



# Delta Farmland & Wildlife Trust



## 2017 Annual Report

*"Conserving farmland and wildlife  
through co-operative land stewardship."*

### **Cover Photo Credits**

Top: DF&WT Hedgerow, Drew Bondar

Bottom Left: Barley Cover Crop Field (Nov. 2017), Drew Bondar

Bottom Right: Extensively Grazed Barley Cover Crop Field (Mar. 2018), Drew Bondar

Thank you to everyone who has provided photographs to Delta Farmland & Wildlife Trust. If you are interested in contributing your own photos of wildlife and farming, please contact DF&WT at 604-940-3392 or [dfwt@dccnet.com](mailto:dfwt@dccnet.com).

### **Our Supporters**

The Delta Farmland & Wildlife Trust relies on additional funding to deliver the full extent of our stewardship programs. We would like to recognize the agencies that provided funding to our Stewardship Programs for 2017.

**Delta Agricultural Society**

**Vancouver Foundation**

**Environment and Climate Change Canada**

**Wildlife Habitat Canada**

**Ducks Unlimited Canada**

**BC Waterfowl Society**

**Habitat Conservation Trust Foundation**

**City of Delta**

**City of Richmond**

**and**

**Private Donations**



## Delta Farmland & Wildlife Trust: Our Mission

DF&WT is a non-profit organization that promotes the preservation of farmland and wildlife habitat on the lower Fraser River delta (Cities of Delta and Richmond) through co-operative land stewardship.

## Challenges to Farming and Wildlife Conservation

Farmland on the lower Fraser River delta is ideal for food production because the soils are fertile and the region has a relatively long growing season. The area is also important for a diversity of migratory birds that either use the delta as a stopover before they continue their journey or spend the entire winter. Despite the suitability of the area for farming and wildlife, there are challenges facing both.

The heavy silt/clay soils of local farms are prone to degradation when overworked by machinery. Tractors and other farm equipment can compact the soil and intensive tillage speeds the breakdown of soil organic matter, a crucial component of soil fertility. Farmers can fallow (rest) land by planting grasses and clovers and leaving the field alone for a period of time, however many farms simply cannot afford to take crop fields out of production.



Grass forage field with City of Vancouver in background



Potato field

Glen Bodie©

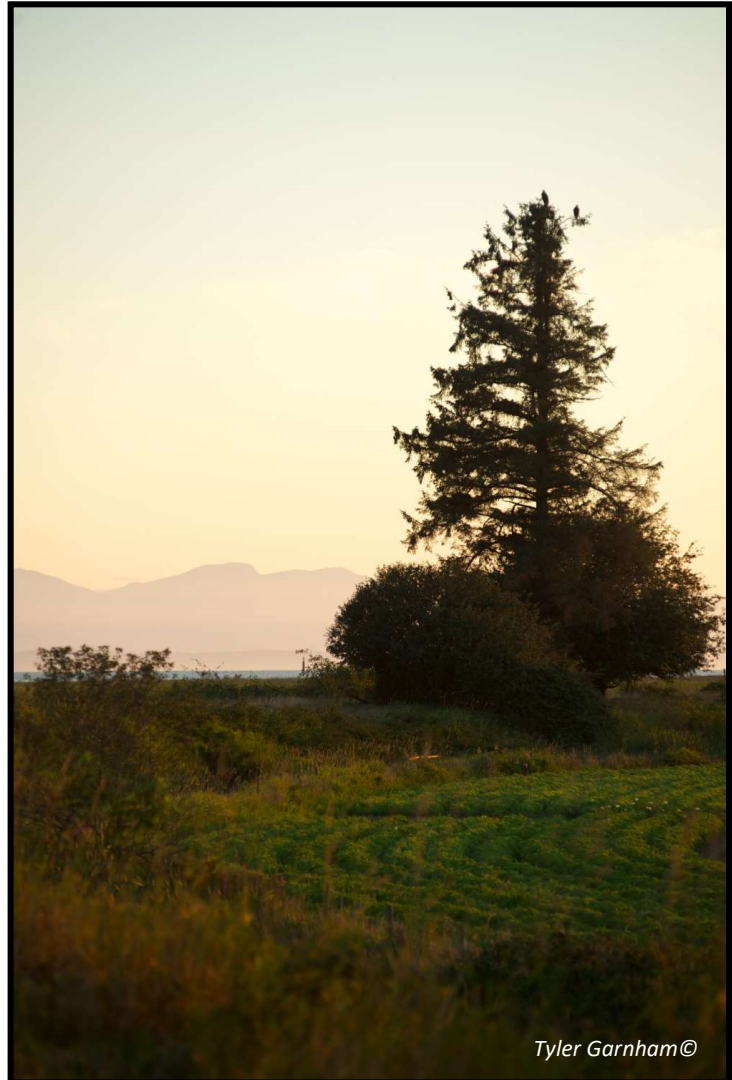
Wildlife, especially migratory birds, are also challenged to survive in the increasingly developed landscape of the lower Fraser River delta. Almost 80% of the marsh present a century ago has been drained and only 600 hectares of grassland are present in the City of Delta, compared to an estimated 6,000 hectares before 1890. Native shrubs and tree communities have dwindled as well.

