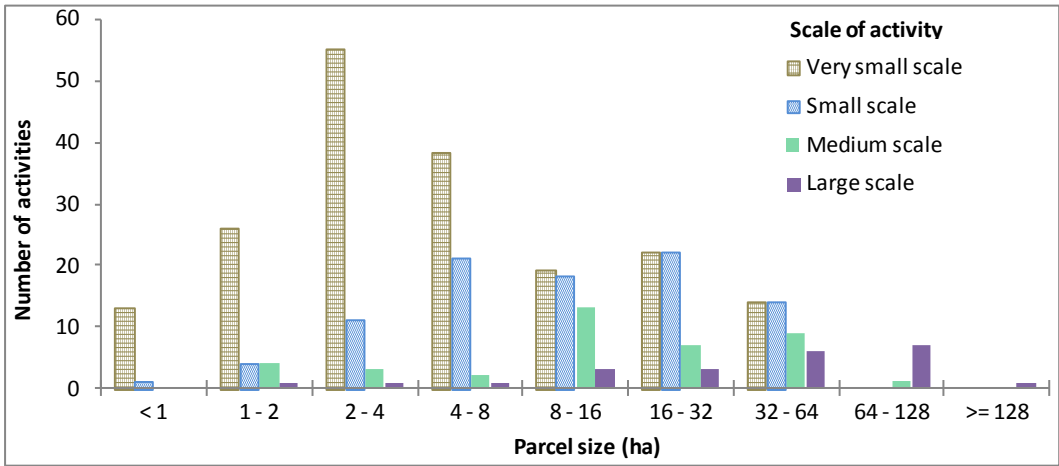


Figure 30 illustrates the distribution of livestock activities (excluding equine) by scale across parcel size categories.

“Very small” and “Small” scale livestock operations occur on all parcel sizes categories less than 64 hectares.

“Large” scale activities occur across all parcel sizes greater than 1 hectare, though most occur on larger parcels.

Refer to Tables A6, A7, A8, and Figures A1, A3, and A5 in Appendix A for more information.

Figure 31. Livestock activities (excluding equines) by parcel size and type

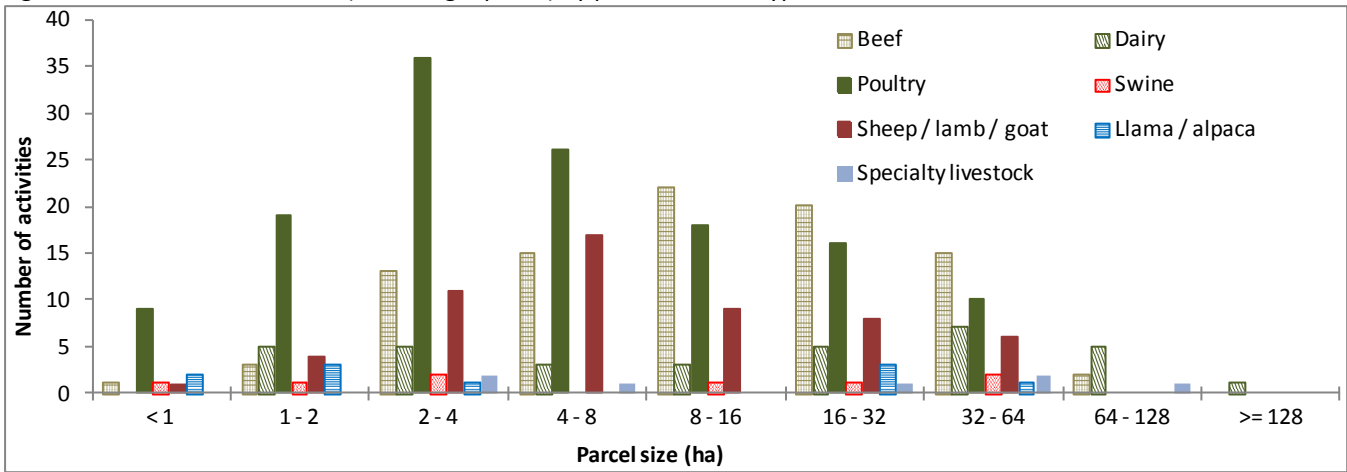


Figure 31 compares the distribution of different livestock types across parcel size categories.

Dairy occurs on all parcels sizes greater than 1 hectare and is the only livestock activity to occur on parcels >= 128 hectares. One dairy activity on a parcel of 156 hectare is associated with Northey Lake Farm.

Beef activities occur on all parcels sizes less than 128 hectares.

Refer to Table A5 in Appendix A for more information.

Figure 32. Livestock and equine activities by parcel size

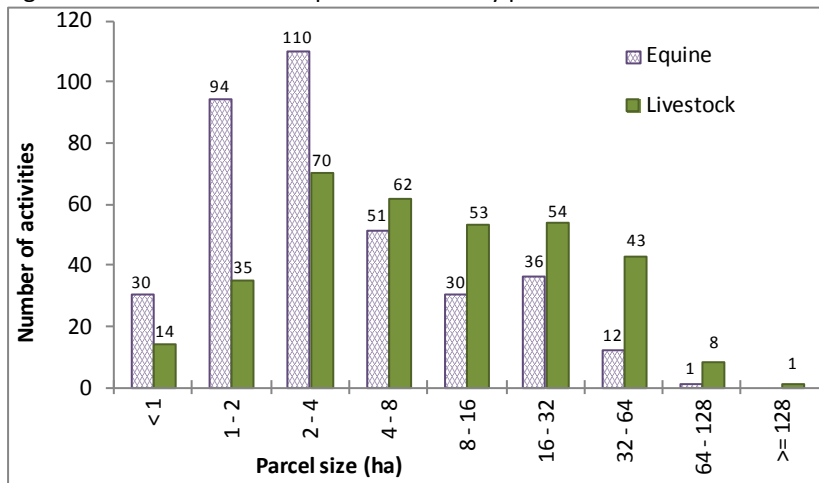


Figure 32 compares the distribution of equine and livestock activities across parcel size categories.

Parcels less than 4 hectares are more likely to have equine activities while parcels greater than 4 hectares are more likely to have other livestock activities.

Both equine and livestock activities occur on parcels less than 1 hectare.

Refer to Tables A6, A7, A8, and A10 in Appendix A for more information.

Figure 33. Average area in forage, pasture, and farm infrastructure on parcels with livestock activities (excluding very small scale)

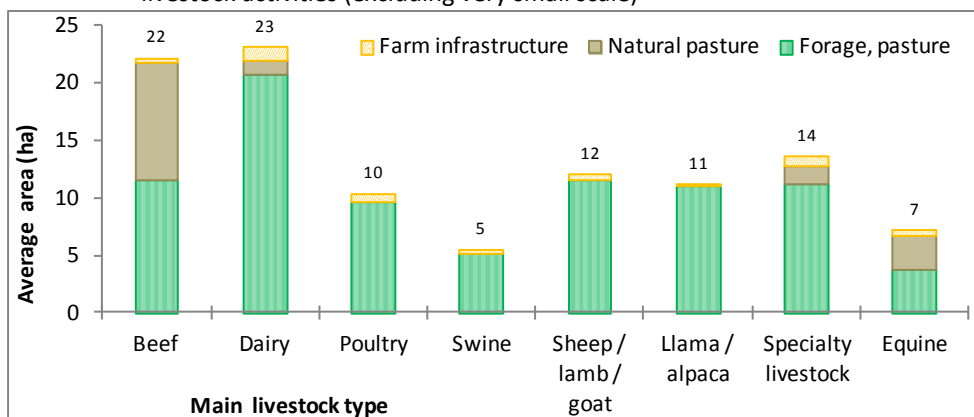


Figure 33 shows that on average a beef or dairy activity is associated with 22-23 hectares of forage, pasture, natural pasture, and farm infrastructure. However, on average, a beef activity relies more heavily than a dairy on natural pasture.

Figure 34. Total area in forage, pasture, and farm infrastructure on parcels with livestock activities (excluding very small scale)

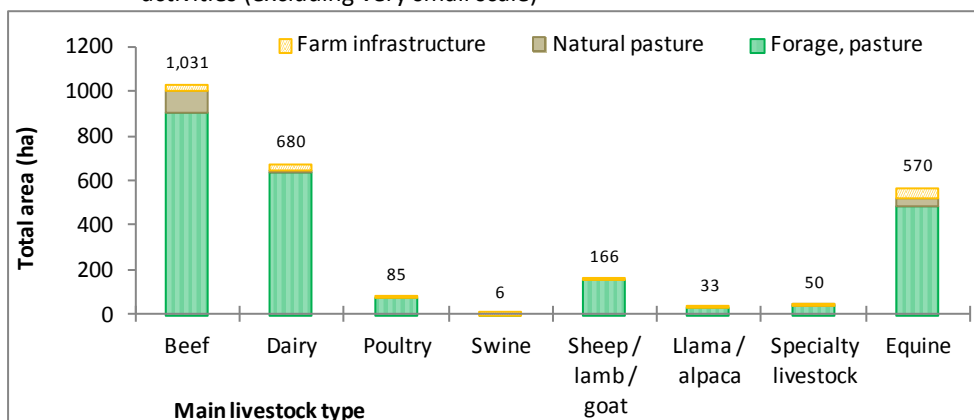


Figure 34 shows that beef activities use a greater total area for forage, pasture than any other livestock activity.

The actual forage area for dairy is often underestimated as not all dairy forage fields are located on the same parcel as the livestock.

