

Growing Knowledge



Ministry of
Agriculture

Land Use Inventory Report

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Township of Langley Summer 2010

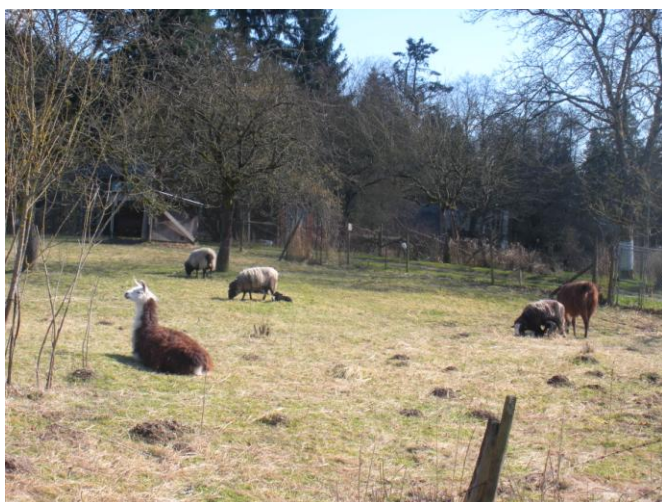


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Strengthening Farming Program
Sustainable Agriculture Management Branch
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Acronyms

AAC	Agricultural Advisory Committee
AAP	Agricultural Area Plan
AGRI	BC Ministry of Agriculture
ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
ALUI	Agricultural Land Use Inventory
GIS	Geographic Information Systems
TOL	Township of Langley

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.

Cadastral – 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 Cadastral Fabric maintained by the Parcel Fabric Section of the BC Government.

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

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

Land Cover

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

Anthropogenic – Built up - Other – Lands covered by various unused or unmaintained built objects (structures) and associated yards that are not directly used for farming.

Anthropogenic – Managed vegetation – Lands seeded or planted for landscaping, dust or soil control but not cultivated for harvest or pasture. Includes parklands, golf courses, landscaping, lawns, vegetated enclosures, remediation areas.

Anthropogenic – Non Built or Bare – Human created bare areas such as extraction or disposal sites. Includes piles, pits, fill dumps, dirt parking or storage areas.

Anthropogenic – Residential – Lands covered by built objects (structures) and their associated auxiliary buildings, yards, roads, and parking. Includes single and multifamily dwellings, and mobile homes.

Anthropogenic – Residential footprint – Includes the main residence plus its associated yard, driveway, parking and any auxiliary buildings or structures. When two residences are on a property, areas associated to both (e.g. 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 – The term *anthropogenic* describes an effect or object resulting from human activity. In this report, the term anthropogenic refers to land cover originating and maintained by human actions but excludes farmed land cover; cultivated field crops, farm infrastructure, crop cover structures.

Anthropogenic – 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 native low, non woody plants such as ferns, grasses, horsetails, closers and dwarf woody plants. If greater than 50% cover is grass, the land is categorized as grassland.

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

Natural and Semi-natural – Natural pasture – Smaller fenced 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.

Unused greenhouse – Crop cover structure in good condition that is not currently used for farming activities.

Livestock

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

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

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

Land Cover and Farming

Actively farmed – Land cover considered **Farmed** but excludes unused / unmaintained field crops, and unmaintained greenhouses. 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. 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. E.g., land with little slope, sufficient soils and exhibiting a natural treed land cover would be considered as having potential for farming.

Land Use

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

Resource protection & research – Government or private research activities (including agriculture). Flood protection areas.

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

Wildlife management – Areas used to actively manage wildlife; reserves, traplines, breeding areas, fish ladders/ hatcheries, wild harvest

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 2010, the BC Ministry of Agriculture (AGRI) conducted an Agricultural Land Use Inventory (ALUI) for the Township of Langley. The ALUI was funded in part by Metro Vancouver, and was completed with in-kind support from the Township of Langley and Langley Environmental Partners Society (LEPS).

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, and the amount of land within the Agricultural Land Reserve (ALR) that is not available for agriculture. The data can also be used to estimate agricultural water demand with the use an irrigations water demand model.

The ALUI for Township of Langley was conducted using a drive-by inventory that recorded land cover and land use on a per-parcel basis, as a “snapshot in time.” Four categories of parcels were included: i) all parcels completely or partially in the ALR; ii) parcels zoned for Agriculture outside of the ALR; iii) parcels outside of the ALR that were assessed as a farm by BC Assessment; and iv) parcels zoned as Rural in the Metro Vancouver Regional Growth Strategy (which have agriculture as a permitted use).

The ALR in Langley consists of 23,406 ha. Ninety-five percent (95%) of this or 22,281 ha on 4,861 parcels was surveyed as part of this inventory. The remaining 5% or 1,125 ha of ALR was in road rights of ways and parcels less than 100 square meters. An additional 1,630 ha of land was surveyed outside the ALR, bringing the total survey area to 23,911 ha.

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

In terms of land cover in the ALR, a total area of 9,751 (42%) was farmed (both actively and inactively), 3,283 ha was anthropogenically modified (14%), and 9,247 ha was in a natural or semi-natural state (39%). The remaining 1,125 ha (5%) was not surveyed, and was not available for farming. Farmed land cover included cultivated field crops, farm buildings and structures, greenhouses and crop barns. It is important to note that some of the anthropogenically modified land covers may support farming, e.g. farm residences, vegetative buffers, and farm roads, but were not defined as ‘farmed’ land covers for the purpose of this part of the analysis. An additional 650 ha outside of the ALR were farmed. See Table 1 and Map B1 for details.

In terms of land use, the entire parcel was examined, and a “Used for farming” definition was applied, based on the percentage and/or scale of the parcel in cultivated crops, farm infrastructure, and/or certain scales of livestock production. For a more detailed definition of “Used for farming” see the Definitions section. In terms of land use in the ALR, 11,584 ha (49%) was defined as “Used for farming,” and 10,697 ha (46%) was defined as “Not used for farming”. In this analysis, farm residential uses and farm roads, were included in the “Used for farming” subtotal (along with other mixed uses such as commercial & service, protected areas/ parks, and institutional & community). As before, 1,125 ha (5%) was not surveyed, and was not considered to be available for farming. See Table 2 and Maps B3 and B4 for details.

A third way to analyze the data is to analyze how much land is available for farming and how much of that has the potential to be farmed. The characteristics of these two types of land are also examined.

This involved looking at both land covers and land use. Land may be unavailable for farming because of existing land use (e.g. parks, golf courses), or may have limited potential for farming because of physical limitations (e.g. steep slopes).

Of the 23,406 ha in Langley's ALR, 1,125 ha (5%) was not surveyed, but would not be available to be farmed or have the potential to be farmed (e.g. it was in road rights of way, etc.). A further 3,242 ha (14%) was considered to be unavailable for farming due to existing land use or land cover (e.g. it was in parks, golf courses, non-farm residential uses, etc.). Added to that was the 599 ha (2%) of the ALR that is used in farm support (e.g. farmhouse residential footprint, artificial water bodies such as farm reservoirs, and transportation such as farm roads). A further 1,123 ha (5%) was defined as having limited potential for farming due to site limitations (e.g. drainage limitations, etc.). That left 9,314 ha (40%) of the ALR that was actively farmed, and 8,003 ha (34%) of the ALR that was available for farming. Of that 34%, 1,711 ha occurred on parcels that are already "Used for farming" and 6,292 ha occurred on parcels not "Used for farming." See Table 4, Figure 6 and Maps B5 and B6 for details.

On parcels "Used for farming" the largest gains for bringing more land into active agricultural production would come from clearing natural and semi-natural vegetation (1,464 ha). See Figure 7 for more details.

On parcels "Not used for farming" the largest gains for bringing more land into active agricultural production would come from clearing land with natural and semi-natural vegetation (5,077 ha) and converting land cover with "Anthropogenic managed vegetation" (e.g. lawns, gardens). See Figure 8 for more details.

In terms of farming activities, two of the land covers were examined in detail: cultivated field crops and greenhouses. The top three crops were forage & pasture at 6,822 ha (76% of all cultivated land) followed by vines & berries at 1,378 ha (15%) and nursery & tree plantations at 467 ha (5%). Within the berry category blueberries were the top crop in terms of area. Greenhouses and crop barns covered 148 ha of ALR land. See Table 7, Table 9, Table 12 and Maps B7 to B11 for more information.

Irrigation use was captured by crop type and irrigation system type, to aid in developing a water demand model for agriculture in Metro Vancouver. Trickle systems were the most commonly used (839 ha) and were found primarily on vines and berries. Sprinkler systems were the next most common (778 ha) and were used on a broad range of crops. Giant gun systems were third (180 ha). See Table 13 and Map B12 for more information.

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 Township of Langley, equines were the most common type of livestock activity (with 950 out of 1,579 activities), followed by poultry (200 out of 1,579 activities) and beef (199 out of 1,579 activities). There were 90 intensive poultry activities in Langley and 110 non-intensive activities (e.g. backyard flocks). 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. See the Definitions section for more information, as well as Table 15 and Maps B13 to B17.

In terms of condition of ALR lands, further analysis was conducted on 4,810 parcels with 22,264 ha or 95% of Langley's ALR land. This additional analysis found that while 71% of ALR parcels are less than 4 ha in size, they make up only 28% of the total area. The majority of these parcels are "Not used

for farming”. Over half (51%) of Langley’s ALR area is on parcels greater than 8 hectares. See Figures 35 to 37 for more information.

Residential uses occurred on 4,119 parcels, and 2,465 of those parcels were “Not used for farming”. Houses greater than 3,500 sq. ft. in size were found on 671 parcels and nearly two-thirds of those houses (64%) were on parcels “Not used for farming”. See Tables 17 and 18 for more information.

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 farm in BC was established in the Township of Langley, and Langley has continued to be a major agriculture community in BC. The Township has the third highest farm gates receipts in the province and over the last census period (2006 – 2011) had the highest rate of growth in agriculture output in the Fraser Valley. The information in this Land Use Inventory (LUI) points to some of the reasons why this is happening.

The attached maps collectively show that Langley produces a wide variety of agriculture products from horses to blueberries and from wine to forage. The main commodities are produced throughout the Township and over the full range of lot sizes.

The ALR in Langley is characterized by having a high proportion of small lots relative to neighbouring jurisdictions. Over 70% of the lots in the ALR in Langley are less than 10 acres and these small lots represent almost 30% of the land base. The majority of these small lots were not “used for farming”. This indicates why parcel subdivision in the ALR is generally not beneficial for agriculture.

The LUI found that just over 1/3 of the parcels in the ALR in Langley were being farmed and this represented roughly half of the land available for farming. There are almost 1200 parcels between 5 and 20 acres in Langley that are not currently being farmed. Langley has land available in parcel sizes that meet the needs of new or expanding farms that focus on intensive horticulture crops and intensive livestock production.

Over 80% of the land available for farming, but not currently farmed, is in natural vegetation. A growing agriculture sector in Langley will mean a changing landscape. While fish and wildlife needs must be respected, land not currently farmed will need to be cleared for it to be actively farmed and for the agriculture sector to expand.

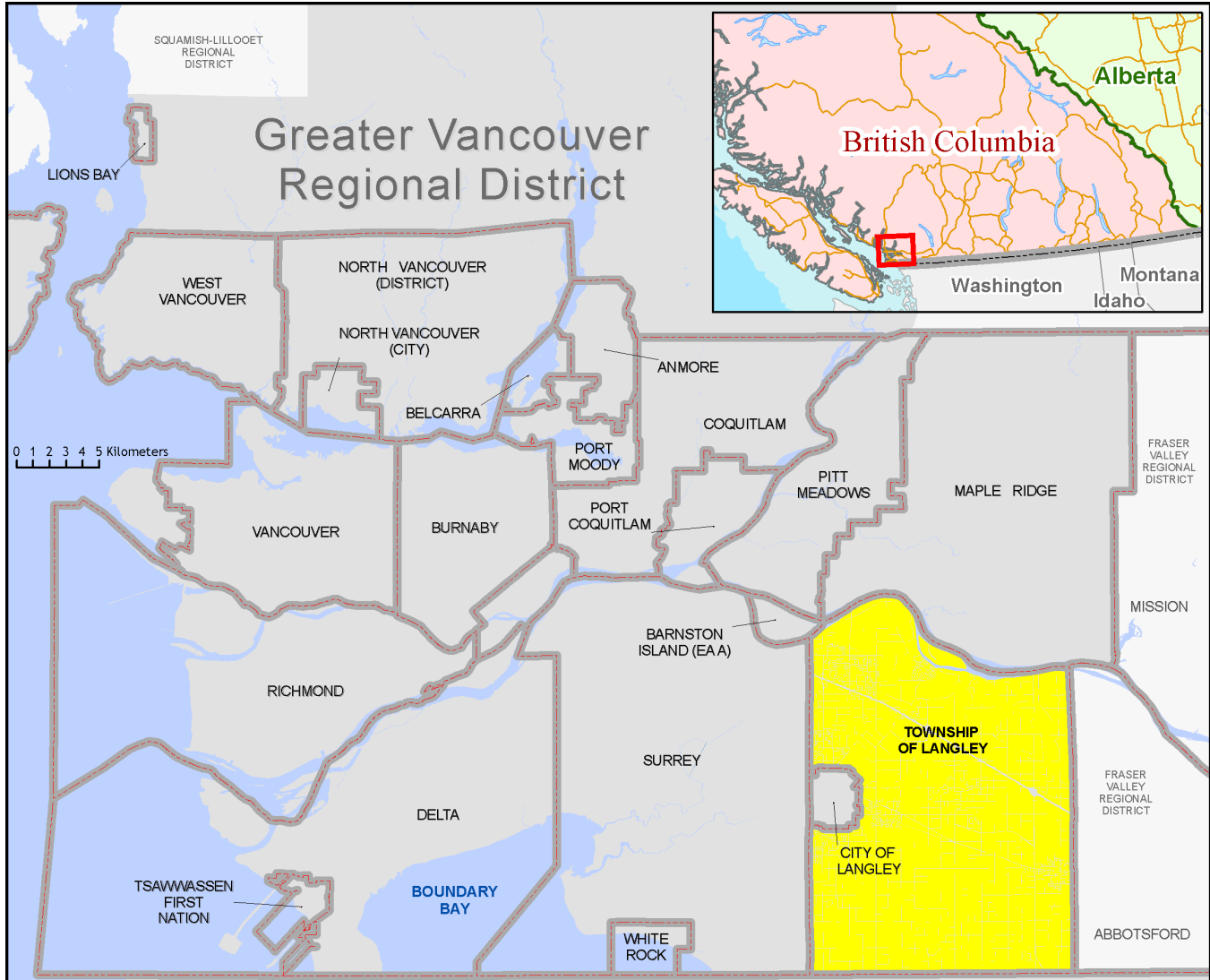
The LUI survey team identified irrigation systems on almost 20% of the land being farmed. These were on the more intensive crops such as berries, grapes, nurseries, and vegetables. As more farmland is converted from lower revenue forage crops to higher revenue horticulture crops, the proportion of farmland being irrigated will increase. A future challenge will be to determine the source for that irrigation water in light of Langley’s “Water Management Plan” and potential restrictions on water use.

The LUI is a collection of maps and numbers that together paint a picture of the current state of agriculture in the Township and identify areas of potential growth and change in the future. A large number of medium sized unfarmed lots provide the basic resource for potential growth of intensive horticulture and livestock production. As the growth occurs, there will be a loss of natural vegetation to agriculture production and an increased use of irrigation.

General Community Information

The Township of Langley (TOL) is located east of Vancouver in southwestern British Columbia. Township of Langley's total area (including water) is 31,765 hectares¹. The Township is bordered by Surrey to the west, the Fraser River and Maple Ridge to the north, Abbotsford to the east, and the U.S. border to the south. Township of Langley is part of the Greater Vancouver Regional District.

Figure 1. General location map



¹ Government of British Columbia; Ministry of Community, Sport & Cultural Development, Local Government Statistics
http://www.cscd.gov.bc.ca/lgd/infra/library/regional_stats11_summary.pdf

AGRICULTURAL LAND RESERVE

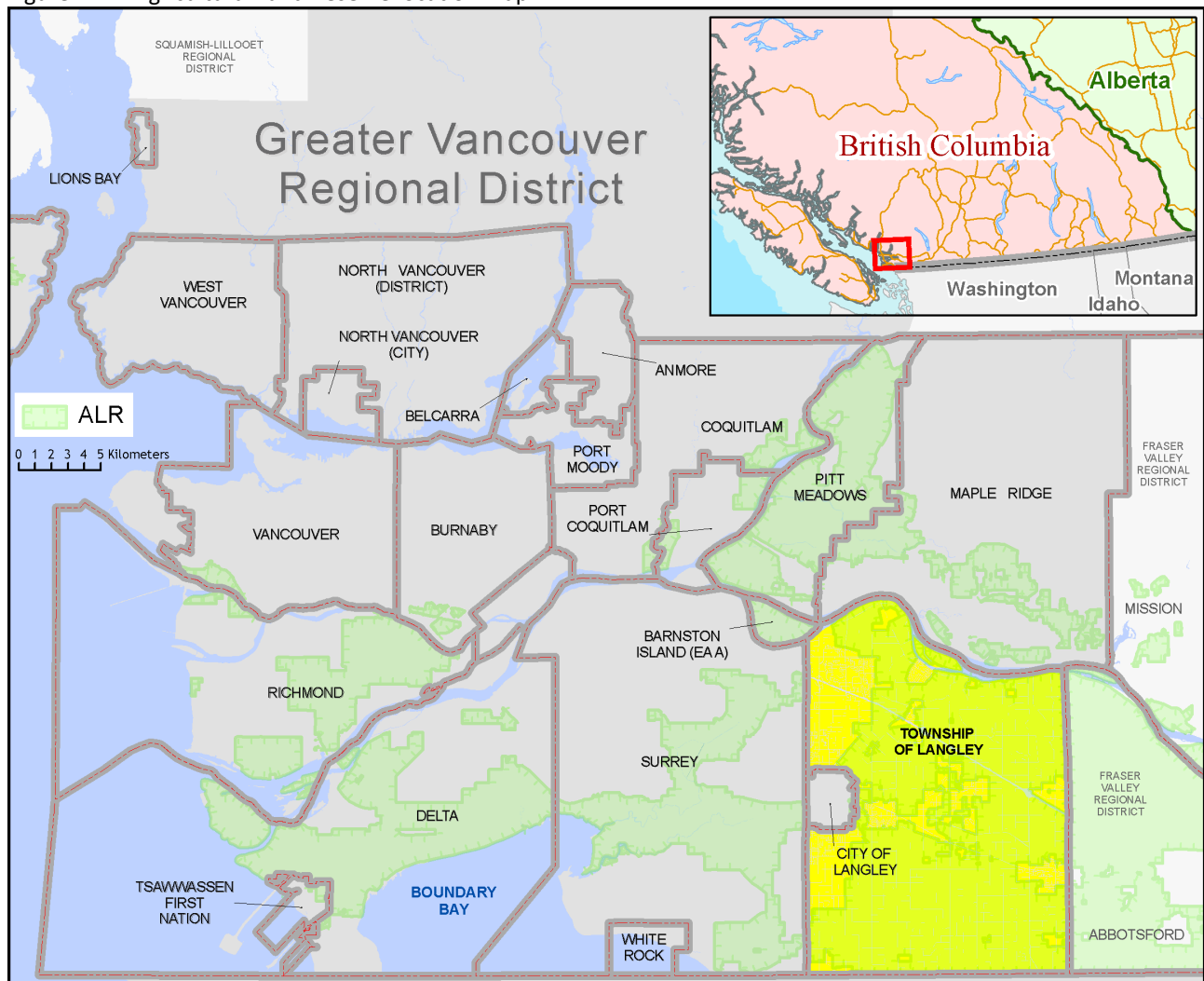
The Agricultural Land Reserve (ALR) is a provincial land use zone that was designated in 1973 in which agriculture is recognized as the priority use. Within the ALR, farming is encouraged and non-agricultural uses are controlled.

There are 60,554 hectares² of ALR land within the Greater Vancouver Regional District (shown in Figure 2); 23,406 hectares³ or over 38% is within Township of Langley.

The land area of Township of Langley is 30,031 hectares⁴. With 23,406 hectares³ in the ALR, 78% of the Township's land area is in the ALR. This area includes:

- 22,281 hectares in surveyed parcels
- 1,125 hectares outside surveyed parcels
 - 1,123 hectares of designated rights-of-way
 - 2 hectares of parcels less than 100 square meters

Figure 2. Agricultural Land Reserve location map



² Provincial Agricultural Land Commission (ALC) Annual Report 2009/10 & 2010/11 Pg 39. http://www.alc.gov.bc.ca/publications/Annual_Report_2009-10_and_2010-11.pdf.

³ Agricultural Land Commission, ALR mapping, Land and Resource Data Warehouse, 2010-01-31 (area calculated in GIS).

⁴ Calculated in GIS.

