

CORPORATION OF DELTA AGRICULTURAL LAND USE INVENTORY, 2002



***PREPARED BY THE MINISTRY OF AGRICULTURE, FOOD AND FISHERIES
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Introduction

In the spring and summer of 2002, the Ministry of Agriculture, Food and Fisheries (MAFF) worked with the Corporation of Delta to conduct an agricultural land use inventory. The inventory encompasses all land within Agricultural Land Reserve (ALR), in addition to some land adjacent to the ALR. The study area was approximately 9759 hectares and included 1600 parcels.

The information collected from this inventory is useful to both the Corporation of Delta and MAFF as it pertains to land use and agricultural production in Delta. It will play a role in assessing possible development applications as well as in policy formation.

Since the agricultural landscape, particularly for soil-based farming area, changes as frequently as on a yearly basis, this inventory provides only a snapshot of the land uses and agricultural activities occurring within Delta at the time of the survey.

The Corporation of Delta

The Corporation of Delta is located in the Greater Vancouver Regional Corporation (GVRD) and has a total population¹ of 96,950 in 2001. Delta is bordered by the Fraser River to the North, Boundary Bay to the South, the Strait of Georgia to the West, and Surrey to the East. Delta's jurisdictional area² is 36,433 hectares in size, of which about 10,181 hectares³, or 28%, is in the ALR. The 2001 Census of Agriculture⁴ reported that Delta was the municipality in the GVRD that generated the most in farmgate sales per farm, at just over \$820,000 per farm, with 196 census farms.

¹ Source: <http://www.statcan.ca/>

² Source: Ministry of Municipal Affairs; Municipal Statistics, 1996.

³ ALR as of January 1, 2000 – Source: files of the Agricultural Land Commission. Please note that this number does not match that of the surveyed ALR area (9427.0 ha). This is because land without Parcel ID's, such as roads and watercourses, were not included in the analysis.

⁴ Source: *Statistics Canada, Census of Agriculture Profile Data - British Columbia*.

Survey method

This inventory was conducted by MAFF at an approximate rate of 1000 hectares/day using the following tools:

- A vehicle for drive-by observations;
- Survey maps for identifying parcels and features. The survey maps are aerial photographs with ALR boundaries, property boundaries, street names, and parcel identification (PID) numbers recorded on them. (These were provided to MAFF by the Corporation of Delta, and were taken in the 2002);
- MS Access database and laptop for recording observed data; and
- Digital GIS layers, including ALR boundaries, roads, and property boundaries (cadastre). These are used to map the data collected from the survey.

The surveying method was developed by MAFF which involves a team of 2 MAFF staff, with one (usually a regional agrologist) driving, navigating, and observing the land use activities, and the other recording the information into MS Access database on a laptop. During the survey, two types of information were entered for each property – the land covers (including crops, buildings, structures, natural areas, and water features), and the land use activities. The database can then be used in conjunction with ArcView to generate queries, maps, reports, and statistics. The following pages of this report contain a summary of the data collected.

For additional details about the methodology, please refer to the document [AgFocus – A Guide to Agricultural Land Use Inventory](#).

Land Use Activities in the ALR

Land use activities are the general activities (e.g. agricultural, residential, or industrial use) observed on each parcel. The primary land use activity was recorded for each parcel while any additional activities were recorded as secondary and tertiary. For example, a horse farm with a house would have Agriculture as the primary land use activity and Residential Use as the secondary land use activity. The following table shows the primary land use activities found within the Corporation of Delta. It should be noted that the table only lists figures for the parcels that are within the ALR; parcels along the outside edge of the ALR will be discussed in the section "Land Use Activities on the Urban-Rural Edge" on Page 26.

Table 1: Primary Land Use Activities within the ALR, Corporation of Delta

<i>Primary land use activity</i>	<i>Number of parcels</i>	<i>% of parcels</i>	<i>Total area (ha)*</i>	<i>% Total area (ha)</i>	<i>Average parcel size (ha)</i>
Agriculture	518	54.9%	7396.2	78.5%	14.3
Transportation and Communications	101	10.7%	563.7	6.0%	5.6
Not in use	81	8.6%	344.4	3.7%	4.3
Residential Use	81	8.6%	57.4	0.6%	0.7
Hobby Farm	38	4.0%	73.8	0.8%	1.9
Commercial/Service Use	30	3.2%	23.5	0.2%	0.8
Unused farmland	21	2.2%	161.3	1.7%	7.7
Recreational Use	15	1.6%	31.1	0.3%	2.1
Institutional Use	14	1.5%	19.7	0.2%	1.4
Golf Course	11	1.2%	135.2	1.4%	12.3
Indian Reserve	11	1.2%	218.3	2.3%	19.8
Utility	9	1.0%	27.2	0.3%	3.0
Unknown	7	0.7%	3.1	0.0%	0.4
Industrial Use	3	0.3%	3.7	0.0%	1.2
Park	2	0.2%	58.3	0.6%	29.2
Bird Sanctuary	1	0.1%	301.1	3.2%	301.1
"Filled" site	1	0.1%	8.8	0.1%	8.8
Total Parcels	944**	100.0%	9427.0***	100.0%	10.0

**Note: "Total area (ha)" column refers to the total area of the parcels, not just the portion of the parcels engaged in the primary land use activity. This is also true for all other tables and maps in this report.*

***Note: The census of Agriculture reports 196 census farms in 2001, while this summary reports 518 parcels primarily engaged in agriculture within the ALR in 2002. It is important to note that there is a difference between census farms and parcels. Many census farms have their operation on multiple parcels, which accounts for the large difference between the number of census farms and the number of parcels engaged in agriculture.*

****Note: This number does not quite add up to 10,181 hectares (the total area within Delta's ALR) because not all roads and watercourses have Parcel ID's, and are not included in the analysis.*

It should be noted that when classifying the land use and agricultural activities, there is an element of subjectivity. While many efforts are made to reduce the subjectivity (e.g. by quantifying what is considered “small” or “large”, or by defining what is “Forage” and what is “Pasture”), each surveyor may interpret the land uses observed differently. Thus, the results are a reflection of the surveyor’s method of interpreting what was seen.

A property was recorded as Agriculture if farming was the only observed use or was considered to be the most prominent use and thus, three parcels that belong to the Alaksen National Wildlife Area are shown as Agriculture on the accompanied “Primary Land Use Activities” map. Hobby Farm was recorded when farming was obviously recreational and of secondary importance to the residential use, and not likely the major source of income to the residents. For example, a farm with a house and one or two horses is considered as a Hobby Farm because the agricultural activities are an unlikely primary source of income. Hobby Farm implies that there is residential use on a parcel, and thus residential use is not recorded separately. Due to the subjectivity of this analysis, some of the parcels recorded as Agriculture may in fact be Hobby Farms, and vice versa. The classification was based on how the surveyor interpreted the prominence of the land uses. In the future, in order to avoid confusion between “Agriculture” and “Hobby Farm”, farmland classification from BC Assessment will be used to more accurately distinguish the two.

For all parcels, vegetated areas and watercourses were recorded as land covers rather than land use activities. Exceptions to this are parcels with only natural trees, watercourses, and/or natural vegetation as covers. These parcels were then labeled Not in Use. The term “Filled” site was used when it appeared as a filled dump site.




















Parcels that were located mostly out of the ALR, but had a small portion within the ALR were not included in the analysis (i.e. are not included in the statistics or the map) for “Land Use Activities in the ALR”. However, if these parcels were located on the Urban-Rural edge, then they are included in the section “Land Use Activities on the Urban-Rural Edge” on page 29.

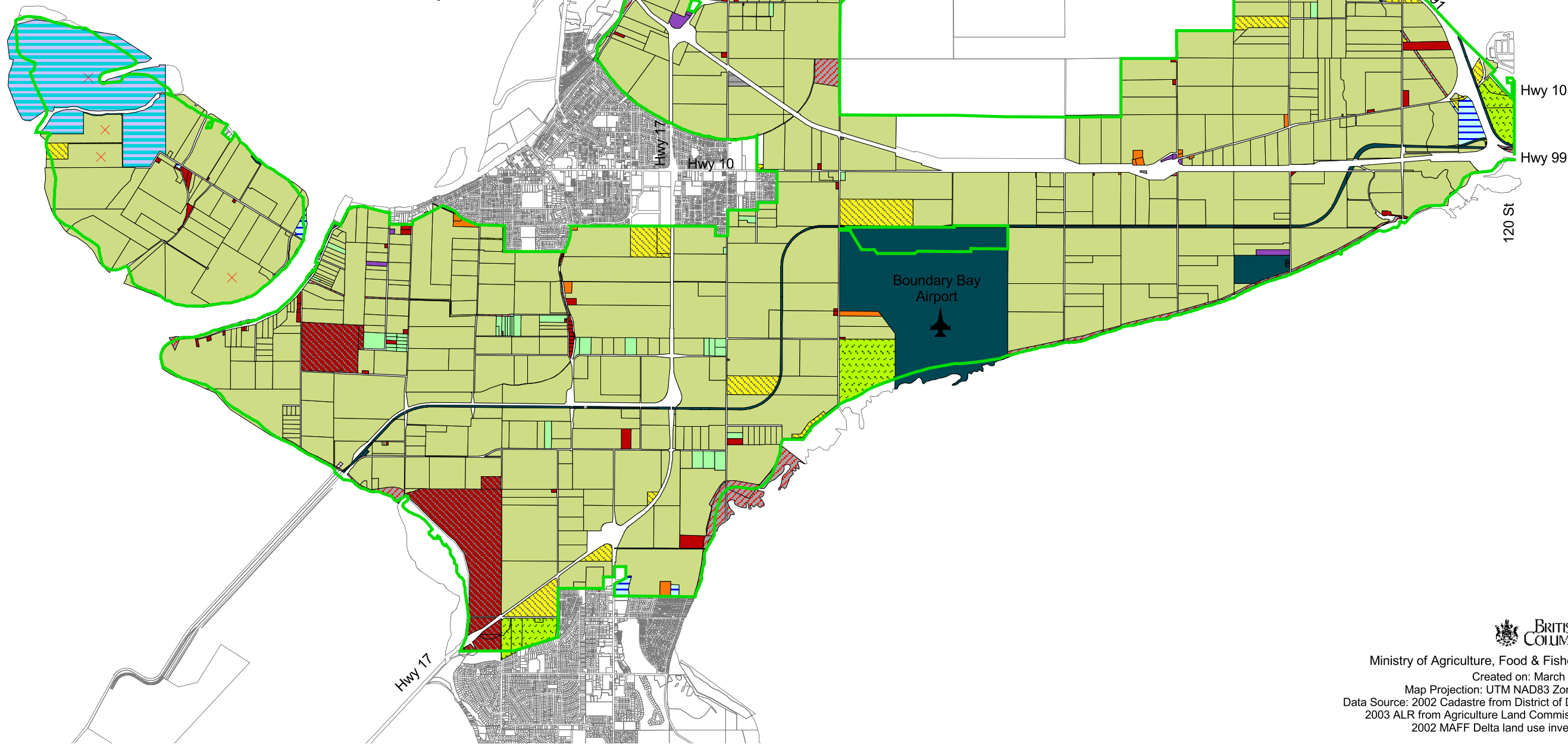
In Delta’s ALR, 58.9% of the parcels have Agriculture and Hobby as their primary land use activity. These parcels account for 79.3% of the total area of ALR land. Parcels with Residential Use as the primary use account for 8.6% of ALR parcels, and 0.6% of ALR land, while Transportation and Communications accounts for 10.7% of all parcels and 6.0% of all ALR land.

While it is not uncommon for parcels primarily engaged in agriculture to have an average parcel size larger than parcels primarily engaged in a hobby/small scale farm, the difference between their average sizes in Delta seems to be greater than typical. The average parcel size for agriculture is 14.3 hectares, while the average parcel size for hobby/small scale farms is at just 1.9 hectares. The average parcel size for parcels primarily engaged in residential use is even smaller, at 0.7 hectares.

Primary Land Use Activities, 2002

Corporation of Delta, BC

Primary Land Use Activities			
	Agriculture		Not in Use
	Bird Sanctuary		Park
	Commercial/Service Use		Recreational Use
	"Filled" site		Residential Use
	Golf Course		Transportation and Communications
	Hobby Farm		Unknown
	Indian Reserve		Unused Farmland
	Industrial Use		Utility
	Institutional Use		ALR Boundary
	Alaksen National Wildlife Area		



Ministry of Agriculture, Food & Fisheries
Created on: March 2004
Map Projection: UTM NAD83 Zone 10
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Primary Land Use Activities, 2002

Agriculture in the ALR

Agricultural activities were recorded for any parcels with Agriculture or Hobby Farm as primary, secondary, or tertiary activity. Up to four types of agricultural activities were recorded with the primary agricultural activity being the likely primary source of income. The distinction between primary, secondary, tertiary, and quaternary agricultural activity was difficult to determine at times, so the order was sometimes the surveyors' best guess. The following table and map show the agricultural activities grouped into general categories for the Corporation of Delta. The specific agricultural activities recorded during the survey will be described in greater detail in later sections of this report.

If a parcel was classified as primarily Agriculture, its primary agricultural activity is considered to be that parcel's *Main use*. For example, if a parcel had a primary land use activity as Agriculture and a primary agricultural activity as Greenhouse Operation, it would be counted in the table below as having Greenhouses and Nurseries as its *Main Use*. The "*Main Use – Number of Parcels*" column is mutually exclusive; that is, a parcel can only be counted once in this column.

If a parcel's primary land use activity is Hobby Farm or its secondary/tertiary activity is Agriculture, then all of its agricultural activities would be considered an *Ancillary Use*. If a parcel's primary land use activity is Agriculture, then its secondary/tertiary/quaternary agricultural activities would be considered *Ancillary Use*. For example, if a Hobby Farm has field vegetables or if a farm devoted primarily to field vegetables also has some berries, the berries would be included in Berry Crops as an ancillary use. The "*Ancillary Use – Number of Parcels*" is not mutually exclusive; that is, a parcel with several agricultural activities is counted several times in this column. Thus, no grand total has been calculated. The definitions of *Main Use* and *Ancillary Use* described in this section apply to all remaining sections of this report.

Table 2: Primary Agricultural Activities within the ALR, Corporation of Delta

<i>Agricultural activity</i>	<i>Main Use</i>					<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Total area (ha)</i>	<i>% of total area</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Field Vegetables and Potatoes	179	34.6%	3240.2	43.8%	18.1	77	256
Forage and Pasture	103	19.9%	952.6	12.9%	9.2	167	270
Livestock Operations	77	14.9%	989.7	13.4%	12.9	62	139
Cultivated or Fallow Land	72	13.9%	763.1	10.3%	10.6	67	139
Berry Crops	42	8.1%	759.2	10.3%	18.1	9	51
Grain Production	18	3.5%	218.5	3.0%	12.1	8	26
Greenhouse Operations	19	3.7%	365.9	4.9%	19.3	2	21
Nursery Operations	5	1.0%	32.3	0.4%	6.5		5
Miscellaneous Agriculture	3	0.6%	74.6	1.0%	24.9	6	9
Total Parcels	518	100.0%	7396.2	100.0%	14.3		

**Note: The "Total – Number of Parcels" column counts all parcels having the given agricultural activity as main or ancillary use. No grand total has been calculated since a parcel could be counted several times. For example, a farm having its primary agricultural activity as dairy, secondary as beef and tertiary as horse would be counted 3 times under "Total - Livestock Operations".*

In Delta, there are 518 parcels that have Agriculture as its main use, with an average size of 14.3 hectares. Field Vegetables and Potatoes is the most common type of agriculture found in Delta's ALR, accounting for 34.6% of all parcels in the ALR and 43.8% of all land in agricultural production. Field Vegetables and Potatoes have an average area of 18.1 hectares. Forage and Pasture was the second most common agricultural activity, with 19.9% of all parcels primarily engaged in agriculture, and 12.9% of all land in agricultural production. Other common agricultural activities are Livestock Operations, and Cultivated and Fallow Land, and Berry Crops.

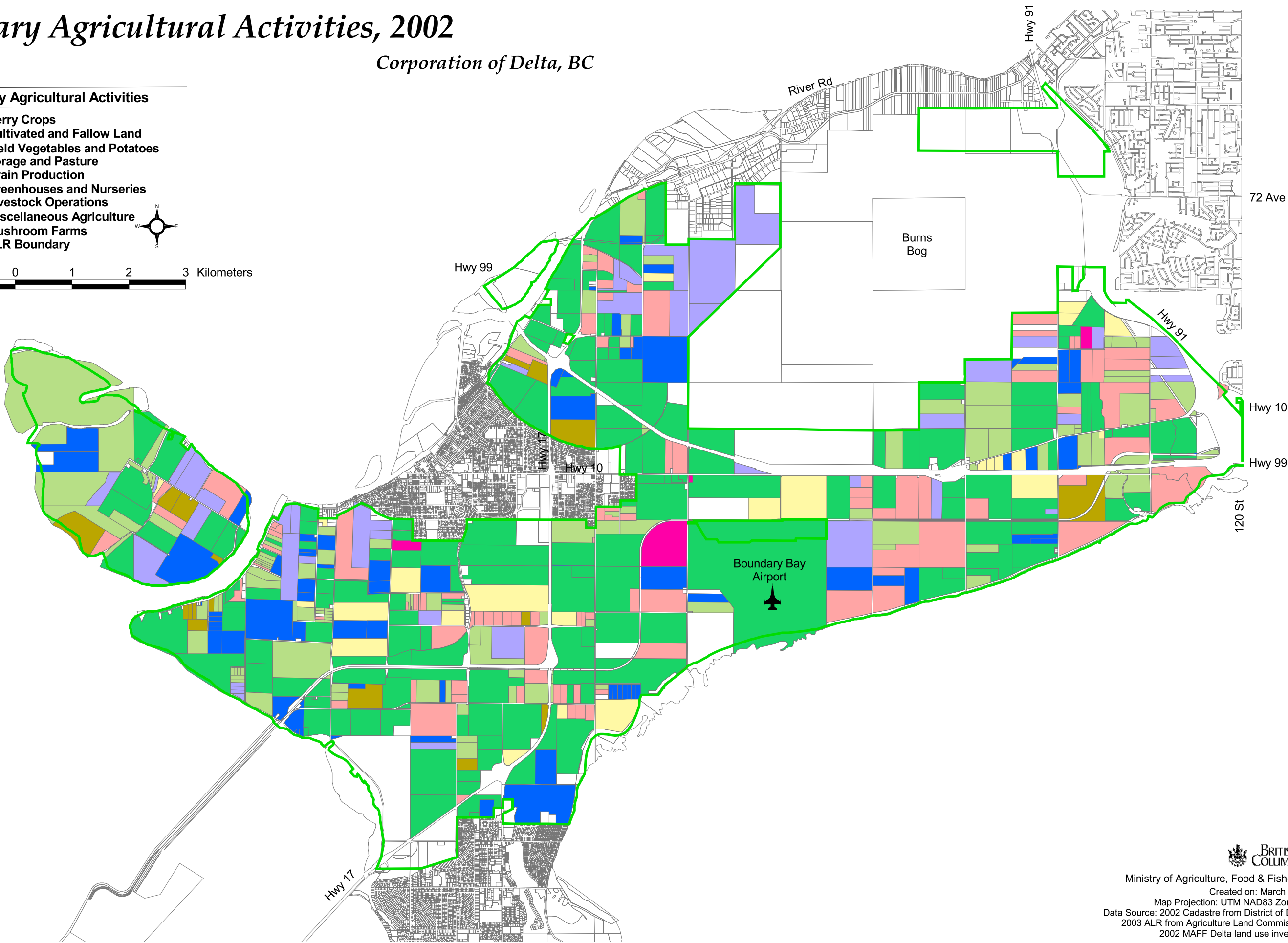
A breakdown of each primary agricultural activity is included in the following pages, accompanied by maps and statistics showing the various types of farm use in Delta.

Primary Agricultural Activities, 2002

Corporation of Delta, BC

Primary Agricultural Activities

- Berry Crops
- Cultivated and Fallow Land
- Field Vegetables and Potatoes
- Forage and Pasture
- Grain Production
- Greenhouses and Nurseries
- Livestock Operations
- Miscellaneous Agriculture
- Mushroom Farms
- ALR Boundary



Primary Agricultural Activities, 2002

Field Vegetables and Potatoes

The most common type of agricultural activity in Delta was Field Vegetables and Potatoes. The numbers of field vegetable and potato farms are likely underestimated, since some plants may not have been visible at the time of the survey (in the early summer, before crops are visible). A portion of the areas classified as Cultivated land (refer to Table 9) would likely have been in vegetable or potato production later in the year.