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

Figure 35. Percent of parcel area utilized for forage, pasture, and farm infrastructure on parcels with livestock activities (excluding very small scale)

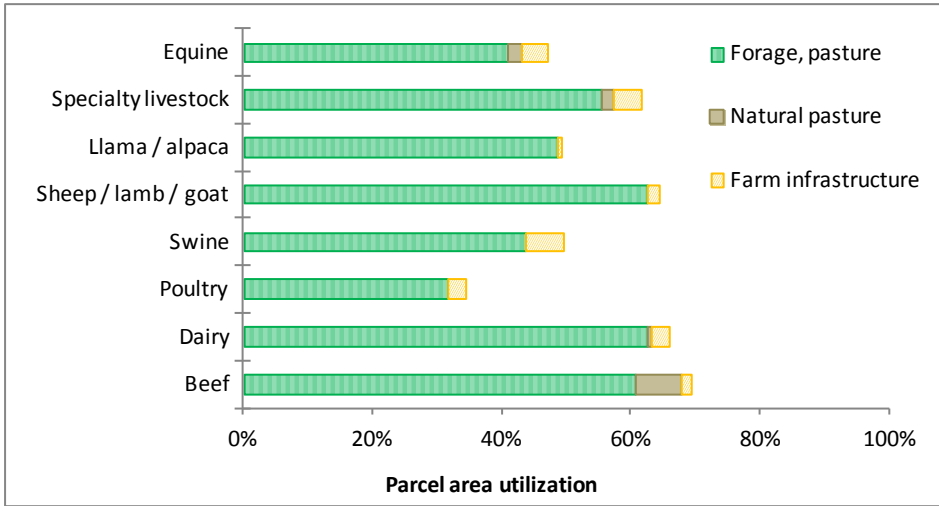


Figure 35 shows that on average, livestock activities use between 50% to 70% of their parcel area for forage, pasture, natural pasture, and farm infrastructure.

Poultry activities are an exception as, on average, they utilizes only 35% of their parcel area.

Figure 36. Land cover on parcels with livestock activities (excluding very small scale)

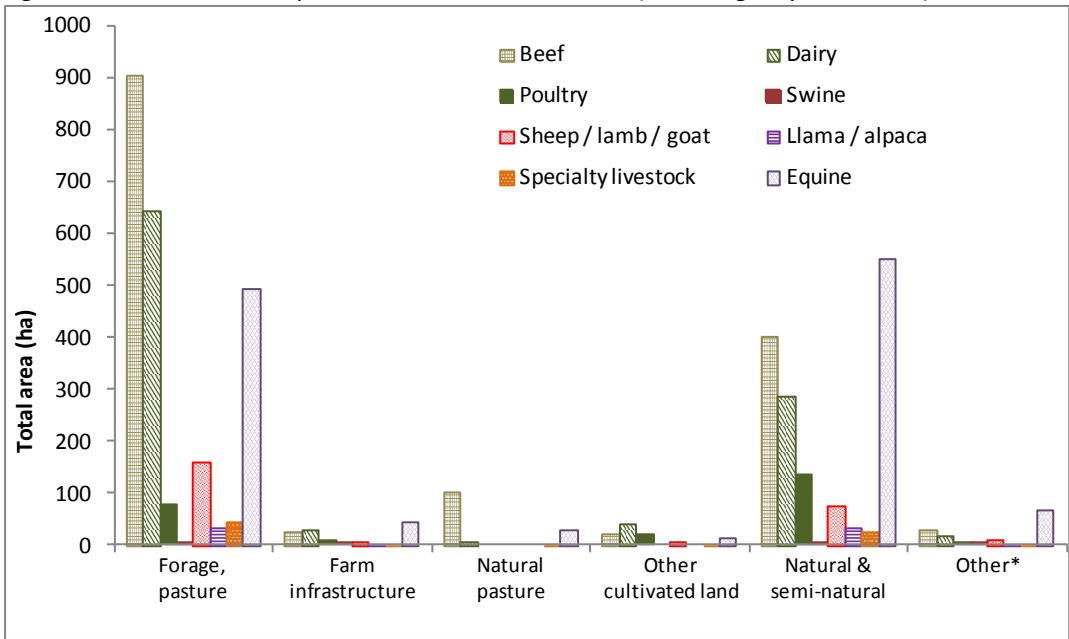


Figure 36 shows that beef, dairy, and equine activities have large amounts of forage & pasture associated with them. These operations are growing some of their own feed.

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

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

## Denman Island livestock subset

Table 32. Livestock activities on Denman Island

Livestock group	Livestock detail *	By parcel		Total activities	By activity type	
		Main type	Secondary type		Intensive	Non Intensive
Beef	Beef total	8	1	9	-	9
Poultry	Chicken	10	2	12	-	12
	Turkey	2	-	2	-	2
	Duck	-	1	1	-	1
	Goose	1	1	2	-	2
	Poultry total	13	4	17	-	17
Swine	Swine total	-	1	1	-	1
Sheep / lamb	Sheep / lamb total	4	1	5	-	5
Equine	Horse	7	1	8	-	8
	Donkey	1	-	1	-	1
	Unidentified	4	-	4	-	4
	Equine total	12	1	13	-	13
<b>TOTAL</b>		<b>37</b>	<b>8</b>	<b>45</b>	<b>-</b>	<b>45</b>

\* When livestock type appears in parentheses (), it indicates the livestock activity is a mixed herd or flock.

Table 26 illustrates that beef, poultry, swine, sheep/lamb, and equine activities were recorded on Denman Island. All activities are “non-intensive”

Refer to Maps B13 and B14 in Appendix B for more information.

Figure 37. Livestock activities (including equine) by scale and type on Denman Island

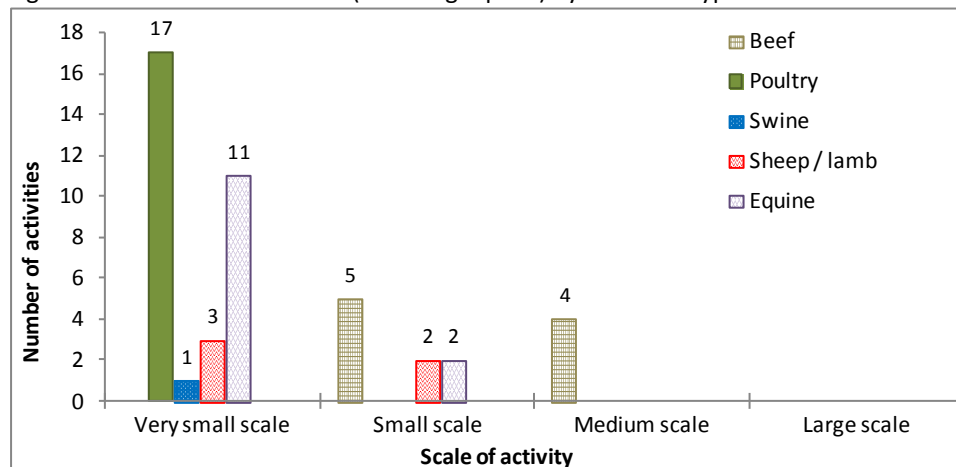


Figure 28 illustrates the scale of livestock activities on Denman Island.

Nearly all (41 of 45) livestock activities are “small” or “very small” scale. All poultry and most equine activities are “very small” scale.

There are 4 “medium” scale beef activities on Denman Island. All are non-intensive.

## Hornby Island livestock subset

Table 33. Livestock activities on Hornby Island

Livestock group	Livestock detail *	By parcel		Total activities	By activity type	
		Main type	Secondary type		Intensive	Non Intensive
Beef	Beef total	8	-	8	-	8
Poultry	Chicken	5	3	8	-	8
	Turkey	1	-	1	-	1
	Duck	1	-	1	-	1
	Poultry total	7	3	10	-	10
Sheep / lamb / goat	Sheep / lamb	-	3	3	-	3
	Goat	1	1	2	-	2
	Sheep / lamb / goat total	1	4	5	-	5
Equine	Equine total	7	1	8	-	8
TOTAL		23	8	31	-	31

Table 26 illustrates that beef, poultry, sheep/ lamb / goat, and equine activities were recorded on Hornby Island. All activities are “non-intensive”

Refer to Maps B13 and B14 in Appendix B for more information.

Figure 38. Livestock activities (excluding equine) by scale and type on Hornby Island

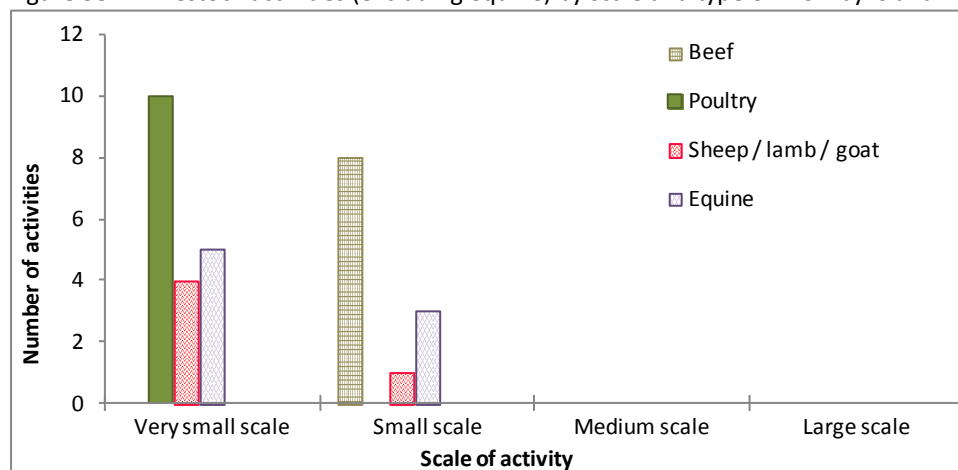


Figure 28 illustrates the scale of livestock activities on Hornby Island. All livestock activities are “small” or “very small” scale. All poultry activities are “very small” scale.