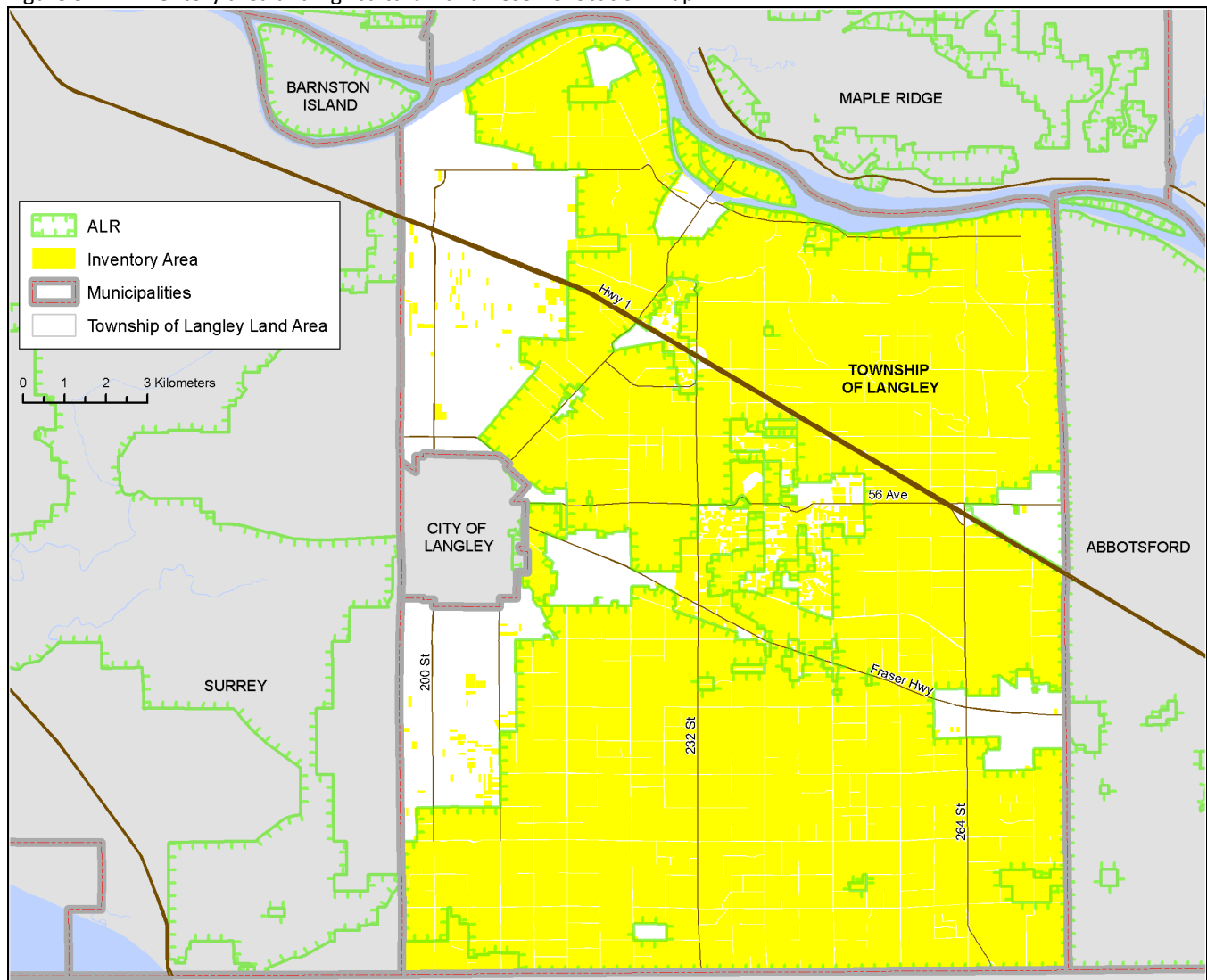
INVENTORY AREA

The total inventory area encompasses 6,188 parcels with a combined area of 23,911 hectares or almost 80% of the land area in Township of Langley. Included are all parcels:

- completely or partially within the Agricultural Land Reserve
- within Metro Vancouver's Regional Growth Strategy "Agriculture" designation
- within Metro Vancouver's Regional Growth Strategy "Rural" designation and greater than 1 acre
- classified by BC Assessment as having "Farm" status for property tax assessment

The amount of ALR land included in the inventory area is 22,281 hectares located on 4,861 parcels. This area is over 95% of the ALR within Township of Langley. The remaining 5% of the ALR was excluded from the inventory as it is in parcels less than 100 square metres or outside surveyed land parcels in designated rights-of-way.

Figure 3. Inventory area and Agricultural Land Reserve location map



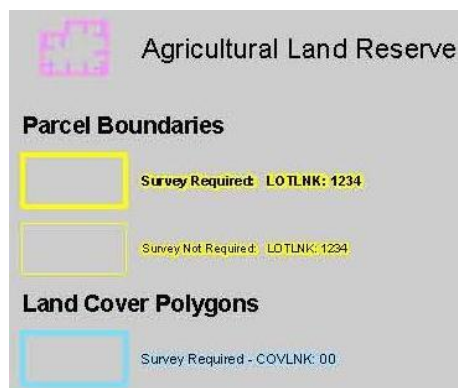
Agricultural Land Use Inventory

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 Township of Langley land use inventory was conducted in the summer of 2010 by Langley Environmental Partners Society (LEPS). 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. A technician entered the survey data into a database on a laptop computer.



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

- The legal parcel boundaries (cadastre)⁵
- Unique identifier for each legal parcel
- The preliminary land cover polygon boundaries (digitized prior to field survey using aerial photography)
- Unique identifier for each preliminary land cover polygon
- The boundary of the Agricultural Land Reserve (ALR)
- Base features such as streets, street names, watercourses and contours
- Aerial photography



⁵ Cadastre mapping (2010) was provided by the Township of Langley through the Integrated Cadastral Information Society and compiled by Metro Vancouver Regional District Staff.

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.

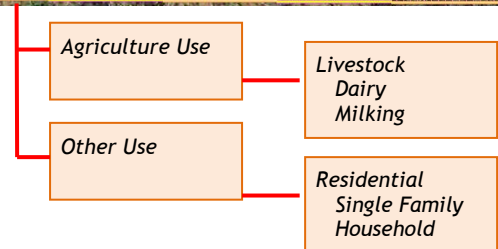
Once acquired through the survey, the data was brought into a Geographic Information System (GIS) to facilitate analysis and mapping. Digital data, in the form of a tabular database and GIS spatial layers (for maps), may be available with certain restrictions through a terms of use agreement.

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

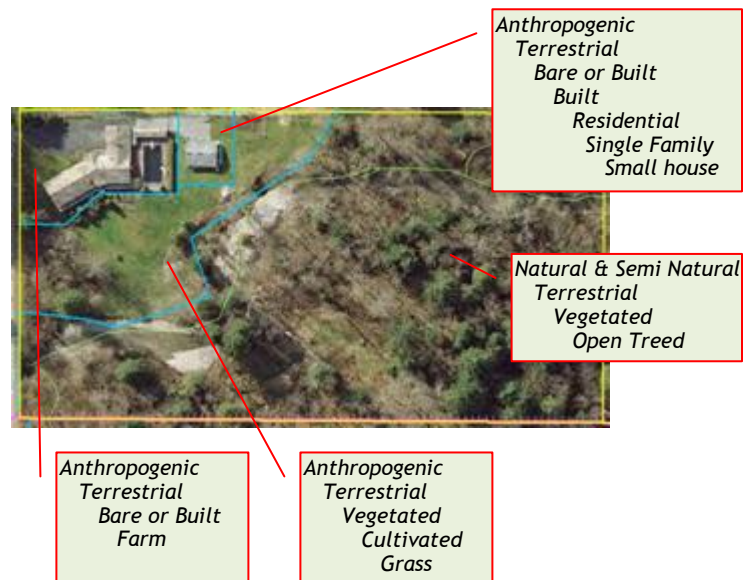
In addition, the availability of non-farm use properties for future farming was assessed based on the amount of potential land for farming on the property and the compatibility of existing non-farm use with future farming activities.



Land cover:

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

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



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

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

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

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

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

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

PRESENTATION OF THE DATA

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

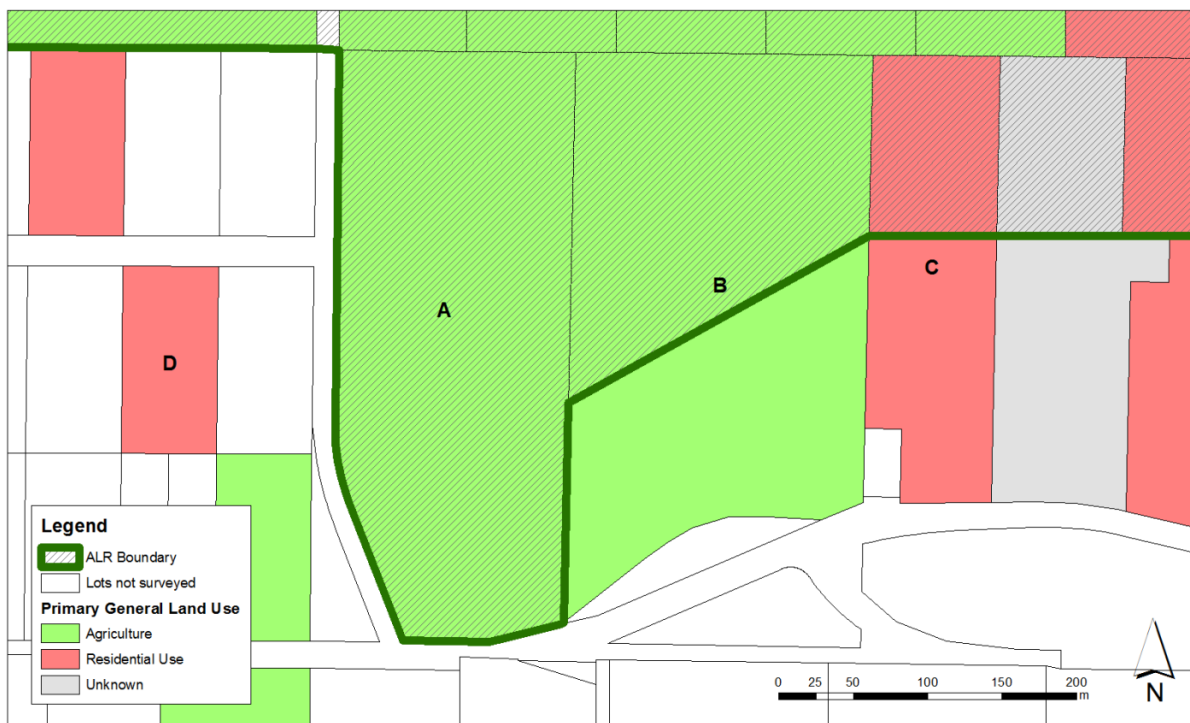
DETERMINATION OF PARCELS WITHIN THE ALR

Since much of the following analysis is parcel based, it is important to note that the ALR boundaries are not always coincident 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 wall 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 “Natural and Semi-natural” and not “Farmed” although these areas are usually extensions of more intensive farming areas.

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

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	8,354	36%	157	8,511	36%
	Farm infrastructure	816	3%	42	858	4%
	Greenhouses	124	< 1%	<1	125	< 1%
	Crop barns	19	< 1%	<1	19	< 1%
Inactively Farmed	Unused forage or pasture	401	2%	10	411	2%
	Unmaintained field crops	32	< 1%	<1	32	< 1%
	Unmaintained greenhouses	2	< 1%	<1	2	< 1%
	Unused greenhouses	<1	< 1%	-	<1	< 1%
	Unmaintained crop barns	2	< 1%	<1	2	< 1%
FARMED SUBTOTAL		9,751	42%	210	9,961	42%
Anthropogenic (not farmed)	Managed vegetation	1,418	6%	232	1,650	7%
	Non Built or Bare	145	< 1%	30	175	< 1%
	Residential footprint	907	4%	379	1,285	5%
	Settlement	397	2%	67	464	2%
	Transportation	170	< 1%	38	208	< 1%
	Utilities	37	< 1%	10	47	< 1%
	Built up - Other	77	< 1%	5	81	< 1%
	Waterbodies	133	< 1%	10	143	< 1%
SUBTOTAL		3,283	14%	771	4,053	17%
Natural and Semi-natural	Vegetated	8,613.54	37%	625	9,239	39%
	Wetlands	358.22	1%	15	373	2%
	Waterbodies	275.05	1%	10	285	1%
SUBTOTAL		9,247	39%	650	9,897	41%
TOTAL		22,281	95%	1,630	23,911	100%
Not surveyed	Rights-of-way	1,123	5%			
	Parcels < 100 m ²	2	< 1%			
SUBTOTAL		1,125	5%			
TOTAL		23,406	100%			

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

In Township of Langley, 9,961 hectares of land is in "Farmed" land cover although 448 of those hectares are "Inactively farmed" in unused forage or pasture, unmaintained field crops or unmaintained and unused greenhouses and crop barns.

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

Figure 5. Land cover and farmed area in the ALR

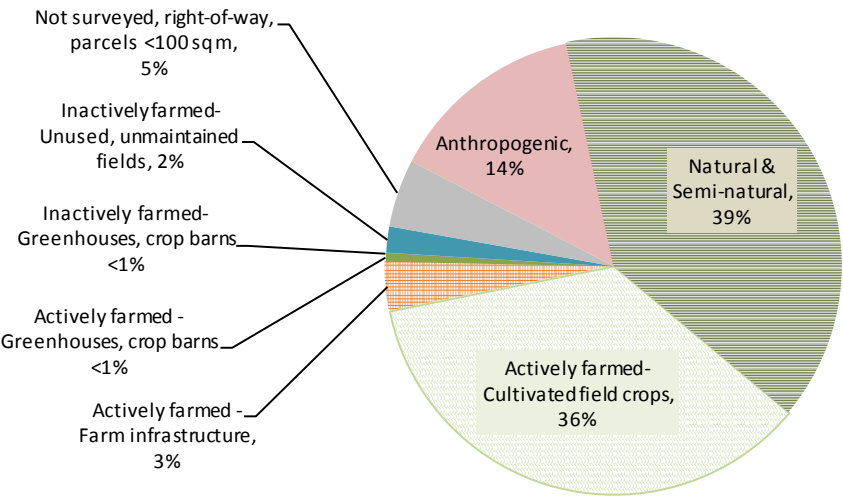


Figure 5 shows the proportions of the different land cover types across the ALR in Township of Langley (TOL).

Of TOL’s ALR land, 40% is “Actively Farmed” while 2% is in unused forage, unused pasture, unmaintained field crops, and unmaintained or unused greenhouses or crop barns (“Inactively Farmed”)

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.

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

Many parcels “Used for farming” or “Used for grazing” are also used for other purposes such as “Residential” or “Industrial”. This report does not attempt to determine which use is primary.

Table 2. 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		1,528	7 %	33	1,562	7 %	198	3 %	8
Used for farming - Mixed use	Residential	9,483	41 %	197	9,680	40 %	1,765	29 %	5
	Commercial & service	188	<1 %	1	189	<1 %	18	<1 %	10
	Protected area / park / reserve	186	<1 %	< 1	187	<1 %	11	<1 %	17
	First Nations- Band Settlement	109	<1 %	< 1	109	<1 %	1	<1 %	109
	Recreation & leisure	33	<1 %	4	37	<1 %	2	<1 %	19
	Institutional & community	26	<1 %	-	26	<1 %	3	<1 %	9
	Wildlife management	26	<1 %	-	26	<1 %	1	<1 %	26
	Utilities	5	<1 %	< 1	5	<1 %	1	<1 %	5
USED FOR FARMING SUBTOTAL		11,584	49 %	236	11,820	49 %	2,000	32 %	
Not used for farming	Residential	6,944	30 %	1,013	7,958	33 %	3,540	57 %	2
	No apparent use	1,583	7 %	188	1,770	7 %	342	6 %	5
	Protected area / park / reserve	850	4 %	27	877	4 %	87	1 %	10
	Military	362	2 %	< 1	362	2 %	1	<1 %	362
	Golf	357	2 %	< 1	357	1 %	12	<1 %	30
	Transportation	183	<1 %	14	197	<1 %	50	<1 %	4
	Commercial & service	148	<1 %	20	167	<1 %	41	<1 %	4
	Land in transition	59	<1 %	< 1	59	<1 %	3	<1 %	20
	Institutional & community	57	<1 %	17	73	<1 %	33	<1 %	2
	Recreation & leisure	51	<1 %	16	67	<1 %	8	<1 %	8
	First Nations	38	<1 %	< 1	38	<1 %	1	<1 %	38
	Industrial	35	<1 %	30	65	<1 %	31	<1 %	2
	Water management	21	<1 %	-	21	<1 %	19	<1 %	1
	Utilities	11	<1 %	38	48	<1 %	12	<1 %	4
	Communications	< 1	<1 %	13	14	<1 %	1	<1 %	14
	Gravel extraction	< 1	<1 %	17	17	<1 %	7	<1 %	2
NOT USED FOR FARMING SUBTOTAL		10,697	46 %	1,394	12,091	51 %	4,188	68 %	
TOTAL		22,281	95 %	1,630	23,911	100 %	6,188	100 %	
Not surveyed	Rights-of-way	1,123	5 %						
	Parcels < 100 m ²	2	<1 %						
SUBTOTAL		1,125	5 %						
TOTAL		23,406	100 %						

Table 2 shows that 11,584 hectares or 49% of TOL's ALR is on parcels "Used for farming".

Most "Used for farming" parcels are also used for other purposes with only 198 parcels or 7% of the ALR area used exclusively for farming.

Campbell Valley Regional Park contains 112 hectares of land that is mixed use "Protected area/ park/ reserve" and "Used for farming". The park contains forage fields and a riding arena. Aldergrove and Derby Reach regional parks also contain lands with the mixed use "Protected area/ park/ reserve" and "Used for farming"

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

Table 3. 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		1,298	6 %	62	<1 %	169	<1 %	1,528	7 %
Used for farming - mixed use	Residential	7,002	30 %	789	3 %	1,692	7 %	9,483	41 %
	Commercial & service	102	<1 %	28	<1 %	57	<1 %	188	<1 %
	Protected area / park / reserve	112	<1 %	3	<1 %	71	<1 %	186	<1 %
	First Nations- Band Settlement	19	<1 %	7	<1 %	84	<1 %	109	<1 %
	Recreation & leisure	19	<1 %	11	<1 %	3	<1 %	33	<1 %
	Institutional & community	20	<1 %	2	<1 %	4	<1 %	26	<1 %
	Wildlife management	13	<1 %	3	<1 %	10	<1 %	26	<1 %
	Utilities	4	<1 %	< 1	<1 %	< 1	<1 %	5	<1 %
SUBTOTAL		8,589	37 %	905	4 %	2,090	9 %	11,584	49 %
Not used for farming		1,161	5 %	2,379	10 %	7,157	31 %	10,697	46 %
SUBTOTAL		9,750	42 %	3,284	14 %	9,247	40 %	22,281	95 %
Not surveyed	Rights-of-way							1,123	5 %
	Parcels < 100 m²							2	<1 %
	SUBTOTAL							1,125	5 %
TOTAL ALR								23,406	100 %

* 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 Definition section of this report.

Table 3 combines land use and land cover on ALR land in Township of Langley. For example, parcels with the mixed use "Used for farming" and "Residential" have a total of 7,002 hectares in "Farmed" land cover, 789 hectares in "Anthropogenic" (not farmed) land cover, and 1,692 hectares in "Natural & Semi-natural" land cover.

Although 11,584 hectares or 49% of TOL's ALR is on parcels "Used for farming" (refer to Table 2), only 9,750 hectares or 42% of the ALR is actually in "Farmed" land cover as many "Used for farming" parcels are also used for other purposes. In fact, the majority of the "Farmed" land cover is on parcels also used for "Residential" purposes.

3. Availability of Land for Farming

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

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

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

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

In Township of Langley, properties in the ALR and “Used for farming” have an average assessed value of \$95,759 per hectare while properties in the ALR but unavailable for farming have an average assessed value of \$1,030,085 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 very small size are considered to have limited potential for farming. For this analysis, it is assumed that removing built structures and fill piles, filling in water bodies or remediating slopes to create land with potential for farming would likely not occur.

⁶ In BC, the regulated marketing system requires that over 95% of our milk, eggs, chicken and turkey be produced in BC. The need to produce these products increases in direct proportion to the population growth.

Table 4. 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	8,354	36 %	157	8,511	36 %
	Farm infrastructure	816	3 %	42	858	4 %
	Greenhouses	124	<1 %	< 1	125	<1 %
	Crop barns	19	<1 %	< 1	19	<1 %
ACTIVELY FARMED		9,314	40 %	199	9,513	40 %
Anthropogenic areas supporting farming	Residential footprint	358	2 %	25	383	2 %
	Built up - Other	139	<1 %	3	142	<1 %
	Artificial Waterbodies	84	<1 %	< 1	84	<1 %
	Transportation	17	<1 %	1	18	<1 %
SUPPORTING FARMING		599	2 %	29	627	3 %
Unavailable for farming due to existing land use	Protected area / park / reserve	756	3 %	17	773	3 %
	Military	362	2 %	< 1	362	2 %
	Golf	357	2 %	< 1	357	1 %
	Residential	151	<1 %	283	434	2 %
	Transportation	129	<1 %	12	141	<1 %
	Land in transition	57	<1 %	< 1	57	<1 %
	Commercial & service	48	<1 %	18	65	<1 %
	Recreation & leisure	32	<1 %	5	37	<1 %
	Institutional & community	23	<1 %	11	34	<1 %
	Industrial	13	<1 %	27	40	<1 %
	Water management	9	<1 %	< 1	9	<1 %
	Utilities	2	<1 %	17	19	<1 %
Unavailable for farming due to existing land cover	Wetlands & waterbodies	543	2 %	30	573	2 %
	Residential footprint	435	2 %	127	562	2 %
	Built up - Other	280	1 %	25	305	1 %
	Transportation	35	<1 %	22	57	<1 %
	Utilities	10	<1 %	7	17	<1 %
UNAVAILABLE FOR FARMING		3,242	14 %	599	3,841	16 %
Site limitations	Physical limitation (drainage, slope, soils)	965	4 %	124	1,089	5 %
	Operational	158	<1 %	59	217	<1 %
LIMITED POTENTIAL FOR FARMING		1,123	5 %	182	1,306	5 %
Available & with potential for farming	Natural & Semi-natural - Vegetation	6,541	28 %	430	6,972	29 %
	Anthropogenic - Managed vegetation	927	4 %	163	1,090	5 %
	Unused forage or pasture	397	2 %	10	407	2 %
	Anthropogenic - Non Built or Bare	101	<1 %	17	118	<1 %
	Unmaintained field crops	32	<1 %	< 1	32	<1 %
	Unused/unmaintained greenhouses	3	<1 %	< 1	3	<1 %
	Unmaintained crop barns	2	<1 %	< 1	2	<1 %
AVAILABLE & WITH POTENTIAL FOR FARMING		8,003	34 %	621	8,624	36 %
TOTAL		22,281	95 %	1,630	23,911	100 %
Not surveyed	Rights-of-way	1,123	5 %			
	Parcel areas < 100 sq m	2	<1 %			
SUBTOTAL		1,125	5 %			
TOTAL		23,406	100 %			

Table 4 shows that 8,624 hectares or 36% of the inventory area is not farmed, but is available for farming, and is not limited by existing land cover, land use, or other site limitations. Almost all of this is ALR land, with only 621 hectares outside.

