

Groundwater Protection Program

1996/97 Annual Report

1.0 Milestones

In the first year of operation (1995/96), the Groundwater Protection Program (GPP) was concerned mainly with identifying a loading and hauling system that would reduce the high costs associated with transporting manure longer distances. In the fall of 1995, an on-farm conveyor system was built and tested. The advantages of this system were quick loading, lowered trucking costs due to access to a wide variety of truck types and back hauling opportunities, relatively easy unloading at the destination, and low machinery cost of operation through cooperative use of a conveyor between poultry farmers.

The focus for the second year was the expansion of the Groundwater Protection Program. Building on the successes reached by the end of year 1, a significant expansion was possible (see Table 1). This expansion happened in the following ways:

- increase in the number of poultry and crop producers involved in shipping and purchasing manure
- increase in the volume of manure shipped
- increase in the capacity of the hauling system through expansion of contacts with manure hauling (trucking) contractors and construction of a new conveyor (two conveyors now in operation)
- increase in the flexibility and efficiency of the loading system through some minor equipment alterations

Table 1 Increase in Manure Shipments from 1995/96 to 1996/97

<i>Year of Operation</i>	<i>Shipment Volume</i>	<i>Shipment Period</i>	<i>Increase (adjusted)*</i>
Year 1 (1995/96)	6,200 yd ³	8 months	NA
Year 2 (1996/97)	18,200 yd ³	12 months	+ 96 %

* Increase adjusted to reflect the increased Shipment Period from Year 1 to Year 2

2.0 Manure Hauling Activity

Period of April 1, 1996 - March 31, 1997

Figure 1 shows the destination market area for GPP shipments of poultry manure during year 2. Lower Mainland destinations are Delta, Pitt Meadows, and Richmond while Interior shipments include Merritt, Boston Bar, 100 Mile House, and Keremeos.

From Figure 1, there is a trend toward greater volumes of manure shipped to interior markets during late summer to early fall. During late fall to mid-winter, shipments increase to Delta and Richmond markets (Lower Mainland). This change in product flow is due largely to interior weather and road

Figure 1

**Monthly Poultry Manure Shipments Identified By Area of Origin
April 1, 1996 - March 31, 1997**

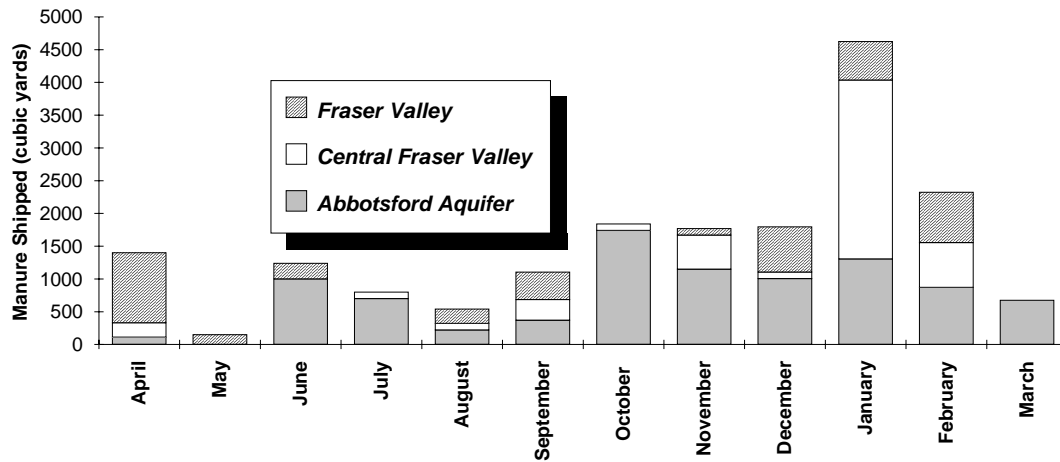
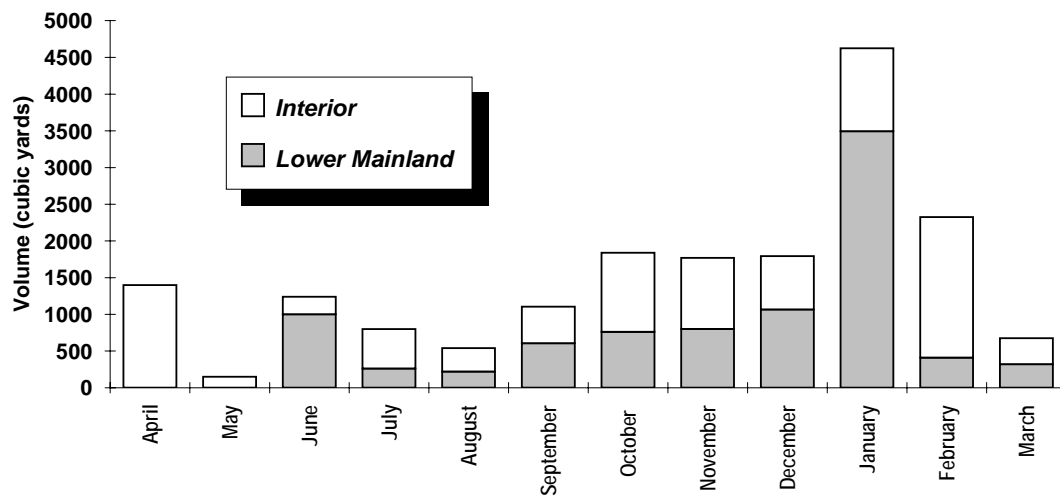


Figure 2

**1996/97 Monthly Poultry Manure Shipments
April 1, 1996 - March 31, 1997**



situations causing difficult hauling conditions. Thus, maximal future shipment of manure to distant markets will likely involve the coordination and optimization of product flow to each market area based on demand and weather conditions at the time of shipment both locally and in distant markets.

In Figure 2, Year 2 GPP shipments are identified monthly by their point of origin. Each geographic area represented is totaled as distinctly separate from other areas. For example, Central Fraser Valley is defined as the City of Abbotsford minus that area represented by the Abbotsford Aquifer while Fraser Valley is defined as all Fraser Valley areas outside of the Central Fraser Valley area.

Most of the poultry farms within the Central Fraser Valley area were located near the Abbotsford Aquifer area. Therefore, due to the close proximity of these poultry farms with the Abbotsford Aquifer area, shipments originating from the Central Fraser Valley likely affect the amount of poultry manure spread on the aquifer area. As well, manure shipped to distant markets from these farms should be considered as contributing to reducing the overall amount of poultry manure spread over the Abbotsford Aquifer.

From Figure 2, observations regarding monthly shipments from each area are difficult to make. However, shipment volumes from the Abbotsford Aquifer area are apparently more consistent throughout the year, than from other areas.

Table 2 below, shows the amount of total nitrogen shipped from the volumes shown in Figures 1 and 2.

**Table 2 Origin and Destination of Poultry Manure Shipments Identified by Area
- amounts and share of total nitrogen for each area ¹**

Area of Origin				Area of Destination	
-----			kg Total N	-----	
Abbotsford Aquifer	Central Fraser Valley	Fraser Valley	Total	Lower Mainland	Interior
87,840	49,200	42,030	179,070	85,170	93,900
-----			Share of Total N in Shipments (%) ²	-----	
49.1	27.5	23.5	100	47.6	52.4

¹ Assuming nutrient content and density estimates as identified in report Standardizing Measures of Nutrient Content and Density of Poultry Manure in Resource Binder, Sustainable Poultry Farming Group, Abbotsford, B.C.

² Percentages for each area may not total 100 due to rounding