## AQUACULTURE

Aquaculture is defined as 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 2010, the BC aquaculture sector produced 90,600 tonnes of fish and shellfish generating over \$533.8 million in farmgate value<sup>12</sup>.

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

The majority of aquaculture in Comox Valley occurs outside of parcels on ocean foreshore or deepwater sites. These sites were not captured as part of the land use inventory. Land based aquaculture sites were captured and seven were found in Comox Valley.

Table 34. Inland aquaculture activities

Aquaculture type	Scale	Farm Name	Number of activities	Average parcel size
Finfish	Small scale	Mainstream Canada Stelling Road Hatchery	1	6
		Evansdale Farms	1	236
	Large scale	Red Fish Ranch	1	21
		Marine Harest United Hatchery	1	8
Shellfish	Small scale	Fanny Bay Oysters (processing)	1	1
	Medium scale	Manatee Holdings	1	1
		Mac's Oysters	1	1
TOTAL NUMBER OF INLAND ACTIVITIES			7	

*Table 34 details the 7 inland aquaculture activities in Comox Valley. There are 4 inland finfish activities and 3 are inland shellfish activities.*

<sup>12</sup> Ministry of Environment, Oceans and Marine Fisheries Branch. Seafood Statistics. <http://www.env.gov.bc.ca/omfd/fishstats/aqua/index.html>



## ON-FARM VALUE-ADDED

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Activities which add value to raw commodities produced on the farm are reported in this section. At least 50% of the commodity utilized must be produced on farm<sup>13</sup> or the activity is considered non-agricultural. In many cases, local knowledge in combination with the field survey is used to determine if an activity meets the criteria to be considered on-farm value-added. The three main categories of value-added are: processing, direct sales, and agri-tourism.

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

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

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

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

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

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<sup>13</sup> On-farm refers to the farm unit which includes all the property belonging to the farm and may incorporate more than one parcel.

Figure 39. Percentage of parcels “Used for farming” with value-added activities

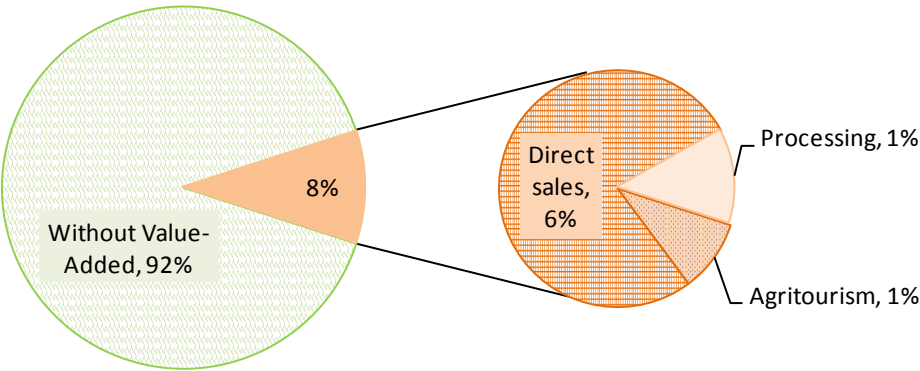
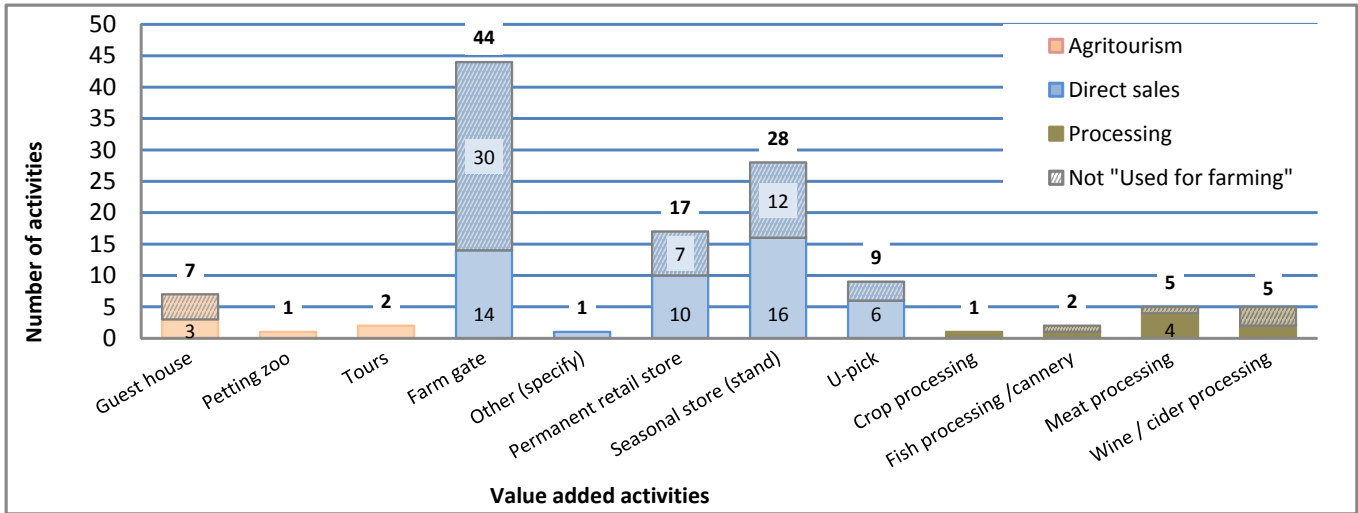


Figure 39 shows that 8% of all of all parcels “Used for farming” are also being used for value-added activities.

Given the close proximity to outdoor recreational activities, there are opportunities to further increase value-added activities such as agri-tourism, processing, and direct sales.

Figure 40. Number of parcels with farming and value-added activities



There are at least 122 value-added activities located on 93 parcels in Comox Valley. Half of these activities (61 activities on 48 parcels) are on parcels “Used for farming” while the other half (61 activities on 43 parcels) are on parcels that do not meet the “Used for farming” criteria (refer to the definition section), or are part of a farm unit where the farming activity occurs on another parcel.

Figure 40 shows that the majority of the value added activities are direct sales including farm gate sales, permanent stores, seasonal stands and u-pick activities. Nearly half of these (47 out of 99) are “Not used for farming”. This indicates there are many operations selling their products through informal local markets.

Table 35. Value added activities by scale

Value added	Description	Scale of activity			Total number of activities	Average parcel size (ha)
		Small scale	Medium scale	Large scale		
Agritourism	Guest house	7	-	-	7	18
	Petting zoo	1	-	-	1	35
	Tours	1	1	-	2	18
SUBTOTAL		9	1	-	10	
Direct sales	Farm gate	44	-	-	44	6
	Other (specify)	-	1	-	1	37
	Permanent retail store	11	6	-	17	10
	Seasonal store (stand)	26	2	-	28	14
	U-pick	8	1	-	9	8
SUBTOTAL		89	10	-	99	
Processing	Crop processing	1	-	-	1	1
	Fish processing /cannery	1	1	-	2	1
	Meat processing	3	1	1	5	26
	Wine / cider processing	3	2	-	5	6
SUBTOTAL		8	4	1	13	
TOTAL NUMBER OF ACTIVITIES		106	15	1	122	

Table 35 details the scale of value added activities in Comox Valley. Most value added activities (106 out of 122 or 87%) are “small” scale .

The 1 “large” scale activity is associated with Gunter Bros Meat Co.

## 5. Condition of ALR Lands

This section presents a parcel based analysis of parcel size and residential uses in the ALR.

### PARCEL INCLUSION IN THE ALR

The inventory area included 22,593 hectares of ALR on 2,444 parcels which is 96.4% of the ALR within Comox Valley Regional District. The remaining ALR was excluded from the inventory as it is in parcels with an average elevation of >100 meters or outside surveyed land parcels in designated rights-of-way or water and foreshore.

ALR boundaries do not always coincide 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 CVRD, only parcels that meet the following criteria are included in this section of the report:

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

In total, 1,809 parcels, with 22,421 hectares or 95.6% of CVRD's ALR land meets the above criteria and is included in the further analysis of the ALR. This includes 29 parcels that have less than 50% of their area in the ALR but all contain greater than 12 hectares of ALR land.