Refer to Map B5 in Appendix B for more information.

Figure 6. Availability and potential of ALR lands for farming

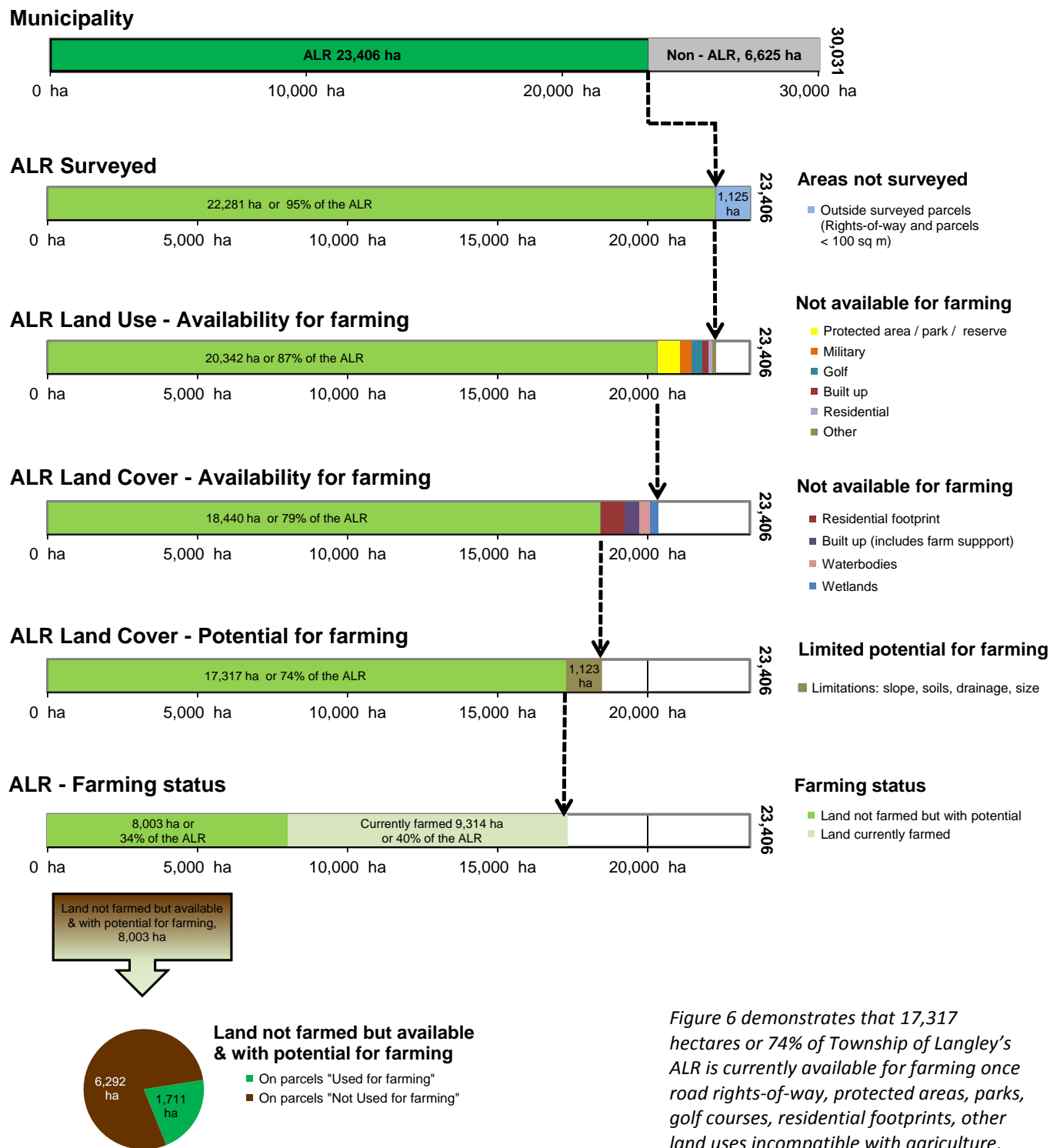


Figure 6 demonstrates that 17,317 hectares or 74% of Township of Langley's ALR is currently available for farming once road rights-of-way, protected areas, parks, golf courses, residential footprints, other land uses incompatible with agriculture, and physical limitations are taken into account.

Of those 17,317 hectares, 9,314 hectares are actively farmed and 8,003 hectares are available and have potential for farming.

Refer to Map B6 in Appendix B for more

CHARACTERISTICS OF NOT FARMED BUT AVAILABLE ALR LANDS

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

On Parcels “Used for Farming”

Table 5. 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	976	1,411	33	1,444	4,769	56	4,825	15 %
Used for farming only	72	135	4	139	503	6	508	1 %
First Nations- Band Settlement	1	84	< 1	84	19	< 1	19	<1 %
Commercial & service	15	51	< 1	51	97	< 1	97	<1 %
Protected area / park / reserve	8	12	< 1	13	94	< 1	94	<1 %
Wildlife management	1	9	< 1	9	13	< 1	13	<1 %
Recreation & leisure	1	5	< 1	5	19	< 1	19	<1 %
Institutional & community	2	4	< 1	4	18	< 1	18	<1 %
TOTAL	1,076	1,711	38	1,749	5,532	62	5,594	18 %

Table 5 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 7. Land cover available for farming but not farmed on ALR parcels “Used for farming”

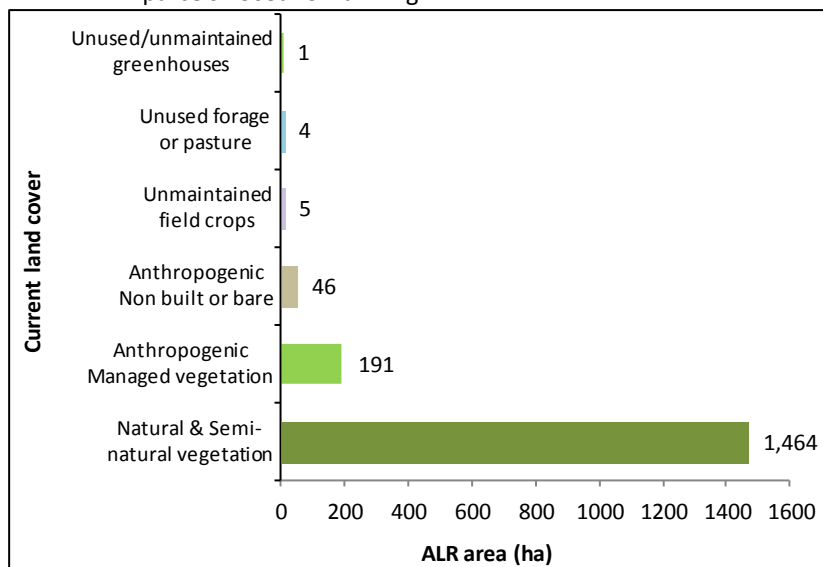


Figure 7 indicates that clearing land covered with “Natural and Semi-natural” vegetation would offer the greatest gains in farmed land on parcels that are already “Used for Farming”.

“Anthropogenic managed vegetation” mainly consists of landscaping and lawns surrounding residential uses. Converting this to agricultural use may not be supported by the landowners.

On Parcels “Not Used for Farming”

Table 6. 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	2322	4,682	389	5,071	50 %
	No apparent use	257	1,353	125	1,478	15 %
	Protected area / park / reserve	11	75	9	84	<1 %
	Commercial & service	19	57	< 1	58	<1 %
	First Nations	1	37	< 1	37	<1 %
	Transportation	3	29	< 1	29	<1 %
	Institutional & community	11	25	3	28	<1 %
	Recreation & leisure	3	15	10	24	<1 %
	Industrial	7	9	2	11	<1 %
	Utilities	4	6	15	21	<1 %
	Water management	1	2	-	2	<1 %
	Land in transition	1	1	< 1	1	<1 %
	Communications	1	< 1	13	14	<1 %
	Gravel extraction	7	< 1	14	14	<1 %
TOTAL		2,648	6,292	583	6,875	68 %

Table 6 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 8. Land cover available for farming but not farmed on ALR parcels “Not used for farming”

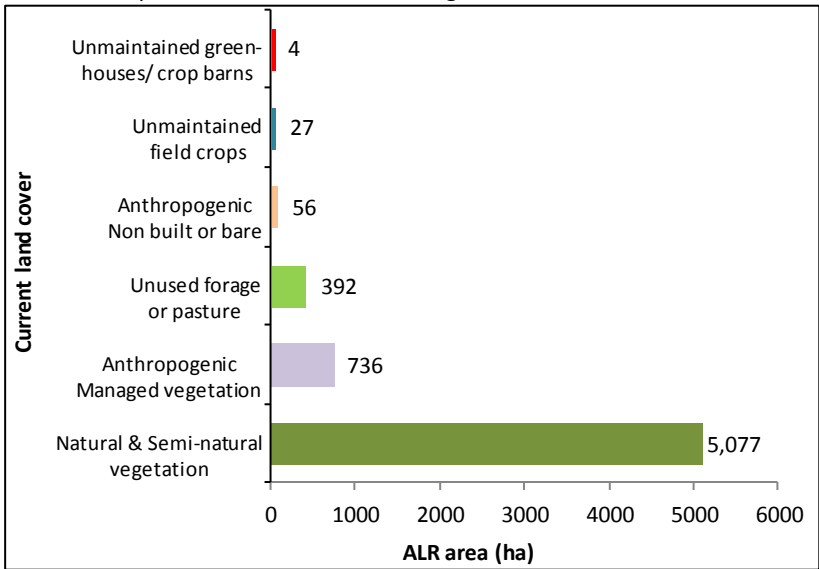


Figure 8 indicates that clearing land covered with “Natural and Semi-natural vegetation” would provide the greatest gains in farmed land on parcels currently “Not used for farming”. Bringing unused forage or pasture back into production would also increase the amount of farmed land.

Figure 9. Size of areas available for farming but not farmed on parcels “Not used for farming”

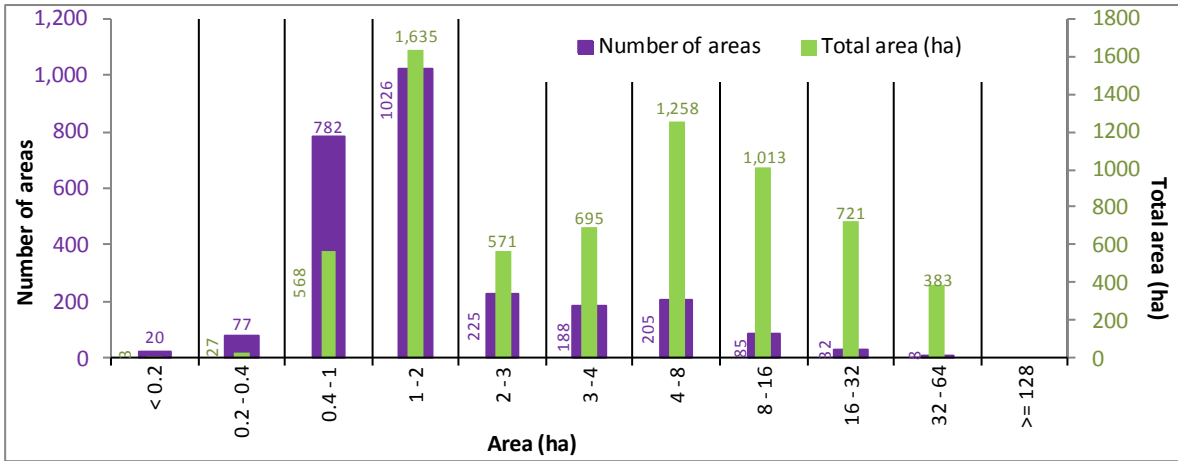


Figure 9 demonstrates that that majority of the areas available for farming (1929 of 2648 or 73%) are less than 2 hectares in size. These small areas have fewer options available to efficiently farm the land. Larger areas provide a wider range of options to bring the land into farming production. The areas greater than 4 hectares and available for farming in Township of Langley, total 3,375 hectares or 49% of the 6,875 hectares available.

4. Farming Activities

CULTIVATED FIELD CROPS

Cultivated field crops are captured in a geographical information system at the field or land cover polygon level by crop type (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 in the survey season. Excluded are crops grown in crop cover structures such as greenhouses or mushroom barns.

Cultivated field crops in Township of Langley (TOL) are described by ten crop groupings:

- **Forage & pasture:** grass, mixed grass/ legumes, forage corn
- **Vines & berries:** blackberries, blueberries, cranberries, raspberries, strawberries, grapes
- **Nursery & tree plantations:** ornamentals & shrubs, cedar hedging, Christmas trees, fibre/pulp/veneer trees
- **Vegetables:** cole, mixed, sweet corn, pumpkins, cucurbits
- **Other:** bare cultivated land, crop transition, fallow land
- **Turf**
- **Nut trees**
- **Tree fruits**
- **Oats**
- **Floriculture**

Table 7. Main field crop types by area

Type	ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
	In ALR (ha)	% of ALR			
Forage & pasture	6,680	29%	142	6,822	76%
Vines & berries	1,374	6%	3	1,378	15%
Nursery & tree plantations	453	2%	14	467	5%
Vegetables	131	< 1%	4	135	2%
Other*	55	< 1%	< 1	55	< 1%
Turf	39	< 1%	< 1	39	< 1%
Nut trees	29	< 1%	2	31	< 1%
Tree fruits	21	< 1%	2	23	< 1%
Oats	4	< 1%	-	4	< 1%
Floriculture	1	< 1%	< 1	1	< 1%
TOTAL	8,787	38%	167	8,954	100%

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

Table 7 shows the 10 main field crop types produced on the 8,954 hectares of cultivated land in Township of Langley (TOL).

“Forage & pasture” is the most common type of cultivated field crop accounting for 76% of all cultivated land and 29% of TOL’s ALR. “Vines & berries” are the second most common type of cultivated crop, accounting for 15% of all cultivated land and 6% of TOL’s ALR.

Refer to Map B7 in Appendix B for more information.

Figure 10. Main field crop types by percentage

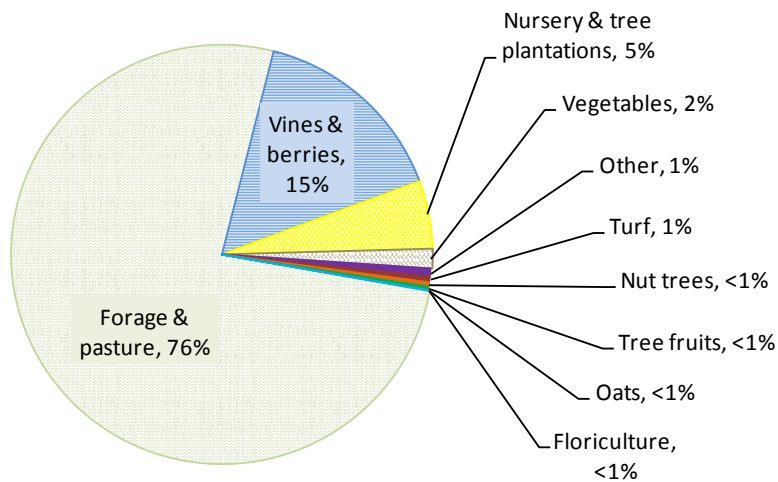


Figure 10 shows the proportion of main field crop types across all cultivated land in Township of Langley.

“Forage & pasture” combined with “Vines & berries” comprise 91% of all cultivated land in Township of Langley.

Figure 11. All cultivated crop fields by size

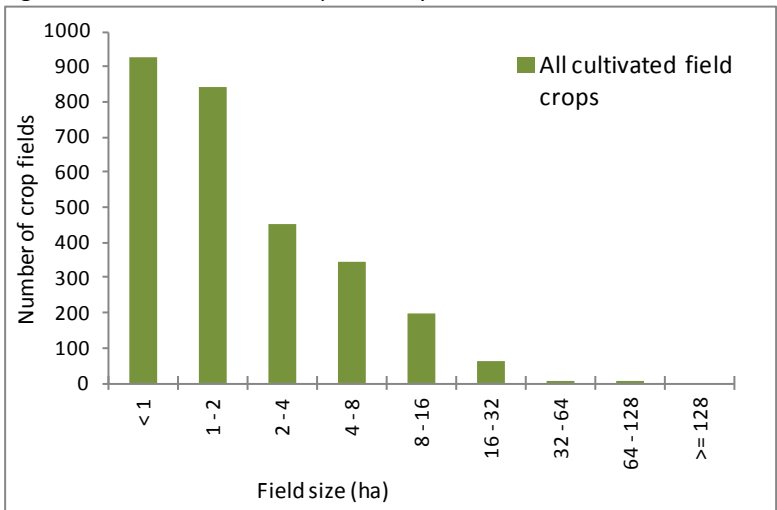


Figure 11 illustrates the number and size distribution of fields used for cultivated field crops.

In Township of Langley, cultivated fields are most likely to be less than 2 hectares in size.

There are 2,833 individual crop fields with an average area of 3 hectares and median area of 1 hectare.

Cultivated crops occur on 2,692 parcels with an average parcel size of 6 hectares and a median size of 3 hectares.

Refer to Table A1 in Appendix A for more information.

Figure 12. Forage & pasture, vines & berries, nursery & tree plantations by size

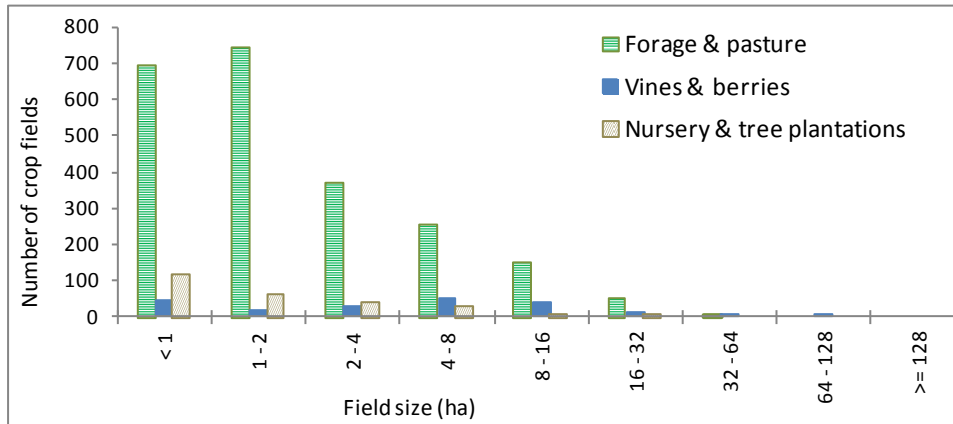


Figure 12 compares the top three main crop types by field sizes.

“Forage & pasture” fields are the most numerous in all size categories less than 64 hectares. There is one “Vine & berry” crop (cranberry) that is 79 hectares in size.

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 several 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 8. Forage & pasture crops by area

Forage and pasture crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Forage ^	Grass	5	< 1%	< 1	5	< 1%
Forage ^	Mixed grass / legume	81	< 1%	2	82	< 1%
Forage (managed)	Grass	533	2%	7	540	6%
Forage (managed)	Mixed grass / legume	1,606	7%	16	1,622	18%
Forage (managed)	Forage corn	242	1%	3	245	3%
Forage (unmanaged)	Grass	146	< 1%	6	152	2%
Forage (unmanaged)	Mixed grass / legume	651	3%	16	667	7%
Forage (intensively managed)	Mixed grass / legume	4	< 1%	< 1	4	< 1%
Subtotal		3,267	14%	50	3,318	37%
Pasture ^	Grass	1	< 1%	3	4	< 1%
Pasture ^	Mixed grass / legume	48	< 1%	6	55	< 1%
Pasture (managed)	Grass	53	< 1%	1	54	< 1%
Pasture (managed)	Mixed grass / legume	566	2%	11	577	6%
Pasture (unmanaged)	Grass	108	< 1%	6	114	1%
Pasture (unmanaged)	Mixed grass / legume	1,425	6%	43	1,468	16%
Subtotal		2,200	9%	71	2,271	25%
Forage & pasture (managed)	Mixed grass / legume	777	3%	10	788	9%
Forage & pasture (managed)	Grass	30	< 1%	< 1	30	< 1%
Subtotal		807	3%	10	818	9%
Unused	Grass	74	< 1%	1	75	< 1%
Unused	Mixed grass / legume	327	1%	9	336	4%
Unmaintained	Mixed grass / legume	4	< 1%	0	4	< 1%
Subtotal		405	2%	10	415	5%
TOTAL		6,680	29%	142	6,822	76%

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

Table 8 shows that there is more forage than pasture in Township of Langley. Mixed grass / legume is the main forage and pasture crop type.

Refer to Map B8 in Appendix B for more information.

Figure 13. Forage & pasture fields by size

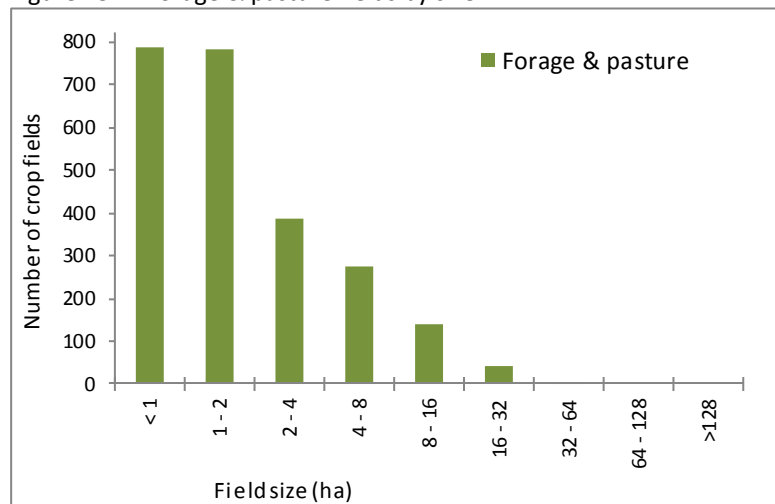


Figure 13 shows that “Forage & pasture” fields are most likely to be less than 2 hectares.

In Township of Langley, there are 2,420 individual “Forage & pasture” fields with an average area of 3 hectares and median area of 1 hectare.

The average parcel size where “Forage & pasture” occurs is 5 hectares.