In the survey, there were 35 farms which were recorded as growing both vegetables and potatoes. When field vegetables were the main use, they were recorded in the *Main Use* column and the potatoes were recorded in the *Ancillary Use* column. Similarly, when potatoes were the main use, they were recorded in the *Main Use* column and the vegetables were recorded in the *Ancillary Use* column. Occasionally, both the field vegetables and the potatoes were ancillary uses, in which case, each commodity was recorded separately in the *Ancillary Use* column (i.e. those parcels will be counted twice in the *Ancillary Use* column).

Table 3: Field Vegetables and Potatoes within the ALR, Corporation of Delta

	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Field Vegetables and Potatoes					
Field Vegetable Farm	86	1474.5	17.1	49	135
Potato Field	93	1765.7	19.0	28	121
Total Parcels	179	3240.2	18.1		

Forage and Pasture Operations

The second most common type of agricultural activity in Delta was Forage and Pasture. This is mostly in the form of grass or corn, with some legumes as well. Forage refers to crops which are made into silage or hay, and Pasture refers to crops which are grazed by livestock. There were a total of 264 parcels which were assigned the activity Pasture or Forage Operation. Of these, 103 parcels had Forage or Pasture as their main use, with an average size of 9.2 hectares.

Occasionally, parcels that have livestock also have Forage or Pasture operations. The table and accompanying map identify the main and ancillary uses of the parcels with Extensive Livestock⁵ and those without.

Table 4: Forage and Pasture Operations within the ALR, Corporation of Delta

	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Forage and Pasture Operations					
With Extensive Livestock	4	52.1	13.0	96	100
Without Extensive Livestock	99	900.5	9.1	71	170
Total	103	952.6	9.2		

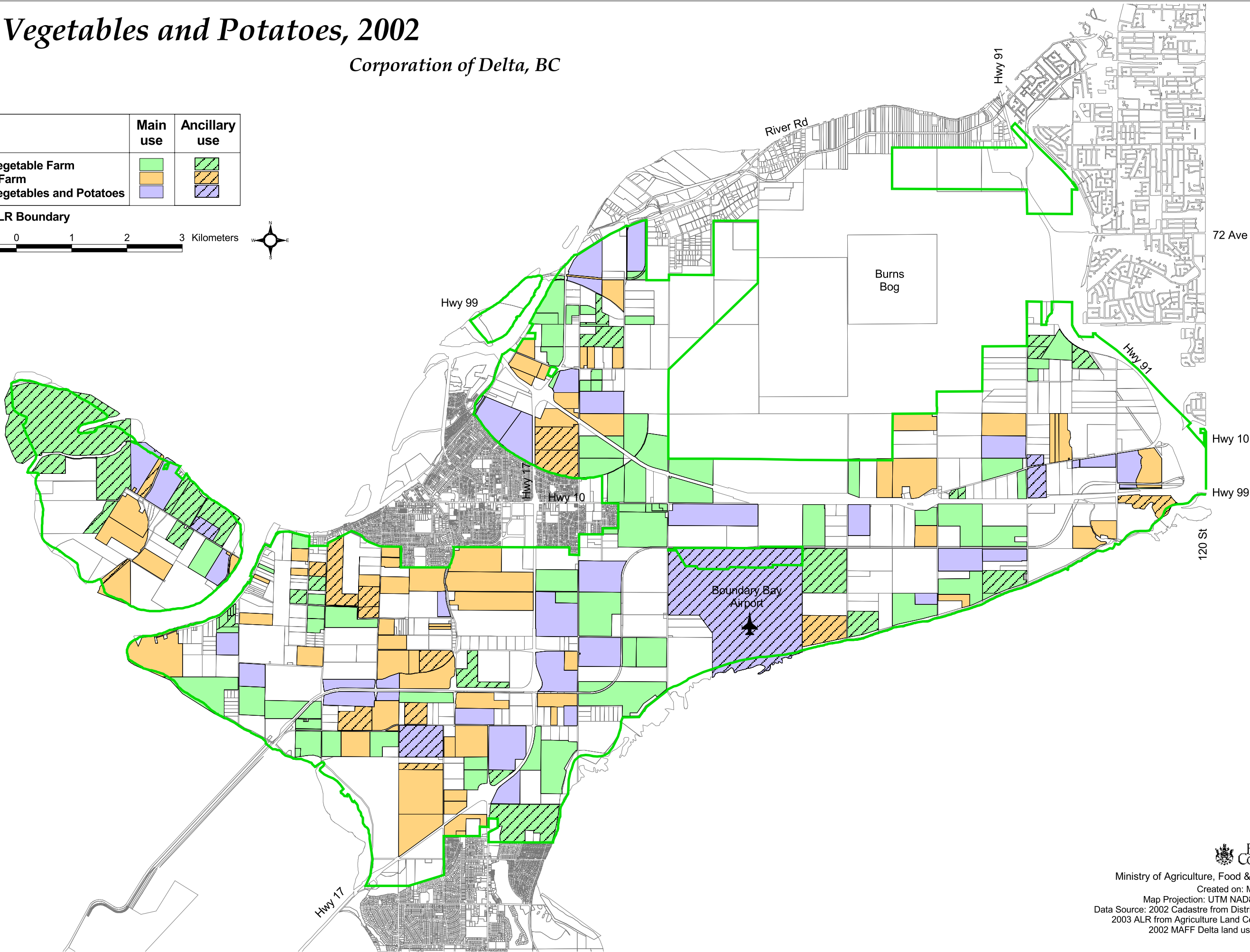
⁵ Extensive Livestock is livestock that are allowed to graze on a pasture. This is different from Intensive Livestock, which are raised exclusively in a barn, and are not allowed to graze. Further explanation is provided in the following section "Livestock Operations".

Field Vegetables and Potatoes, 2002

Corporation of Delta, BC

	Main use	Ancillary use
Field Vegetable Farm		
Potato Farm		
Field Vegetables and Potatoes		

 ALR Boundary



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

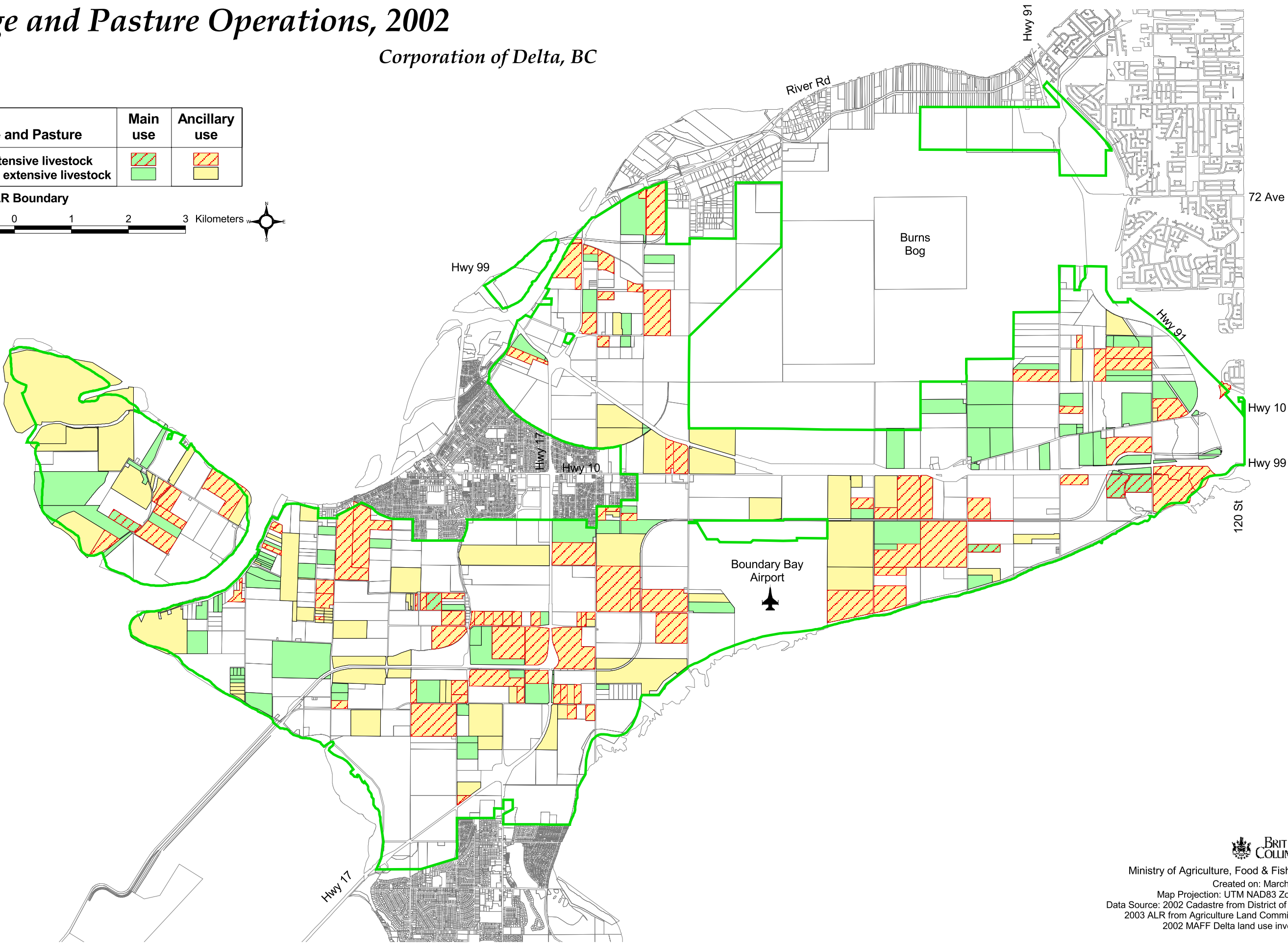
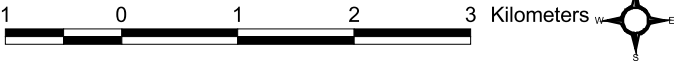
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Forage and Pasture Operations, 2002

Corporation of Delta, BC

Forage and Pasture	Main use	Ancillary use
With extensive livestock		
Without extensive livestock		

 ALR Boundary



Ministry of Agriculture, Food & Fisheries
Created on: March 2004
Map Projection: UTM NAD83 Zone 10
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Livestock Operations

All parcels with livestock and livestock structures (barns, paddocks, and/or manure storage facilities) on them were considered in this next group of statistics. If a parcel contains only pasture with livestock grazing on it (no animal housing, etc.), the agricultural activity is recorded as Pasture rather than Livestock Operation. Since the survey boundary is based on property line rather than farm operation, parcels with grazing livestock are usually part of a larger Livestock Operation or are parcels that lease out land to a neighbouring farm.

The majority of parcels engaged in livestock operations have Extensive Livestock (horses, beef or dairy cattle, free-range poultry, sheep and goats, llamas, and/or ratites (ostrich and emus)). One parcel, however, has Intensive Livestock, (livestock raised exclusively in a barn). This one occurrence is a poultry farm, yet fur, swine, and game birds are also types of intensive livestock. Dairy can be considered either extensive or intensive livestock, depending on whether or not the cattle graze. If the cattle are raised indoors, then they are considered intensive, and if they are allowed to graze on a pasture, they are considered extensive.

An estimate was made on the number of animals belonging to a Livestock Operation. The estimation is based on the size of structures such as barns and paddocks, as well as the number of animals seen from the road. The estimate was then used to categorize the size of the operation into a small, medium, or large farm based on the following numbers of livestock:

	Small	Medium	Large
Horses	1-4	5-10	11+
Beef, sheep/goats, llamas	1-10	11-50	51+
Dairy cattle	1-50	51-100	101+

For this inventory, an estimation of the scale of the operation was sometimes not possible because not all of the livestock were visible. Therefore, the size of the operation and the number of livestock could be underestimated, and thus recorded as an unknown scale. When animals were not seen, their presence was determined by signs of pasture that had been grazed or well-maintained structures like barns and paddocks. Free range poultry may also be underestimated because its housing is small and easily missed from both the road and the aerial photography.

The following table shows a breakdown of different livestock found in the Corporation of Delta.

Table 5: Livestock operations within the ALR, Corporation of Delta

<i>Livestock</i>	<i>Main Use</i>					<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Total area (ha)</i>	<i>% of total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Horse Farm	45	58.4%	375.6	37.9%	8.3	44	89
Dairy Farm (intensive and extensive)	14	18.2%	368.5	37.2%	26.3	-	14
Beef Cattle Farm	12	15.6%	184.1	18.6%	15.3	5	17
Sheep/Goat Farm	4	5.2%	22.8	2.3%	5.7	4	8
Ratite Farm	1	1.3%	2.2	0.2%	2.2	-	1
Poultry Farm (intensive)	1	1.3%	36.6	3.7%	36.6	-	1
Llama/Alpaca Farm	-	-	-	-	-	4	4
Poultry Farm, free-range	-	-	-	-	-	3	3
Mixed Livestock (small-scale)	-	-	-	-	-	2	2
Total parcels	77	100.0%	989.7	100.0%	12.9		

Horse farms are the most common main use for Livestock Operations in Delta's ALR, accounting for nearly two thirds of all parcels engaged in livestock operations, with an average parcel size of 8.3 hectares. Dairy is the second most common livestock type in Delta, accounting for 18.2% of all parcels and 37.2% of all parcel area. It also has one of the largest average parcel sizes, at 26.3 hectares. While there are more than three times the number of parcels engaged in Horse farms than Dairy farms, these two livestock activities occupy approximately the same number of hectares in Delta. As such, an average-sized Dairy farm in Delta is approximately three times larger than an average-sized Horse farm.

The third most common type of livestock operations in Delta is beef which makes up 15.6% of all livestock parcels and has an average parcel size of 15.3 hectares. Other main use livestock operations found in Delta include: 4 Sheep/Goat farms, 1 Ratite farm, and 1 Poultry farm.

Tables and maps are included on the following pages showing the scale and locations of Horse, Dairy, and Beef operations.

Horses

The most common livestock type in the Delta's ALR is horses, with a total of 89 operations. 45 of these parcels have horse operations as their main use, and of these, 22 are large with 11 or more horses per operation.

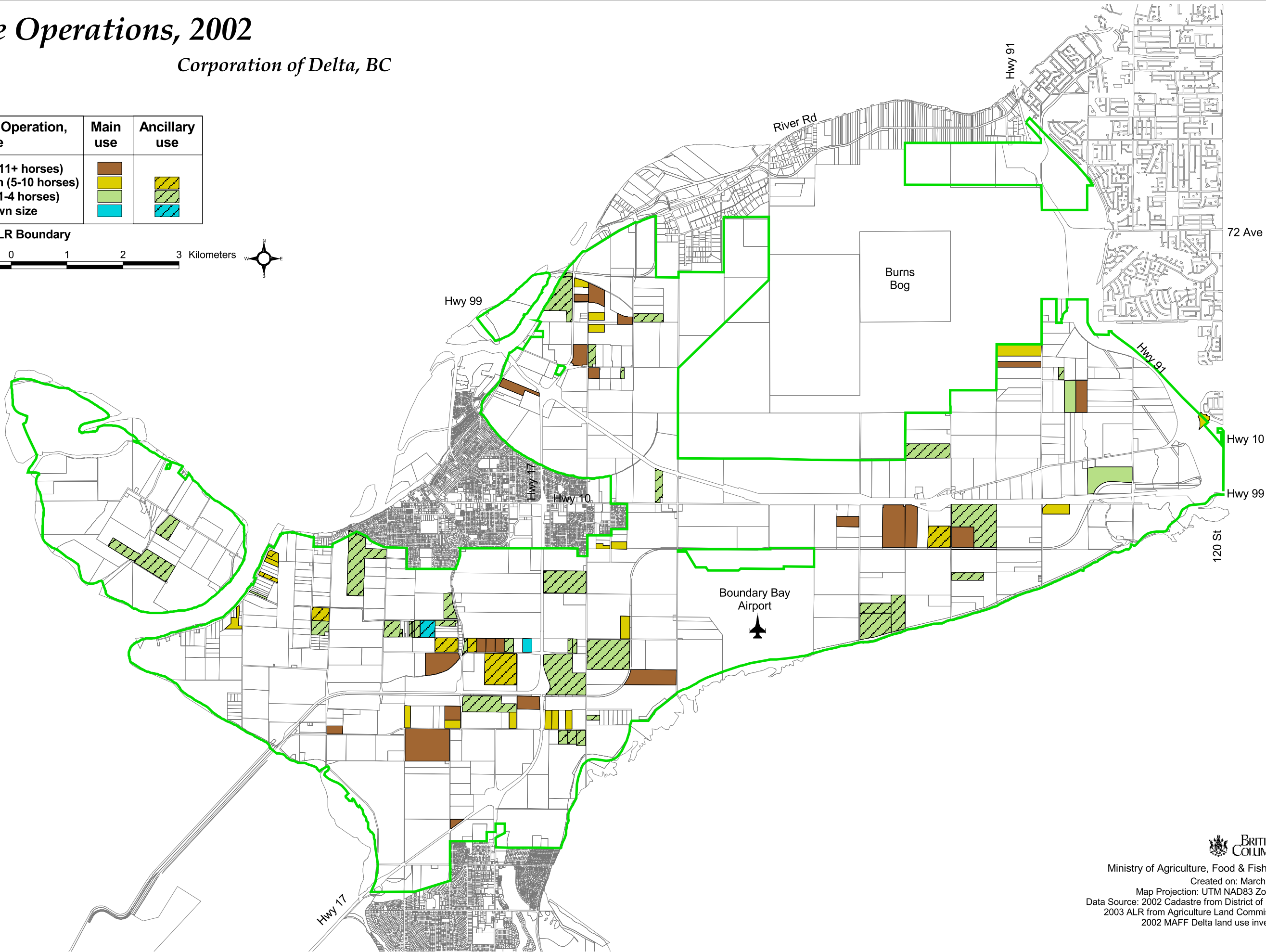
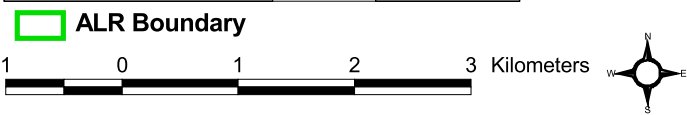
Table 6: Horse Operations within the ALR, Corporation of Delta

<i>Size of horse operation</i>		<i>Number of horse operations</i>	<i>% of horse operations</i>	<i>Average parcel size (ha)</i>
Large (11+ horses)	Main use	22	24.7%	11.3
	Ancillary Use		0.0%	
	Subtotal	22	24.7%	
Medium (5-10 horses)	Main use	19	21.3%	4.5
	Ancillary Use	6	6.7%	11.9
	Subtotal	25	28.1%	
Small (1-4 horses)	Main use	3	3.4%	12.5
	Ancillary Use	37	41.6%	12.1
	Subtotal	40	44.9%	
Unknown	Main use	1	1.1%	4.0
	Ancillary Use	1	1.1%	8.1
	Subtotal	2	2.2%	
All sizes	Main use	45	50.6%	8.3
	Ancillary Use	44	49.4%	12.0
	Total	89	100.0%	

Horse Operations, 2002

Corporation of Delta, BC

Horse Operation, by size	Main use	Ancillary use
Large (11+ horses)		
Medium (5-10 horses)		
Small (1-4 horses)		
Unknown size		



Dairy Cattle

The second most common livestock operation is Dairy. All dairy operations are the main use of the parcels, with no dairy as an ancillary use. What this indicates for Delta is that if a parcel has dairy farming and other agricultural activities, dairy is likely the largest type of operation on that property.

Table 7: Dairy Operations within the ALR, Corporation of Delta

<i>Size of dairy operation</i>		<i>Number of dairy operations</i>	<i>% of dairy operations</i>	<i>Average parcel size (ha)</i>
Large (101+ cattle)	Main use	10	71.4%	26.6
	Ancillary Use			
	Subtotal	10	71.4%	
Medium (51-100 cattle)	Main use	3	21.4%	21.0
	Ancillary Use			
	Subtotal	3	21.4%	
Small (1-50 cattle)	Main use	1	7.1%	39.3
	Ancillary Use			
	Subtotal	1	7.1%	
All sizes	Main use	14	100.0%	26.3
	Ancillary Use			
	Total	14	100.0%	

Beef Cattle

Beef was another common type of livestock, with a total of 17 parcels with beef cattle. Approximately 71% of the parcels with beef cattle were the main use of the parcel, and the other 29% were ancillary.