Figure 41. Parcel inclusion in the ALR

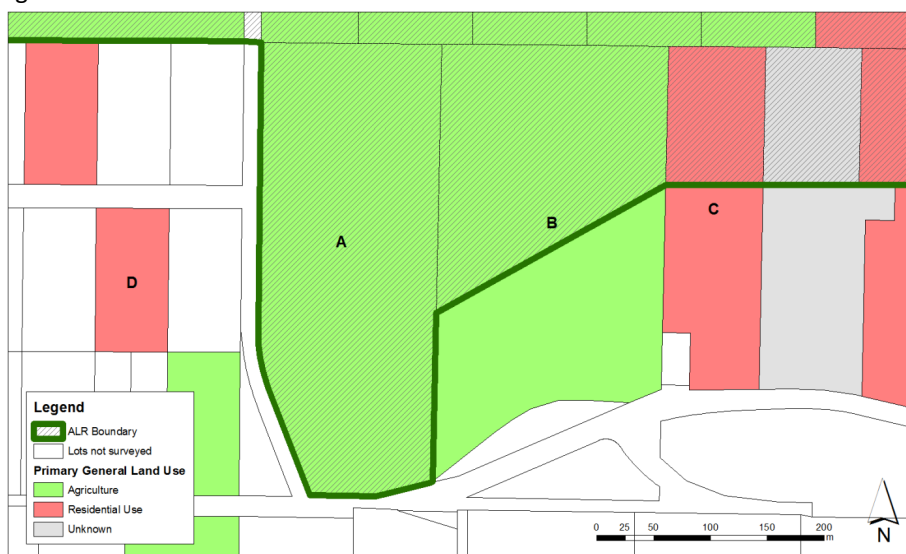


Figure 41 illustrates the distinction between parcels considered to be within or outside the ALR:

**Considered to be within the ALR:**

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

**Considered to be outside the ALR:**

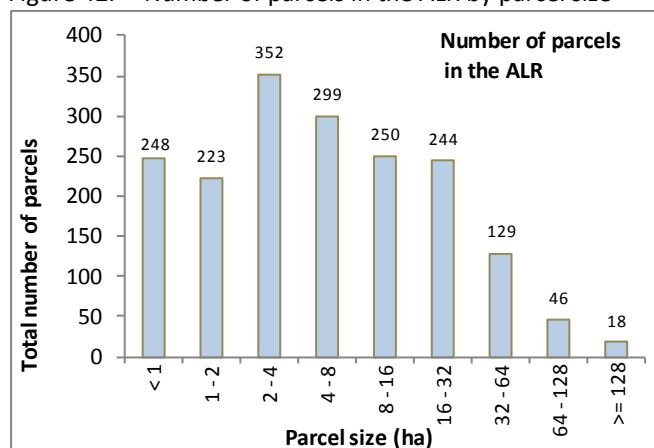
- lot C has less than 50% of its area and less than 10 hectares in the ALR
- lot D is completely outside the ALR.

## PARCEL SIZE & FARMING IN THE ALR

Parcel size must be considered when determining the agricultural potential of a land parcel. Larger parcels usually allow farmers greater flexibility to expand or change their type of operation as the economy and markets change. Although some types of agriculture can be successful on small parcels, (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 unit<sup>14</sup>, however it is generally more efficient to run a farm on fewer larger parcels than many smaller parcels. Larger parcels accommodate equipment more efficiently and reduce the need to move farm equipment on public roads. Smaller parcels are more impacted by bylaws designed to reduce potential land use conflicts, such as setbacks from lot lines and road allowances, and may encourage alternative land uses such as residential.

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



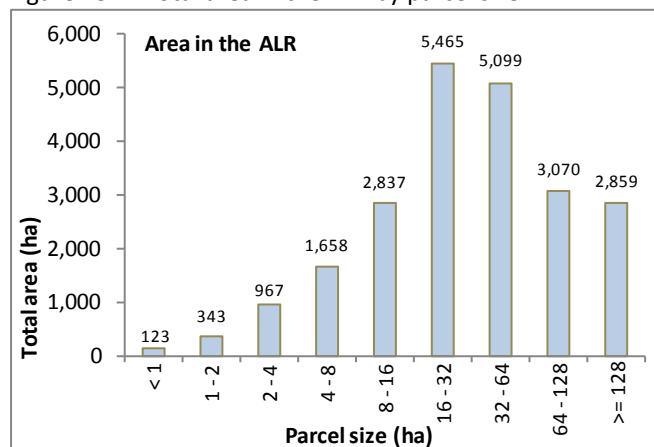
The average ALR parcel size in CVRD is 16.2 hectares and the median ALR parcel size is 4.5 hectares.

Figure 42 illustrates that of the 1,809 parcels in the ALR:

- 14% (248 parcels) are less than 1 hectare.
- 45% (823 parcels) are less than 4 hectares.
- 17% (299 parcels) are between 4 and 8 hectares.
- 14% (250 parcels) are between 8 and 16 hectares.
- 24% (437 parcels) are greater than 16 hectares.

Refer to Map B15 in Appendix B for more information.

Figure 43. Total area in the ALR by parcel size



In CVRD the majority of the ALR area is in larger parcels.

Figure 43 illustrates that of the 22,421 hectares in the ALR:

- <1% (123 hectares) is on parcels less than 1 hectare.
- 6% (1,433 hectares) is on parcels less than 4 hectares.
- 7% (1,658 hectares) is on parcels between 4 and 8 hectares.
- 13% (2,837 hectares) is on parcels between 8 and 16 hectares.
- 74% (16,493 hectares) is on parcels greater than 16 hectares.

<sup>14</sup> Farm Unit – An area of land used for a farm operation consisting of one or more contiguous or non-contiguous parcels, that may be owned, rented or leased, which form and are managed as a single farm.

Table 36. Number of farmed and not farmed parcels in the ALR

Parcel status with respect to farming	Number of parcels	% of parcels in the ALR
Used for farming	460	25 %
Not used for farming	1,349	75 %
<b>TOTAL</b>	<b>1,809</b>	<b>100 %</b>

Table 36 demonstrates that of the 1,809 parcels in the ALR, only 460 or 25% are "Used for farming".

Figure 44. Number of farmed and not farmed parcels in the ALR by parcel size

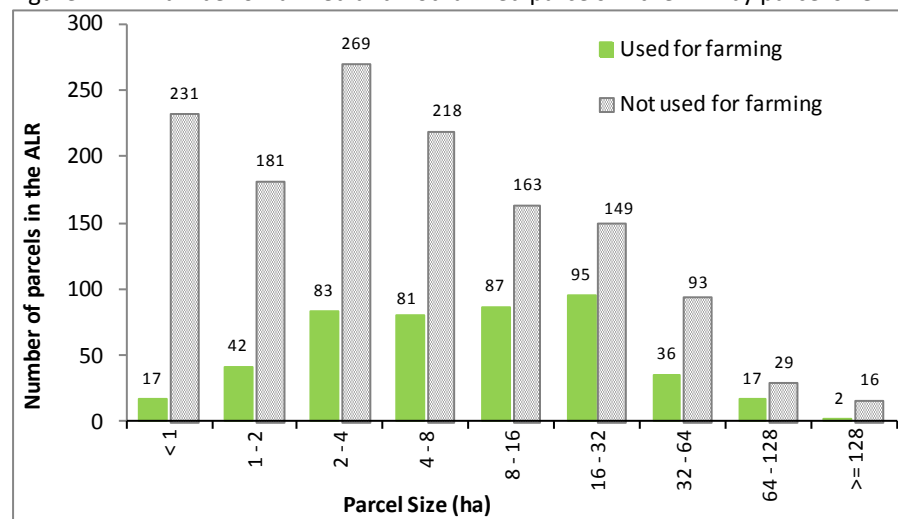


Figure 44 shows that of the 1,349 or 75% of parcels in the ALR and "Not used for farming",

- 231 parcels or 17% are less than one hectare
- 681 parcels or 51% are less than 4 hectares

Small parcels are less likely to be farmed.

Figure 45. Number of farmed and not farmed parcels in the ALR by parcel size (line chart)

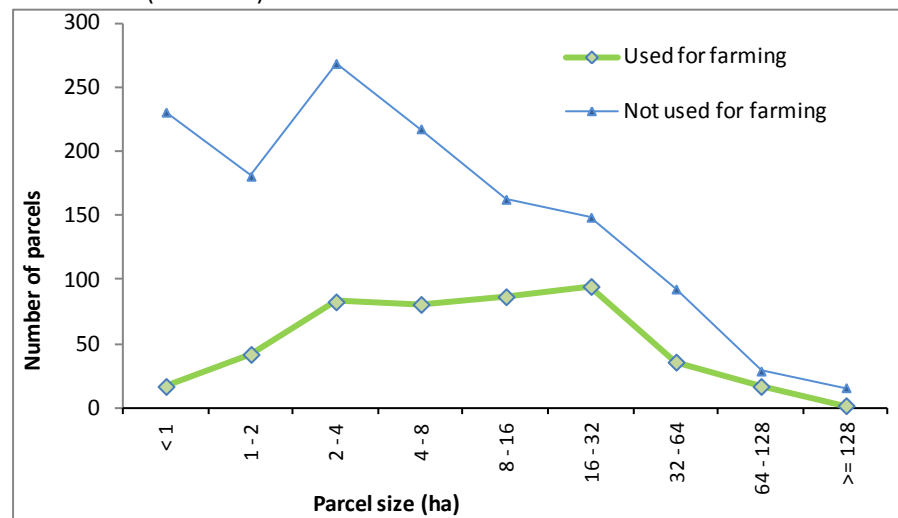


Figure 45 illustrates that although parcels of all sizes are "Used for farming", small parcels are less likely to be farmed.