Refer to Table A2 in Appendix A for more information.

Figure 14. Forage & pasture fields by size and type

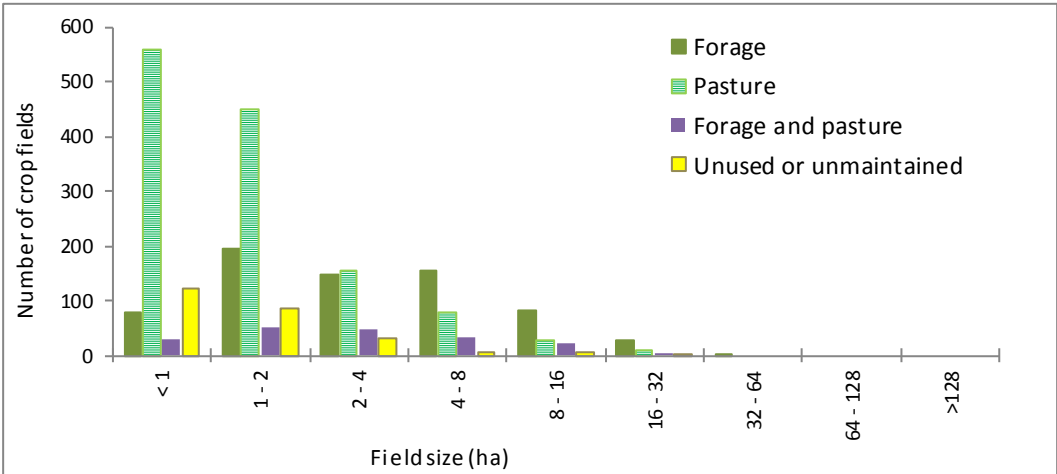


Figure 14 illustrates the variation in field sizes between forage, pasture, and unused or unmaintained fields.

Forage fields have an average area of 5 hectares, a median area of 3 hectares, and an average parcel size of 9 hectares. In comparison, pasture fields have an average area of 2 hectares, a median area of 1 hectare, and an average parcel size of 4 hectares.

Forage fields are generally larger than pasture fields mainly due to harvesting equipment requirements and fencing costs.

Refer to Table A2 in Appendix A for more information.

Vine & 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 9. Vine & berry crops by area

Vine & berry crops		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Blueberries	Mature	588	3%	2	590	7%
Blueberries	Young	258	1%	< 1	258	3%
Blueberries	Unmaintained	23	< 1%	< 1	23	< 1%
Subtotal		870	4%	2	872	10%
Cranberries	Mature	228	< 1%	< 1	228	3%
Cranberries	Young	27	< 1%	< 1	27	< 1%
Subtotal		255	1%	< 1	255	3%
Raspberries	Mature	130	< 1%	< 1	130	1%
Raspberries	Young	11	< 1%	< 1	11	< 1%
Subtotal		141	< 1%	< 1	141	2%
Strawberries	Mature	30	< 1%	< 1	30	< 1%
Strawberries	Young	8	< 1%	< 1	8	< 1%
Subtotal		37	< 1%	< 1	37	< 1%
Berries - unknown type	Mature	34	< 1%	< 1	34	< 1%
Subtotal		34	< 1%	< 1	34	< 1%
Grapes		36	< 1%	< 1	37	< 1%
Subtotal		36	< 1%	< 1	37	< 1%
Blackberries	Mature	1	< 1%	< 1	1	< 1%
Subtotal		1	< 1%	< 1	1	< 1%
TOTAL		1,374	6%	3	1,378	15%

Table 9 shows that Township of Langley has a total of 1,378 hectares of vine and berry crops, of which nearly two-thirds (872 hectares) are blueberries.

Refer to Map B9 in Appendix B for more information.

Figure 15. Vine & berry fields by size

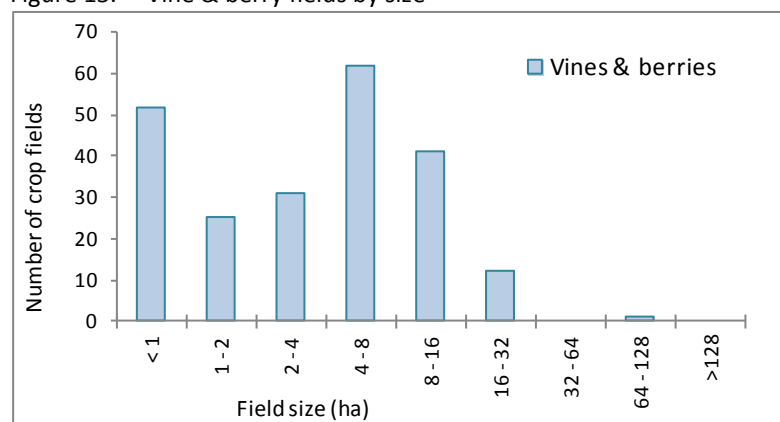


Figure 15 shows that vine and berry fields occur on a variety of field sizes.

In Township of Langley, there are 224 individual vine and berry fields with an average area of 6 hectares and median area of 4 hectares.

The average parcel size where vine and berry crops occur is 10 hectares.

Refer to Table A3 in Appendix A for more information.

Figure 16. Blueberry, cranberry, and raspberry fields by size

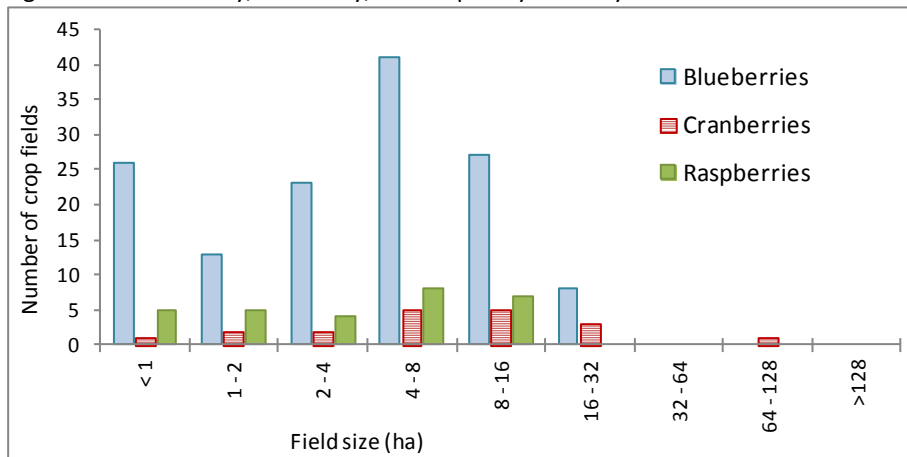


Figure 16 shows that blueberry, cranberry, and raspberry fields occur in all field size categories less than 16 hectares.

There are 138 blueberry fields with an average crop area of 6 hectares, median area of 5 hectares, and average parcel size of 10 hectares. By comparison, there are 19 cranberry fields with an average crop area of 13 hectares, median area of 7 hectares and average parcel size of 16 hectares.

Refer to Table A3 in Appendix A for more information.

Nursery & Tree Plantations

Table 10. Nursery & tree plantations by area

Nursery and tree plantations		ALR		Outside ALR (ha)	Total area (ha)	% of cultivated land
		In ALR (ha)	% of ALR			
Nursery	Ornamentals and shrubs	165	< 1%	3	169	2%
	Nursery - unknown type	56	< 1%	3	59	< 1%
	Cedar hedging	43	< 1%	1	45	< 1%
Nursery total		265	1	8	272	3
Tree plantation	Christmas trees	82	< 1%	3	85	< 1%
	Tree plantation -unknown type	61	< 1%	2	63	< 1%
	Fibre/pulp/veneer trees	45	< 1%	2	47	< 1%
Tree plantation total		188	< 1	6	195	2
TOTAL		453	2%	14	467	5%

Table 10 shows that Township of Langley has a total of 467 hectares in nursery and tree plantations.

Refer to Map B10 in Appendix B for more information.

Figure 17. Nursery & tree plantations by size

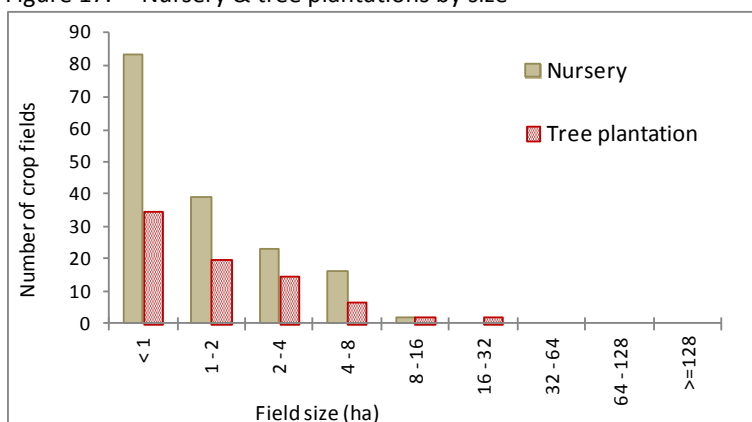


Figure 17 shows that nursery crops are more numerous than tree plantations.

There are 163 nursery activities with an average area of 2 hectares, a median area of 1 hectare, and an average parcel size of 5 hectares.

In comparison, there are 81 tree plantations with an average area of 2 hectares, a median area of 1 hectare, and average parcel size of 6 hectares.

Refer to Table A4 in Appendix A for more information

Top 20 Individual Crops

Table 11. 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)	2,381	10%	26	2,408	27%
Pasture (unmanaged)	1,532	7%	49	1,582	18%
Blueberries	846	4%	2	848	9%
Forage (unmanaged)	797	3%	22	819	9%
Forage & pasture (managed)	807	3%	10	818	9%
Pasture (managed)	618	3%	13	631	7%
Unused forage/pasture	401	2%	10	411	5%
Cranberries	255	1%	< 1	255	3%
Ornamentals and shrubs	165	< 1%	3	168	2%
Raspberries	141	< 1%	< 1	141	2%
Forage^	86	< 1%	2	87	< 1%
Christmas trees	82	< 1%	3	85	< 1%
Tree plantation	61	< 1%	2	63	< 1%
Nursery	56	< 1%	3	59	< 1%
Pasture^	49	< 1%	9	58	< 1%
Fibre/pulp/veneer trees	45	< 1%	2	47	< 1%
Cedar hedging	43	< 1%	1	44	< 1%
Cole crops	42	< 1%	< 1	42	< 1%
Crop transition	42	< 1%	< 1	42	< 1%
Turf	39	< 1%	< 1	39	< 1%
TOTAL	8,489	36%	158	8,648	97%

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

Table 11 shows the 20 individual crops that account for 97% of the cultivated land in Township of Langley.

Figure 18. Top 20 crop types by area

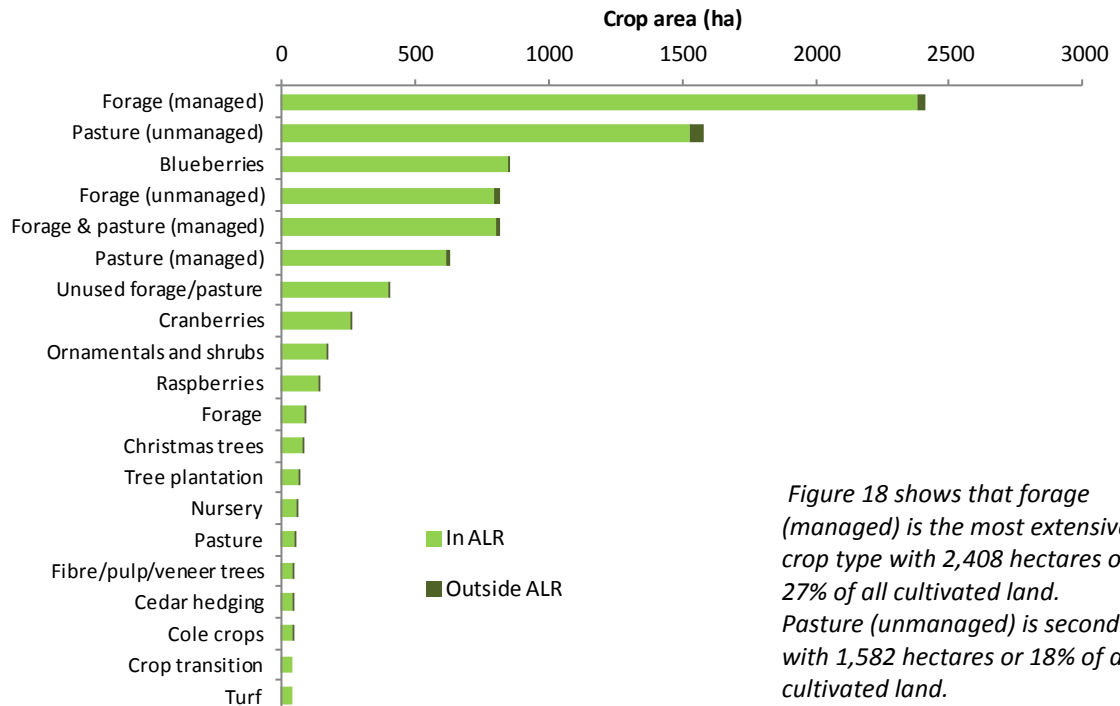


Figure 18 shows that forage (managed) is the most extensive crop type with 2,408 hectares or 27% of all cultivated land. Pasture (unmanaged) is second with 1,582 hectares or 18% of all cultivated land.

GREENHOUSES & CROP BARNs

Greenhouses are structures covered with translucent material and of sufficient size for a person to work inside⁷. 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.

Unused greenhouses are in good structural condition, but have not been used for agricultural purposes this season.

Table 12. Greenhouses & crop barns by area⁸

Greenhouses & crop barns		ALR		Outside ALR (ha)	Total area (ha)	% of greenhouse & crop barn area
		In ALR (ha)	% of ALR			
Crop barn	Mushroom	19	< 1%	< 1	19	13%
Crop barn	Mushroom - Unmaintained	2	< 1%	< 1	2	1%
Subtotal		21	< 1%	< 1	21	14%
Glass greenhouse	Vegetables	33	< 1%	< 1	33	22%
Glass greenhouse	Mixed	18	< 1%	< 1	18	12%
Glass greenhouse	Floriculture	12	< 1%	< 1	12	8%
Glass greenhouse	Nursery	10	< 1%	< 1	10	7%
Glass greenhouse	Unknown type	9	< 1%	< 1	9	6%
Glass greenhouse	Unused	< 1	< 1%	-	< 1	< 1%
Glass greenhouse	Unmaintained	< 1	< 1%	< 1	< 1	< 1%
Subtotal		83	< 1%	< 1	83	56%
Poly greenhouse	Nursery	25	< 1%	< 1	25	17%
Poly greenhouse	Unknown type	6	< 1%	< 1	7	4%
Poly greenhouse	Floriculture	5	< 1%	< 1	5	4%
Poly greenhouse	Mixed	4	< 1%	< 1	4	3%
Poly greenhouse	Vegetables	2	< 1%	< 1	2	1%
Poly greenhouse	Unused	< 1	< 1%	-	< 1	< 1%
Poly greenhouse	Unmaintained	1	< 1%	< 1	1	< 1%
Subtotal		44	< 1%	< 1	43	29%
TOTAL		148	< 1%	< 1	148	99%

Table 12 shows that glass greenhouses, poly greenhouses, and crop barns cover 148 hectares of ALR land in Township of Langley.

Glass greenhouses cover 83 hectares, poly greenhouses cover 44 hectares, and crop barns cover 21 hectares of ALR land.

Refer to Map B11 in Appendix B for more information.

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

⁸ 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.

Figure 19. Distribution of greenhouses and crop barns by building type

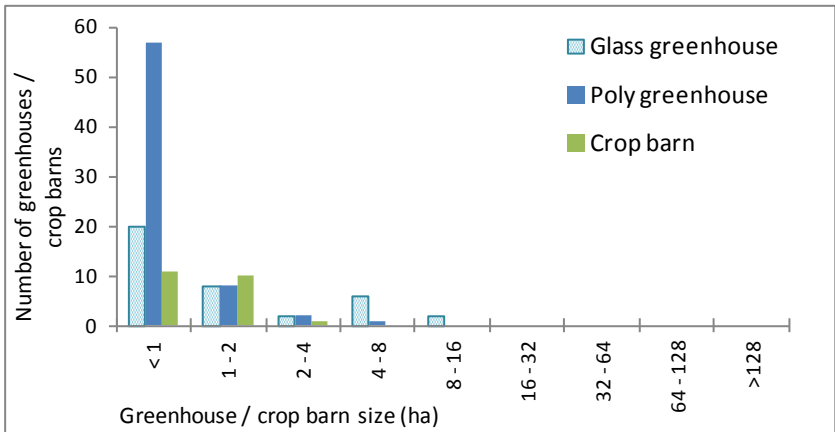
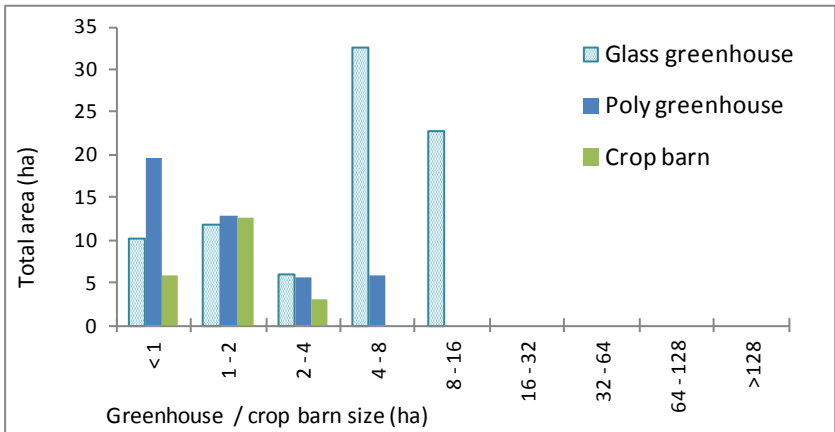


Figure 20 shows that there are significantly more poly than glass greenhouses in Township of Langley.

The majority of poly greenhouses are less than 1 hectare in size.

Refer to Table A5 in Appendix A for more information.

Figure 20. Distribution of greenhouse and crop barn total area by building type



Although though there are fewer glass than poly greenhouses in Township of Langley, Figure 20 shows glass greenhouses comprise a larger total area.

Refer to Table A6 in Appendix A for more information.

Figure 21. Distribution of greenhouses and crop barns by crop type

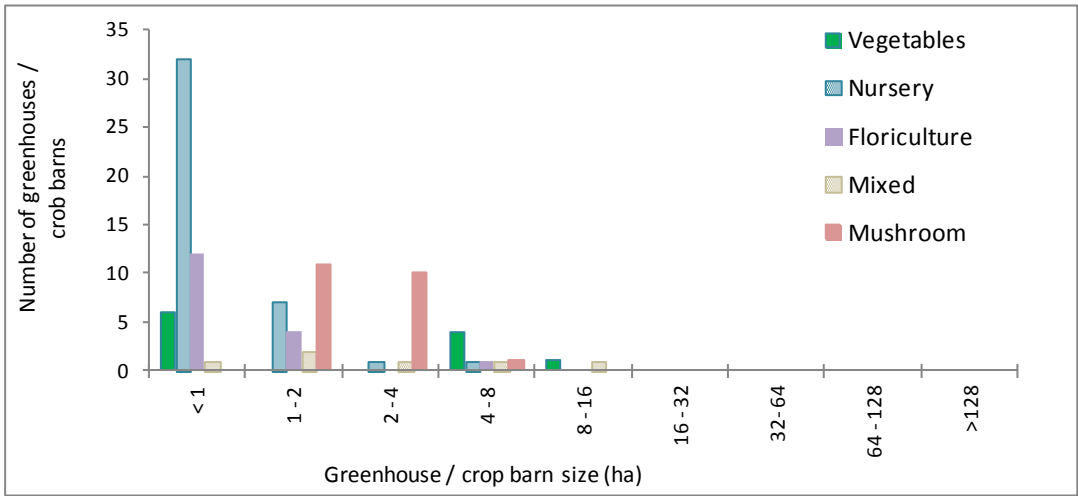


Figure 20 shows that there are two greenhouses larger than 8 hectares in Township of Langley. One contains vegetables and the other contains mixed crops.

Nursery comprises the most common greenhouse crop type.

Refer to Table A6 in Appendix A for more information.

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, the top 20 cultivated field crops are evaluated for percent of crop area under irrigation.

Table 13. Main crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)			Total area irrigated (ha)	% of crop area irrigated
	Sprinkler	Giant gun	Trickle		
Vines & berries	368	75	826	1,269	92%
Nursery & tree plantations	164	21	13	198	42%
Forage & pasture	140	53	-	194	3%
Vegetables	58	32	-	90	67%
Turf	39	-	-	39	100%
Tree fruits	7	-	-	7	30%
Other*	2	-	-	2	3%
Floriculture	< 1	-	< 1	< 1	77%
TOTAL FIELD CROP AREA IRRIGATED	778	180	839	1,798	20%
Crop Barns	Trickle irrigation			19	100%
Greenhouses	Mix of flood and trickle irrigation			125	100%

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

Table 13 illustrates that nearly all vine and berry crops and all turf crop are irrigated. Trickle systems are reported primarily on vine and berry crops while sprinkler systems are found on all main irrigated crop types in Township of Langley.

Refer to Map B12 in Appendix B for more information.

Figure 22. Irrigation systems by percentage of cultivated land

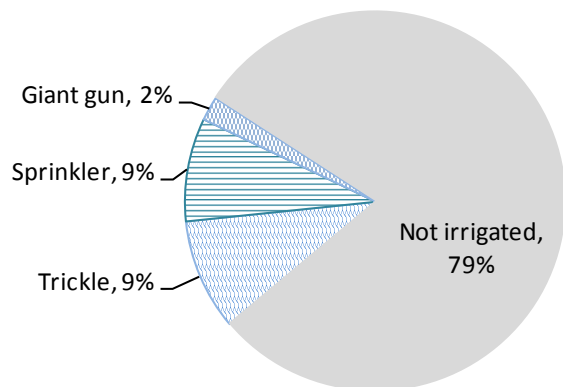


Figure 22 shows that 79% of cultivated land in Township of Langley (TOL) is not irrigated. Trickle and sprinkler irrigation are the most widely used systems in TOL with each occurring on 9% of the cultivated land.