Table 8: Beef Operations within the ALR, Corporation of Delta

<i>Size of beef operation</i>		<i>Number of beef operations</i>	<i>% of beef operations</i>	<i>Average parcel size (ha)</i>
Large (51+ cattle)	Main use	1	5.9%	41.0
	Ancillary Use		0.0%	
	Subtotal	1	5.9%	
Medium (11-50 cattle)	Main use	10	58.8%	14.1
	Ancillary Use	3	17.6%	31.6
	Subtotal	13	76.5%	
Small (1-10 cattle)	Main use	1	5.9%	2.4
	Ancillary Use	2	11.8%	27.9
	Subtotal	3	17.6%	
All sizes	Main use	12	70.6%	15.3
	Ancillary Use	5	29.4%	30.1
	Total	17	100.0%	

Dairy Operations, 2002

Corporation of Delta, BC

Dairy Operation, by size

Large (101+ cattle)

Medium (51-100 cattle)

Small (1-50 cattle)

Main use

ALR Boundary

10

0

1

2

3

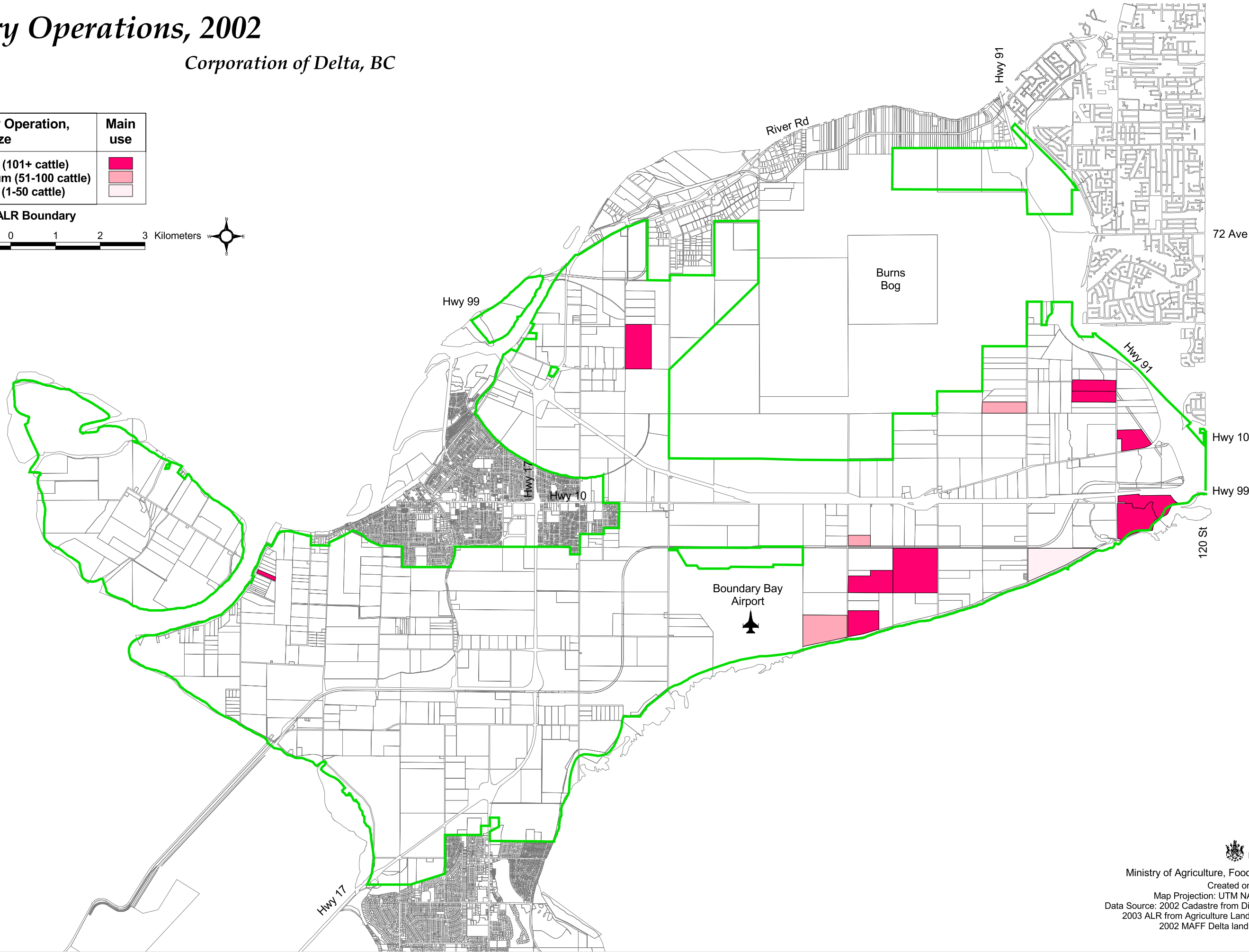
Kilometers

N

E







S

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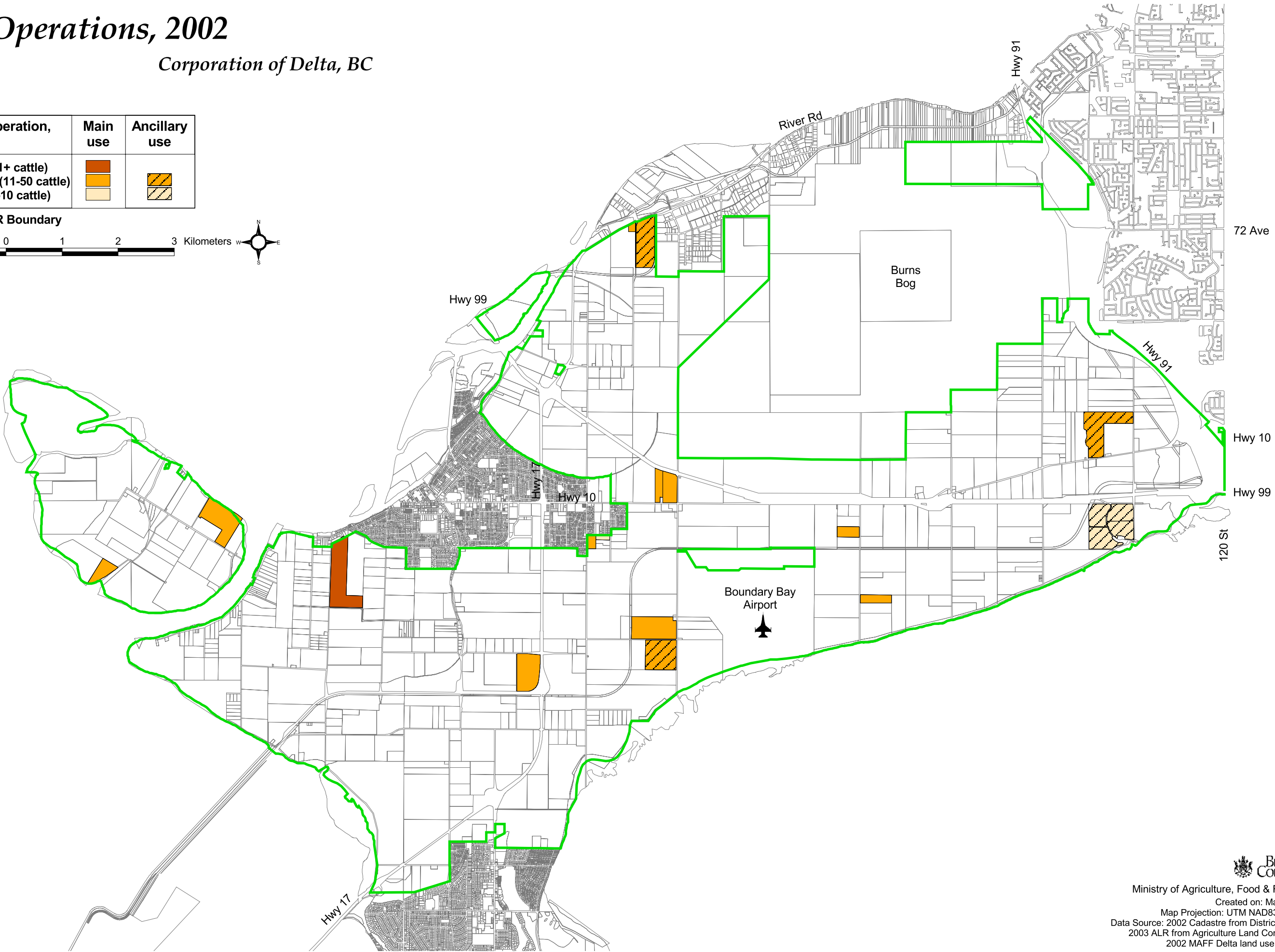
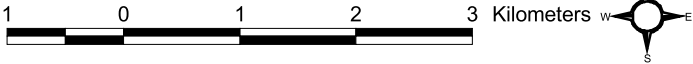


Beef Operations, 2002

Corporation of Delta, BC

Beef Operation, by size	Main use	Ancillary use
Large (51+ cattle)		
Medium (11-50 cattle)		
Small (1-10 cattle)		

 ALR Boundary



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Cultivated or Fallow Land

Cultivated land is used to describe fields where the crop could not be identified because there were no plants visible, and the land appeared to be tilled and planted. *Fallow land* refers to fields which were not currently in production.

There are a somewhat large number of parcels with cultivated land. This is likely due to the fact that the survey took place in the early summer, and many field crops were not visible or identifiable at the time of the survey. Many of the parcels classified as Cultivated Land may have been engaged in field vegetable, or grain production later in the year.

As noted on the map, there is one parcel where there is both cultivated and fallow land. For this parcel, the cultivated land is the main use, and the fallow land is the ancillary use, and is recorded in the respective columns in the table below.

Table 9: Cultivated or Fallow Land within the ALR, Corporation of Delta

<i>Cultivated and Fallow Land</i>	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Cultivated Land	71	755.1	10.6	65	136
Fallow Land	1	8.0	8.0	2	3
Total parcels	72	763.1	10.6		

Berry Crops

Delta had a total of 42 berry farms as the main use in 2002. While the average parcels size for all berries was 18.1 hectares, cranberries are on parcels that occupy more than twice that, with an average of 37.6 ha. Although cranberries are situated on only 8 parcels, they make up nearly the same amount of hectares (301.1 ha) as blueberries (339.5 ha).







Blueberries are by far the most common type of berry production in Delta, followed by cranberries and strawberries. Another practice for berry farmers is to produce more than 1 type of berry (such as a mix of blueberries, raspberries, and strawberries).

Table 10: Berry Crops within the ALR, Corporation of Delta

<i>Berry Crops</i>	<i>Main Use</i>				<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Blueberries	20	47.6%	339.5	17.0	2	22
Cranberries	8	19.0%	301.1	37.6	1	9
Strawberries	6	14.3%	20.3	3.4	3	9
More than 1 type of berry	4	9.5%	64.0	16.0	-	4
Raspberries	2	4.8%	9.1	4.6	2	4
Currants	2	4.8%	25.3	12.7	-	2
Unknown Berries	-	-	-	-	1	1
Total Parcels	42	100.0%	759.2	18.1		

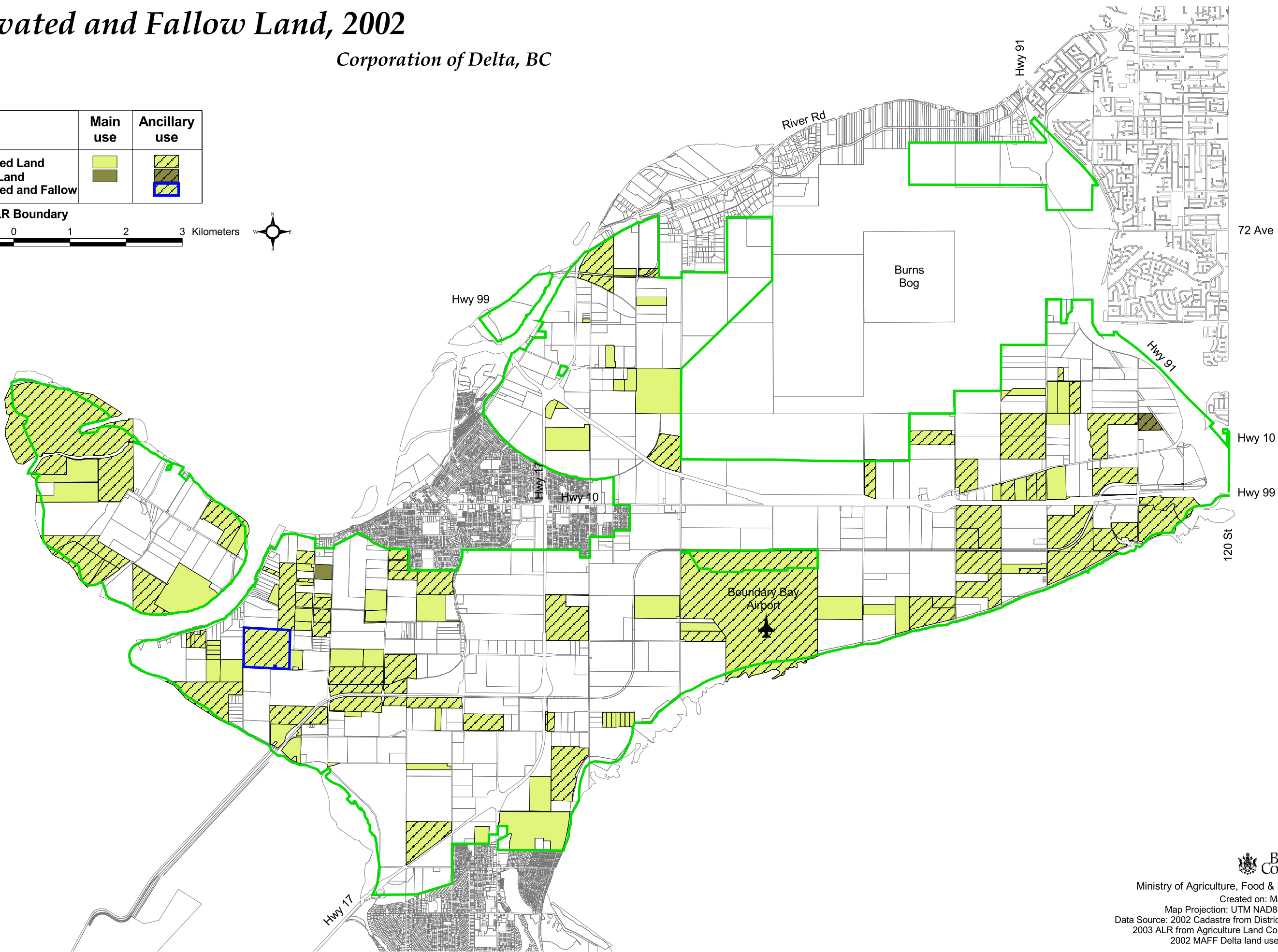
Cultivated and Fallow Land, 2002

Corporation of Delta, BC

	Main use	Ancillary use
Cultivated Land		
Fallow Land		
Cultivated and Fallow		

 ALR Boundary

1 0 1 2 3 Kilometers



Ministry of Agriculture, Food & Fisheries













Created on: March 2004

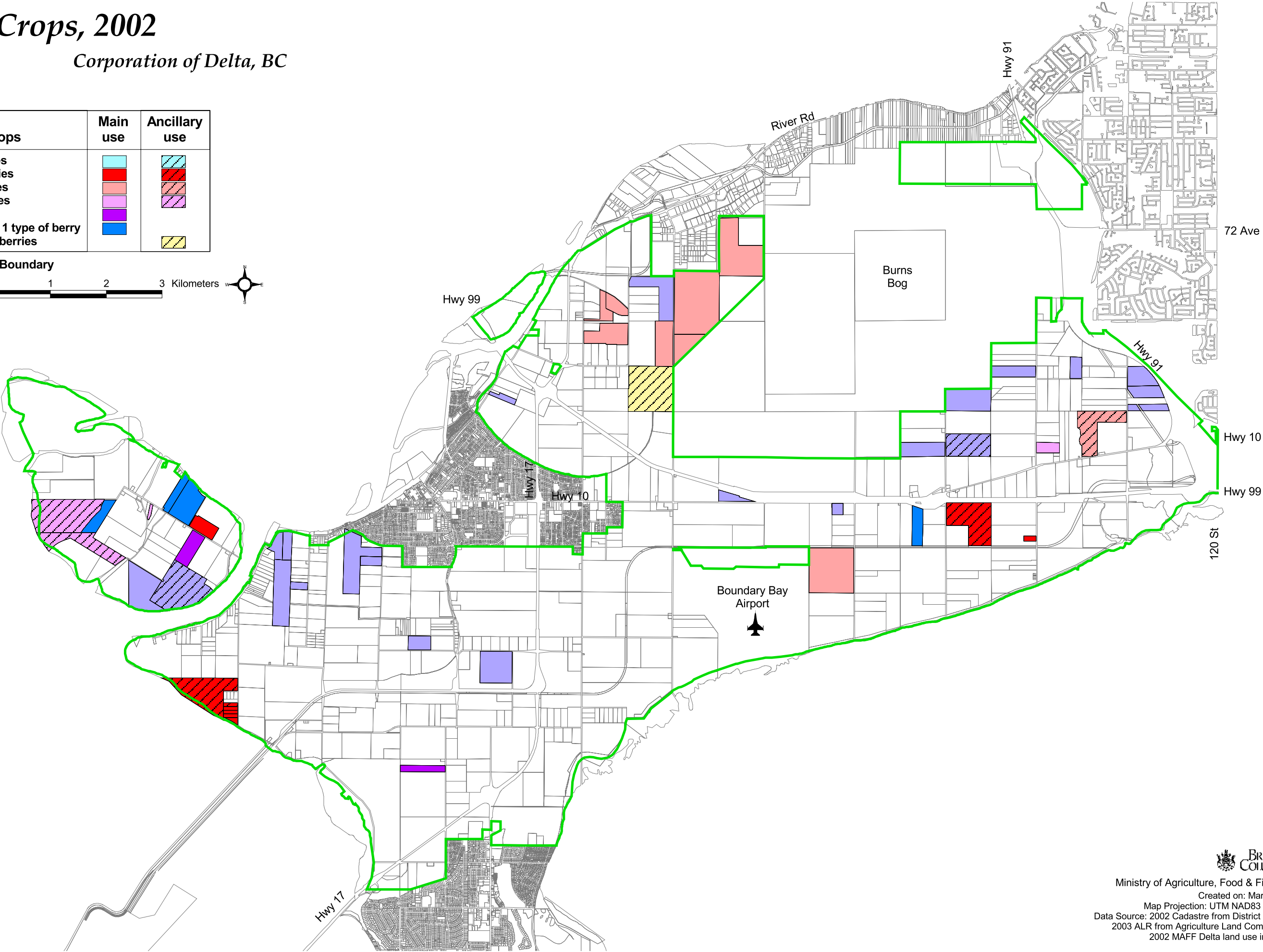
Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Berry Crops, 2002

Corporation of Delta, BC

Berry Crops	Main use	Ancillary use
Blueberries		
Strawberries		
Cranberries		
Raspberries		
Currants		
More than 1 type of berry		
Unknown berries		



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Greenhouse Operations

The term *Greenhouse Operation* was assigned to parcels with glass structures used for the purpose of growing plants⁶. Occasionally, there were nurseries with greenhouses as a part of the same operation. Rather than record this as two separate activities (i.e. "Nursery" and "Greenhouse Operation"), a category was added called *Nursery including Greenhouses*. This category appears in the table below and on the accompanying map, as well as in the Nursery Operations map and table (Table 13). In Table 2, which summarizes the primary agricultural activities of parcels, these operations are tallied in the "Nursery Operations" category.

In Delta, 23 parcels have greenhouses or nurseries including greenhouses as its main use, and only one parcel had greenhouses as its ancillary use. There is also one greenhouse operation that is being abandoned. The average parcel size for parcels with greenhouses is somewhat larger than the average parcel size of agriculture in general, at 19.3 hectares compared to 14.3 hectares.

A greenhouse was classified as large when more than 5 acres, or 2 hectares, is under glass. In Delta, 9 of the 25 greenhouses were classified as large. On the map, the parcels with large greenhouses are indicated with a red outline, and parcels with small greenhouses are indicated with a blue outline. According to the 2001 Census of Agriculture⁷, Delta had 1,169,000 square meters in greenhouse production, which accounts for 61% of the GVRD's and 25% of BC's total greenhouse production.