## Farmland Stewardship in Action

DF&WT has developed stewardship programs to address the challenges facing agriculture and wildlife conservation. Through the stewardship programs, local farmers are eligible for cost-share payments when they plant crops that are beneficial to wildlife and/or agricultural production. The management guidelines that farmers follow to be eligible for the programs are guided by extensive research.

Each program addresses a specific example of wildlife conservation and/or agricultural production. The **Grassland Set-aside Stewardship Program** pays farmers to fallow land, which improves soil fertility, while providing habitat for a diversity of grassland raptors, wading birds, songbirds, small mammals, and pollinating insects. The **Winter Cover Crop Stewardship Program** helps cover the cost of establishing vegetative cover on fields before winter, which protects the soil from erosion, improves soil fertility, and provides feeding habitat for herbivorous waterfowl and shorebirds. Through the **Hedgerow Stewardship Program**, linear corridors of native shrubs and trees are planted along farm fields to provide habitat for songbirds, raptors, and beneficial insects. Similar corridors of grasses are planted along field edges through the **Grass Margin Stewardship Program**. Farmers can also apply to cover some of the costs of soil amendments and management through the **Field Liming** and **Laser Leveling Stewardship Programs**. Lime maintains soil pH at optimum levels so that plants can grow effectively and laser leveling improves drainage on fields that are prone to flooding.

By providing solutions to farmers that are compatible with their crop rotations, the DF&WT Stewardship Programs are contributing to the availability of wildlife habitat and the long-term viability of local farming operations, which ensures that land will continue to be available for food production and wildlife conservation.



## Summary of Stewardship Programs in 2017

Delta Farmland & Wildlife Trust stewardship programs are designed to contribute to agricultural soil fertility and wildlife habitat availability, while mitigating conflict between wildlife and farming operations. During the 2017 fiscal year DF&WT provided cost-shares totaling **\$417,753**, excluding hedgerow maintenance, staff time and administration costs.