Table 14. Top 20 field crop types and irrigation

Cultivated field crop	Irrigation system in use (ha)			Total area irrigated (ha)	% crop area irrigated
	Sprinkler	Trickle	Giant gun		
Forage (managed)	102	-	33	135	6%
Pasture (unmanaged)	4	-	-	4	< 1%
Blueberries	73	715	7	795	94%
Forage (unmanaged)	3	-	-	3	< 1%
Forage & pasture (managed)	4	-	20	24	3%
Pasture (managed)	19	-	< 1	20	3%
Unused forage/pasture	6	-	-	6	2%
Cranberries	255	-	-	255	100%
Ornamentals and shrubs	112	11	-	123	73%
Raspberries	16	74	34	124	88%
Forage^	1	-	-	1	2%
Christmas trees	3	-	20	23	27%
Tree plantation	3	2	-	5	8%
Nursery	33	-	< 1	34	58%
Pasture^	-	-	-	-	-
Fibre/pulp/veneer trees	-	-	-	-	-
Cedar hedging	12	-	-	12	28%
Cole crops	16	-	-	16	37%
Crop transition	2	-	-	2	4%
Turf	39	-	-	39	100%
TOTAL	705	802	115	1,622	

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

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

Table 14 outlines the type of irrigation systems used on the top 20 field crops in Township of Langley. Trickle irrigation systems are used primarily on blueberries while sprinkler systems are used on nearly all of the top 20 field crop types.

LIVESTOCK

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

"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.

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, 1,250 turkeys, 2,500 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, 1,000 sheep, 5,000 turkeys, 10,000 chickens (over 100 animal unit equivalents).

Table 15. Livestock activities

Livestock group	Livestock detail *	By parcel		Total activities	By activity type	
		Main type	Secondary type		Intensive	Non Intensive
Beef	Beef	177	20	197	2	195
	Beef (Llama)	1	-	1	-	1
	Beef (Dairy)	-	1	1	-	1
	Beef total	178	21	199	2	197
Dairy	Dairy total	34	2	36	12	24
Poultry	Poultry - unknown type	2	1	3	-	3
	Chicken	136	24	160	77	83
	Chicken (Turkey)	7	2	9	5	4
	Chicken (Duck)	-	1	1	-	1
	Chicken (Goose)	-	3	3	-	3
	Chicken (Sheep / lamb)	-	1	1	-	1
	Duck	6	3	9	1	8
	Duck (Goose)	-	1	1	-	1
	Goose	3	1	4	2	2
	Goose (Turkey)	-	1	1	-	1
	Turkey	7	1	8	5	3
	Poultry total	161	39	200	90	110
Swine	Swine total	3	-	3	-	3
Sheep / lamb / goat	Sheep / lamb	37	11	48	-	48
	Sheep / lamb (Goat)	6	4	10	-	10
	Sheep / lamb (Llama)	3	-	3	-	3
	Goat	23	10	33	-	33
	Goat (Llama)	3	-	3	-	3
	Goat (Swine)	-	1	1	-	1
	Sheep / lamb / goat total	72	26	98	-	98
Llama / alpaca	Llama	23	4	27	-	27
	Llama (Alpaca)	8	1	9	-	9
	Llama (Sheep / lamb)	3	-	3	-	3
	Llama (Goat)	2	-	2	-	2
	Llama / alpaca total	36	5	41	-	41
Specialty livestock**	Fur bearing	6	1	7	5	2
	Game bird	1	1	2	-	2
	Ratite	1	3	4	-	4
	Specialty livestock total	8	5	13	5	8
Unknown livestock	Unknown livestock total	34	-	34	-	34
Inactive	Inactive operation	5	-	5	3	2
Equine	Horse	779	20	799	-	799
	Equine - other^	7	7	14	-	14
	Equine- unknown type	105	-	105	-	105
	Mixed equine	30	2	32	-	32
	Equine total	921	29	950	-	950
TOTAL		1,452	127	1,579	112	1,467

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

** Specialty livestock includes game birds (partridge, pheasant, pigeon, quail), ratites (emu, ostrich, rhea, peacock), and fur bearing animals (rabbits).

^ Equine - other. Includes ponies, miniature horses, donkeys, and mules

Table 15 shows that equine is the most common type of livestock activity in Township of Langley, accounting for 950 of 1579, or 60% of all livestock activities. Poultry is the second most common with 200 activities or 13% and beef is third with 199 activities or 13%. Nearly half of all poultry activities are intensive while only 2 beef activities are intensive.

Three former poultry operations and 2 former dairy operations were recorded as inactive activities.

Refer to Maps B13, B14, B15, B16, and B17 in Appendix B for more information.

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

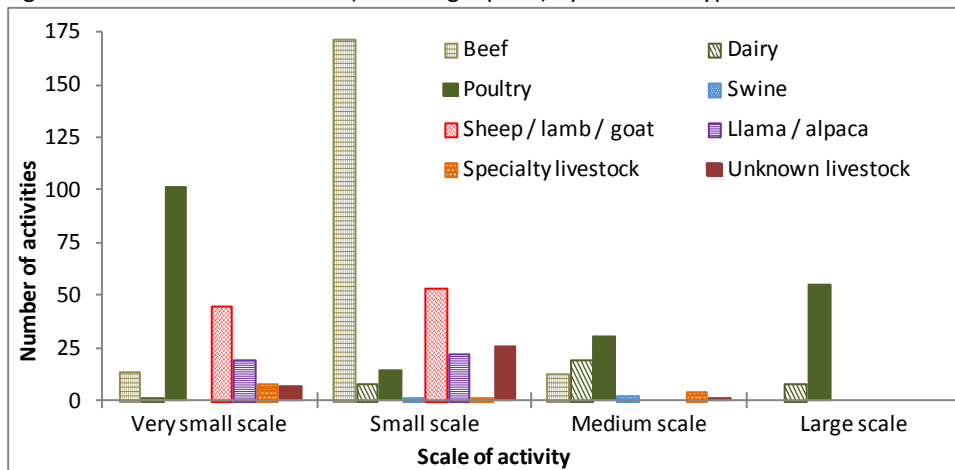


Figure 23 illustrates the scale of livestock activities (excluding equine) in Township of Langley.

Most of livestock activities are “small” or “very small” scale.

There are 55 “large” scale poultry and 8 “large” scale dairy activities in Township of Langley. Both poultry and dairy are supply managed industries.

Refer to Tables A8, A10, A12, and A14 in Appendix A for more information.

Figure 24. Livestock and equine activities by scale

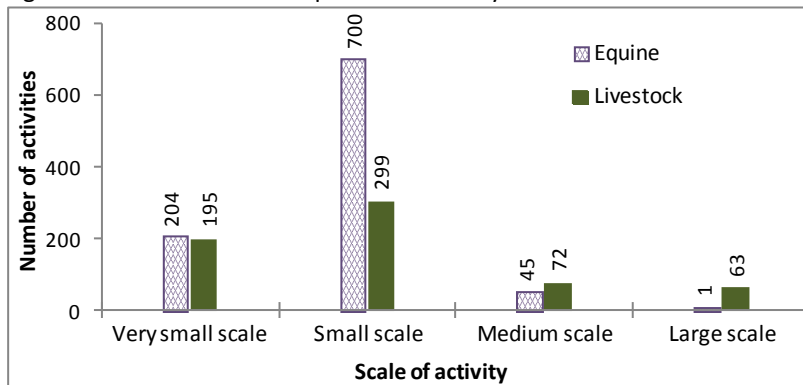


Figure 24 compares the scale of livestock activities with equine activities.

Even though 950 of the 1579 livestock activities are equines, most are “very small” or “small” scale. There is only one “large” scale equine activity in Township of Langley compared to 63 “large” scale livestock activities.

Refer to Tables A8, A10, A12, A14 and A16 in Appendix A for more information.

Figure 25. Livestock activities (excluding equine) by parcel size and scale

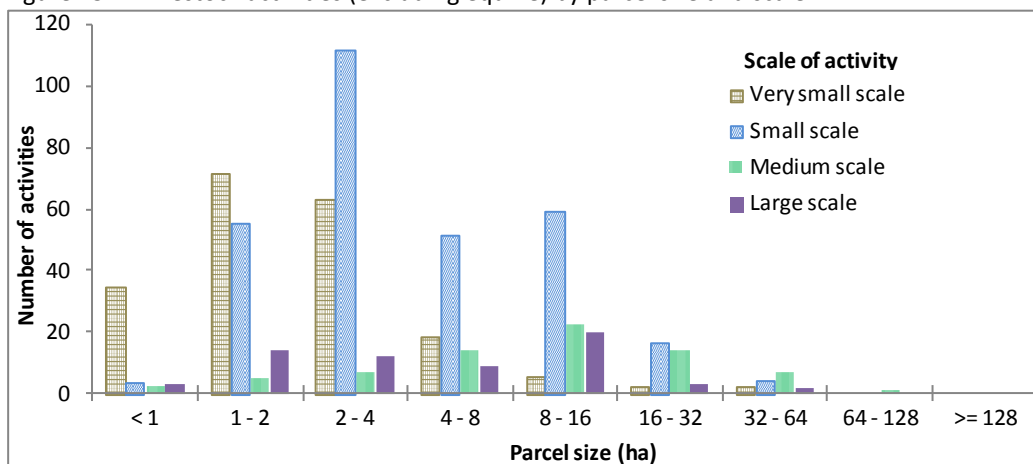


Figure 25 illustrates the distribution of livestock activities (excluding equine) by scale across parcel size categories.

“Large” scale operations occur on multiple parcel sizes, including small parcels. All “large” scale activities taking place on parcels less than 8 hectares are poultry.

There are also “small” and “very small” scale livestock activities occurring on larger parcels.

Refer to Tables A8, A10, A12, A14 and Figures A1, A3, A5, A7 in Appendix A for more information.

Figure 26. Livestock activities (excluding equines) by parcel size and type

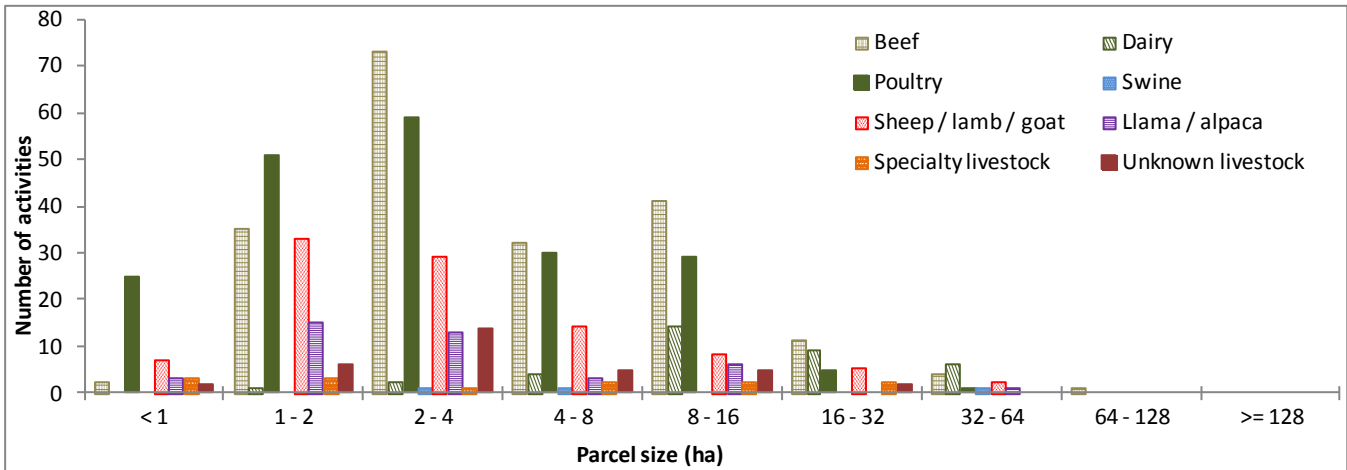


Figure 26 compares the distribution of different livestock types across parcel size categories. Beef and poultry occur across all parcel sizes less than 64 hectares. One “medium” scale beef activity is the only livestock activity occurring on parcels larger than 64 hectares.

Figure 27. Livestock and equine activities by parcel size

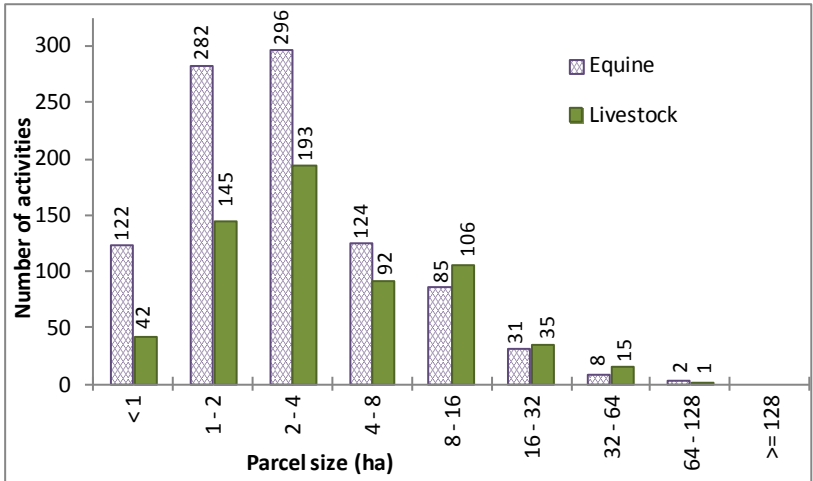


Figure 27 compares the distribution of equine and livestock across parcel size categories.

Equine activities occur more frequently than livestock activities on parcels less than 8 hectares.

Both livestock and equine activities occur across all parcel sizes except for parcels >=128 hectares.

Refer to Table A7 in Appendix A for more information.

Figure 28. Average area in forage, pasture and farm infrastructure on parcels with livestock activities (excluding very small scale)

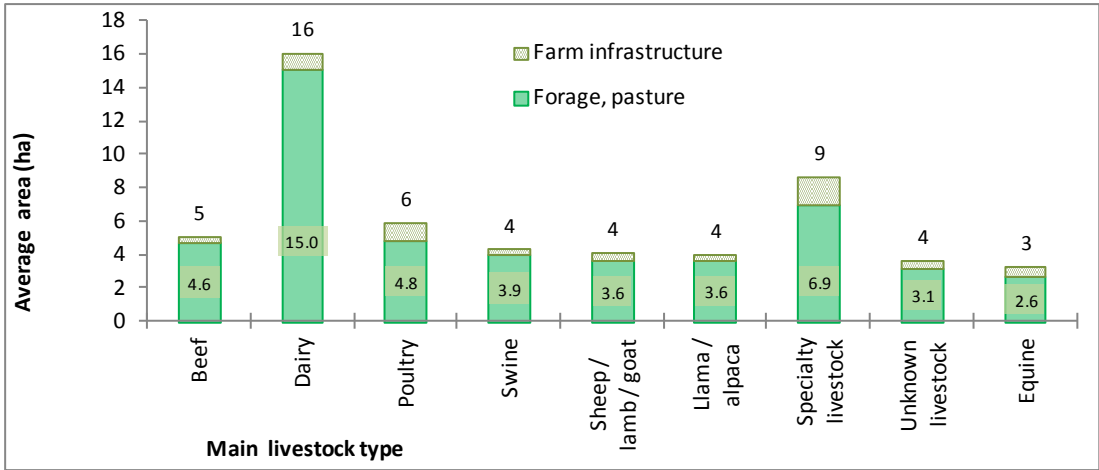


Figure 28 shows that on average, a dairy activity is associated with 15 hectares of forage and pasture land, more than any other type of livestock activity. Specialty livestock activities are associated with an average area of 2 hectares of farm infrastructure. This is more than any other type of livestock activity.

Figure 29. Total area in forage, pasture, and farm infrastructure on parcels with livestock activities (excluding very small scale)

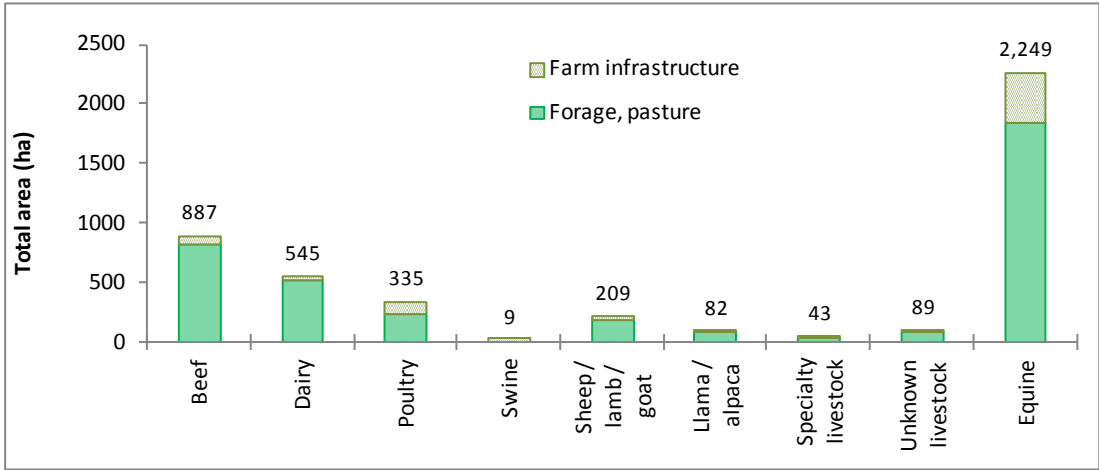


Figure 29 shows that although each dairy activity on average uses more forage and pasture land than each equine activity (see Figure 28 above), equine activities use a greater total area. The actual forage area for dairy is underestimated since not all dairy forage fields will be located on the same parcel as the livestock. Refer to Figures A2, A4, A6, A8, and A10 in Appendix A for more information.

Figure 30. Percent of parcel area utilized for forage, pasture, and farm infrastructure on parcels with livestock activities (excluding very small scale)

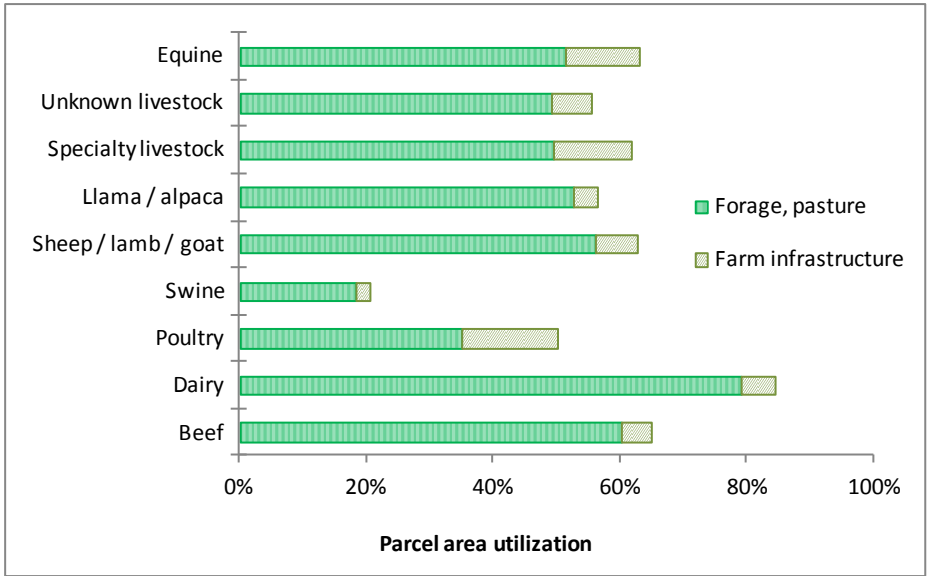
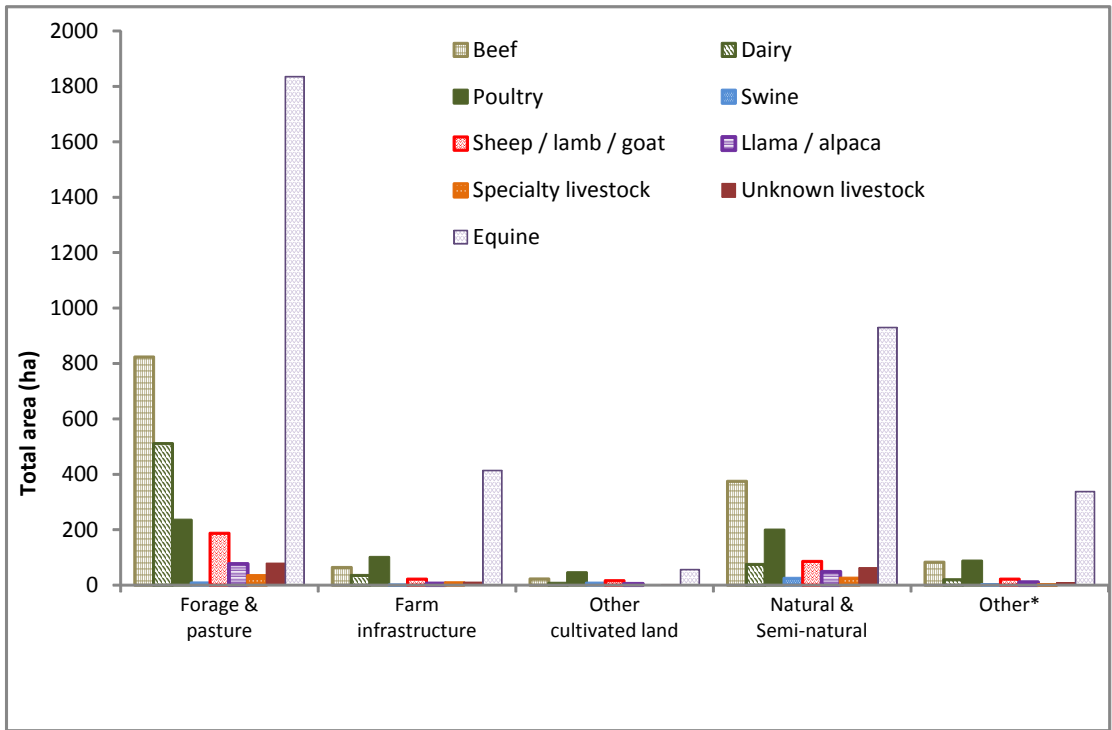


Figure 30 shows that on average, a dairy activity in Township of Langley utilizes 84% of its parcel area for forage, pasture, and farm infrastructure while a swine activity utilizes only 21%.