Table 11: Greenhouse Operations within the ALR, Corporation of Delta






<i>Greenhouse Operations</i>	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Greenhouse Operation	18	362.8	20.2	1	20
Nursery incl. Greenhouses	5	32.3	6.5		5
Abandoned Greenhouse	1	3.1	3.1		
Total parcels	24	398.2	16.6		

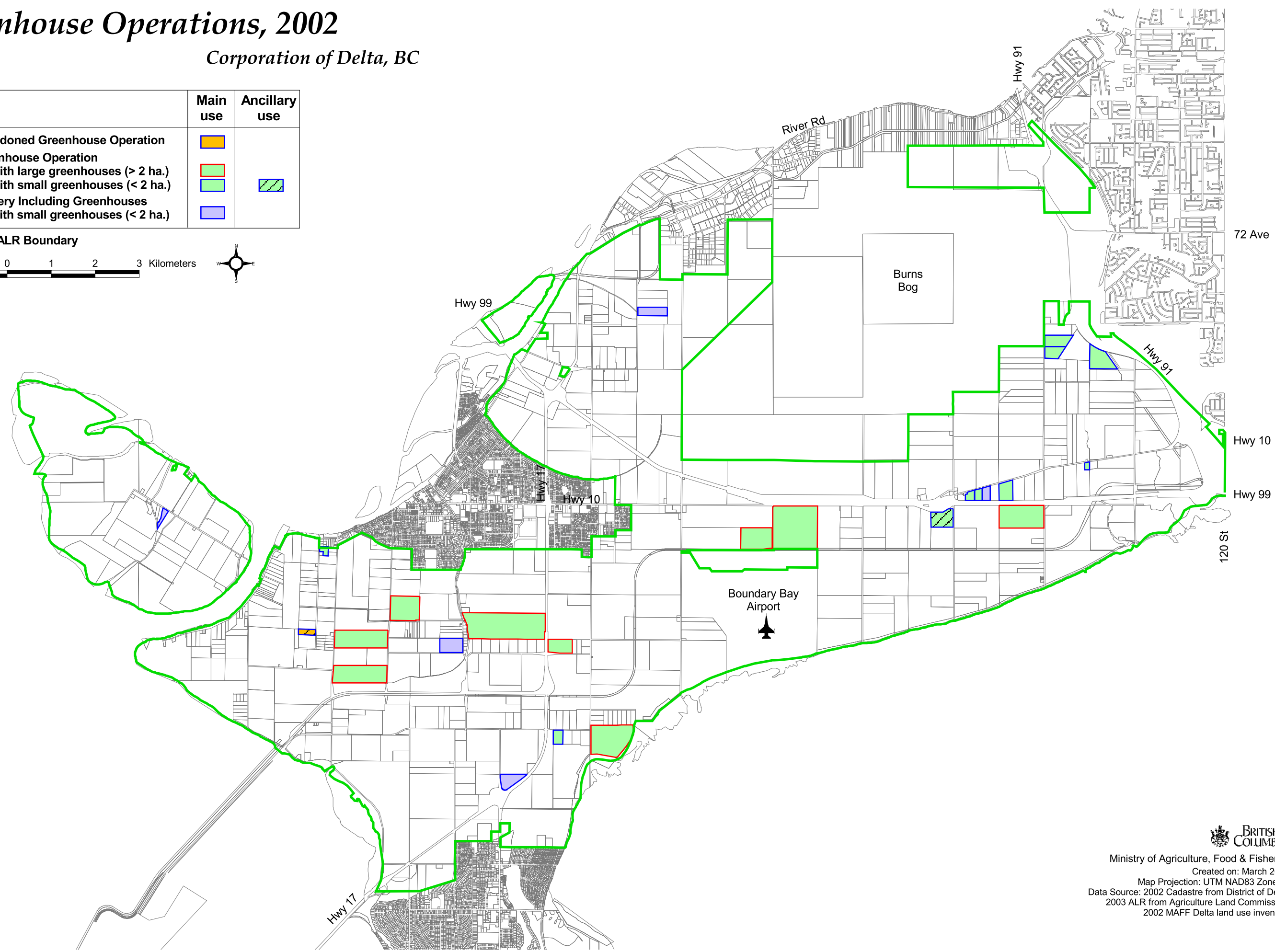
⁶ Source: *Guide for Bylaw Development Food, 1998 Issue (Working Copy)* by Ministry of Agriculture and Food. Actual definition is : "a structure covered with translucent material, and used for the purpose of growing plants, which is of sufficient size for persons to work within the structure"

⁷ Source: *Statistics Canada, Census of Agriculture Profile Data - British Columbia*. Please note that the 2001 census reports 32 Greenhouse Operations in Delta. This number does not match the number reported in this summary. This could be attributed to various factors, such as smaller operations located outside of the ALR, or farms with small greenhouses that were not visible on the aerial photographs or at the time of the survey.

Greenhouse Operations, 2002

Corporation of Delta, BC

	Main use	Ancillary use
Abandoned Greenhouse Operation		
Greenhouse Operation with large greenhouses (> 2 ha.)		
Greenhouse Operation with small greenhouses (< 2 ha.)		
Nursery Including Greenhouses with small greenhouses (< 2 ha.)		



Grain Production

The most common grain crop observed in Delta was barley, with some wheat as well. There are 18 parcels where grain production is the main use, and they occupy an average parcel size of 12.1 hectares, which is slightly smaller than Delta's average parcel size for agriculture in general, at 14.3 hectares.

Table 12: Grain Production within the ALR, Corporation of Delta

<i>Grain Production</i>	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Grain Production	18	218.5	12.1	8	26

Nursery Operations

A Nursery is defined as "a farm operation where woody ornamental or herbaceous perennial plants are grown outdoors or in removable over-wintering polyhouses, cold frames, and hot beds"⁸. As mentioned before, parcels with nurseries and greenhouses are recorded as having "Nursery including Greenhouses" in the inventory (Note: This category also appears on the Greenhouse Operations map and table on p.15). In Table 2, which summarizes the primary agricultural activities of parcels, these operations are tallied in the Nursery Operations category. Noted that retail or wholesale component of nurseries are not collected in this inventory but such information is available through the Corporation of Delta.



Table 13: Nursery Operations within the ALR, Corporation of Delta

<i>Nursery Operations</i>	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Nursery incl. Greenhouses	5	32.3	6.5		5
Nursery				1	1
Total parcels	5	32.3	6.5		

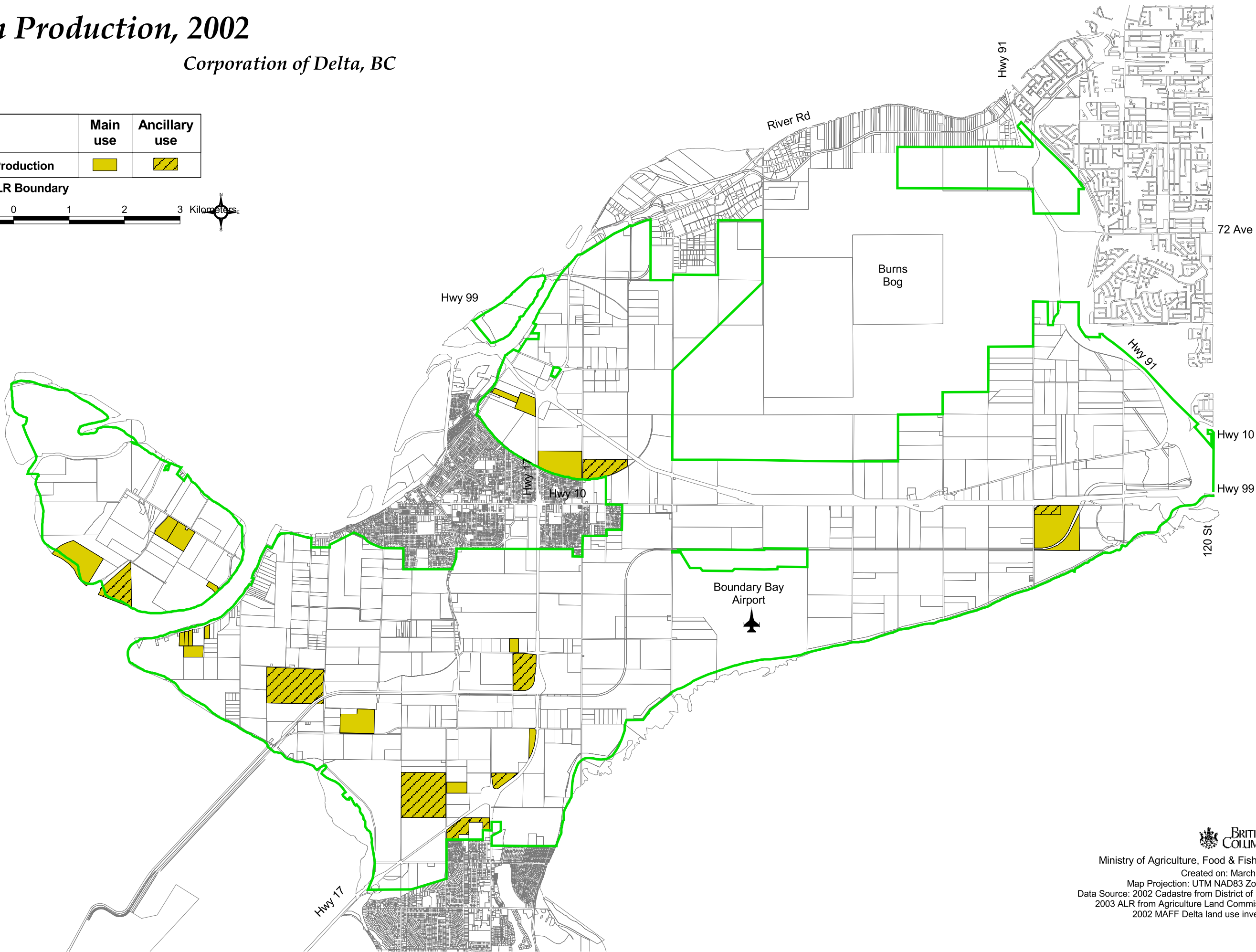
⁸ Source: *Guide for Bylaw Development Food, 1998 Issue (Working Copy)*

Grain Production, 2002

Corporation of Delta, BC

	Main use	Ancillary use
Grain Production		

 ALR Boundary



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

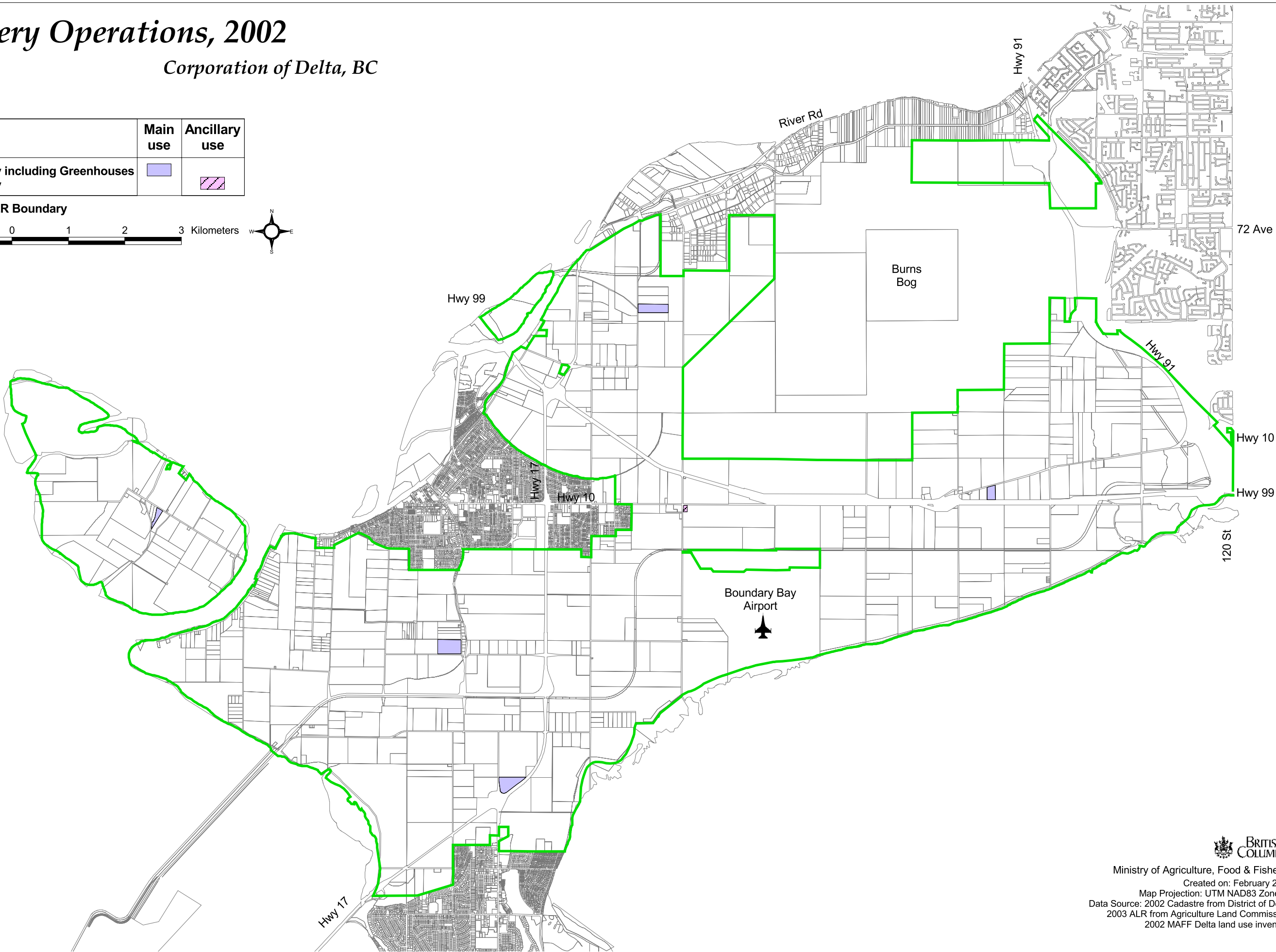
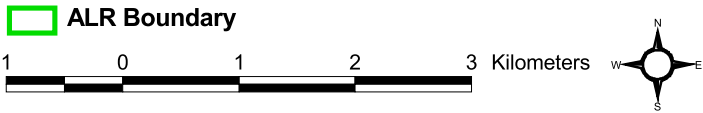
Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Nursery Operations, 2002

Corporation of Delta, BC

	Main use	Ancillary use
Nursery including Greenhouses Nursery		



Ministry of Agriculture, Food & Fisheries
Created on: February 2004
Map Projection: UTM NAD83 Zone 10
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Miscellaneous Agriculture

Miscellaneous agriculture includes agri-commercial (yoghurt processing plant), orchards, turf farms, agri-tourism, on-farm Bed & Breakfasts, apiaries (bee production), and specialty crop production. The apiary category is likely underestimated, since bee hives are small and could easily be missed. Plus, often farmers only use bee hives temporarily when they need their crops fertilized, so the hives may not be owned by that farm operation.

Some examples of specialty crops are medicinal plants such as Ginseng or Echinacea, Nuts, or others such as Garlic, Herbs, and Hops. There is only 1 parcel engaged in specialty crop production in Delta in 2002 and it was producing herbs, as an ancillary use.

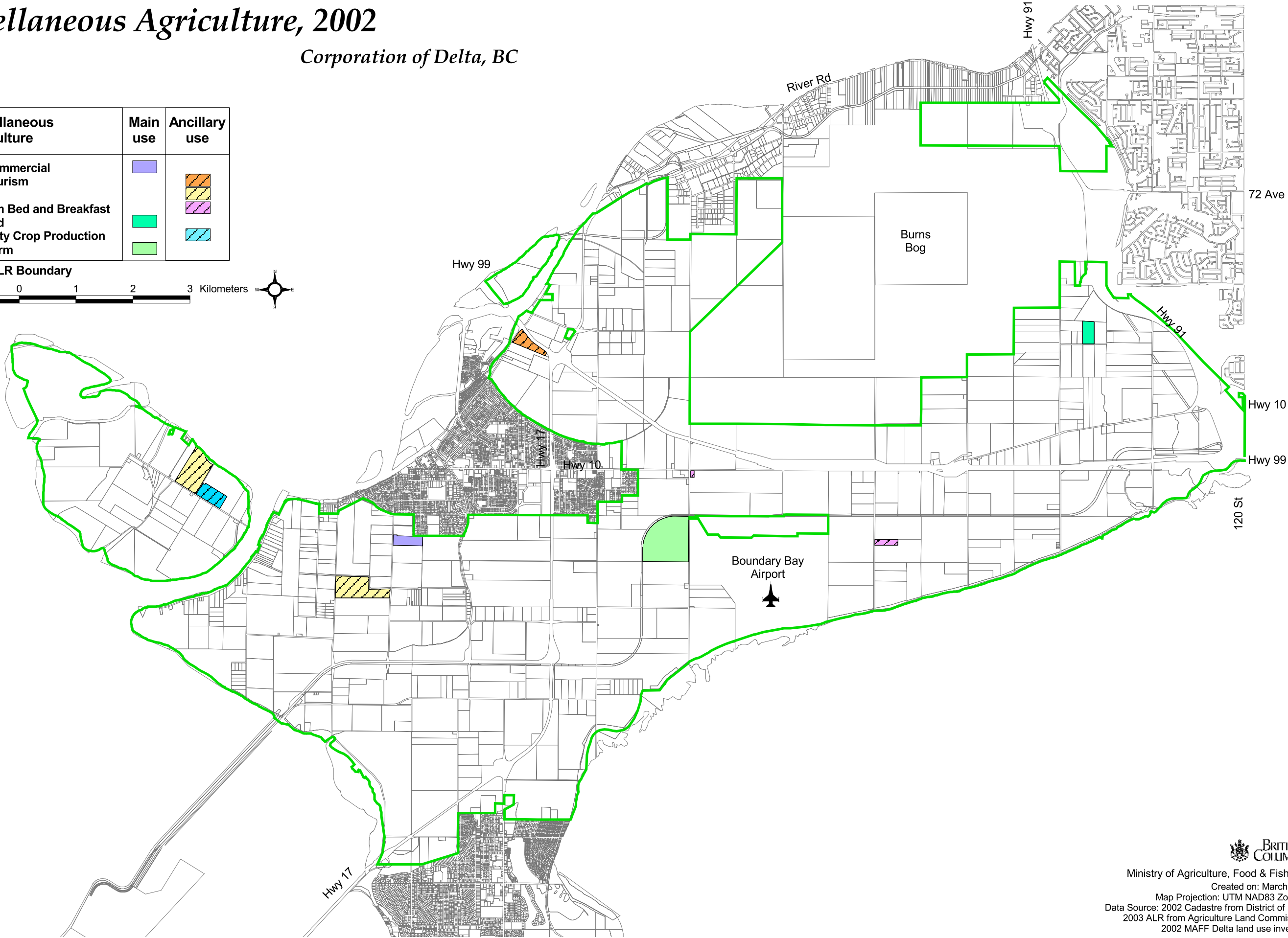
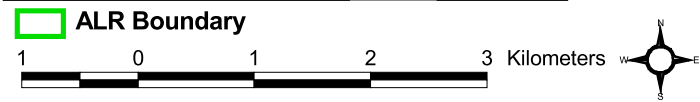
Table 14: *Miscellaneous Agriculture within the ALR, Corporation of Delta*

	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
<i>Miscellaneous Agriculture</i>					
Agri-commercial	1	9.1	9.1	-	1
Orchard	1	8.0	8.0	-	1
Turf Farm	1	57.4	57.4	-	1
Agri-tourism	-	-	-	1	1
On-Farm Bed and Breakfast	-	-	-	2	2
Apiary	-	-	-	2	2
Specialty Crop Production	-	-	-	1	1
Total parcels	3	74.6	24.9		

Miscellaneous Agriculture, 2002

Corporation of Delta, BC

Miscellaneous Agriculture	Main use	Ancillary use
Agri-commercial		
Agri-tourism		
Apiary		
On-farm Bed and Breakfast		
Orchard		
Specialty Crop Production		
Turf Farm		



Changes from 1996 to 2002

Of the 944 parcels within the ALR, 193 underwent some type of change to agriculture. Since this was a significant amount of change (20%), analysis has been done on the types of changes within Delta's ALR. While some parcels had an increase in agricultural use (e.g. an expanded greenhouse, or a new crop on a parcel that previously had no agriculture), other parcels experienced a decrease (e.g. a crop abandoned, or livestock operation changed to pasture only). Finally, some parcels had a change in agricultural use (e.g. a berry farm became a horse farm).