Figure 46. Proportion of parcels farmed and not farmed by parcel size in the ALR

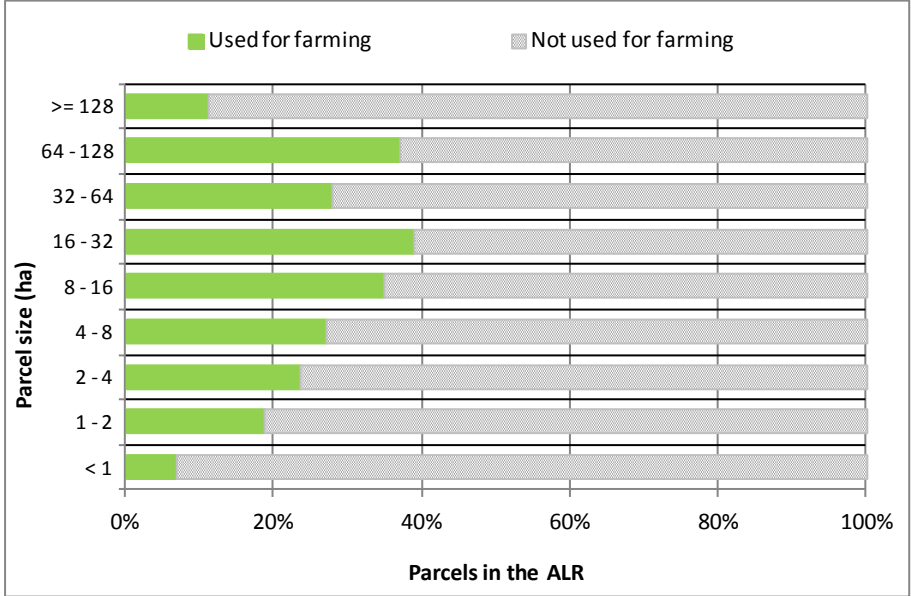
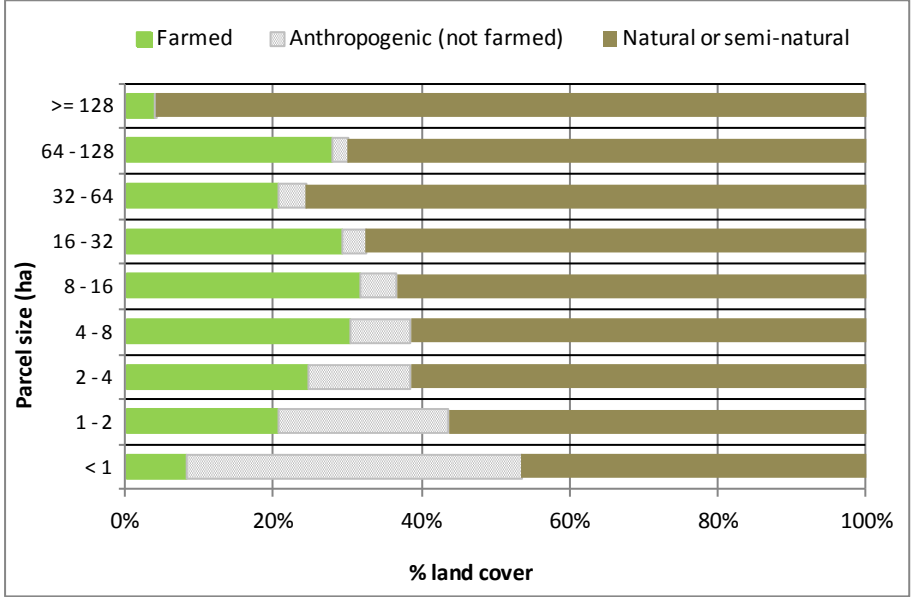


Figure 46 shows that in CVRD the proportion of parcels “Used for farming” generally increases as the parcel size increases.

Only 7% of parcels less than 1 hectare are “Used for farming”.

There are 2 parcels greater than 128 hectares in the ALR that are “Used for farming”. One houses a “large” scale dairy and is associated with Northey Lake Farm. The other grows forage crops and is associated with Evansdale dairy farm.

Figure 47. Proportion of land cover by parcel size in the ALR



Similar to Figure 46 above, Figure 47 shows that in Comox Valley, the proportion of farmed land cover generally increases as the parcel size increases.

Parcels less than 1 hectare have the largest proportion of “Anthropogenic (not farmed)” land cover.



## RESIDENTIAL USE IN THE ALR

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

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

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

- estate single family house \$1,186,650
- large single family house \$431,318
- medium single family house \$266,535
- small single family house \$161,530
- single mobile home \$73,375

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

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. (< 140m<sup>2</sup> )
- Medium single-family house 1,500 – 3,500 sq. ft. (140 m<sup>2</sup> - 325 m<sup>2</sup>)
- Large single-family house 3,500 – 5,000 sq. ft. (325 m<sup>2</sup> - 465 m<sup>2</sup>)
- Estate (very large) single-family house > 5,000 sq. ft. (> 465 m<sup>2</sup>)

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.

Table 37. Farming and residences in the ALR

Parcel status	With residence		Without residence		Total number of parcels
	Number of parcels	% of parcels	Number of parcels	% of parcels	
Used for farming	355	20%	105	6%	460
Not used for farming but available	877	48%	369	20%	1246
Not used for farming and unavailable	62	3%	41	2%	103
<b>TOTAL</b>	<b>1,294</b>	<b>72%</b>	<b>515</b>	<b>28%</b>	<b>1,809</b>

Table 37 shows that 1,294 parcels or 72% of ALR parcels have residences and that 939 of these parcels are “Not used for farming”.

Table 38. Farming and residence type in the ALR

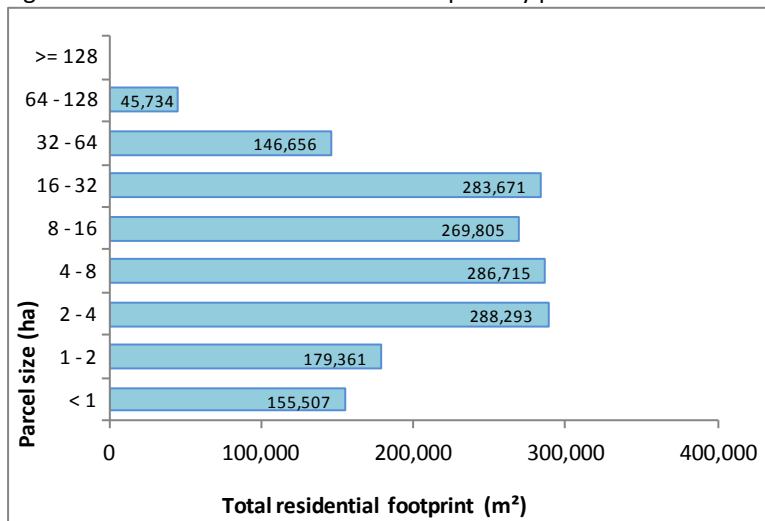
Parcel status	Residences *						Total residences	Total number of parcels
	Single mobile home	Small house	Medium house	Large house	Estate house	Other**		
Used for farming	43 ( 15)	196 ( 122)	210 ( 176)	38 ( 37)	3 ( 3)	7 ( 2)	497	355
Not used for farming but available	44 (18)	542 ( 398)	428 ( 403)	56 ( 55)	1 ( 1)	13 ( 2)	1084	877
Not used for farming and unavailable	2( 1)	39 ( 37)	20 ( 19)	4 ( 4)	( )	1 ( 1)	66	62
<b>TOTAL RESIDENCES</b>	<b>89</b>	<b>777</b>	<b>658</b>	<b>98</b>	<b>4</b>	<b>21</b>	<b>1,647</b>	
<b>TOTAL PARCELS</b>	<b>34</b>	<b>557</b>	<b>598</b>	<b>96</b>	<b>4</b>	<b>5</b>		<b>1,294</b>

\* xx ( yy) - xx indicates the number of residences and ( yy) indicates the number of parcels where the residence type is the largest on that parcel.

\*\* Other includes 1 duplex, 1 dormitory, 1 mobile home park, and 18 cabin/cottage style residences

*Table 38 demonstrates there are 1,294 parcels in the ALR with 1,647 residences (some parcels have more than one residence). Most residences are “small” or “medium” houses though there are at least 102 “large” or “estate” houses (>5000 sq. ft) in the ALR. Sixty percent (60%) of all “large” and “estate” houses are on parcels “Not used for farming.”*

Figure 48. Total area in residential footprint by parcel size



*Figure 48 illustrates there are over 165 hectares (1,655,743 m²) of ALR land in residential footprints distributed across all parcel sizes less than 128 hectares.*

Figure 49. Proportion of parcels with residences by parcel size

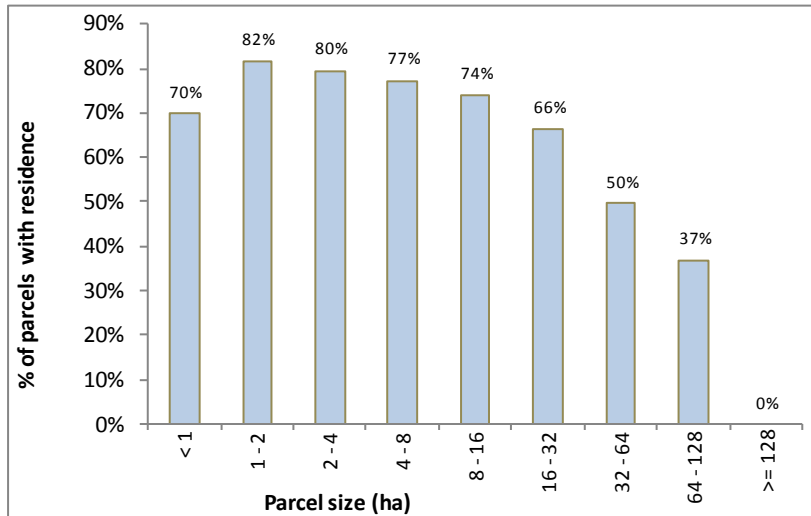


Figure 49 shows parcels less than 32 hectares have a large proportion of parcels with residences.

There are no residences on the 18 parcels >= 128 hectares in the ALR (refer to Figure 42).