Figure 31. Land cover on parcels with livestock activities (excluding very small scale)



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

Figure 31 shows that the majority of the land cover associated with beef, dairy, and equine activities is forage and pasture. These operations are growing some of their own feed. Equine activities are associated with a greater variety of land cover types, which indicate more mixed use parcels.

Refer to Figures A2, A4, A6, A8, and A10 in Appendix A for more information.

ON-FARM VALUE-ADDED

Activities which add value to raw commodities produced on the farm are reported in this section. At least 50% of the commodity utilized must be produced on farm⁹ 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 backyard flock.
- “**Medium**” scale is sufficient to add value to on-farm products for sale to small local markets or serve a moderate number of people. Usually includes designated parking for customers and requires at least one full-time worker to manage. An example is 3-10 tourist accommodation spots.
- “**Large**” scale is intended to add value to large amounts of on-farm generated products or serve large numbers of people. Requires multiple workers to operate value-added component of farm operation. An example is more than 10 tourist accommodation spots.

⁹ On-farm refers to the farm unit which includes all the property belonging to the farm and may incorporate more than one parcel.

Figure 32. Percentage of parcels “Used for farming” and with value-added activities

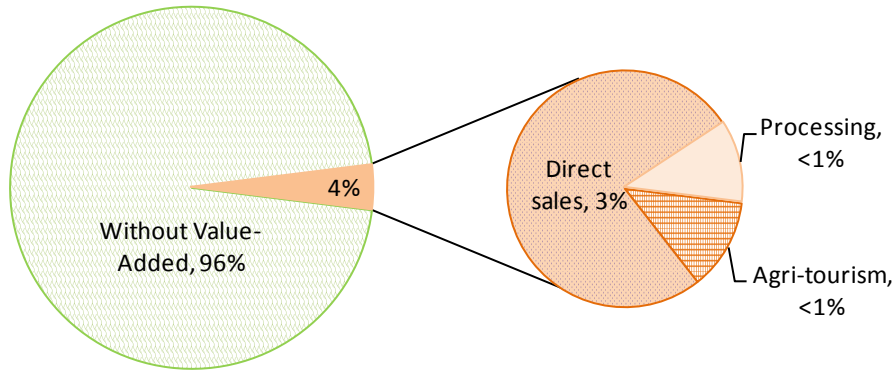
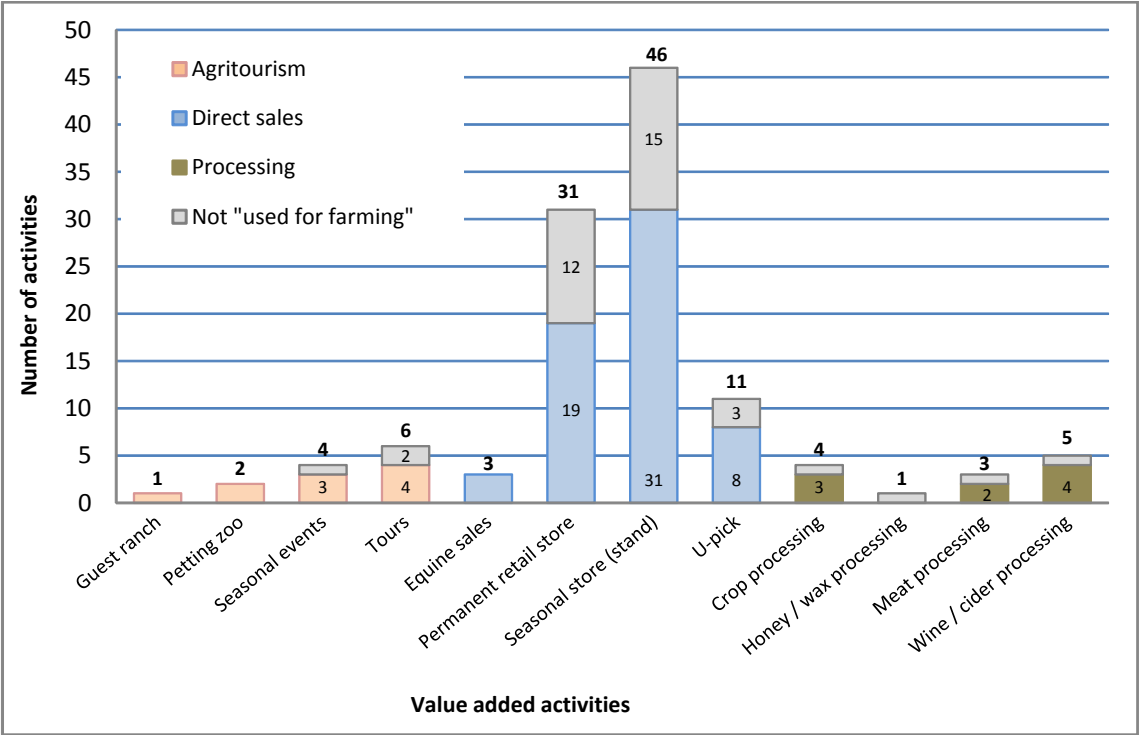


Figure 32. Only 80 or 4% of all parcels “Used for farming” are also being used for value-added activities. Given the close proximity to a relatively large urban population, there is opportunity to increase activities such as agri-tourism and direct sales.

Figure 33. Number of parcels with farming and value-added activities



There are 117 value-added activities located on 94 parcels in Township of Langley. Thirty-nine of these activities on 34 parcels either do not meet the “Used for farming” criteria (refer to the Definitions section), or are part of a farm unit where the farming activity takes place on another parcel.

Figure 33 shows that the majority of value added activities are seasonal stands and permanent retail stores.

Refer to Tables A18 through A22 in Appendix A for more information.

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

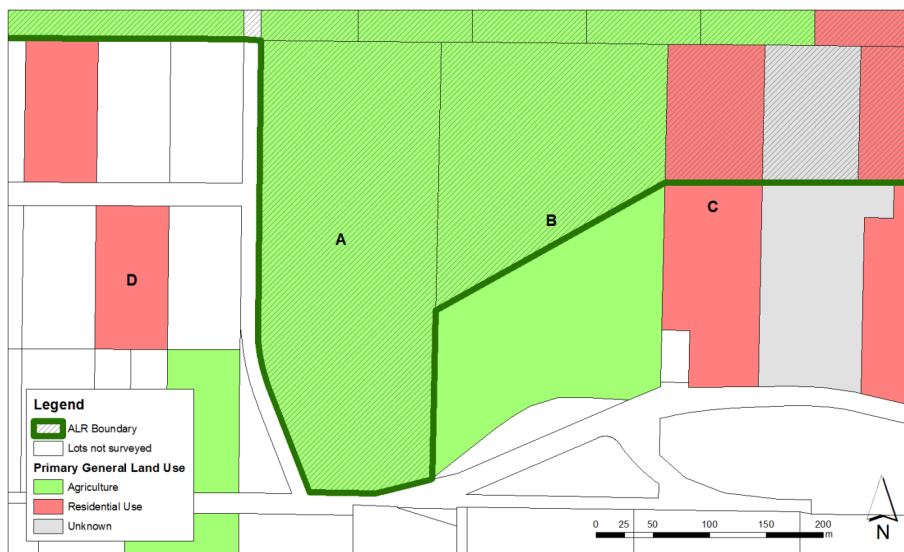
The inventory area included 22,281 hectares of ALR on 4,861 parcels which is 95.2% of the ALR within Township of Langley. The remaining 5% of the ALR was excluded from the inventory as it is in parcels less than 100 square metres in size or outside surveyed land parcels in designated rights-of-way.

ALR boundaries are not always coincident with parcel boundaries which results in many parcels having only a portion of their area in the ALR. To achieve an accurate picture of the ALR land in Township of Langley, 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 (≥ 10 hectares) of ALR land.

In total, 4,810 parcels with 22,264 hectares or 95.1% of Township of Langley's ALR land meet the above criteria and are included in the further analysis of the ALR. This includes 1 parcels that has less than 50% of its area in the ALR ($<50\%$) but contains 10.4 hectares of ALR land.

Figure 34. Parcel inclusion in the ALR

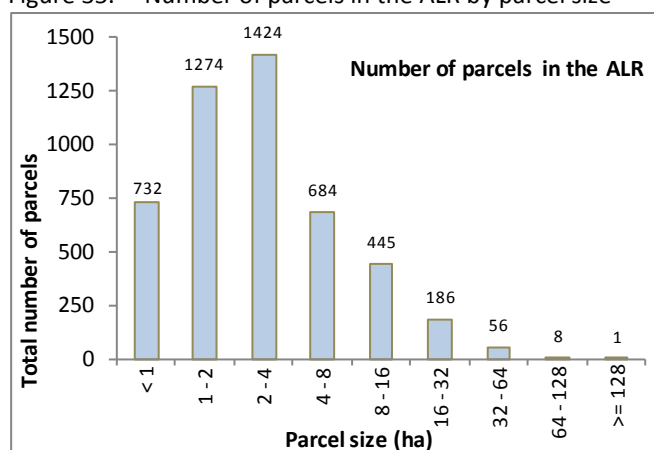


PARCEL SIZE & FARMING IN THE ALR

Parcel size must be considered when determining the agricultural potential of a land parcel. Larger parcels usually allow farmers greater flexibility to expand or change their type of operation as the economy and markets change. Although some types of agriculture can be successful on small parcels, such as intensive organic market gardens, greenhouse operations and nurseries, generally the smaller the parcel is, the fewer viable options there are for farming.

A farming operation may utilize more than one parcel as a farm unit¹⁰, 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 35. Number of parcels in the ALR by parcel size

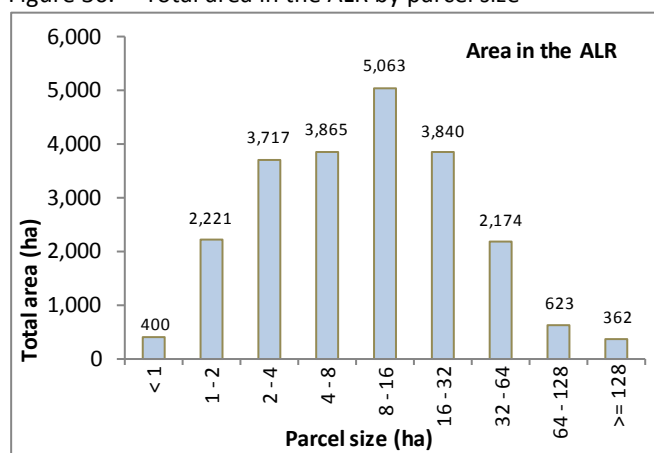


Of Township of Langley's ALR parcels, 15% are less than one hectare. The average ALR parcel size is 3.6 hectares.

Figure 36 illustrates that of the 4810 parcels in the ALR:

- 15% (732 hectares) is on parcels less than 1 hectare.
- 71% (3,430 hectares) is on parcels less than 4 hectares.
- 14% (684 hectares) is on parcels between 4 and 8 hectares.
- 9% (445 hectares) is on parcels between 8 and 16 hectares.
- 5% (251 hectares) is on parcels greater than 16 hectares.

Figure 36. Total area in the ALR by parcel size



Even though Township of Langley is a metropolitan area and has a significant number of small parcels, over half of its ALR area is in parcels larger than 8 ha.

Figure 36 illustrates that of the 22,264 hectares on parcels in the ALR:

- 2% (400 hectares) is on parcels less than 1 hectare.
- 28% (6,338 hectares) is on parcels less than 4 hectares.
- 17% (3,865 hectares) is on parcels between 4 and 8 hectares.
- 22% (5,063 hectares) is on parcels between 8 and 16 hectares.
- 31% (6,998 hectares) is on parcels greater than 16 hectares.

¹⁰Farm 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 16. 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	1,853	39 %
Not used for farming	2,957	61 %
TOTAL	4,810	100 %

Table 16 demonstrates that of the 4,810 parcels in the ALR, only 1,853 or 39% are "Used for farming".

Figure 37. Number of farmed and not farmed parcels in the ALR by parcel size

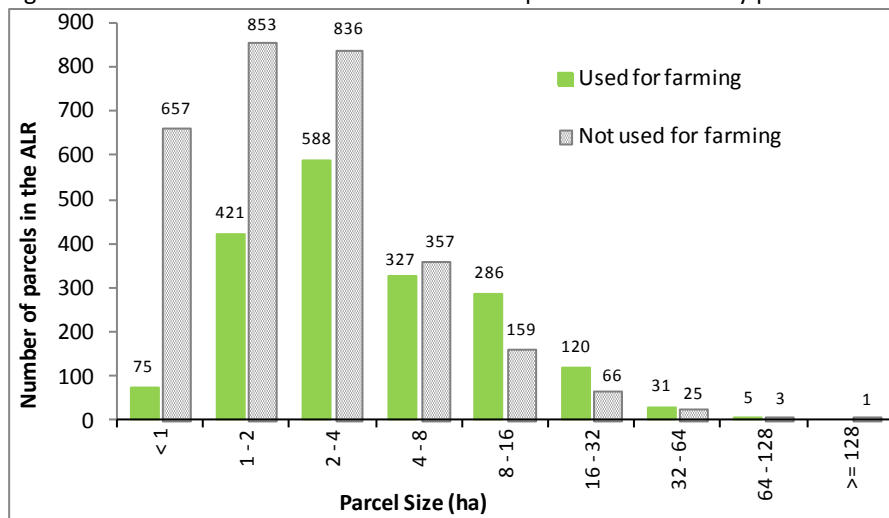


Figure 37 shows that of the 61% of parcels in the ALR that are "Not used for farming":

- 657 parcels, or 20%, are less than one hectare.
- 2,346 parcels, or 79%, are less than 4 hectares.

Figure 38. Number of farmed and not farmed parcels in the ALR by parcel size (line chart)

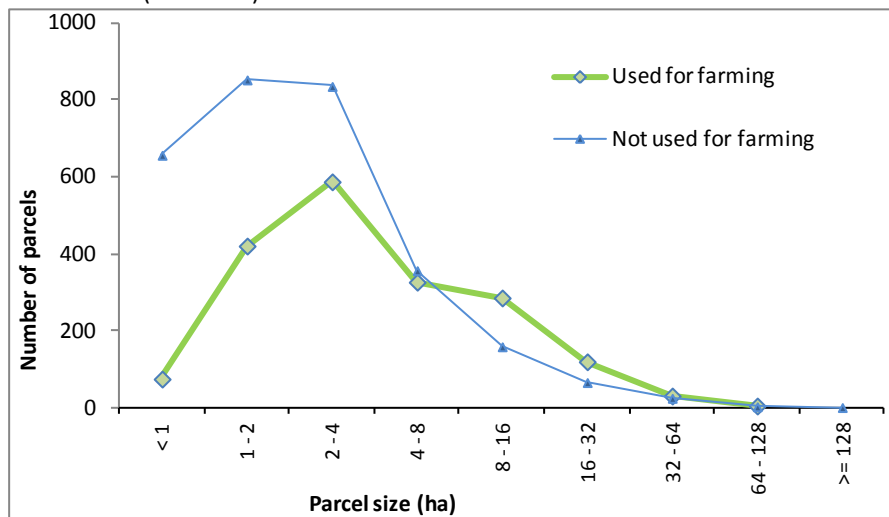


Figure 38 illustrates that although parcels of all sizes are "Used for farming", small parcels are less likely to be farmed than larger parcels.

Figure 39. Proportion of parcels farmed and not farmed by parcel size in the ALR

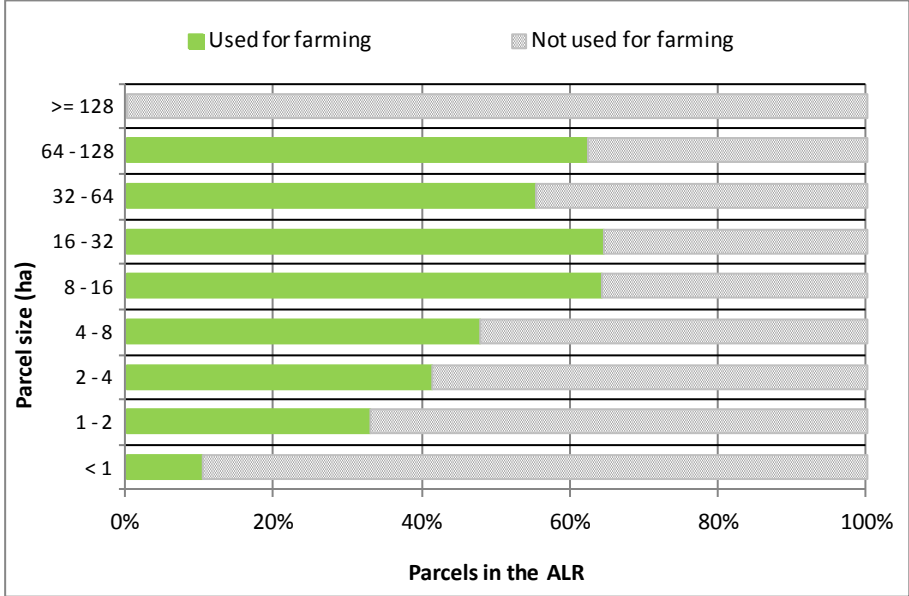
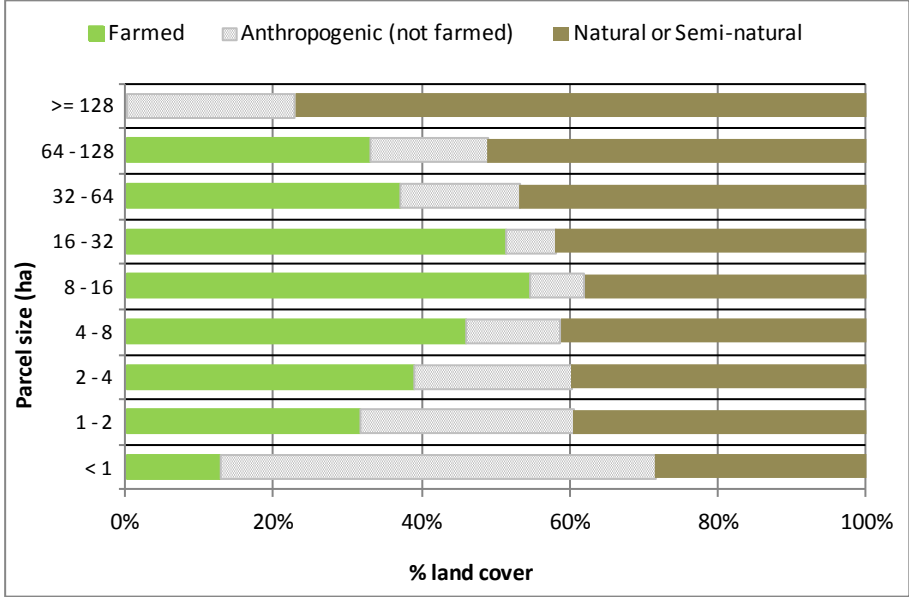


Figure 39 shows that in Township of Langley, the proportion of parcels being “Used for farming” increases as the parcel size increases.

Only 10% of parcels that are less than 1 hectare are “Used for farming”.

There is one parcel >=128 hectares that is “Not used for farming”. It is owned by the Department of National Defense.

Figure 40. Proportion of land cover by parcel size in the ALR



Similar to Figure 39 above, Figure 40 shows that in Township of Langley, the proportion of farmed land cover generally increases as the parcel size increases.

Only 13% of the land cover is farmed on parcels that are less than 1 hectare.

RESIDENTIAL USE IN THE ALR

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

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

Average land improvement values of Township of Langley properties with residences in the ALR were as follows:

- estate single family house \$1,074,700
- large single family house \$517,500
- medium single family house \$252,030
- small single family house \$158,480
- single mobile home \$126,706

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

In the following analysis cabins/cottages, mobile homes, single-family houses, duplexes, townhouses, apartments, motels, hotels, dormitories, and institutional living buildings are included. Single-family houses are further described by estimated size of the building:

- Small single-family house <1,500 sq. ft.
- Medium single-family house 1,500 – 3,500 sq. ft.
- Large single-family house 3,500 – 5,000 sq. ft.
- Estate (very large) single-family house > 5,000 sq. ft.

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

Properties “Not used for farming but available” are properties with either no apparent use or an existing non-farm use that is compatible with agriculture, such as Residential.

Properties “Not used for farming and unavailable” have an established non-farm use that is incompatible with agriculture.

Table 17. 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	1,654	34%	199	4%	1853
Not used for farming but available	2,163	45%	319	7%	2482
Not used for farming and unavailable	302	6%	173	4%	475
TOTAL	4,119	86%	691	14%	4,810

Table 17 shows that 4119 parcels or 86% of ALR parcels have residences but 2,465 of these parcels are “Not used for farming”.

Table 18. 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	176 (26)	505 (353)	1130 (1036)	224 (218)	19 (19)	2 (2)	2056	1654
Not used for farming but available	236 (38)	595 (432)	1413 (1331)	365 (339)	21 (21)	2 (2)	2632	2163
Not used for farming and unavailable	13 (9)	103 (75)	178 (173)	42 (42)	-	5 (3)	341	302
TOTAL RESIDENCES	425	1,203	2,721	631	40	9	5,029	
TOTAL PARCELS	73	860	2,540	599	40	7		4,119

* 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 duplexes, townhouses, mobile home parks, and motel style residences

Table 18 demonstrates that there are 4119 parcels in the ALR with 5029 residences (some parcels have more than one residence). Most residences are medium houses (1,500 – 3,500 sq. ft). Of all the large (3,500-5,000 sq. ft.) and estate (>5000 sq. ft) houses in the ALR, 64% are on parcels “Not used for farming”.