General Changes

There were several different types of changes that were recorded throughout the survey. The general types of changes are as follows:

1. Parcels with new agricultural use are parcels that were not engaged in agricultural activities in 1996, but have agricultural use in 2002.
2. Parcels with new agricultural activity are parcels that were previously engaged in agricultural activities in 1996, and have a new additional agricultural activity in 2002 (e.g. A horse farm in 1996 has horses and vegetables in 2002).
3. Parcels with new or expanded farm structure are parcels that were engaged in an agricultural activity in 2002, and have expanded that operation (e.g. A greenhouse operation has more square meters under glass)
4. Parcels with change in agriculture are parcels that have removed one type of agricultural activity since 1996, and introduced a different type of agricultural activity by 2002
5. Parcels with an agricultural activity removed are parcels where the number of agricultural activities has been reduced. That is, if a parcel was engaged in 3 agricultural activities in 1996, it was engaged in 2 or 1 agricultural activities in 2002.
6. Parcels no longer in agricultural production are parcels where there was agricultural activity in 1996, and all of those activities were no longer in practice in 2002. These parcels no longer have any agricultural use.

Table 15: Changes to Agriculture 1996-2002, Corporation of Delta

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
New agriculture use	25	320.7	12.8
New agricultural activity	18	444.8	24.7
New or expanded farm structures	7	86.3	12.3
Change in agriculture	124	2359.8	19.0
Agricultural activity removed	11	215.0	19.5
No longer in agricultural production	8	33.8	4.2
Total parcels	193	3460.2	17.9

Approximately 1 in 5 parcels⁹ underwent a change in agricultural activity over a six year period, with an overall net increase in agriculture. Overall, there has been an increase in agriculture since 1996, with 50 parcels either introducing or expanding agricultural activities, and 19 parcels reducing or removing the agricultural activities. The parcels which had experienced a loss in agriculture tend to be smaller than the average parcels size.

The three most common commodities that have increased in Delta since 1996 are crops (including berries, grain, vegetables, and potatoes), livestock and greenhouses. The following table briefly summarizes the increase in these three commodities, and the following pages elaborate on all the changes that have occurred to these commodities (i.e. increases, decreases, and other changes).

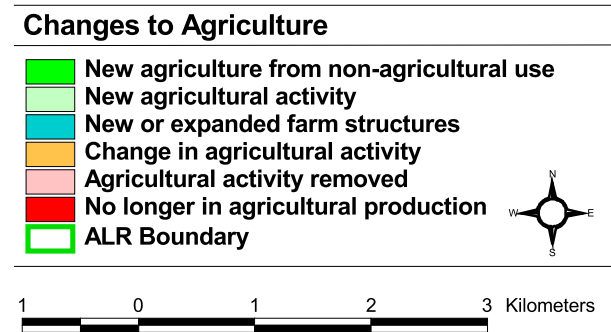
⁹ Source: This is derived based on the total number of parcels with changes to agriculture (194) and the total number of ALR parcels in Delta (944).

Table 16: Most common increase to Agriculture 1996-2002, Corporation of Delta

<i>Commodity</i>	<i>New from non-agricultural use</i>	<i>New from other agricultural uses</i>	<i>Total new</i>
Crops	10	31	41
Livestock	3	20	23
Greenhouses	1	6	7
Total parcels	14	57	71

Changes to Agriculture, 1996 - 2002

Corporation of Delta, BC



Changes to Agriculture, 1996 - 2002

The next group of tables and maps go into more detail about what kinds of changes have taken place. Brief descriptions of the kinds of changes are the following:

1. New from non-agricultural use indicates parcels that were not previously engaged in agricultural activities (e.g. “Not in Use” changed to “Agriculture” – “Berry Farm”)
2. New indicates parcels that were previously engaged in agriculture, but were not engaged in that type of agricultural activity in the 1996 (e.g. a Horse farm introduced Berries)
3. Change in type indicates parcels that were engaged in an agricultural activity, and now are engaged in a different type of the same agricultural activity (e.g. a Horse Farm changed to a Beef Farm – both are Livestock Operations)
4. Removed indicates that a type of agricultural activity was removed; however, it does not necessarily mean that there are no agricultural activities remaining on that parcel (e.g. a poultry and berry farm removes only the berries, or a field vegetable farm becomes residential only)

Changes to Crops

The term *Crops* includes all berries, field vegetables, potatoes and grains. 2002 had seen a net increase in crop production since 1996, with 41 parcels increasing their diversity in crop production, and 27 parcels removing crops from production.

Table 17: Changes to Crops 1996-2002, Corporation of Delta

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
New crops from non-agricultural use	10	346.7	34.7
New crops	31	443.7	14.3
Change in type of crops	64	1513.4	23.6
Crops removed	27	379.4	14.1
Total parcels with change	132	2683.2	20.3

Changes to Livestock

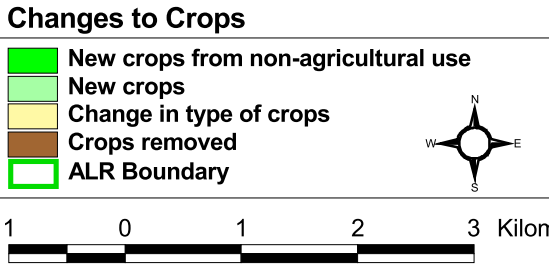
There have been some changes to livestock between 1996 and 2002, with 52 parcels experiencing some type of change. Of those, 23 experienced an increase in livestock, while 13 experienced a decrease.

Table 18: Changes to Livestock 1996-2002, Corporation of Delta

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
New livestock from non-agricultural use	3	31.2	10.4
New livestock	20	182.3	9.1
Change in type of livestock	16	321.8	20.1
Livestock removed	13	323.0	24.8
Total parcels with change	52	858.3	16.5

Changes to Crops, 1996 - 2002

Corporation of Delta, BC



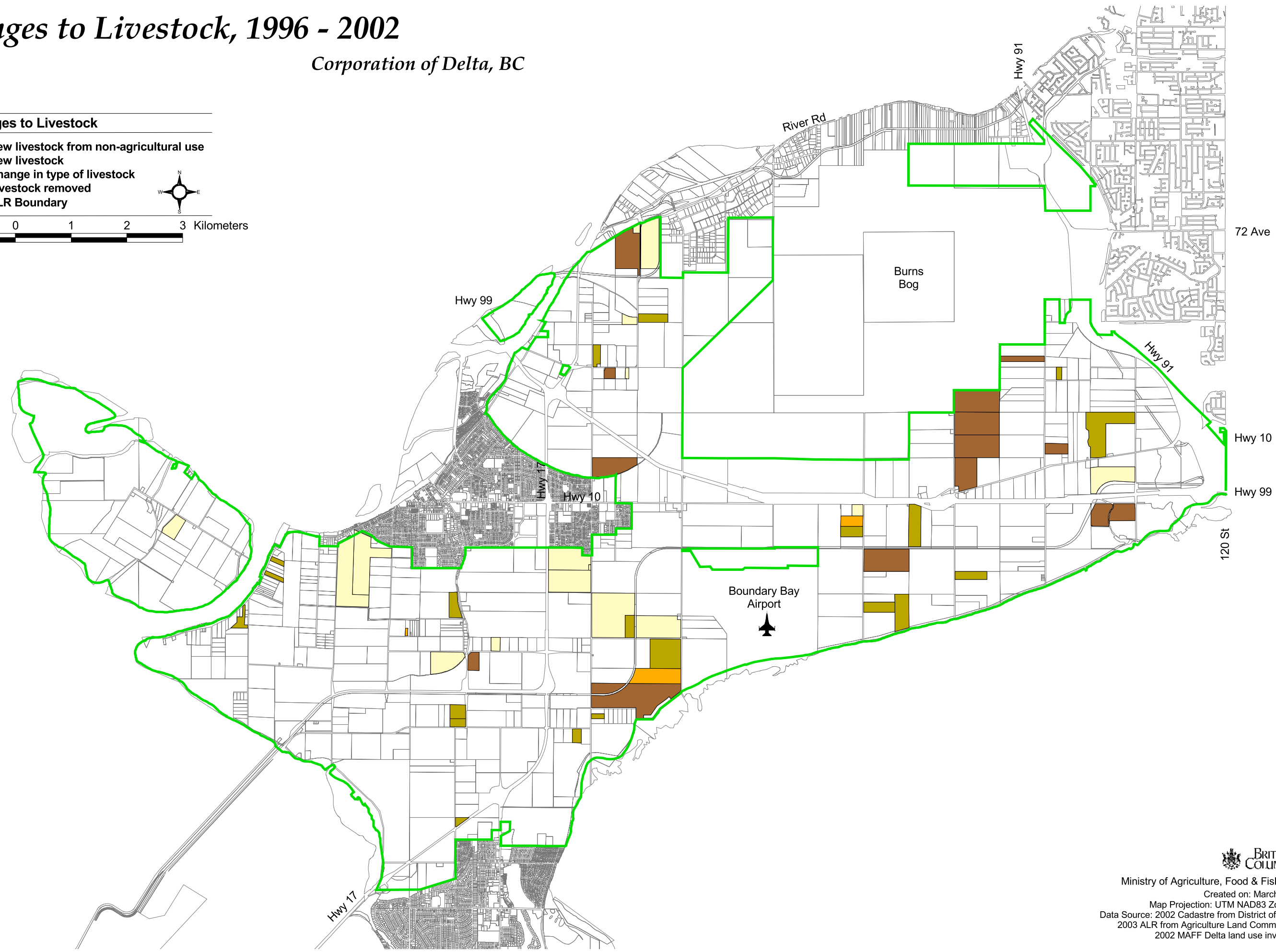
Changes to Crops, 1996 - 2002

Changes to Livestock, 1996 - 2002

Corporation of Delta, BC

Changes to Livestock

- New livestock from non-agricultural use
- New livestock
- Change in type of livestock
- Livestock removed
- ALR Boundary



Changes to Greenhouse Operations

Changes to parcels with greenhouses were the third most common type of change within Delta since 1996, with 9 parcels either introducing or expanding greenhouse operations, and 1 parcel removing its greenhouses. However, while it ranks third in number of parcels experiencing change, other statistics show that the growth in greenhouse operations in Delta is much more significant than changes to crops and livestock.

By simply observing the average size of parcels experiencing an increase in greenhouses in Table 19, it can be determined that these parcels are much larger than the average parcel size of agriculture in general for Delta (33.0 ha compared to 13.3 ha).

According to the 2001 Census of Agriculture¹⁰, in 2001 Delta had 1,169,000 square meters under greenhouse glass, which makes up 25% of BC's total. Since 1996, the area under glass in Delta has more than tripled. The large parcel sizes and relatively flat parcel land are a few possible explanations for the increase in greenhouses in Delta. Other factors that could explain the increase in greenhouses could be the climate (high sunlight and mild temperatures), and an expanding North American market for greenhouse products.

Table 19: Changes to Greenhouses 1996-2002, Corporation of Delta

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
New greenhouses from non-agricultural use	1	60.8	60.8
New greenhouses	6	191.4	31.9
Greenhouse operation expanded	2	45.2	22.6
Greenhouse operation removed	1	7.7	7.7
Total parcels with change	10	305.0	30.5



¹⁰ Source: Statistics Canada, Census of Agriculture Profile Data - British Columbia.

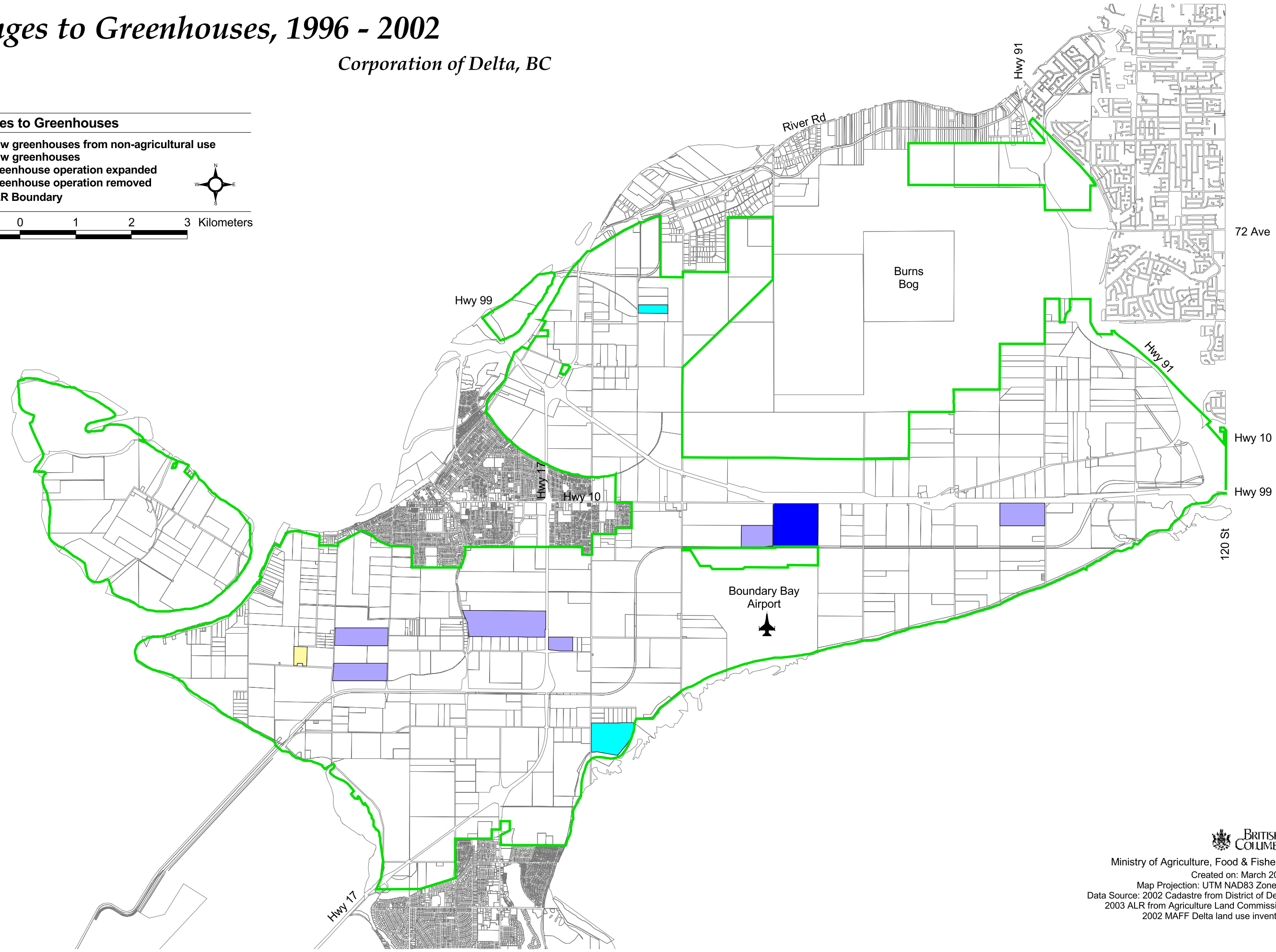
Changes to Greenhouses, 1996 - 2002

Corporation of Delta, BC

Changes to Greenhouses

- New greenhouses from non-agricultural use
- New greenhouses
- Greenhouse operation expanded
- Greenhouse operation removed
- ALR Boundary





Dwellings in the ALR

Dwellings are defined as houses, duplexes, mobile homes, townhouses, and apartments. Based on the current surveying method, those unapproved dwelling units cannot be identified. The following group of tables and maps illustrate statistics associated with collected dwelling information.

Parcels with Dwellings

In Delta's ALR, 416 of 944 parcels (46.9%) have dwellings on them. Of these, 94 parcels have greater than 1 dwelling. Typically, the more dwellings there are per parcel, the larger the parcel size tends to be. The exception to this is the two parcels with 4 dwellings. They have a smaller average area than that of parcels with 1 dwelling (5.7 ha compared to 10.9 ha).

Of the 944 parcels, there are 528 parcels that have no dwelling. Some of these parcels have the potential for gaining new dwellings in the future while some will unlikely to gain a dwelling. The potential and unlikelihood can be determined based on the land use activities of the parcels. For example, if a parcel is engaged in a land use such as Bird Sanctuary, Park, Recreational Use, Transportation and Communications, or Utility, it is unlikely that a new dwelling will be added. If a parcel is engaged in other land uses (e.g. Agriculture, Not in use, or Institutional use), then there is potential that a dwelling may be added to that parcel. If this is the case, 401 out of 528 parcels might have residential use in the future.

Table 20: Number of Dwellings per Parcel within the ALR, Corporation of Delta

<i>Number of Dwellings per Parcel</i>	<i>Number of Parcels</i>	<i>% of parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
0 dwellings (potential for new dwellings)	401	40.3%	3434.8	8.6
1 dwelling	322	32.4%	3506.4	10.9
2 dwellings	84	8.5%	1298.5	15.5
3 dwellings	8	0.8%	221.6	27.7
4 dwellings	2	0.2%	11.5	5.7
0 dwellings (unlikely to gain new dwellings)	127	12.8%	954.2	7.5
Total parcels	944	96.0%	9427.0	10.0

Number of Dwellings per Parcel in the ALR, 2002

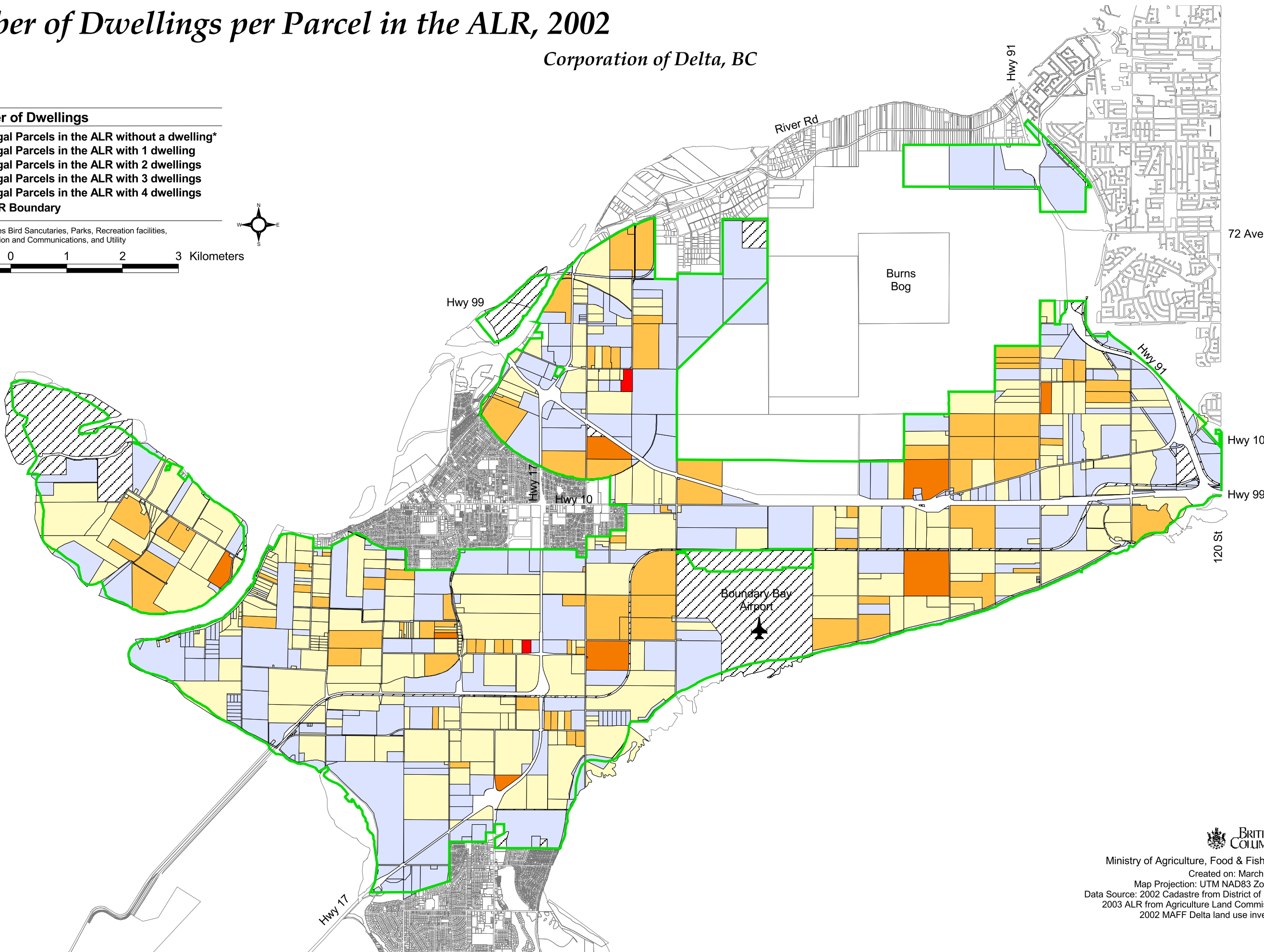
Corporation of Delta, BC

Number of Dwellings

- Legal Parcels in the ALR without a dwelling*
- Legal Parcels in the ALR with 1 dwelling
- Legal Parcels in the ALR with 2 dwellings
- Legal Parcels in the ALR with 3 dwellings
- Legal Parcels in the ALR with 4 dwellings
- ALR Boundary

*This excludes Bird Sanctuaries, Parks, Recreation facilities, Transportation and Communications, and Utility

1 0 1 2 3 Kilometers



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Number of Dwellings per Parcel in the ALR, 2002

Net Change in Number of Dwellings per Parcel

Between 1996 and 2002, 91 parcels underwent a change in the number of dwellings per parcel. 85 parcels increased their number of dwellings, while 6 parcels removed a dwelling. Of the parcels that increased their number of dwellings since 1996, 37 did not have any dwellings previously. These 37 parcels have an average area of 18.1 hectares and are identified on the accompanying map with a blue outline.