Figure 50. Average percent of parcel area in residential footprint by parcel size

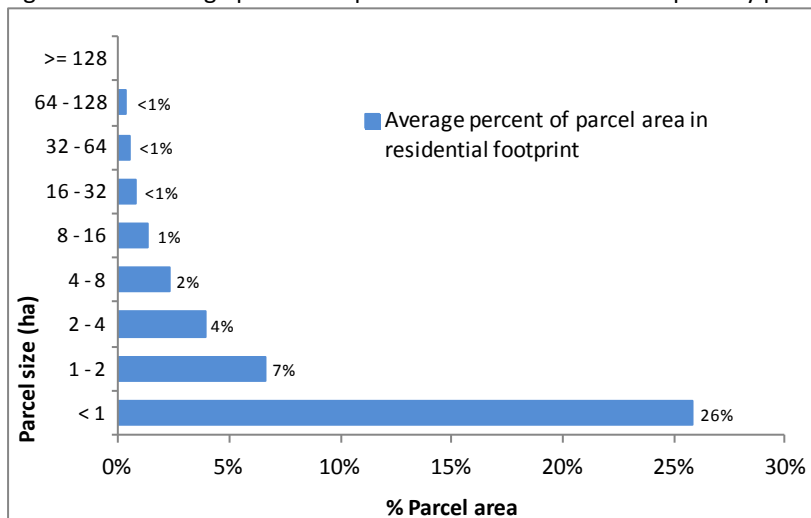


Figure 50 demonstrates that residential footprints on smaller parcels use a much greater proportion of the parcel area than those on larger parcels.

Figure 51. Average total area in residential footprint by parcel size

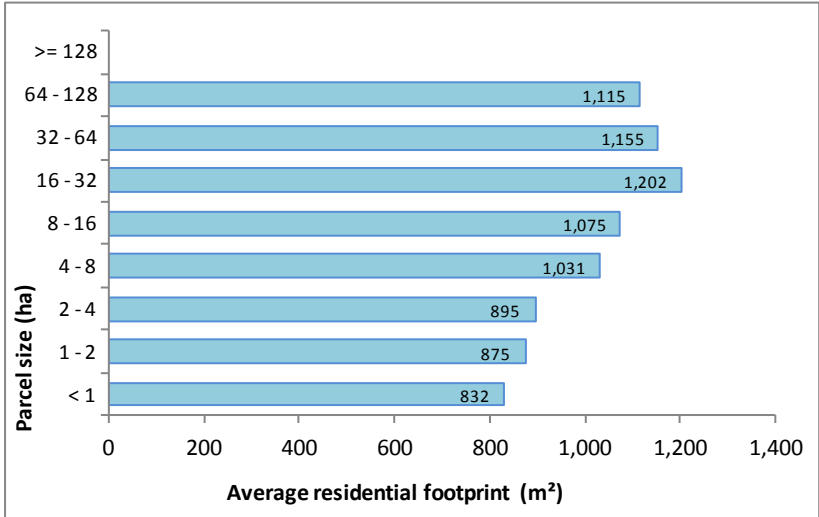
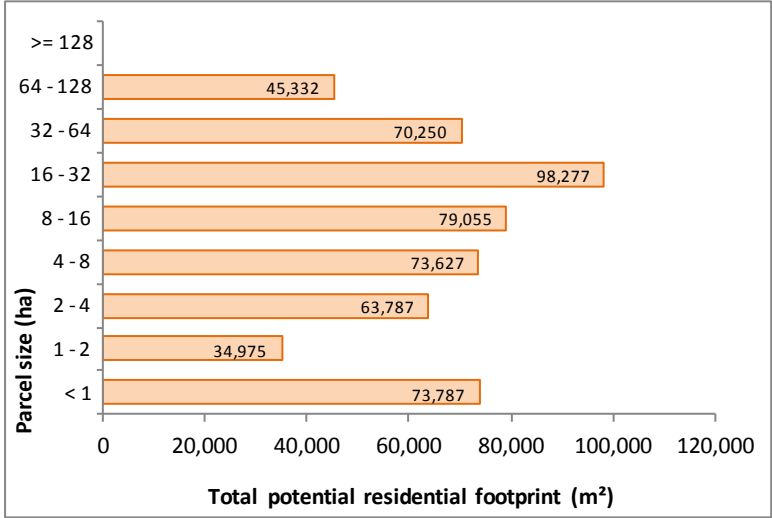


Figure 51 illustrates that even though residential footprints on small parcels use a greater proportion of the parcel area, the average size of the footprint is smaller than the average footprint on larger parcels.

Figure 52. Total and potential area in residential footprint by parcel size



There are 474 parcels in the ALR that are “Used for farming” or “Not used for farming but available” that do not yet have a residence (refer to Table 37).  
If all 474 parcels built a residence, using the average percent of parcel area in residential footprint presented above, Figure 52 shows that an additional 54 hectares (539,090 m<sup>2</sup>) of ALR land would be permanently removed from potential production.

Table 39. Main agriculture activity and largest residence on parcels "Used for farming" in the ALR

Main agricultural activity	Largest residence on the parcel						Number of parcels
	Single mobile home	Small house	Medium house	Large house	Estate house	Other	
Forage, pasture	7	56	58	16	-	1	138
Livestock	4	27	57	8	2	-	98
Equine	4	28	50	10	1	-	93
Vegetables	-	6	2	-	-	-	8
Berries	-	1	1	1	-	1	4
Farm	-	-	2	1	-	-	3
Nursery & Tree plantations	-	1	1	1	-	-	3
Turf	-	1	2	-	-	-	3
Other	-	1	1	-	-	-	2
Grapes	-	-	1	-	-	-	1
Poly greenhouse	-	-	1	-	-	-	1
Tree fruits	-	1	-	-	-	-	1
<b>TOTAL PARCELS</b>	<b>15</b>	<b>122</b>	<b>176</b>	<b>37</b>	<b>3</b>	<b>2</b>	<b>355</b>

\*Other includes 1 dormitory and 1 cabin/cottage style residence.

*There are 355 parcels with residences that are "Used for farming" (refer to Table 38).*

*Table 39 shows that "large" or "estate" houses occur most frequently on parcels with forage & pasture, livestock, or equines as the main agricultural activity.*

# Appendix A

## CULTIVATED FIELD CROPS

Table A1. Distribution of crop field sizes for all cultivated land<sup>1</sup>

Crop Area (ha)	Number of crop fields											Total Number
	Forage & pasture	Vegetables	Berries	Other*	Nursery & tree plantations	Turf	Cereals	Grapes	Tree fruits	Nut trees	Floriculture	
< 1	242	31	21	8	18	3	2	8	32	3	4	372
1 - 2	212	19	5	2	6	-	-	5	4	-	1	254
2 - 4	164	7	2	4	2	-	2	3	4	3	-	191
4 - 8	148	3	1	3	4	2	-	-	-	1	-	162
8 - 16	100	7	3	2	1	-	3	1	-	-	-	117
16 - 32	46	2	1	2	-	1	-	-	-	-	-	52
32 - 64	21	-	2	-	1	-	-	-	-	-	-	24
64 - 128	1	-	-	1	-	-	-	-	-	-	-	2
>= 128	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL FIELD COUNT</b>	<b>934</b>	<b>69</b>	<b>35</b>	<b>22</b>	<b>32</b>	<b>6</b>	<b>7</b>	<b>17</b>	<b>40</b>	<b>7</b>	<b>5</b>	<b>1,174</b>
<b>AVERAGE CROP AREA (ha)</b>	<b>5 ha</b>	<b>3 ha</b>	<b>5 ha</b>	<b>8 ha</b>	<b>3 ha</b>	<b>7 ha</b>	<b>5 ha</b>	<b>2 ha</b>	<b>&lt; 1 ha</b>	<b>2 ha</b>	<b>&lt; 1 ha</b>	<b>5 ha</b>
<b>MEDIAN CROP AREA (ha)</b>	<b>2 ha</b>	<b>1 ha</b>	<b>&lt; 1 ha</b>	<b>2 ha</b>	<b>&lt; 1 ha</b>	<b>2 ha</b>	<b>3 ha</b>	<b>1 ha</b>	<b>&lt; 1 ha</b>	<b>3 ha</b>	<b>&lt; 1 ha</b>	<b>2 ha</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>12 ha</b>	<b>13 ha</b>	<b>27 ha</b>	<b>23 ha</b>	<b>14 ha</b>	<b>9 ha</b>	<b>32 ha</b>	<b>12 ha</b>	<b>5 ha</b>	<b>15 ha</b>	<b>17 ha</b>	<b>12 ha</b>

\* Other. Includes bare cultivated land, fallow land (cultivated land that has not been seeded or planted for one or more growing season), land in crop transition, land planted in cover grass or under mulch to manage soil moisture/erosion associated with a cultivated crop.

Table A2. Distribution of forage & pasture fields

Field size (ha)	Number of forage & pasture fields					Forage & pasture
	Forage	Pasture	Forage & pasture	Unmaintained	Unused	
< 1	57	196	6	1	20	280
1 - 2	58	149	7	3	24	241
2 - 4	82	90	6	-	22	200
4 - 8	97	50	13	1	8	169
8 - 16	63	18	11	-	3	95
16 - 32	44	4	5	-	-	53
32 - 64	12	1	1	-	-	14
64 - 128	-	-	-	-	-	-
>128	-	-	-	-	-	-
<b>TOTAL FIELD COUNT</b>	<b>413</b>	<b>508</b>	<b>49</b>	<b>5</b>	<b>77</b>	<b>1,052</b>
<b>AVERAGE CROP AREA (ha)</b>	<b>8 ha</b>	<b>2 ha</b>	<b>8 ha</b>	<b>3 ha</b>	<b>2 ha</b>	<b>5 ha</b>
<b>MEDIAN CROP AREA (ha)</b>	<b>4 ha</b>	<b>1 ha</b>	<b>5 ha</b>	<b>2 ha</b>	<b>1 ha</b>	<b>2 ha</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>20 ha</b>	<b>8 ha</b>	<b>22 ha</b>	<b>9 ha</b>	<b>5 ha</b>	<b>12 ha</b>

\* Unmaintained forage/pasture refers to forage or pasture which would probably not warrant harvest.