Figure 41. Total area in residential footprint by parcel size

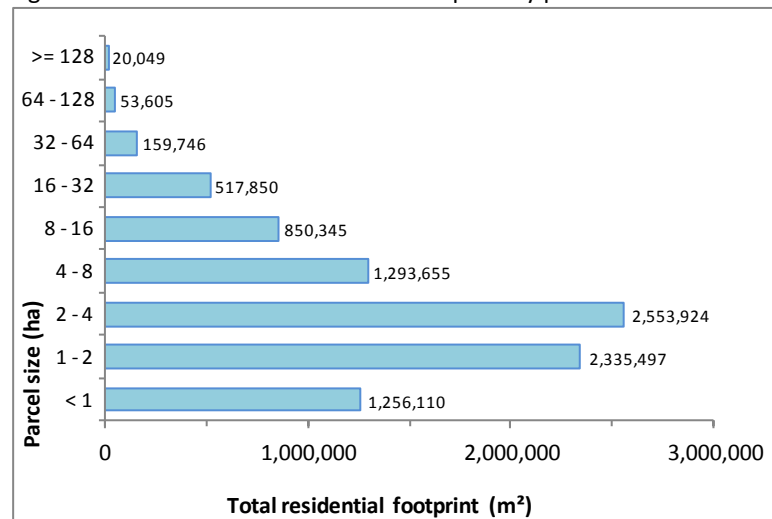


Figure 41 illustrates that there are over 900 hectares (9,040,781 m²) of ALR land in residential footprints distributed across all parcel sizes.

Figure 42. Proportion of parcels with residences by parcel size

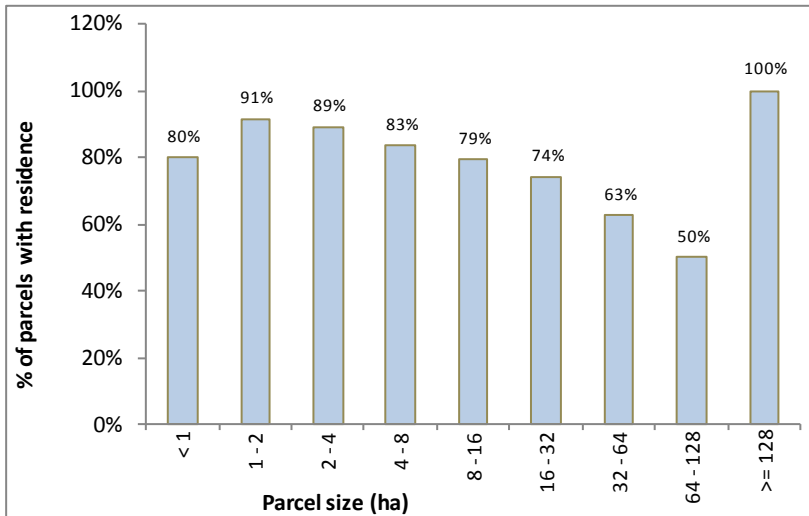


Figure 42 shows that the majority of all parcels in all parcel size categories have a residence.

The one parcel >=128 hectares is owned by the Department of National Defense and contains small military residences.

Figure 43. Average percent of parcel area in residential footprint by parcel size

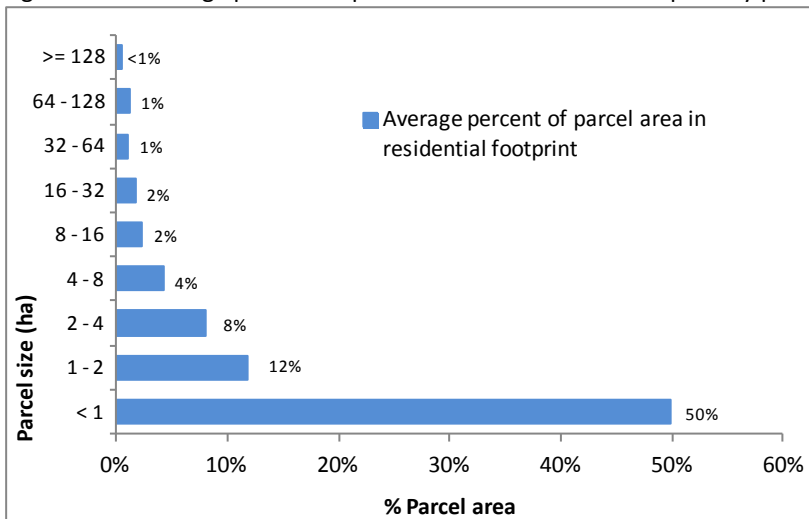


Figure 43 demonstrates that residential footprints on smaller parcels use a much greater proportion of the parcel area than those on larger parcels.

Figure 44. Average total area in residential footprint by parcel size

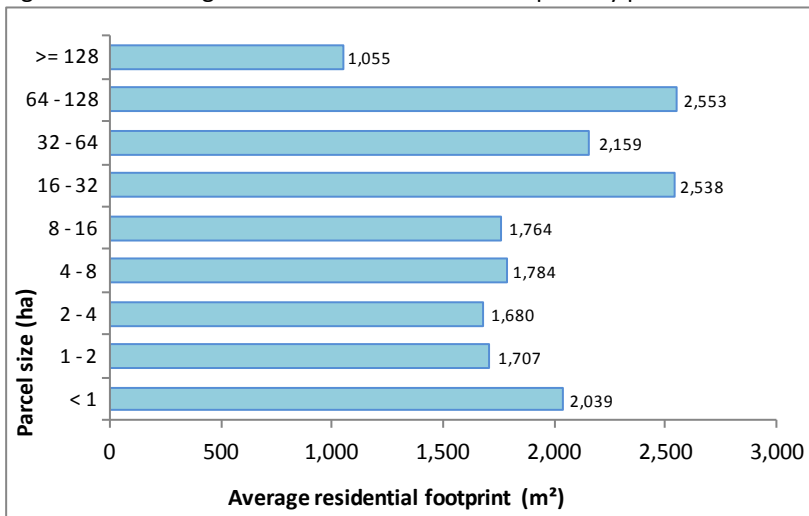
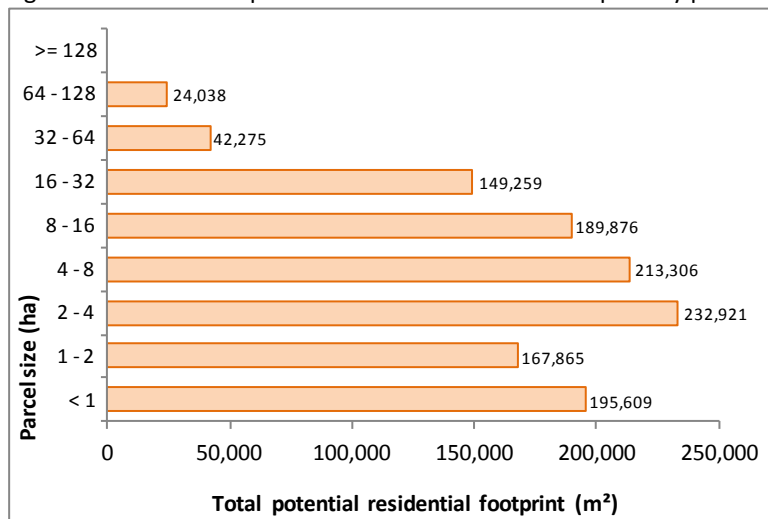


Figure 44 illustrates that even though residential footprints on small parcels use a greater proportion of the parcel area, the average size of the footprint is similar compared to the footprint on larger parcels.

Figure 45. Total and potential area in residential footprint by parcel size



There are 518 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 17 above).

If all 518 parcels built a residence, using the average percent of parcel area in residential footprint presented above, Figure 45 shows that an additional 121 hectares (1,215,149 m²) of ALR land would be permanently removed from potential production.

Table 19. 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 residential building*	
Equine	5	121	421	74	11	1	633
Forage & pasture	10	101	260	47	3	1	422
Beef	3	30	88	17	1	-	139
Vines & berries	4	24	46	28	2	-	104
Poultry	1	12	59	9	1	-	82
Nursery & tree plantations	1	21	39	15	-	-	76
Sheep / lamb / goat	1	9	30	4	-	-	44
Dairy	-	8	20	2	-	-	30
Unknown livestock	1	3	15	5	-	-	24
Llama / alpaca	-	4	8	4	1	-	17
Glass greenhouse	-	1	12	2	-	-	15
Vegetables	-	4	5	4	-	-	13
Mushroom	-	2	7	3	-	-	12
Poly greenhouse	-	3	7	1	-	-	11
Tree fruits	-	1	3	2	-	-	6
Farm	-	1	4	-	-	-	5
Other	-	1	3	1	-	-	5
Nut trees	-	1	3	-	-	-	4
Specialty livestock	-	-	4	-	-	-	4
Inactive	-	2	1	-	-	-	3
Turf	-	2	1	-	-	-	3
Swine	-	2	-	-	-	-	2
TOTAL PARCELS	26	353	1,036	218	19	2	1,654

*Other residential buildings include a townhouse and a dormitory

There are 1,654 parcels with residences that are "Used for farming" (refer to Table 17 above).

Table 19 shows that large and estate houses occur most frequently on parcels with equines as the main agricultural activity.

Table 20. Main agriculture activity on "Used for farming" parcels with large or estate residences in the ALR

Main agricultural activity	Parcels with "Large" or "Estate" residences			
	Number of parcels	Crop area utilized (ha)	Average % of parcel area in crop	Average parcel area (ha)
Equine	85	391	56 %	8
Forage & pasture	50	248	72 %	7
Vines & berries	30	232	77 %	10
Beef	18	124	68 %	10
Nursery & tree plantations	15	43	71 %	4
Poultry	10	56	36 %	12
Unknown livestock	5	15	59 %	4
Llama / alpaca	5	34	57 %	13
Vegetables	4	28	71 %	12
Sheep / lamb / goat	4	12	77 %	4
Mushroom	3	6	50 %	4
Glass greenhouse	2	8	52 %	7
Tree fruits	2	3	71 %	2
Dairy	2	40	66 %	28
Poly greenhouse	1	9	68 %	14
Other*	1	6	46 %	12
TOTAL	237	1,256		

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

There are 237 parcels with large or estate residences in the ALR that are "Used for farming" (see Table 19 above).

Table 20 illustrates that equine activities are the main agricultural activity on 85 or 35% of these parcels. Forage & pasture is the main agricultural activity on 50 or 21% of these parcels.

Appendix A

CULTIVATED FIELD CROPS

Table A1. Distribution of crop field sizes for all cultivated land¹

Crop Area (ha)	Number of crop fields										Total Number
	Forage & pasture	Vines & berries	Nursery & tree plantations	Vegetables	Other*	Turf	Nut trees	Tree fruits	Oats	Floriculture	
< 1	690	46	113	30	7	-	10	27	-	5	928
1 - 2	742	20	60	8	4	-	3	4	-	-	841
2 - 4	370	30	37	4	1	1	4	3	-	-	450
4 - 8	253	51	24	8	2	2	2	-	1	-	343
8 - 16	150	41	2	4	1	2	-	-	-	-	200
16 - 32	47	14	3	-	1	-	-	-	-	-	65
32 - 64	4	1	-	-	-	-	-	-	-	-	5
64 - 128	-	1	-	-	-	-	-	-	-	-	1
>= 128											
TOTAL FIELD COUNT	2256	204	239	54	16	5	19	34	1	5	2833
AVERAGE CROP AREA (ha)	3 ha	7 ha	2 ha	2 ha	3 ha	8 ha	2 ha	< 1 ha	4 ha	< 1 ha	3 ha
MEDIAN CROP AREA (ha)	1 ha	5 ha	1 ha	< 1 ha	1 ha	7 ha	< 1 ha	< 1 ha	4 ha	< 1 ha	1 ha
AVERAGE PARCEL SIZE (ha)	5 ha	10 ha	5 ha	7 ha	9 ha	9 ha	6 ha	4 ha	16 ha	3 ha	6 ha

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

Table A2. Distribution of forage & pasture fields

Field size (ha)	Number of forage & pasture fields					Total number
	Forage	Pasture	Forage and pasture	Unused*	Unmaintained**	
< 1	78	559	30	122	-	789
1 - 2	195	451	52	86	-	784
2 - 4	150	154	50	34	-	388
4 - 8	157	80	34	4	1	276
8 - 16	82	27	24	5	-	138
16 - 32	27	8	4	2	-	41
32 - 64	4	-	-	-	-	4
64 - 128	-	-	-	-	-	-
>128	-	-	-	-	-	-
TOTAL FIELD COUNT	689	1279	194	253	1	2420
AVERAGE CROP AREA (ha)	5 ha	2 ha	4 ha	2 ha	4 ha	3 ha
MEDIAN CROP AREA (ha)	3 ha	1 ha	3 ha	1 ha	4 ha	1 ha
AVERAGE PARCEL SIZE (ha)	9 ha	4 ha	8 ha	4 ha	9 ha	5 ha

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

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

¹ 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 vine & berry fields²

Field size (ha)	Number of vine & berry fields							Total number
	Blueberries	Cranberries	Raspberries	Berries - unknown type	Strawberries	Grapes	Blackberries	
< 1	26	1	5	2	3	13	2	52
1 - 2	13	2	5	-	-	5	-	25
2 - 4	23	2	4	1	-	1	-	31
4 - 8	41	5	8	6	1	1	-	62
8 - 16	27	5	7	-	2	-	-	41
16 - 32	8	3	-	-	-	1	-	12
32 - 64	-	-	-	-	-	-	-	-
64 - 128	-	1	-	-	-	-	-	1
>128	-	-	-	-	-	-	-	-
TOTAL COUNT	138	19	29	9	6	21	2	224
AVERAGE CROP AREA (ha)	6 ha	13 ha	5 ha	4 ha	6 ha	2 ha	< 1 ha	6 ha
MEDIAN CROP AREA (ha)	5 ha	7 ha	5 ha	5 ha	4 ha	< 1 ha	< 1 ha	4 ha
AVERAGE PARCEL SIZE (ha)	10 ha	16 ha	11 ha	15 ha	18 ha	4 ha	10 ha	10 ha

Table A4. Distribution of nursery & tree plantations

Field size (ha)	Number of nursery activities				Number of tree plantation activities				Total number
	Nursery unknown	Ornamentals and shrubs	Cedar hedging	Nursery total	Plantation unknown	Christmas trees	Fibre/pulp/ veneer	Plantation total	
< 1	17	42	24	83	11	21	3	35	118
1 - 2	10	22	7	39	5	13	2	20	59
2 - 4	2	19	2	23	5	6	4	15	38
4 - 8	3	11	2	16	3	2	2	7	23
8 - 16	1	-	1	2	1	1	-	2	4
16 - 32	-	-	-	-	-	1	1	2	2
32 - 64	-	-	-	-	-	-	-	-	-
64 - 128	-	-	-	-	-	-	-	-	-
>=128	-	-	-	-	-	-	-	-	-
TOTAL ACTIVITY COUNT	33	94	36	163	25	44	12	81	244
AVERAGE CROP AREA (ha)	2 ha	2 ha	1 ha	2 ha	3 ha	2 ha	4 ha	2 ha	2 ha
MEDIAN AREA (ha)	< 1 ha	1 ha	< 1 ha	1 ha	2 ha	1 ha	2 ha	1 ha	1 ha
AVERAGE PARCEL SIZE (ha)	6 ha	5 ha	4 ha	5 ha	8 ha	5 ha	7 ha	6 ha	5 ha

² Each distinct berry crop type on one parcel is counted as one crop activity. Each activity will include at least one and perhaps more crop fields. A parcel may have more than one berry activity if there is more than one distinct type of berry crops on that parcel.

GREENHOUSES & CROP BARNs

Table A5. Distribution of greenhouses and crop barns by building type³

Greenhouse size (ha)	Number of Greenhouses / crop barns			Total number
	Glass greenhouse	Poly greenhouse	Crop barn	
< 1	20	57	11	88
1 - 2	8	8	10	26
2 - 4	2	2	1	5
4 - 8	6	1	-	7
8 - 16	-	-	-	-
16 - 32	-	-	-	-
32 - 64	-	-	-	-
64 - 128	-	-	-	-
>128	-	-	-	-
TOTAL COUNT	36	68	22	126
AVERAGE AREA (ha)	2 ha	< 1 ha	< 1 ha	< 1 ha
MEDIAN AREA (ha)	< 1 ha	< 1 ha	1 ha	< 1 ha
AVERAGE PARCEL SIZE (ha)	7 ha	5 ha	5 ha	6 ha

Table A6. Distribution of greenhouses and crop barns by crop type⁴

Greenhouse size (ha)	Type of greenhouse / crop barn						Total number
	Vegetables	Nursery	Floriculture	Mixed	Unknown	Mushroom	
< 1	6	32	12	1	30	11	92
1 - 2	-	7	4	2	4	10	27
2 - 4	-	1	-	1	1	1	4
4 - 8	4	1	1	1	-	-	7
8 - 16	1	-	-	1	-	-	2
16 - 32	-	-	-	-	-	-	-
32 - 64	-	-	-	-	-	-	-
64 - 128	-	-	-	-	-	-	-
>128	-	-	-	-	-	-	-
TOTAL COUNT	11	41	17	6	35	22	132
AVERAGE AREA (ha)	3 ha	< 1 ha	< 1 ha	4 ha	< 1 ha	< 1 ha	< 1 ha
MEDIAN AREA (ha)	< 1 ha	< 1 ha	< 1 ha	2 ha	< 1 ha	1 ha	1 ha
AVERAGE PARCEL SIZE (ha)	10 ha	6 ha	4 ha	12 ha	4 ha	5 ha	6 ha

³ The average area and median area reported in this table excludes external greenhouse/crop barn yards, parking, warehouses and other infrastructure related to the greenhouse/crop barn operation.

⁴ Each distinct greenhouse or crop barn type on one parcel is counted as one activity. Each activity will include at least one and perhaps more greenhouse or crop barn structures. A parcel may have more than one activity if there is more than one distinct type of greenhouse or crop barn on that parcel.

LIVESTOCK

Table A7. 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	Unknown livestock*	Inactive	Equine	
< 1	2	-	25	-	7	3	3	2	-	122	164
1 - 2	35	1	51	-	33	15	3	6	1	282	427
2 - 4	73	2	59	1	29	13	1	14	1	296	489
4 - 8	32	4	30	1	14	3	2	5	1	124	216
8 - 16	41	14	29	-	8	6	2	5	1	85	191
16 - 32	11	9	5	-	5	-	2	2	1	31	66
32 - 64	4	6	1	1	2	1	-	-	-	8	23
64 - 128	1	-	-	-	-	-	-	-	-	2	3
>= 128	-	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	199	36	200	3	98	41	13	34	5	950	1579
MEDIAN PARCEL SIZE (ha)	4 ha	16 ha	2 ha	8 ha	2 ha	2 ha	2 ha	2 ha	6 ha	2 ha	2 ha
AVERAGE PARCEL SIZE (ha)	7 ha	18 ha	5 ha	14 ha	5 ha	4 ha	7 ha	5 ha	10 ha	4 ha	5 ha

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

Table A8. Beef activities

Scale of beef activity	By parcel		Total number of activities	By activity type	
	Main type	Secondary type		Intensive	Intensive
Very small scale (1 cow)	7	7	14	-	14
Small scale (2-25 cattle)	160	12	172	-	172
Medium scale (2-25 cattle)	11	2	13	2	11
TOTAL	178	21	199	2	197

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

Table A9. 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	-	-	2
1 - 2	7	28	-	-	35
2 - 4	5	68	-	-	73
4 - 8	-	32	-	-	32
8 - 16	-	34	7	-	41
16 - 32	-	9	2	-	11
32 - 64	1	-	3	-	4
64 - 128	-	-	1	-	1
>= 128	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	14	172	13	-	199
AVERAGE PARCEL SIZE (ha)	4 ha	6 ha	26 ha	-	7 ha

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

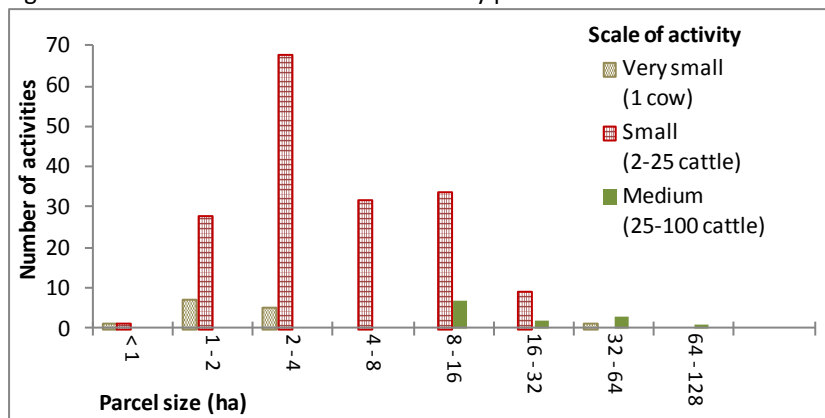
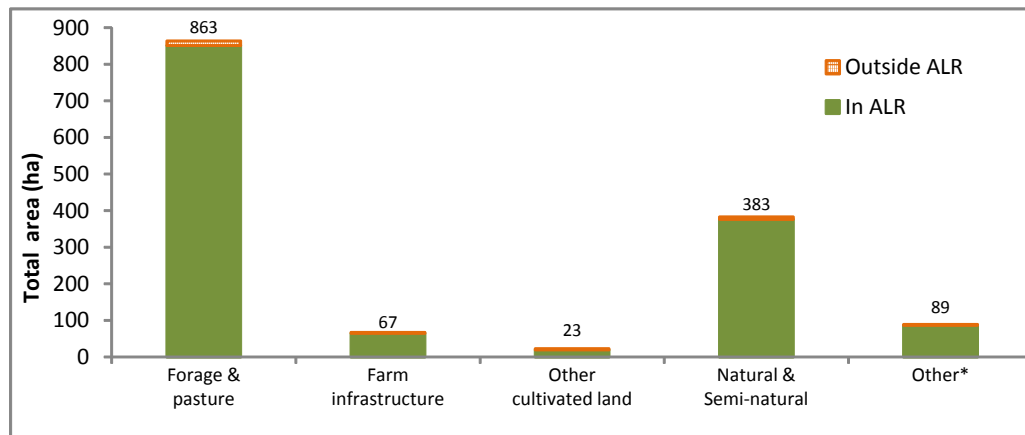