Table 21: Net Change in Number of Dwellings per Parcel within the ALR, Corporation of Delta

<i>Net Change per Parcel</i>	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
1 dwelling removed	6	36.7	6.1
1 dwelling added ¹¹	79	1265.6	16.0
2 dwellings added	5	84.6	16.9
3 dwellings added	1	8.1	8.1
Total parcels	91	1395.1	15.3

Primary Agricultural Activities for Parcels with Large Houses

Throughout the survey, the sizes of the houses observed were recorded. Small houses were recorded as those smaller than 1000 square feet, medium houses were those between 1000-3500 square feet, and large houses were recorded as those larger than 3500 square feet. Large houses are becoming more common in Delta's ALR, therefore a table and map of agricultural activities associated with large houses was generated for this report.

It should be noted that while 33 parcels with large houses have agricultural use, there are 40 parcels total within the ALR with large houses recorded on them. This means that 7 parcels have no agricultural activities at all. These 7 parcels have an average parcel area of 4.9 hectares.

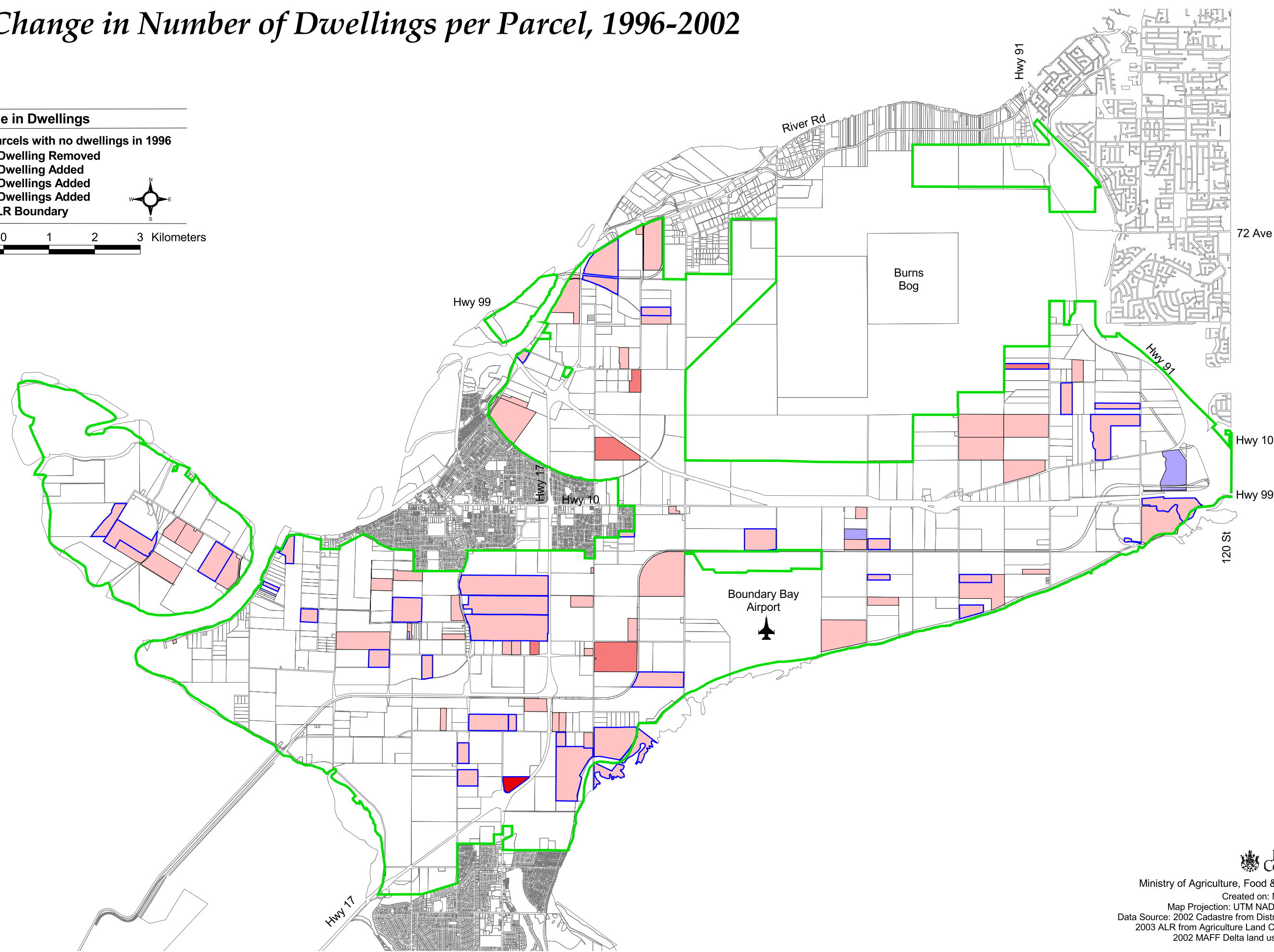
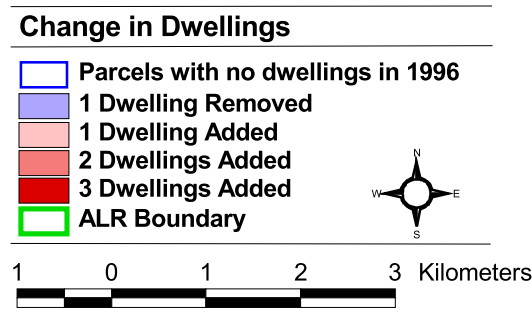
Table 22: Agricultural Activities for Large Houses within the ALR, Corporation of Delta

<i>Primary Agricultural Activity</i>	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
Forage and Pasture	10	37.23	3.72
Field Vegetables and Potatoes	7	139.21	19.89
Cultivated and Fallow Land	5	59.05	11.81
Greenhouses and Nurseries	5	108.74	21.75
Livestock Operations	3	8.86	2.95
Berry Crops	2	12.08	6.04
Miscellaneous Agriculture	1	9.11	9.11
Total Parcels	33	374.29	11.34

¹¹ In this table, the term "added" refers to the number of additional dwellings added to the parcel since 1996. In other words, it refers to the *net increase* in dwellings per parcel.

Net Change in Number of Dwellings per Parcel, 1996-2002

Net Change in Number of Dwellings per Parcel, 1996-2002



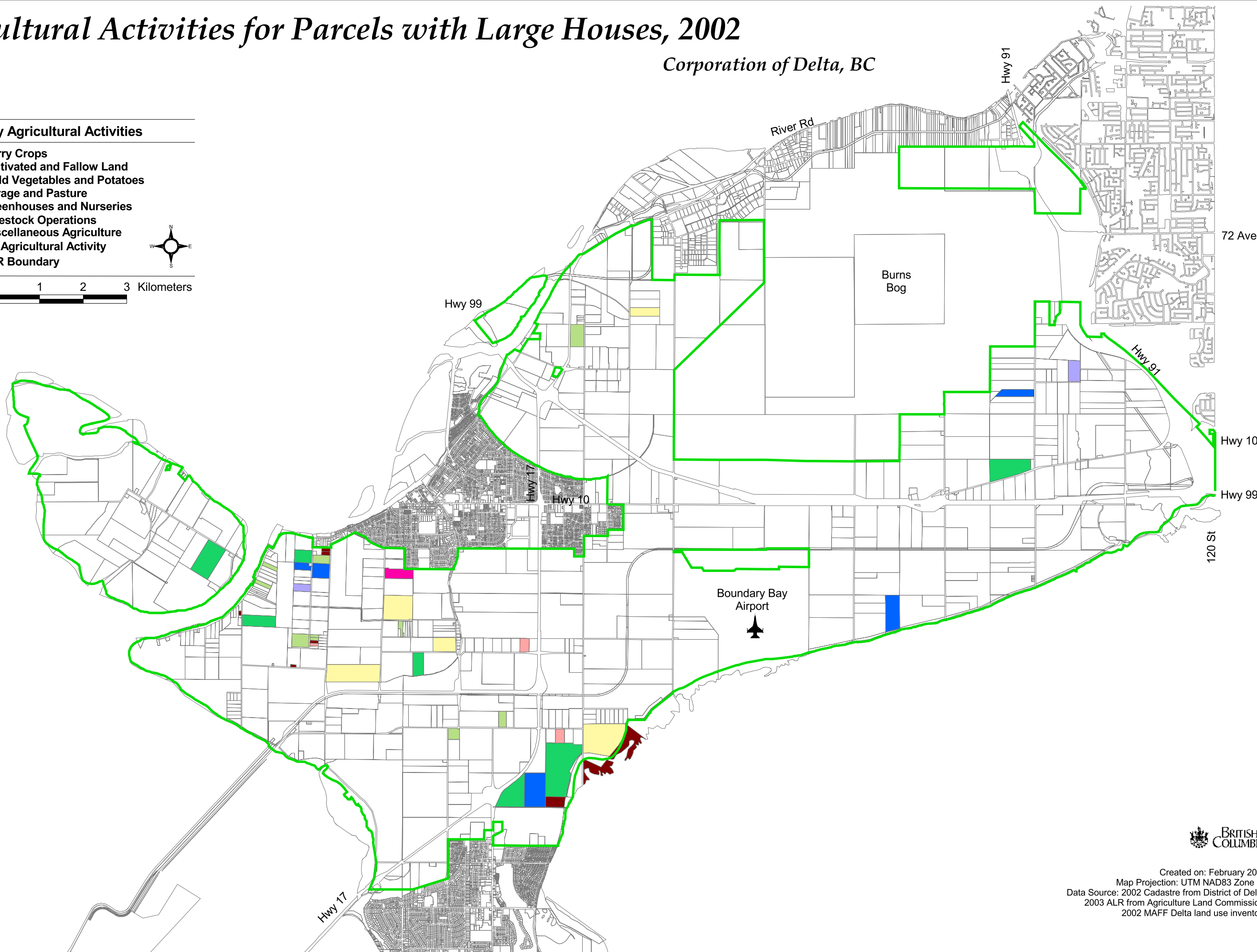
Agricultural Activities for Parcels with Large Houses, 2002

Corporation of Delta, BC

Primary Agricultural Activities

- Berry Crops
- Cultivated and Fallow Land
- Field Vegetables and Potatoes
- Forage and Pasture
- Greenhouses and Nurseries
- Livestock Operations
- Miscellaneous Agriculture
- No Agricultural Activity
- ALR Boundary

1 0 1 2 3 Kilometers



Created on: February 2004
Map Projection: UTM NAD83 Zone 10
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Agricultural Activities for Parcels with Large Houses, 2002

Primary Agricultural Activities of Parcels with More Than 1 Dwelling

Of the 94 parcels with more than one dwelling, three had no observed agricultural use. Furthermore, 9 had hobby farm as its primary land use activity, and one had commercial/service use combined with agriculture. As a result, 91 parcels have agriculture as its primary land use activity. The three most common agricultural activities on parcels with more than one dwelling are Livestock Operations, Field Vegetables and Potatoes, and Forage and Pasture. The table below lists the primary agricultural activities for parcels with more than 1 dwelling.

Table 23: *Agricultural Activities for Parcels with More Than 1 Dwelling, Corporation of Delta*

<i>Primary Agricultural Activity</i>	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
Livestock Operations	31	391.0	12.6
Field Vegetables and Potatoes	26	636.3	24.5
Forage and Pasture	13	163.5	12.6
Cultivated or Fallow Land	8	87.2	10.9
Berry Crops	5	73.9	14.8
Grain Production	3	57.3	19.1
Miscellaneous Agriculture	3	74.6	24.9
Greenhouses and Nurseries	2	38.2	19.1
Total parcels	91	1522.1	16.7

Stewardship Programs

A significant portion of land within the Corporation of Delta is considered to be environmentally sensitive, particularly for bird species and other wildlife. Farmland stewardship programs have been put in place to aid in managing wildlife in Delta. Winter cover crops, grassland set-asides, laser leveling, hedgerows, and grass field margins are examples of this type of stewardship in Delta, and it is not uncommon for one parcel to be engaged in more than one of these stewardship programs. These programs are managed by the Delta Farmland and Wildlife Trust (DF&WT).

Winter cover crops and grassland set-asides are two methods of providing food for birds and other wildlife, while improving soil quality for farmers. Laser levelling is a practice that levels the parcel, which in turn creates drier growing conditions, and improves the longevity of winter cover crops. As a result, it also improves the habitat for wildlife. Hedgerows are dense trees and shrubs, while grass margins are linear grass strips. Both hedgerows and grass margins can choke out weeds from encroaching on the farmland, while providing habitat for birds and other wildlife. The farmers who have installed hedgerows are reimbursed for the land that has been taken out of agricultural production (at a rate of \$300/acre/year for up to 20 years).

Together, these stewardship programs can allow the coexistence of a strong farming community, and a healthy wildlife habitat. The table below shows the number of stewardship programs found in Delta in 2001-2002 and the data is obtained from the Delta Farmland and Wildlife Trust.

Table 24: Stewardship Activities in 2001-2002 within the ALR, Corporation of Delta

Stewardship Program	Number of Programs	Total engaged area (ha)*
Grassland set-asides	37	253.2
Cover crops	179	1367.6
Laser levelling	13	205.1
Hedgerows**	14	2.4
Grass margins	5	1.7
Total programs	248	1830.0

**Note: The area of the land taking part in the stewardship program is only the area engaged in the program, and not the total parcel area, which is different from the other tables in this of the summary report.*

*** Note: 8 additional hedgerows (not recorded in this statistic) were identified at the time of the survey, and they are not necessarily on the same parcels identified by the DF&WT. The parcels with hedgerows according to the land use survey are mapped using a different color and symbol from those reported by the DF&WT.*

Stewardship Activities, 2001-2002

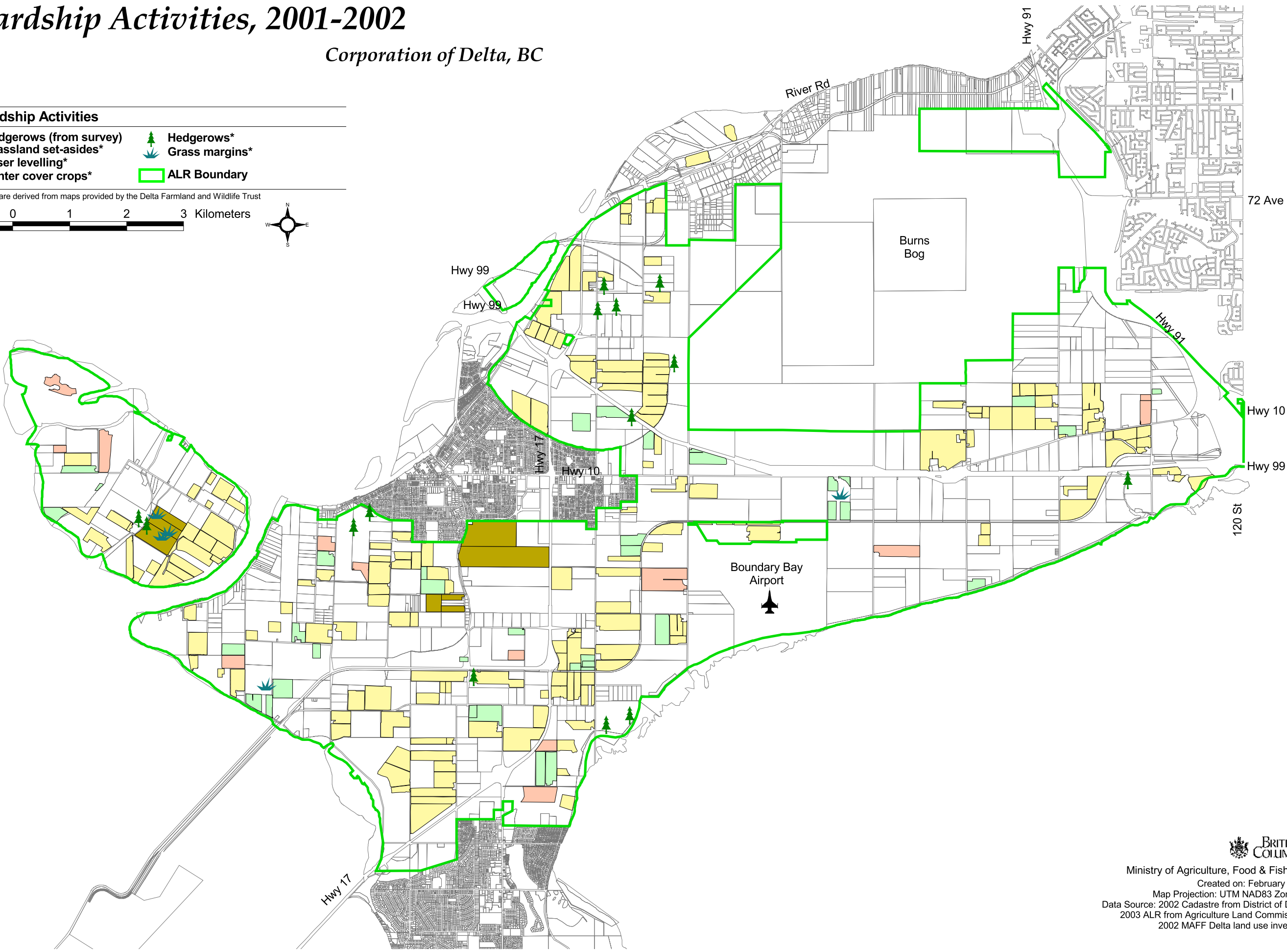
Corporation of Delta, BC

Stewardship Activities

<div></div> Hedgerows (from survey)	<div></div> Hedgerows*
<div></div> Grassland set-asides*	<div></div> Grass margins*
<div></div> Laser levelling*	<div></div> ALR Boundary
<div></div> Winter cover crops*	

* These data are derived from maps provided by the Delta Farmland and Wildlife Trust

10 Kilometers



As shown in Table 24, a total of 248 Stewardship activities occurred in Delta's ALR in 2001-2002. These activities are found in 115 parcels where some parcels have more than one type of stewardship activity. Out of these 115 parcels, 111 parcels have agricultural activity as the main use. Almost half of these parcels have field vegetables and potatoes as the primary agricultural activities (See Table 25 on next page). Other common agricultural activities include Forage and Pasture, Cultivated or Fallow Land, Livestock Operations and Grain Production, at 22.5%, 11.7%, 5.4% and 4.5%, respectively.