Stewardship Program	Acres	Rate	Total
<b>Grassland Set-aside</b>			
<i>1-year</i>	151	\$300.00	\$45,300.00
<i>2-year</i>	244	\$250.00	\$59,750.00
<i>3-year (*IAF Project)</i>	183	\$250-300*	\$50,550.00
<i>4-year (1/2 Yr. Agreement)</i>	4	\$150.00	\$600.00
<i>4+ year</i>	79	\$250.00	\$19,750.00
<b>Total</b>	<b>661</b>		<b>\$175,950.00</b>
<b>Winter Cover Crops</b>			
<i>Spring Cereals, Winter Cereals, Cover Crop Mixes and Clovers</i>	<b>2,807</b>	\$50-55	<b>\$145,582.50</b>
<b>Forage Enhancement Pilot</b>	<b>651</b>	\$75	<b>\$48,825.00</b>
<b>Laser Levelling</b>	<b>224.5</b>	-	<b>\$25,131.25</b>
<b>Field Liming (*tonnes of lime)</b>	<b>746*</b>	\$30.00	<b>\$18,550.20</b>
<b>Farmscape</b>			
<i>Hedgerows</i>	3.16	\$300.00	\$948.00
<i>Grass Margins</i>	9.22	\$300.00	\$2,766.00
<b>Total</b>	<b>12.38</b>		<b>\$3,714.00</b>
<b>Stewardship Programs Total</b>			<b>\$417,752.95</b>

## Grassland Set-aside Stewardship Program

Local farmers in Delta and Richmond are able to fallow land through the Grassland Set-aside Stewardship Program. Individual fields are planted with forage grasses and clovers and can be enrolled in the Set-aside Program for up to 4 years (extensions to 5 or 6 years on a case-by-case basis). During that time, farmers receive cost-share payments to offset rent, seed, equipment, and labour costs (\$300/acre during the 1st year; \$250/acre in the 2nd and 3rd year; and \$300 in the 4th year). Farmers who choose to plant a Grassland Set-aside with grain may harvest the nurse crop in the first year (harvest reduces a farmer's cost-share to \$150/acre). For more information on Grassland Set-asides, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).



**Figure 1: Extent of 2017 Grassland Set-aside Program**

### Role in Local Crop Rotation

Grassland set-asides (GLSA) are short-term fallows that replenish soil organic matter. Soil organic matter is made up of the residue from dead plants, fungus, and soil organisms. Soil organic matter is crucial to maintaining agricultural production, as it influences soil structure (e.g., aggregate stability), water retention, drainage (by increasing soil macro-pores), soil microbial activity, macro invertebrates (e.g., earthworms), nutrient storage and nutrient uptake by crop plants. Additionally, the roots of grasses, and especially clover, can bore channels through compacted soil, thereby increasing drainage and aeration. The program also allows farmers to transition to organically certified production by fallowing their field during the 3-year chemical free period.

### Role in Wildlife Conservation

Grassland set-asides mimic the grasslands that were abundant on the lower Fraser River delta (LFRD) prior to 1890 (when land clearing and draining for agriculture began) and are therefore ideal surrogate habitat for wildlife. Populations of small mammals, especially Townsend's vole, establish under the thick canopy



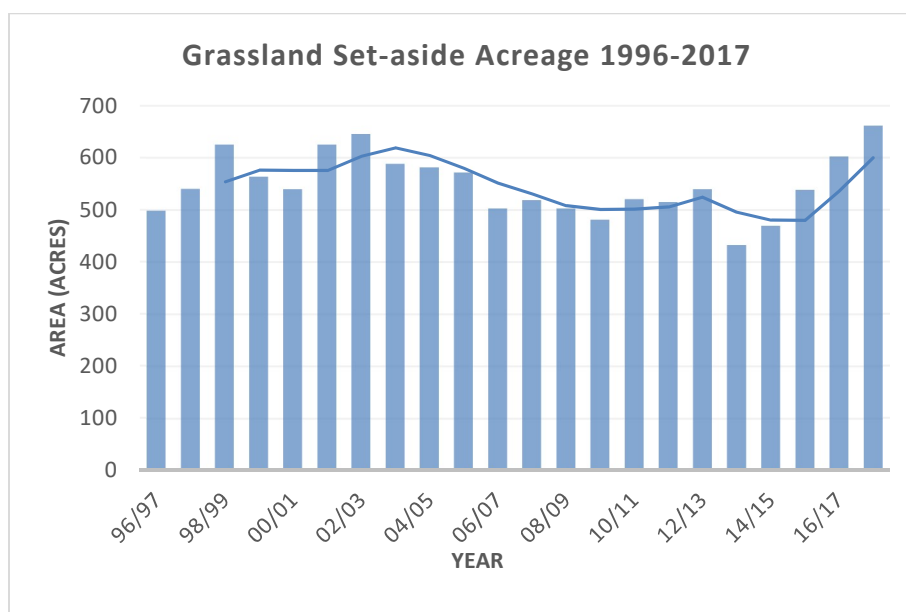
of grass and provide prey for predatory birds. These include raptors (Northern Harrier, Short-eared Owl, Barn Owl, Rough-legged Hawk, Red-tailed Hawk, and American Kestrel) and wading birds (Great Blue Heron and American Bittern).