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

<sup>1</sup> Footnote: Each distinct crop type on one parcel is counted as one crop activity. Each crop activity will include at least one and perhaps more crop fields. A parcel may have more than one crop activity if there is more than one distinct type of crop on that parcel.

Table A3. Distribution of vegetable fields

Field size (ha)	Number of vegetable fields					Total Number
	Potatoes	Mixed vegetables	Sweet corn	Pumpkins	Misc. vegetables	
< 1	-	32	1	-	1	34
1 - 2	8	12	-	1	-	21
2 - 4	2	4	2	-	-	8
4 - 8	1	1	-	-	-	2
8 - 16	5	2	-	-	-	7
16 - 32	2	-	-	-	-	2
32 - 64	-	-	-	-	-	-
64 - 128	-	-	-	-	-	-
>128	-	-	-	-	-	-
<b>TOTAL FIELD COUNT</b>	<b>18</b>	<b>51</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>74</b>
<b>AVGERAGE CROP AREA (ha)</b>	<b>8 ha</b>	<b>1 ha</b>	<b>2 ha</b>	<b>2 ha</b>	<b>&lt; 1 ha</b>	<b>3 ha</b>
<b>MEDIAN CROP AREA (ha)</b>	<b>3 ha</b>	<b>&lt; 1 ha</b>	<b>2 ha</b>	<b>2 ha</b>	<b>&lt; 1 ha</b>	<b>1 ha</b>
<b>AVGERAGE PARCEL SIZE (ha)</b>	<b>17 ha</b>	<b>12 ha</b>	<b>21 ha</b>	<b>8 ha</b>	<b>3 ha</b>	<b>13 ha</b>

Table A4. Distribution of berry fields

Field size (ha)	Number of berry fields						Total number
	Cranberries	Blackberries	Blueberries	Mixed berries	Currants	Raspberries	
< 1	2	-	8	13	-	1	24
1 - 2	1	-	2	2	-	-	5
2 - 4	-	-	-	2	-	-	2
4 - 8	-	-	1	-	1	-	2
8 - 16	3	-	-	-	-	-	3
16 - 32	-	1	-	-	-	-	1
32 - 64	1	1	-	-	-	-	2
64 - 128	-	-	-	-	-	-	-
>128	-	-	-	-	-	-	-
<b>TOTAL FIELD COUNT</b>	<b>7</b>	<b>2</b>	<b>11</b>	<b>17</b>	<b>1</b>	<b>1</b>	<b>39</b>
<b>AVERAGE CROP AREA (ha)</b>	<b>11 ha</b>	<b>32 ha</b>	<b>1 ha</b>	<b>&lt; 1 ha</b>	<b>5 ha</b>	<b>&lt; 1 ha</b>	<b>4 ha</b>
<b>MEDIAN CROP AREA (ha)</b>	<b>8 ha</b>	<b>32 ha</b>	<b>&lt; 1 ha</b>	<b>&lt; 1 ha</b>	<b>5 ha</b>	<b>&lt; 1 ha</b>	<b>&lt; 1 ha</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>74 ha</b>	<b>84 ha</b>	<b>17 ha</b>	<b>9 ha</b>	<b>23 ha</b>	<b>4 ha</b>	<b>27 ha</b>



## LIVESTOCK

Table A5. Distribution of livestock operations by type

Parcel size (ha)	Type of activity								Total number of activities
	Beef	Dairy	Poultry	Swine	Sheep / lamb / goat	Llama / alpaca	Specialty livestock	Equine	
< 1	1	-	9	1	1	2	-	30	44
1 - 2	3	5	19	1	4	3	-	94	129
2 - 4	13	5	36	2	11	1	2	110	180
4 - 8	15	3	26	-	17	-	1	52	114
8 - 16	22	3	18	1	9	-	-	30	83
16 - 32	20	5	16	1	8	3	1	36	90
32 - 64	15	7	10	2	6	1	2	12	55
64 - 128	2	5	-	-	-	-	1	1	9
>= 128	-	1	-	-	-	-	-	-	1
<b>TOTAL NUMBER OF ACTIVITIES</b>	<b>91</b>	<b>34</b>	<b>134</b>	<b>8</b>	<b>56</b>	<b>10</b>	<b>7</b>	<b>365</b>	<b>705</b>
<b>MEDIAN PARCEL SIZE (ha)</b>	<b>13 ha</b>	<b>22 ha</b>	<b>4 ha</b>	<b>7 ha</b>	<b>6 ha</b>	<b>2 ha</b>	<b>19 ha</b>	<b>2 ha</b>	<b>4 ha</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>19 ha</b>	<b>31 ha</b>	<b>10 ha</b>	<b>17 ha</b>	<b>13 ha</b>	<b>14 ha</b>	<b>26 ha</b>	<b>7 ha</b>	<b>10 ha</b>

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

Parcel size (ha)	Scale of beef activities				Total number of activities
	Very small (1 cow)	Small (2-25 cattle)	Medium (25-100 cattle)	Large (> 100 cattle)	
< 1	1	-	-	-	1
1 - 2	2	1	-	-	3
2 - 4	4	9	-	-	13
4 - 8	-	15	-	-	15
8 - 16	1	11	9	1	22
16 - 32	3	11	5	1	20
32 - 64	-	7	7	1	15
64 - 128	-	-	1	1	2
>= 128	-	-	-	-	-
<b>TOTAL NUMBER OF ACTIVITIES</b>	<b>11</b>	<b>54</b>	<b>22</b>	<b>4</b>	<b>91</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>8 ha</b>	<b>15 ha</b>	<b>31 ha</b>	<b>40 ha</b>	<b>19 ha</b>

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

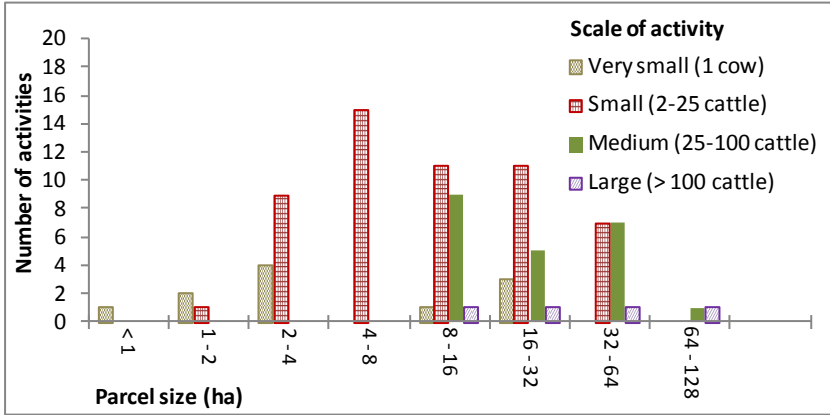
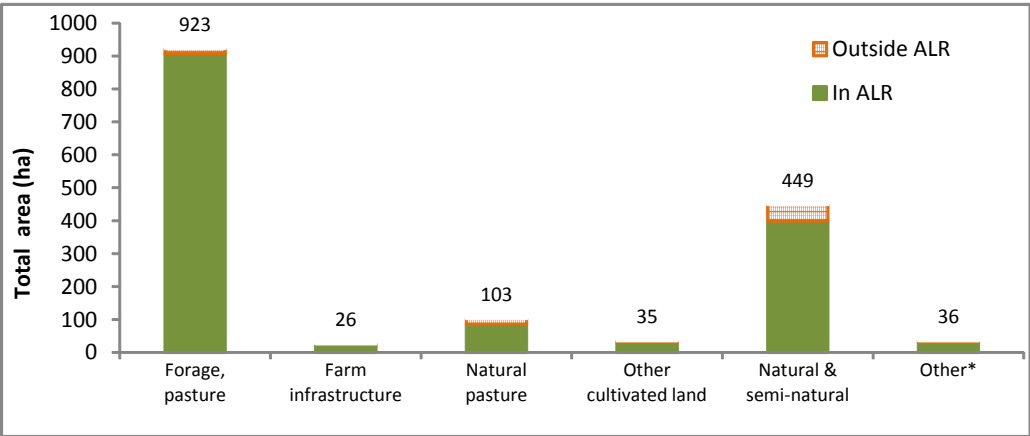


Figure A2. Land cover on parcels with beef activities



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

Table A7. Distribution of dairy activities by parcel size and scale

Parcel Size (ha)	Scale of dairy activities				Total number of activities
	Very small (1 cow)	Small (2-25 cattle)	Medium (25-100 cattle)	Large (> 100 cattle)	
< 1	-	-	-	-	-
1 - 2	-	-	4	1	5
2 - 4	1	-	3	1	5
4 - 8	-	1	1	1	3
8 - 16	-	1	-	2	3
16 - 32	1	-	2	2	5
32 - 64	-	1	1	5	7
64 - 128	-	-	-	5	5
>= 128	-	-	-	1	1
<b>TOTAL NUMBER OF ACTIVITIES</b>	<b>2</b>	<b>3</b>	<b>11</b>	<b>18</b>	<b>34</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>10 ha</b>	<b>20 ha</b>	<b>10 ha</b>	<b>49 ha</b>	<b>31 ha</b>