Table 25: Primary Agricultural Activities for parcels having Stewardship Activity in 2001-2002 within the ALR, Corporation of Delta

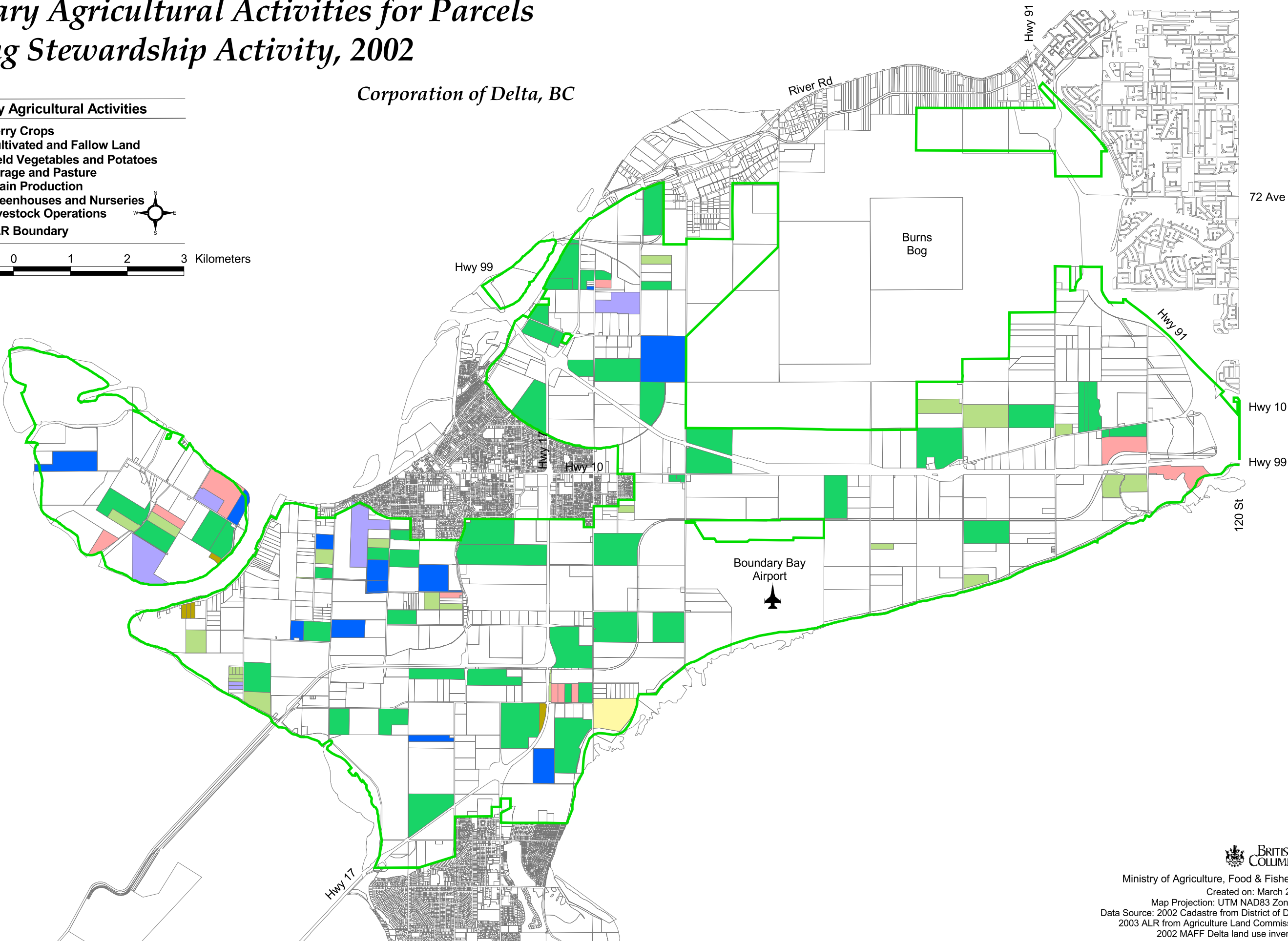
<i>Primary agricultural activity</i>	<i>Main Use</i>			<i>Ancillary Use</i>	<i>Total</i>
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Total area (ha)</i>	<i>Number of parcels</i>	<i>Number of Parcels</i>
Field Vegetables and Flowers	52	46.8%	1132.7	24	76
Forage and Pasture	25	22.5%	190.7	26	51
Cultivated or Fallow Land	13	11.7%	221.6	17	30
Livestock Operations	9	8.1%	115.4	16	25
Berry Crops	6	5.4%	117.2	3	9
Grain Production	5	4.5%	12.8	0	5
Greenhouse Operation	1	0.9%	37.1	0	1
Miscellaneous Agriculture		0.0%	74.6	2	2
Total Parcels	111	100.0%	1902.1	88	199

Primary Agricultural Activities for Parcels having Stewardship Activity, 2002

Corporation of Delta, BC

Primary Agricultural Activities

- Berry Crops
- Cultivated and Fallow Land
- Field Vegetables and Potatoes
- Forage and Pasture
- Grain Production
- Greenhouses and Nurseries
- Livestock Operations
- ALR Boundary



Land Use Activities on the Urban-Rural Edge

In addition to the parcels within the Corporation of Delta's ALR, 662 parcels along the urban edge of the ALR boundary were surveyed. In Table 25, the primary land use activities of these parcels is compared to those of the parcels located along the rural edge of the ALR boundary, in order to better understand how proximity to an urban boundary affects the use of agricultural lands.

The term "urban edge" refers to all parcels located outside of the ALR, in urban areas, and that are adjacent to the ALR boundary. The term "rural edge" refers to all parcels located within the ALR, located adjacent to the ALR boundary, and that are neighbours to urban areas. The "rural edge" includes 105 parcels that are across the ALR boundary from all urban areas, including Tsawwassen, Ladner, North Delta, and the industrial area along River Road.

Land Use Activities on the Urban-Rural Edge

The primary land use activities for the parcels along the ALR edge have been listed below. In the summary below, when the term *rest of the ALR* is used, it is referring to the remainder of the parcels located within the ALR that are not along the Urban-Rural Edge.

Table 26: Land Use Activities along the Urban-Rural Edge, Corporation of Delta

<i>Primary Land Use Activity</i>	<i>Rural Edge</i>			<i>Urban Edge</i>		
	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Average parcel size (ha)</i>	<i>Number of Parcels</i>	<i>% of Parcels</i>	<i>Average parcel size (ha)</i>
Agriculture	44	35.5%	18.5	5	0.8%	7.0
Residential Use	17	13.7%	0.2	533	81.0%	0.1
Transportation and Communications	15	12.1%	1.3	6	0.9%	0.1
Not in use	13	10.5%	9.6	33	5.0%	1.7
Commercial/Service Use	7	5.6%	1.5	8	1.2%	1.3
Golf Course	6	4.8%	9.1	2	0.3%	21.7
Unused farm land	6	4.8%	8.9			
Institutional Use	4	3.2%	2.0	3	0.5%	6.1
Indian Reserve	3	2.4%	2.9	2	0.3%	0.4
Industrial Use	3	2.4%	1.2	38	5.8%	1.0
Utility	3	2.4%	7.4	9	1.4%	3.1
Recreational Use	2	1.6%	3.5	5	0.8%	2.5
Mineral extraction	1	0.8%	8.8	2	0.3%	3.0
Land in Transition				8	1.2%	1.1
Park				2	0.3%	0.9
Residential Use - Multi-family				1	0.2%	1.2
Unknown				1	0.2%	1.6
Total parcels	124	100.0%	9.2	658	100.0%	0.5

Along the rural edge of the 35.5%, most of the parcels are engaged in Agriculture; that number is significantly lower than the rest of the ALR, at 35.5% compared to 60.4%. Other common uses along the inside of the ALR edge are Residential use, Transportation and Communications, and Not in use, at 13.7%, 12.1%, and 10.5%, respectively. However, these numbers are not too different from the rest of the ALR, at 7.5%, 10.5%, and 8.3%, respectively. One interesting figure to note is that of Industrial use. All of the Industrial uses within the ALR, are located along the inside edge.

Along the urban edge, the majority of parcels are primarily engaged in Residential use, at 81.0%, while other common uses are Industrial use (5.8%) and Not in use (5.0%). There is very little agriculture occurring on the urban edge of the ALR, with only 5 of the 658 parcels engaged in agricultural use. There were no Hobby farms observed on either the urban or the rural side of the ALR edge.

Some parcels along the Urban Edge, such as parcels engaged in Land in Transition, Not in Use, and Agriculture, can be considered as buffers for future edge planning. This edge buffering will likely improve the compatibility between urban and agricultural land uses along the ALR edge.

Land Use Activities on the Urban-Rural Edge, 2002

Corporation of Delta, BC

Land Use Activities on the Urban-Rural Edge, 2002

Primary Land Use Activities

- | | |
|------------------------|-----------------------------------|
| Agriculture | Not in use |
| Commercial/Service Use | Park |
| "Filled" Site | Recreational Use |
| Golf Course | Residential Use |
| Indian Reserve | Residential Use - Multi-family |
| Industrial Use | Transportation and Communications |
| Institutional Use | Unused farmland |
| Land in Transition | Utility |

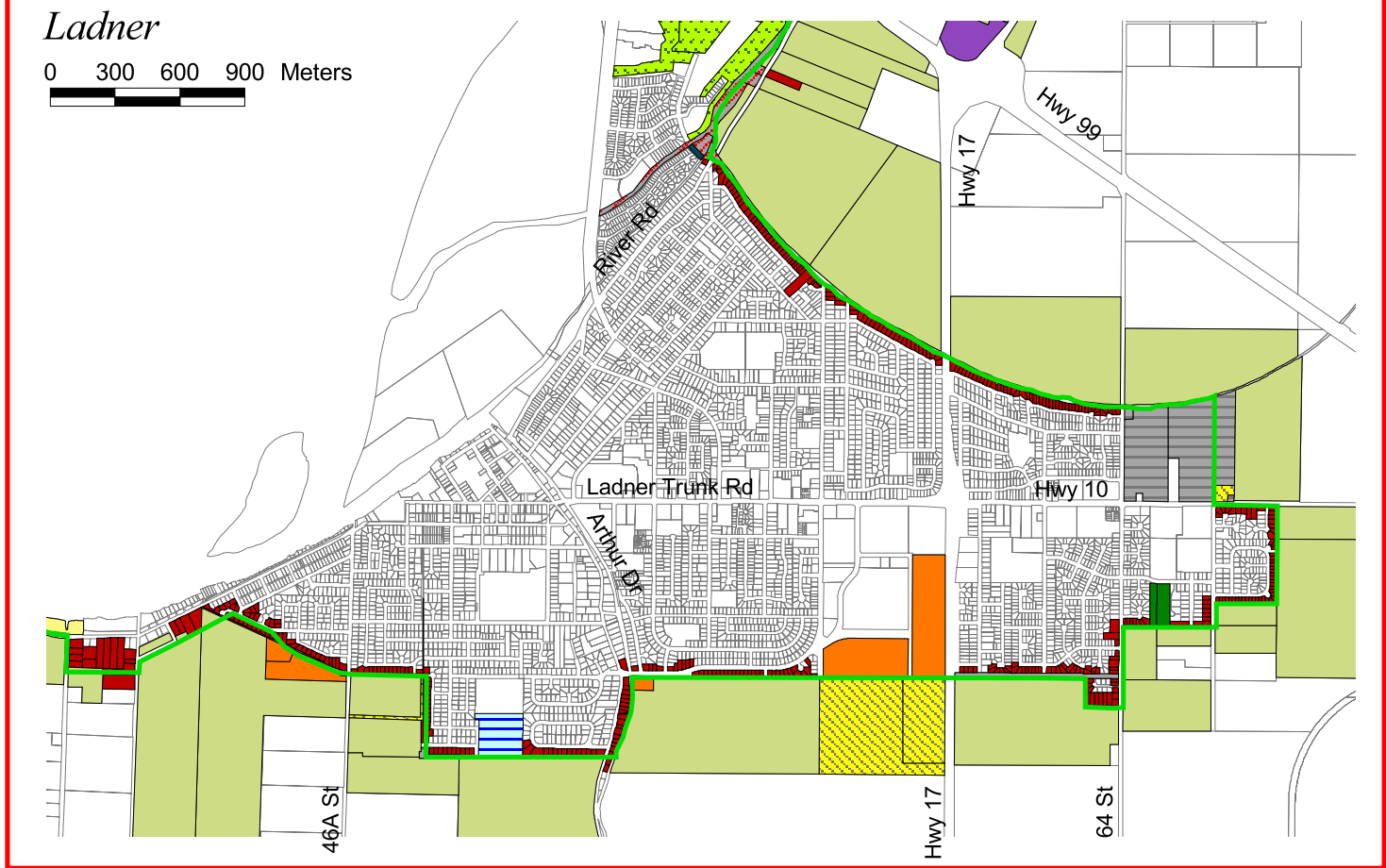
ALR Boundary

0 1 2 3 4 Kilometers



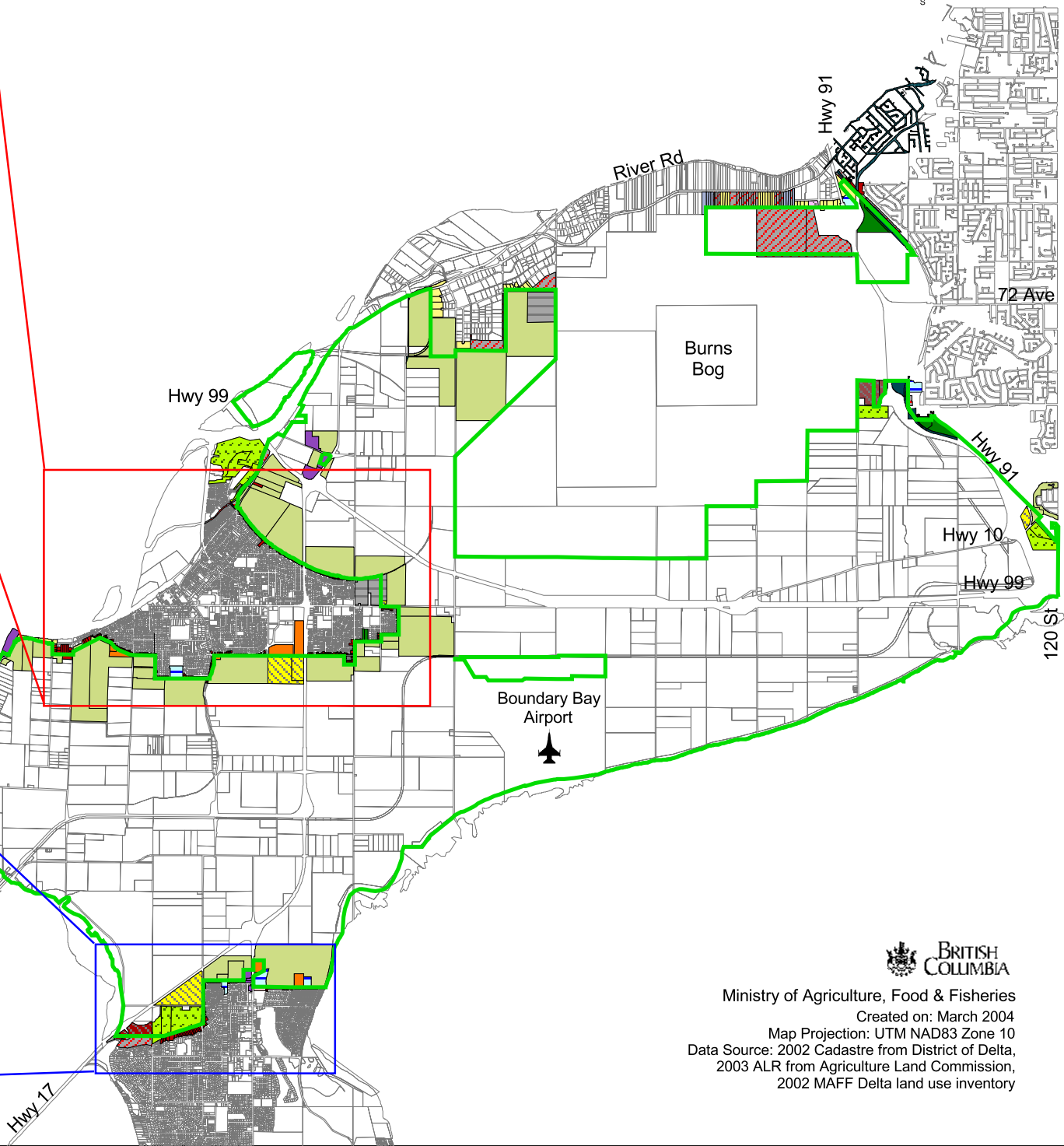
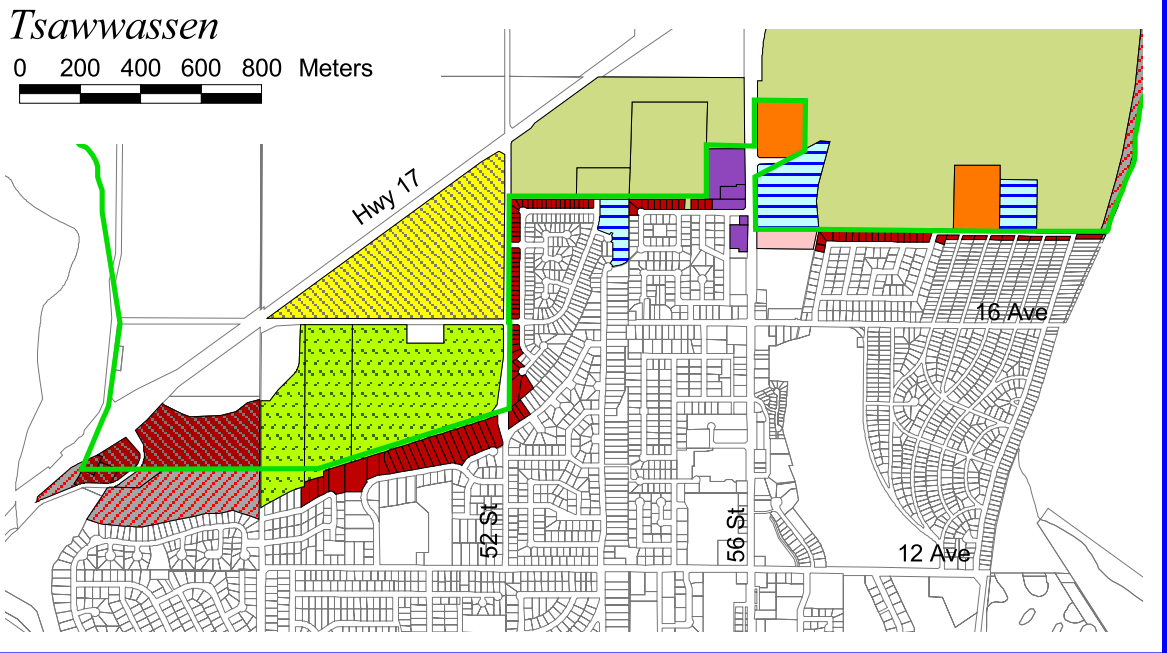
Ladner

0 300 600 900 Meters



Tsawwassen

0 200 400 600 800 Meters



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,

2003 ALR from Agriculture Land Commission,

2002 MAFF Delta land use inventory

Agricultural Activities on the Urban-Rural Edge

The primary agricultural activities for the parcels along the ALR edge have been listed below. In the summary below, when the term *rest of the ALR* is used, it is referring to the remainder of the parcels located within the ALR that are not along the Urban-Rural Edge.