Grassland set-asides provide habitat for a diversity of arthropods, including pollinating insects like bumblebees. Arthropods can also serve as a food source for shrews and insectivorous birds, including Barn Swallows and Western Meadowlarks.

Set-asides also provide nesting habitat for grassland birds. Savannah Sparrows and Common Yellowthroat nests can be found in set-asides and occasionally reports of Northern Harrier nests. Short-eared Owls and Western Meadowlarks may nest in set-asides but this has not been confirmed. It is thought that breeding populations of Western Meadowlarks have been extirpated from the lower Fraser River delta.

### Other Benefits

The organic matter that accumulates in grassland set-asides and benefits soil quality also acts as a pool of carbon, temporarily locking it away into plant tissue and the soil. Although this stored carbon is released from a set-aside's soil when it is returned to crop production, the planting of new set-asides ensures that a dynamic, yet relatively consistent, pool of carbon is sequestered from the atmosphere.



**Figure 2: Historical acreage of Grassland Set-aside program enrollment from 1996 to 2017 (The line is a 3-year running average).**

### Winter Cover Crop Stewardship Program

Farmers in Delta can plant cereal grasses, clover, or annual forage grasses as a cover crop. Cover crops can be under-seeded into growing crops (e.g., cereal grains and silage corn) or planted after cash crops (e.g., beans, peas, and potatoes) are harvested. In 2017, farmers received between \$50 and \$55/acre to seed winter cover crops. The majority of cover crops are seeded in late summer and early fall. For more information on winter cover crops, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).



**Figure 3: Extent of 2017 Winter Cover Crop Program**

### **Role in Local Crop Rotation**

The foliage of cover crops provides ground cover, preventing rain-induced soil erosion, while the roots increase soil porosity and break up compaction. Cereal cover crops scavenge nutrients that would otherwise leach from the soil during heavy winter rains. The cover crop can be incorporated in spring as a green manure to increase soil organic matter. Soil organic matter improves soil structure, increases the water holding capacity of soil, and increases the infiltration of water. Clover cover crops can fix nitrogen and offset the need to use synthetic fertilizers. While directly improving soil health, cover crops can also provide many other agricultural benefits. Cover crops can shade weeds and some release allelopathic compounds that inhibit weed growth, reducing the farmer's usage of chemical controls.

### **Role in Wildlife Conservation**

Cover crops mainly benefit herbivorous waterfowl, providing them with a protein-rich food source during staging and wintering periods. Lesser Snow Geese, American Wigeon, Northern Pintail, Mallard, and Trumpeter Swans are all species that frequently feed on winter cover crops. To a lesser extent, Canada Geese, Cackling Geese, Greater White-fronted Geese, Tundra Swans, and Green-winged Teal feed on cover crops. Several species of shorebird have been identified using cover crop fields as well. Wilson's Snipe use the dense vegetation of early planted cover crops as shelter, and Dunlin and Black-bellied Plover have been observed feeding on invertebrates on grazed cover crop fields. In one instance, a group of 18 Northern Harriers was observed roosting in an oat cover crop that had grown higher than 50 cm.

### **Other Benefits**

Grasses grown for hay and pasture (perennial forage) can be grazed by waterfowl, reducing harvest yields and potentially requiring fields to be reseeded. Winter cover crops can act as lures, drawing waterfowl away from hay and pasture, and provide them with an alternative source of feed. While cover crops have



not resulted in a complete abatement of grazing on hay and pasture, they offset some of the loss that growers would have otherwise experienced.