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

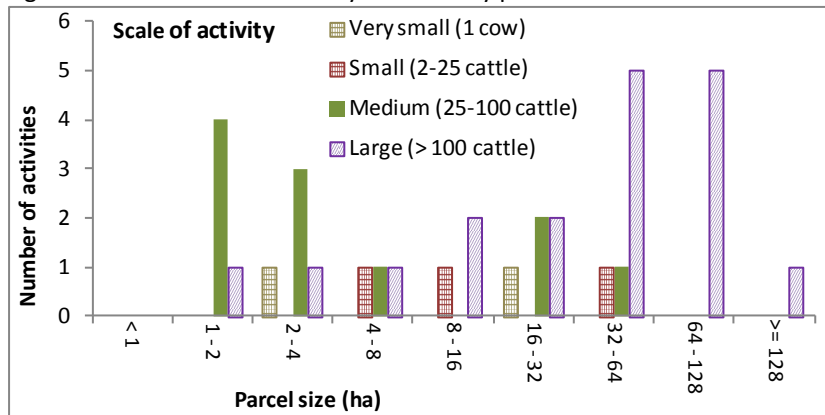


Figure A4. Land cover on parcels with dairy activities

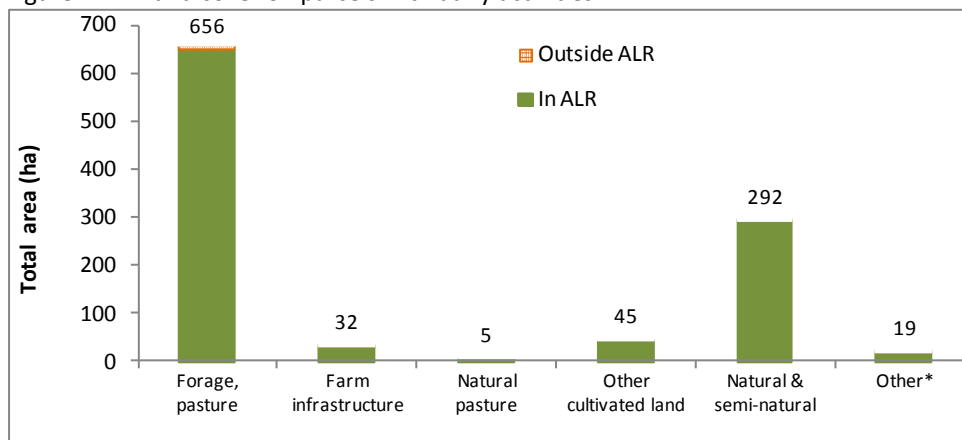


Table A8. Distribution of poultry activities by parcel size and scale

Parcel size (ha)	Scale of poultry activities				Total number of activities
	Very small (< 100 birds)	Small (100 - 2,500 birds)	Medium (2,500 - 10,000 birds)	Large (> 10,000 birds)	
< 1	9	-	-	-	9
1 - 2	18	1	-	-	19
2 - 4	36	-	-	-	36
4 - 8	25	1	-	-	26
8 - 16	13	4	1	-	18
16 - 32	11	5	-	-	16
32 - 64	8	2	-	-	10
64 - 128	-	-	-	-	-
>= 128	-	-	-	-	-
<b>TOTAL NUMBER OF ACTIVITIES</b>	<b>120</b>	<b>13</b>	<b>1</b>	<b>-</b>	<b>134</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>9 ha</b>	<b>18 ha</b>	<b>10 ha</b>	<b>-</b>	<b>9 ha</b>

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

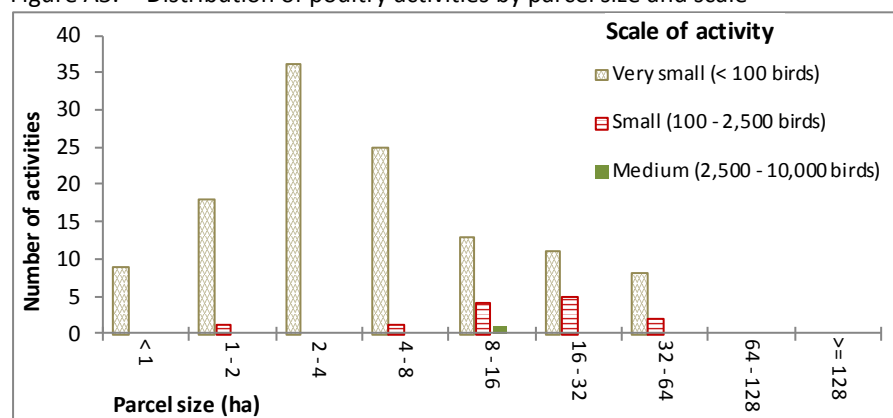
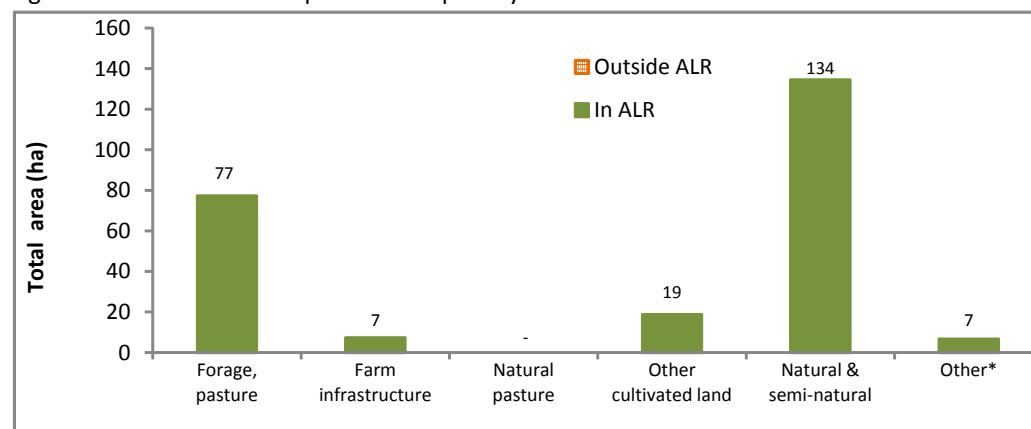


Figure A6. Land cover on parcels with poultry activities



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

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

Parcel size (ha)	Scale of equine activities				Total number of activities
	Very small (1 - 2 equine)	Small (2 - 25 equines)	Medium (25 - 100 equines)	Large (> 100 equines)	
< 1	23	7	-	-	30
1 - 2	69	25	-	-	94
2 - 4	67	43	-	-	110
4 - 8	26	25	-	-	51
8 - 16	14	16	-	-	30
16 - 32	17	19	-	-	36
32 - 64	3	9	-	-	12
64 - 128	1	-	-	-	1
>= 128	-	-	-	-	-
<b>TOTAL NUMBER OF ACTIVITIES</b>	<b>220</b>	<b>144</b>	<b>-</b>	<b>-</b>	<b>364</b>
<b>AVERAGE PARCEL SIZE (ha)</b>	<b>5 ha</b>	<b>9 ha</b>	<b>-</b>	<b>-</b>	<b>7 ha</b>

Figure A7. Distribution of equine activities by parcel size and scale

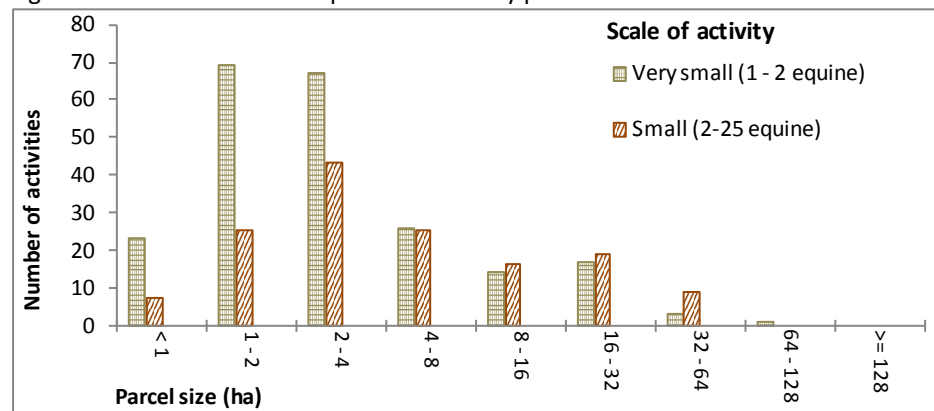
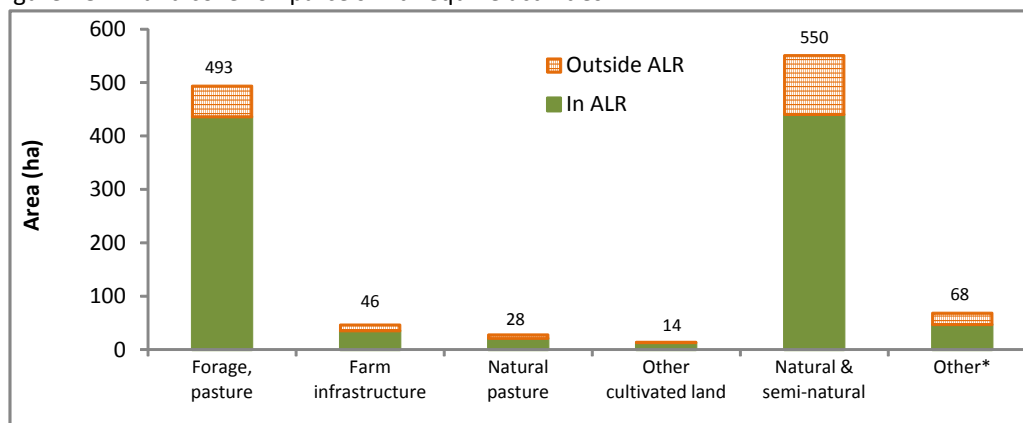


Figure A8. Land cover on parcels with equine activities



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

## Appendix B - Maps