Figure A2. Land cover on parcels with beef activities



* 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 A10. Dairy activities

Scale of dairy activity	By parcel		Total number of activities	By activity type	
	Main type	Secondary type		Intensive	Non intensive
Very small scale (1 cow)	1	-	1	1	-
Small scale (2-25 cattle)	5	2	7	6	1
Small scale - Dry cow - (2 -25 cattle)	1	-	1	1	-
Medium scale (25 -100 cattle)	19	-	19	16	3
Large scale (> 100 cattle)	8	-	8	-	8
TOTAL	34	2	36	24	12

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

Table A11. 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	-	-	1	-	1
2 - 4	-	1	-	1	2
4 - 8	-	1	3	-	4
8 - 16	1	4	4	5	14
16 - 32	-	-	8	1	9
32 - 64	-	2	3	1	6
64 - 128	-	-	-	-	-
>= 128	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	1	8	19	8	36
AVERAGE PARCEL SIZE (ha)	8 ha	16 ha	21 ha	16 ha	18 ha

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

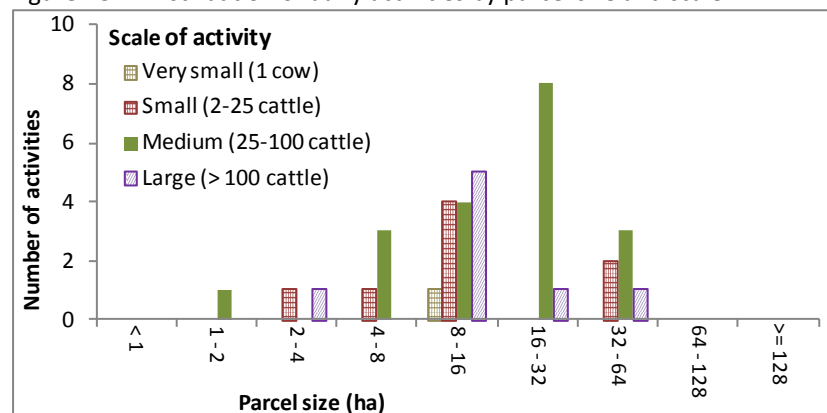
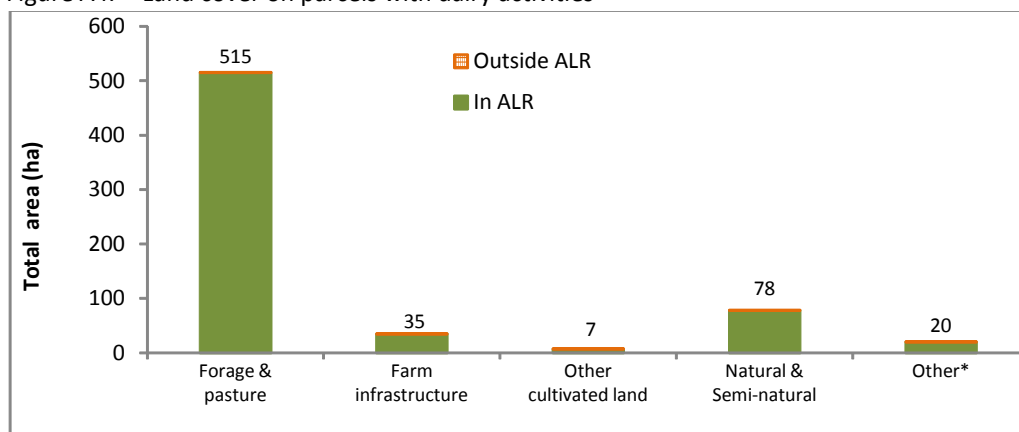


Figure A4. Land cover on parcels with dairy activities



* 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 A12. 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)	17	15	32	-	32
Chicken (layer)	Very small scale (< 100 birds)	40	13	53	-	53
Chicken	Small scale (100 - 2,500 birds)	6	1	7	3	4
Chicken (layer)	Small scale (100 - 2,500 birds)	4	-	4	1	3
Chicken	Medium scale (2,500 - 10,000 birds)	8	-	8	8	-
Chicken (broiler)	Medium scale (2,500 - 10,000 birds)	8	1	9	9	-
Chicken (layer)	Medium scale (2,500 - 10,000 birds)	10	-	10	10	-
Chicken	Large scale (> 10,000 birds)	8	-	8	8	-
Chicken (breeder)	Large scale (> 10,000 birds)	1	-	1	1	-
Chicken (broiler)	Large scale (> 10,000 birds)	31	1	32	32	-
Chicken (layer)	Large scale (> 10,000 birds)	10	-	10	10	-
Duck	Very small scale (< 50 birds)	5	4	9	-	9
Duck	Medium scale (1,250 - 5,000 birds)	1	-	1	1	-
Goose	Very small scale (< 50 birds)	1	1	2	-	2
Goose	Small scale (50 - 1,250 birds)	-	1	1	-	1
Goose	Large scale (> 5,000 birds)	2	-	2	2	-
Poultry - unknown	Very small scale (< 100 birds)	2	1	3	-	3
Turkey	Very small scale (< 50 birds)	1	1	2	-	2
Turkey	Small scale (50 - 1,250 birds)	2	-	2	1	1
Turkey	Medium scale (1,250 - 5,000 birds)	2	-	2	2	-
Turkey	Large scale (> 5,000 birds)	2	-	2	2	-
TOTAL	TOTAL	161	39	200	90	110

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns.

Table A13. 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	20	-	2	3	25
1 - 2	31	3	3	14	51
2 - 4	37	4	7	11	59
4 - 8	10	3	8	9	30
8 - 16	3	3	8	15	29
16 - 32	-	1	2	2	5
32 - 64	-	-	-	1	1
64 - 128	-	-	-	-	-
>= 128	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	101	14	30	55	200
AVERAGE PARCEL SIZE (ha)	2 ha	5 ha	8 ha	7 ha	5 ha

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

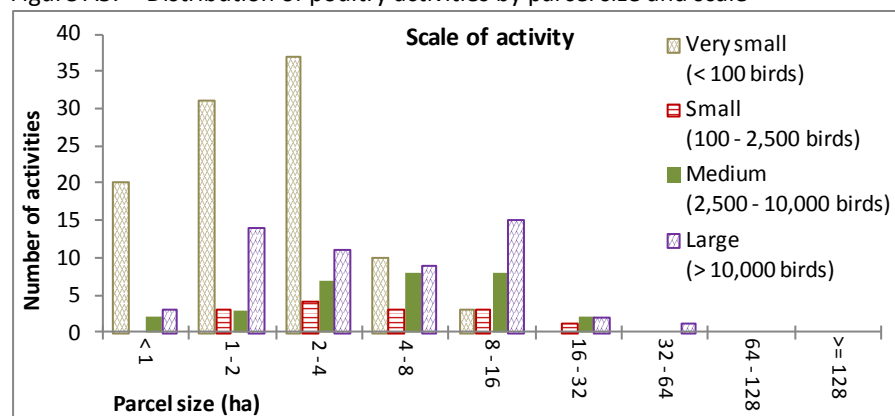
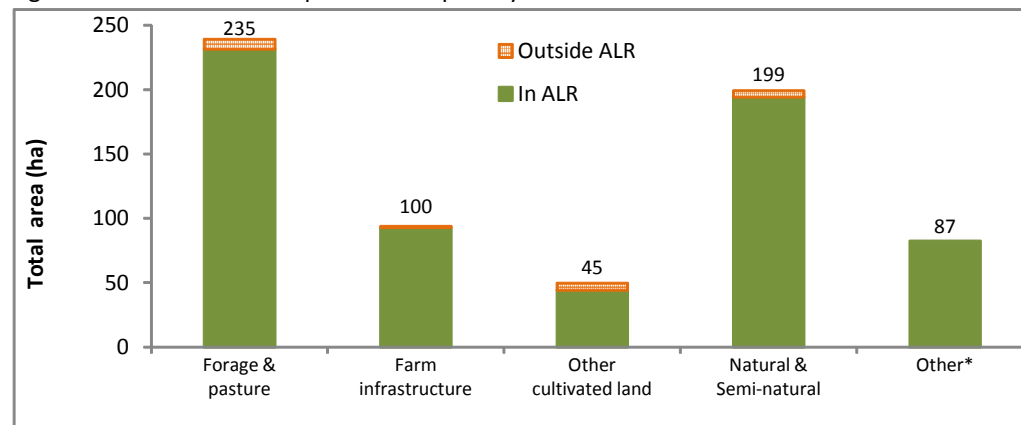


Figure A6. Land cover on parcels with poultry activities



* 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 A14. Sheep / lamb / goat activities

Activity	Scale	By parcel		Total number of activities	By activity type	
		Main type	Secondary type		Intensive	Non intensive
Goat	Very small scale (< 5 goats)	13	7	20	-	20
Goat	Small scale (5 - 125 goats)	13	4	17	-	17
Sheep / lamb	Very small scale (< 10 sheep)	14	11	25	-	25
Sheep / lamb	Small scale (10 - 250 sheep)	32	4	36	-	36
TOTAL	TOTAL	72	26	98	-	98

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns.

Table A15. Distribution of sheep / lamb / goat activities by parcel size and scale

Parcel size (ha)	Scale of activities				Total number of activities
	Very small (5 goats or 10 sheep)	Small (5-125 goats or 10-250 sheep)	Medium (125-500 goats or 250- 1000 sheep)	Large (>500 goats or >1000 sheep)	
< 1	6	1	-	-	7
1 - 2	20	13	-	-	33
2 - 4	10	19	-	-	29
4 - 8	5	9	-	-	14
8 - 16	1	7	-	-	8
16 - 32	2	3	-	-	5
32 - 64	1	1	-	-	2
64 - 128	-	-	-	-	-
>= 128	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	45	53	-	-	98
AVERAGE PARCEL SIZE (ha)	4 ha	6 ha	-	-	5 ha

Figure A7. Distribution of sheep / lamb / goat activities by parcel size and scale

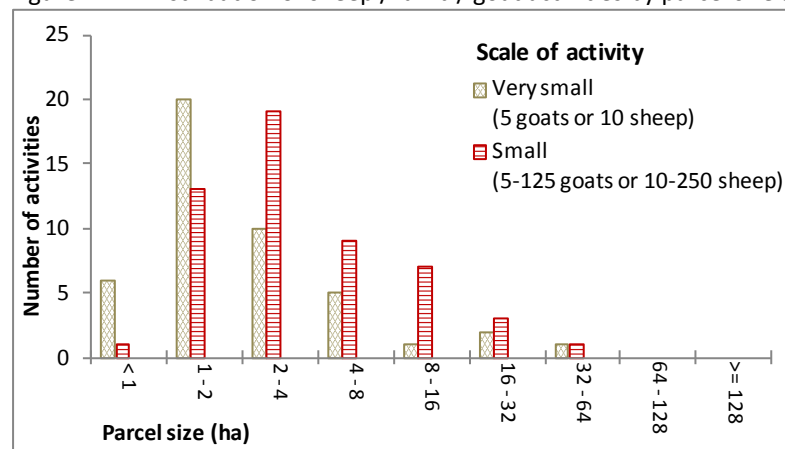
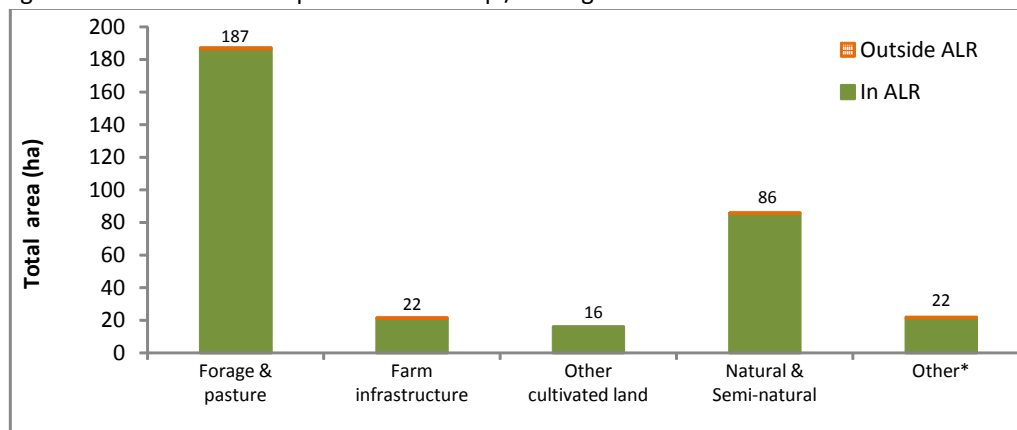


Figure A8. Land cover on parcels with sheep / lamb goat activities



* 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 A16. Equine activities

Type of activity	Scale of equine activity	By parcel		Total number of activities	By activity type	
		Main Type	Secondary Type		Intensive	Non intensive
	Very small scale (1 horse)	189	15	204	-	204
	Small scale (2-25 horses)	656	14	670	-	670
Boarding	Small scale (2-25 horses)	25	-	25	-	25
Companion	Small scale (2-25 horses)	1	-	1	-	1
Recreation	Small scale (2-25 horses)	1	-	1	-	1
Sporting / racing	Small scale (2-25 horses)	3	-	3	-	3
	Medium scale (25- 100 horses)	26	-	26	-	26
Boarding	Medium scale (25- 100 horses)	10	-	10	-	10
Recreation Boarding	Medium scale (25- 100 horses)	1	-	1	-	1
Sporting / racing Boarding	Medium scale (25- 100 horses)	8	-	8	-	8
Sporting / racing Boarding	Large scale (> 100 horses)	1	-	1	-	1
TOTAL	TOTAL	921	29	950	-	950

"Main Type" and "Secondary Type" of livestock are determined by comparing the scale of different livestock activities on the parcel and does not represent primary agricultural activity.

"Intensive" livestock activities utilize specialized structures such as barns, feedlots and stockyards designed for confined feeding at high stocking densities.

"Non Intensive" livestock activities allow animals to graze on a pasture and often utilize non intensive barns and corrals/paddocks.

Table A17. Distribution of equine activities by parcel size and scale

Parcel size (ha)	Scale of equine activities				Total number of activities
	Very small (1 - 2 equine)	Small (2 - 25 equine)	Medium (25 - 100 equine)	Large (> 100 equine)	
< 1	58	64	-	-	122
1 - 2	62	216	4	-	282
2 - 4	60	233	3	-	296
4 - 8	13	97	14	-	124
8 - 16	8	64	13	-	85
16 - 32	2	21	8	-	31
32 - 64	1	4	2	1	8
64 - 128	-	1	1	-	2
>= 128	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	204	700	45	1	950
AVERAGE PARCEL SIZE (ha)	3 ha	4 ha	13 ha	33 ha	4 ha

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

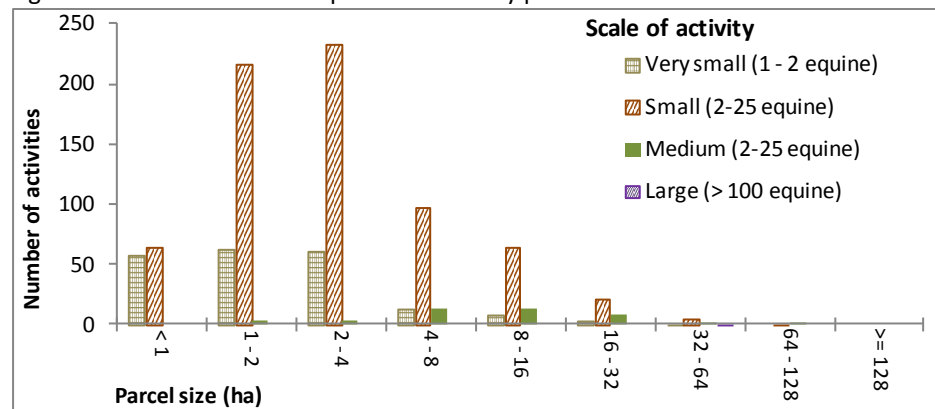
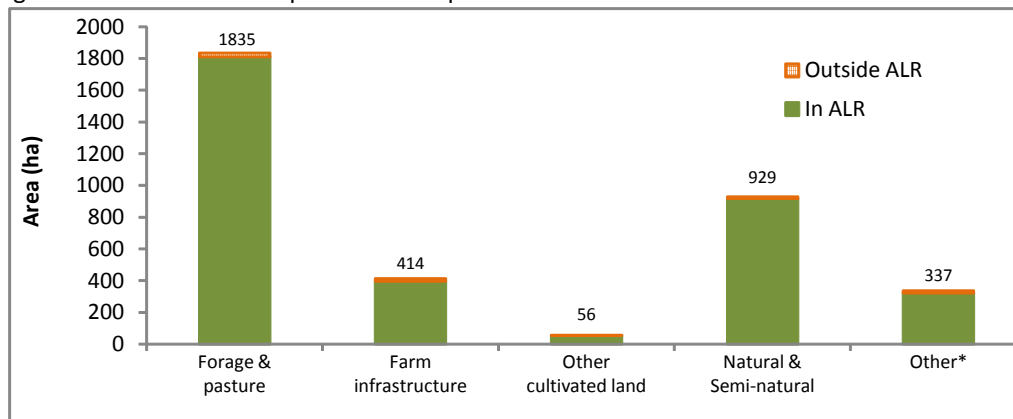


Figure A10. Land cover on parcels with equine activities



* 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.

VALUE ADDED

Table A18. Value added activities

Value added	Description	Scale of activity			Total number of activities	Average parcel size (ha)
		Small scale	Medium scale	Large scale		
Agritourism	Guest ranch	-	1	-	1	14
Agritourism	Petting zoo	2	-	-	2	11
Agritourism	Seasonal events	-	2	2	4	18
Agritourism	Tours	3	3	-	6	15
Direct sales	Equine sales	3	-	-	3	3
Direct sales	Permanent retail store	12	9	10	31	5
Direct sales	Seasonal store (stand)	30	14	2	46	7
Direct sales	U-pick	7	4	-	11	13
Processing	Crop processing	-	2	2	4	16
Processing	Honey / wax processing	1	-	-	1	0
Processing	Meat processing	1	1	1	3	4
Processing	Wine / cider processing	1	3	1	5	7
TOTAL NUMBER OF ACTIVITIES		60	39	18	117	

Table A19. Distribution of value added activities by parcel size

Parcel size (ha)	Agri-tourism				Direct Sales				Processing				Total number of activities
	Guest ranch	Petting zoo	Seasonal events	Tours	Equine sales	Permanent retail store	Seasonal store (stand)	U-pick	Crop processing	Honey / wax processing	Meat processing	Wine / cider processing	
< 1	-	-	-	-	1	1	2	-	-	1	-	-	5
1 - 2	-	-	1	-	1	6	8	1	-	-	-	2	19
2 - 4	-	-	-	-	-	10	12	-	1	-	1	-	24
4 - 8	-	1	-	3	1	8	11	5	-	-	2	2	33
8 - 16	1	-	1	-	-	5	9	1	1	-	-	-	18
16 - 32	-	1	1	2	-	1	3	2	1	-	-	1	12
32 - 64	-	-	1	1	-	-	1	2	1	-	-	-	6
64 - 128	-	-	-	-	-	-	-	-	-	-	-	-	-
>= 128	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	1	2	4	6	3	31	46	11	4	1	3	5	117
AVERAGE PARCEL SIZE (ha)	14 ha	11 ha	18 ha	15 ha	3 ha	5 ha	7 ha	13 ha	16 ha	0 ha	4 ha	7 ha	8 ha

Table A20. Distribution of direct sales by parcel size and scale

Parcel size (ha)	Equine sales	Permanent retail store			Seasonal store (stand)			U-pick		Total number of activities
	Small scale	Small scale	Medium scale	Large scale	Small scale	Medium scale	Large scale	Small scale	Medium scale	
< 1	1	-	-	1	2	-	-	-	-	4
1 - 2	1	2	2	2	6	1	1	1	-	16
2 - 4	-	7	2	1	9	3	-	-	-	22
4 - 8	1	1	4	3	8	3	-	3	2	25
8 - 16	-	1	1	3	5	3	1	1	-	15
16 - 32	-	1	-	-	-	3	-	1	1	6
32 - 64	-	-	-	-	-	1	-	1	1	3
64 - 128	-	-	-	-	-	-	-	-	-	-
>= 128	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	3	12	9	10	30	14	2	7	4	91
AVERAGE PARCEL SIZE (ha)	3 ha	5 ha	4 ha	6 ha	5 ha	11 ha	9 ha	12 ha	15 ha	7 ha

Table A21. Distribution of agritourism events by parcel size and scale

Parcel size (ha)	Guest Ranch	Petting zoo	Seasonal events		Tours		Total number of activities
	Medium Scale	Small scale	Medium Scale	Large Scale	Small Scale	Medium Scale	
< 1	-	-	1	-	-	-	1
1 - 2	-	-	-	-	-	-	-
2 - 4	-	-	-	-	-	-	-
4 - 8	-	1	-	-	2	1	4
8 - 16	1	-	-	1	-	-	2
16 - 32	-	1	1	-	-	2	4
32 - 64	-	-	-	1	1	-	2
64 - 128	-	-	-	-	-	-	-
>= 128	-	-	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	1	2	2	2	3	3	13
AVERAGE PARCEL SIZE (ha)	14 ha	11 ha	12 ha	24 ha	15 ha	16 ha	16 ha

Table A22. Distribution of processing by parcel size and scale

Parcel size (ha)	Crop processing		Honey / wax processing	Meat processing			Wine / cider processing			Total number of activities
	Medium scale	Large scale	Small scale	Small scale	Medium scale	Large scale	Small scale	Medium scale	Large scale	
< 1	-	-	1	-	-	-	-	-	-	1
1 - 2	-	-	-	-	-	-	1	1	-	2
2 - 4	1	-	-	-	-	1	-	-	-	2
4 - 8	-	-	-	1	1	-	-	1	1	4
8 - 16	-	1	-	-	-	-	-	-	-	1
16 - 32	1	-	-	-	-	-	-	1	-	2
32 - 64	-	1	-	-	-	-	-	-	-	1
64 - 128	-	-	-	-	-	-	-	-	-	-
>= 128	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER OF ACTIVITIES	2	2	1	1	1	1	1	3	1	13
AVERAGE PARCEL SIZE (ha)	9 ha	24 ha	0 ha	5 ha	5 ha	3 ha	2 ha	9 ha	7 ha	9 ha