Table 27: Agricultural Activities along the Urban-Rural Edge, Corporation of Delta

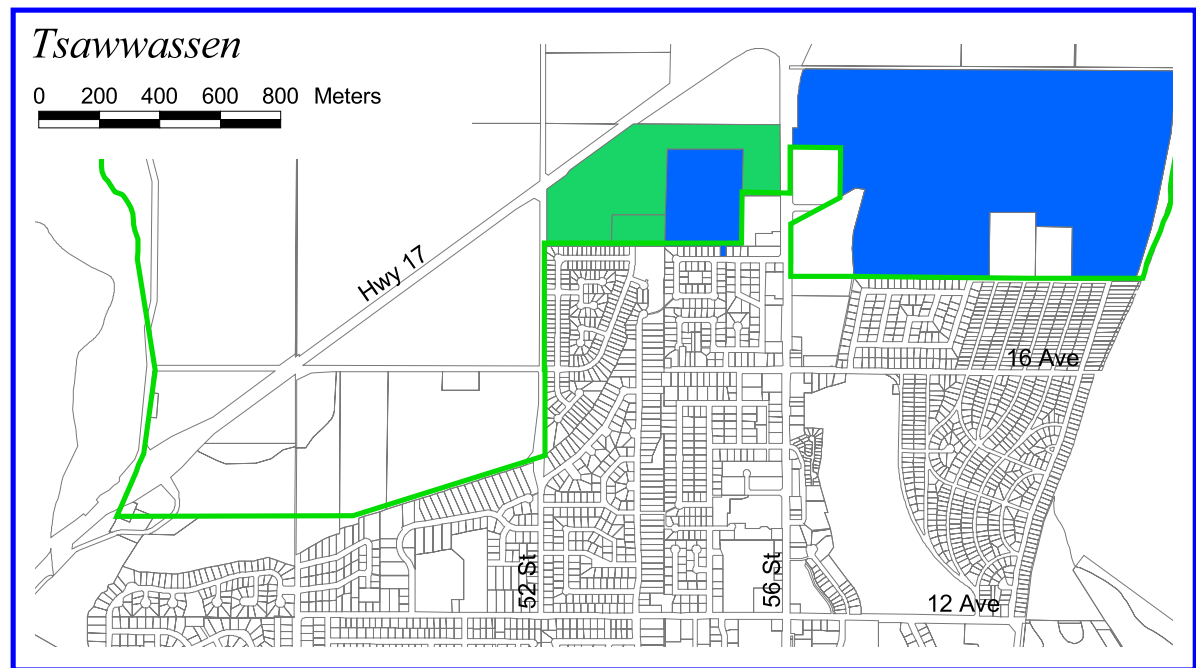
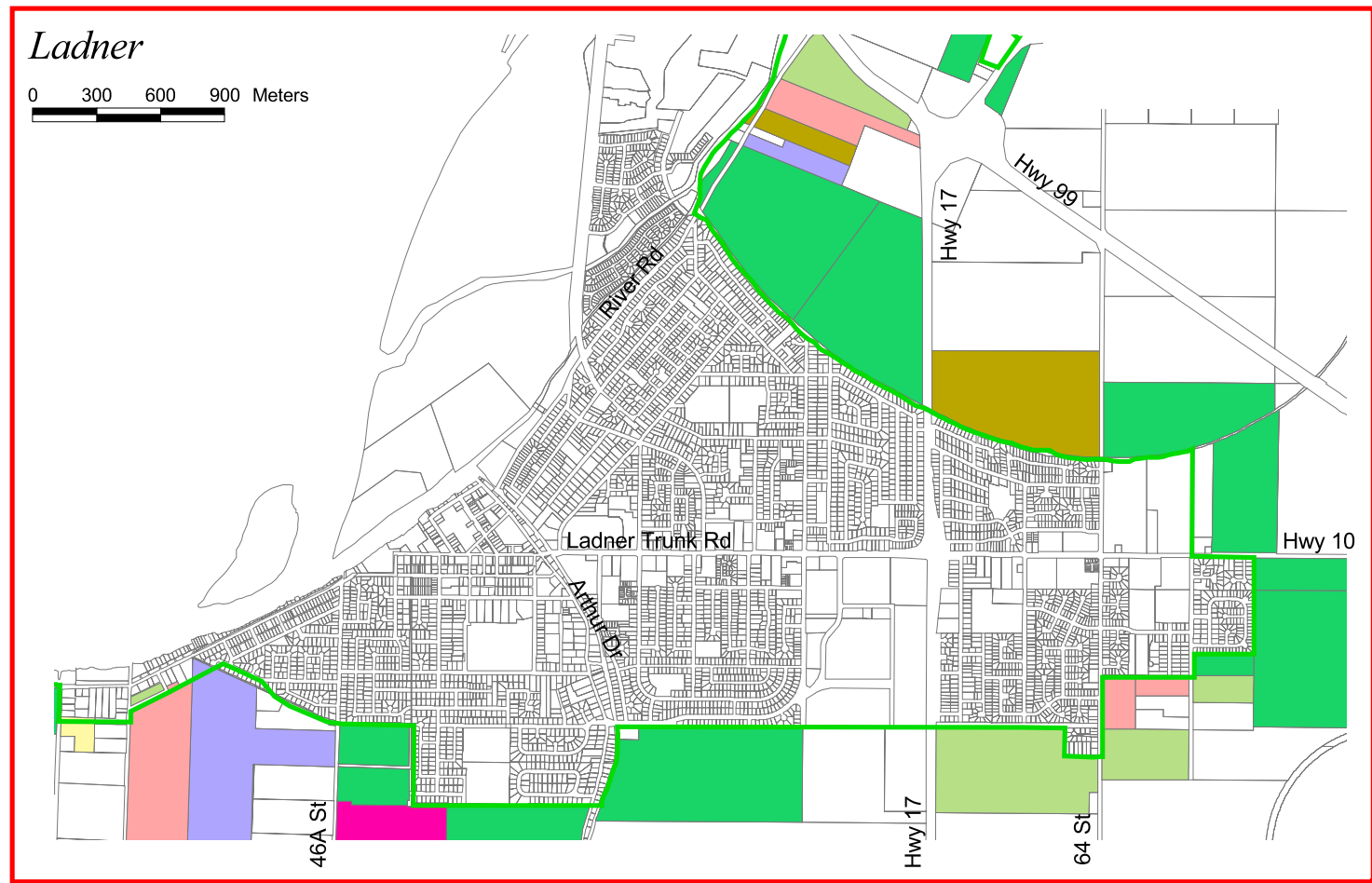
Primary Agricultural Activity	Rural Edge			Urban Edge		
	Number of Parcels	% of Parcels	Average parcel size (ha)	Number of Parcels	% of Parcels	Average parcel size (ha)
Field Vegetables and Potatoes	21	47.7%	16.0	2	40.0%	0.2
Berry Crops	7	15.9%	34.3			
Livestock Operations	6	13.6%	10.1	1	20.0%	10.1
Forage and Pasture	4	9.1%	12.7	2	40.0%	12.3
Grain Production	2	4.5%	19.0			
Greenhouse Operation	1	2.3%	2.1			
Cultivated or Fallow Land	2	4.5%	39.1			
Miscellaneous Agriculture	1	2.3%	9.1			
Total parcels	44	100.0%	18.5	5	100.0%	7.0

Of the 124 parcels located on the rural side of the ALR, 44 were primarily engaged in agricultural use. Similar to the rest of the ALR, the most common agricultural use along the rural edge is Field Vegetables and Potatoes, at 47.7% along the rural edge, and 33.8% within the rest of the ALR. Other common agricultural activities located on the rural edge of the ALR were Berry Crops, Livestock Operations, and Forage and Pasture, at 15.9%, 13.6%, and 9.1%, respectively.

Of the 5 parcels engaged in agricultural use along the urban edge of the ALR, two are Field Vegetables and Potatoes, two are Forage and Pasture, and one is a Livestock Operation.

Agricultural Activities on the Urban-Rural Edge, 2002

Corporation of Delta, BC

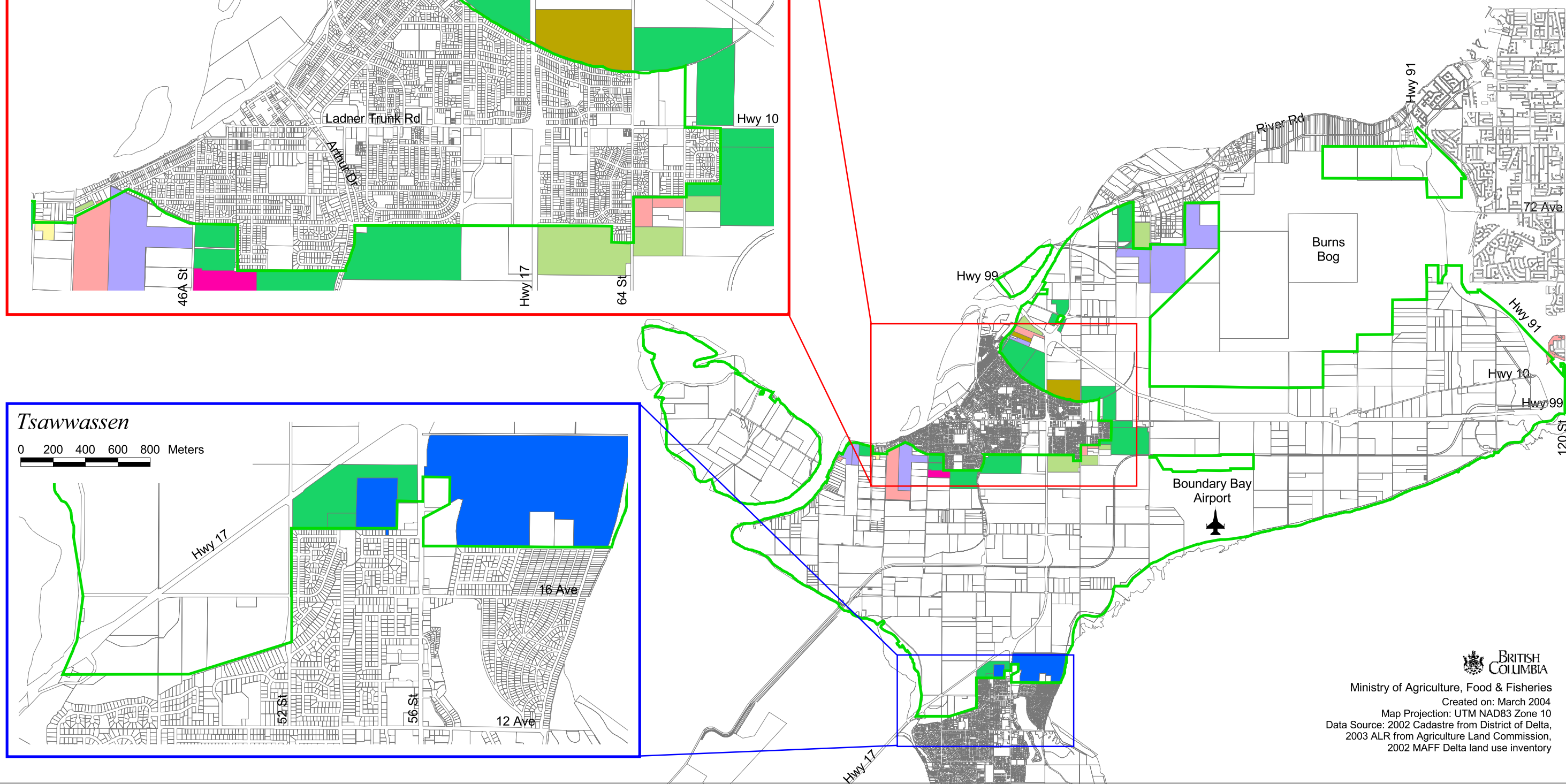


Agricultural Activities

- Berry and Vine Crops
- Cultivated and Fallow Land
- Forage and Pasture
- Field Vegetables and Potatoes
- Grain Production
- Greenhouses and Nurseries
- Livestock Operations
- Miscellaneous Agriculture

ALR Boundary

0 1 2 3 4 Kilometers



Ministry of Agriculture, Food & Fisheries

Created on: March 2004

Map Projection: UTM NAD83 Zone 10

Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Agricultural Activities on the Urban-Rural Edge, 2002

Other Statistics for the ALR

Parcels with Potential for Gaining New Agricultural Use

The next group of statistics looks at land use activities that are not currently in agricultural use, but have the potential for new agricultural production. Parcels considered for this statistic are engaged in the following activities: Not in Use, Unused Farmland, and Mineral Extraction. Over 500 hectares fall under this classification, and accounts for 5.5% of ALR land.

Table 28: *Parcels with Potential for Gaining New Agricultural Use, Corporation of Delta*

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
Not in use	81	344.4	4.3
Unused farmland	21	161.3	7.7
Mineral extraction	1	8.8	8.8
Total parcels	103	514.6	5.0

Parcels Unlikely to Gain Agricultural Use

While the ALR is approximately 10,181 hectares in size, it is unlikely that all of the land in the ALR will be farmed. Some parcels are engaged in activities that may prevent them from ever entering into agricultural production. These activities include Transportation and Communications, Commercial/Service, Recreational Use, Institutional Use, Golf Courses, Utility, Industrial Use, and Parks. All of these activities, taken together, add up to over 862.5 hectares, or 9.1% of ALR land that may never gain agricultural use.

Table 29: *Parcels Unlikely to Gain New Agricultural Use, Corporation of Delta*

	<i>Number of Parcels</i>	<i>Total area (ha)</i>	<i>Average parcel size (ha)</i>
Transportation and Communications	101	563.7	5.6
Commercial/Service Use	30	23.5	0.8
Recreational Use	15	31.1	2.1
Institutional Use	14	19.7	1.4
Golf Course	11	135.2	12.3
Utility	9	27.2	3.0
Industrial Use	3	3.7	1.2
Park	2	58.3	29.2
Total parcels	185	862.5	4.7

It should be noted that two of the 101 parcels primarily engaged in transportation and communications are airports, with sizes of 447.4 ha and 27.3 ha each. The other 99 parcels engaged in transportation and communications have a total area of 89 hectares, that is, an average area less than 1.0 hectares.

Parcels with Potential for New Agricultural Use, 2002

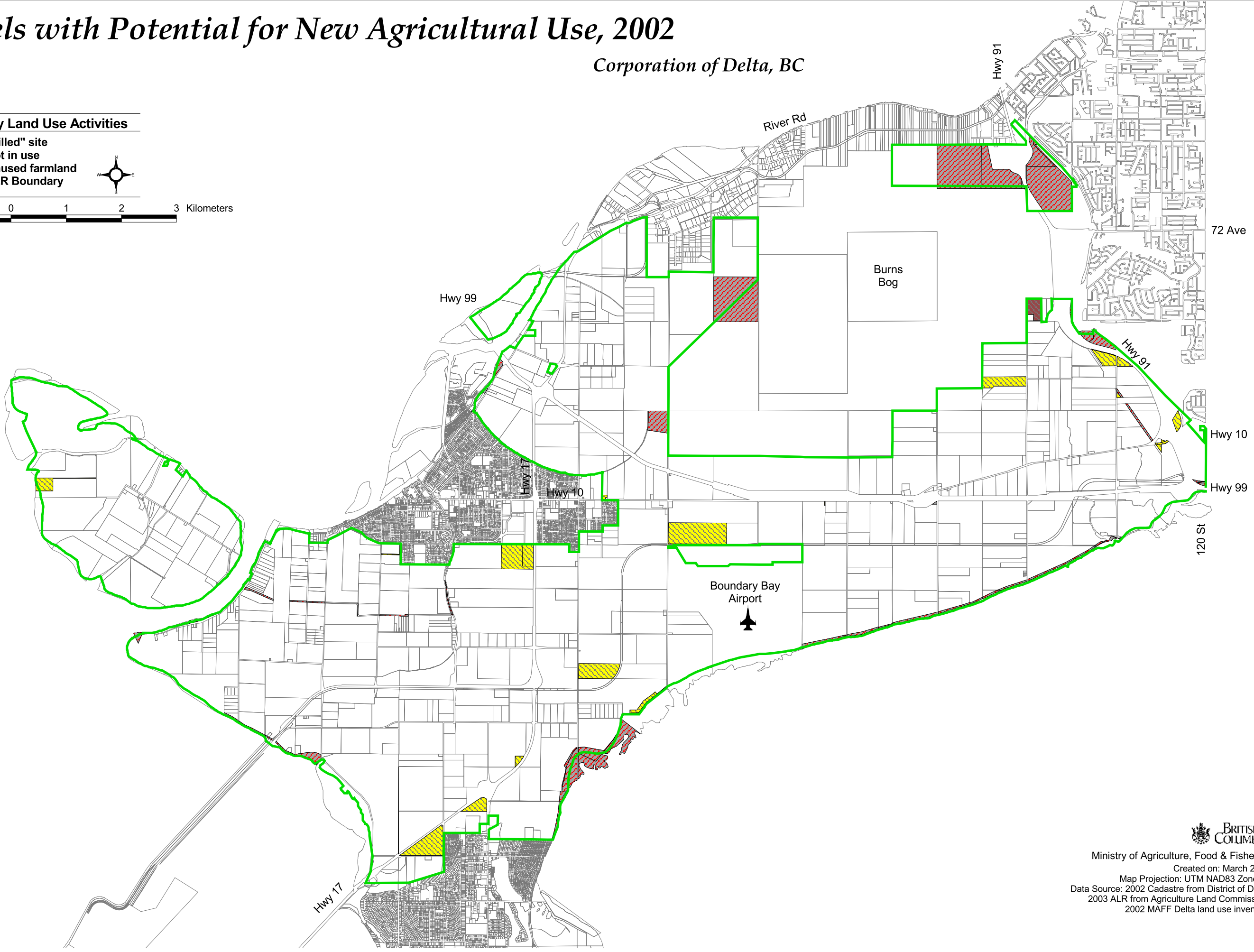
Corporation of Delta, BC

Primary Land Use Activities

- "Filled" site
- Not in use
- Unused farmland
- ALR Boundary



1 0 1 2 3 Kilometers



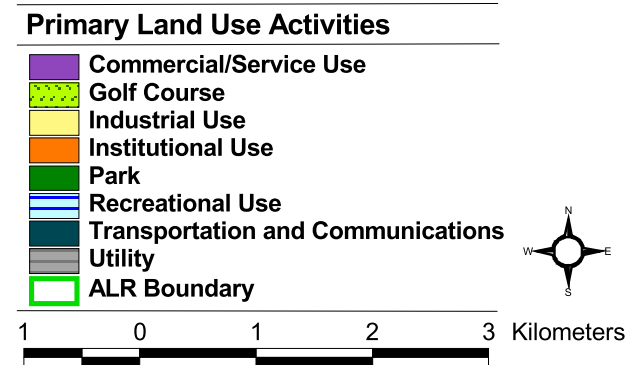
Parcels with Potential for New Agricultural Use, 2002



Ministry of Agriculture, Food & Fisheries
Created on: March 2004
Map Projection: UTM NAD83 Zone 10
Data Source: 2002 Cadastre from District of Delta,
2003 ALR from Agriculture Land Commission,
2002 MAFF Delta land use inventory

Parcels Unlikely to Gain Agricultural Use, 2002

Corporation of Delta, BC



Parcels Unlikely to Gain Agricultural Use, 2002

Summary

The land use inventory has provided many insights into the Corporation of Delta's agricultural landscape. The most common agricultural use is Field Vegetables and Potatoes, followed by Forage and Pasture, and Livestock Operations. The most common types of livestock are Horses, Dairy and Beef. Other common types of Livestock Operations are Sheep/Goats, Ratites, Poultry Farm (intensive), Free-Range Poultry, Llamas and Alpacas, and other small-scale mixed livestock. In addition to Field Vegetables and Potatoes, Forage and Pasture, and Livestock Operations, other agricultural activities in Delta include Cultivated and Fallow Land, Berry Crops, Grain Production, Greenhouses and Nurseries, and Miscellaneous Agriculture.

Several changes to agriculture have occurred in Delta since 1996. Overall, there has been an increase in agricultural activities over those 7 years, with particular increases to crops, livestock operations, and greenhouses.

The majority of parcels with dwellings have either one or two dwellings on them. Parcels engaged in Livestock are the most common to have more than one dwelling. Some parcels have increased their number of dwellings, while others have decreased, yet overall, there has been a general increase to the number of dwellings per parcel since 1996. Some of the parcels with residential use have large houses. There are still many parcels in the ALR that do not have dwellings, but have a strong possibility of gaining residential use.

Stewardship programs are important for the health and prosperity of both farmland and wildlife. Through the management of the Delta Farmland and Wildlife Trust, stewardship practices in Delta are aiding in the survival of important wildlife species, particularly birds. Overall, 1830.0 hectares and 18.0% of ALR land was engaged in stewardship activities in 2001-2002., with the largest concentration near and on Westham Island.

Some ALR land is not currently in agricultural production, but has potential of gaining agricultural use in the future. Land with agricultural potential is currently categorized as not in use, unused farmland, and mineral extraction. This land totals 514.6 hectares, and 5.5% of all ALR land. While some land has potential for new agricultural use, there are also some parcels within the ALR that may never go into agricultural use. These parcels have activities such as Transportation and Communications, Commercial/Service, Recreational Use, Institutional Use, Golf Courses, Utility, Industrial Use, and Parks. The land that is unlikely to gain agricultural use accounts for 862.5 hectares, or 9.1% of ALR land.

The data collected for inventories such as this has proven to be useful to MAFF on many occasions. If a concern arises about a certain agricultural operation, the data can give a good overview of the operation and the surrounding area. Land use data has been useful for testing the impacts of various scenarios or proposals, in order to develop, for example, farm bylaw standards. Data can also be used in designing and conducting surveys to research agriculture/residential compatibility; land use information can be used to locate different farm operations and their surrounding urban neighbours. It is anticipated that the land use inventories will continue to be useful to the Ministry of Agriculture, Food and Fisheries, and local governments in the future, as other issues arise.