### Cereal Habitat Enhancement Pilot

Due to a recent decrease in operations of a local large-scale vegetable processor, the DF&WT initiated a three-year pilot project in 2016 to include spring-sown grain fields as a sub-component within our Winter Cover Crop Stewardship Program. As more acreage is being planted to grain because of the decrease in pea and bean contracts, this new DF&WT pilot program gives farmers an additional stewardship option. This program assists in supporting winter cover crops that have been established through the adequate re-distribution of residual seed from grain crops after harvest. If this spilt seed is adequately re-spread across the field and disked in, it has been observed that a cover crop can be established over the fall season that is equivalent to that planted following our management guidelines under our Winter Cover Crop Stewardship Program. This new three-year pilot program will assist farmers who are having to adjust their crop rotations as a result of the loss of pea and bean contracts, as well as ensure more acres are planted to a winter cover crop. In 2017, 668 acres were enrolled in the program costing \$33,400.

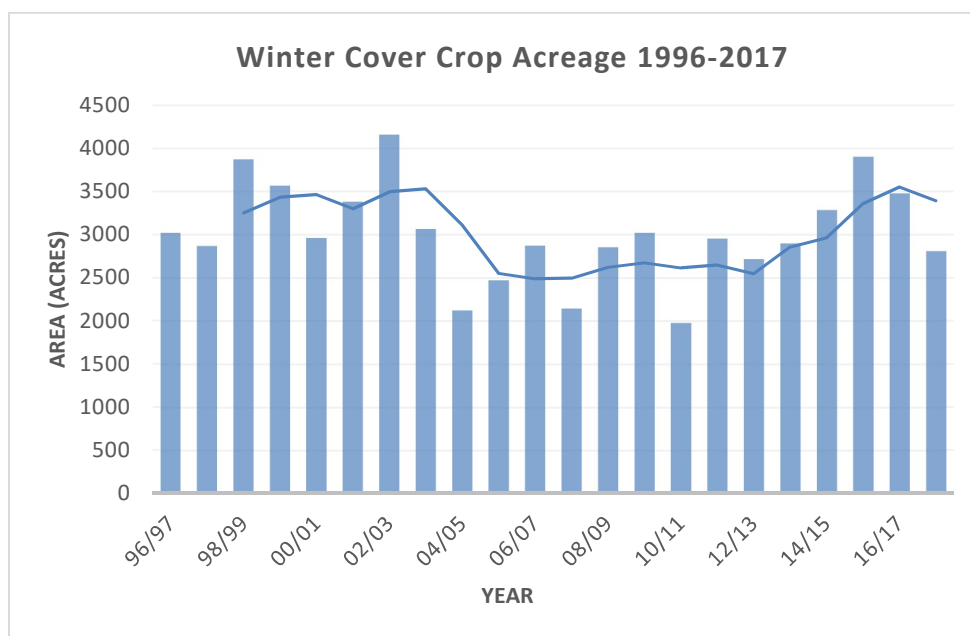


Figure 4: Historical acreage of Winter Cover Crop program enrollment from 1996 to 2017 (The line is a 3-year running average).

### Forage Enhancement Pilot Program

In 2017, DF&WT initiated a two-year Forage Enhancement Pilot Program. The program is designed to assist grass forage producers with the increasing intensity of grazing that their forage fields are experiencing over the winter season. Through the Forage Enhancement Pilot Program, DF&WT is sharing the costs associated with over- and re-seeding forage fields in the spring due to waterfowl grazing. This will support the enhancement and continued provision of these high-valued fields both for dairy cattle feed and as vital waterfowl foraging habitat. In 2017, 651 acres were enrolled in the program costing \$48,825.

### **Role in Local Crop Rotation & Wildlife Conservation**

Perennial grass forage fields provide the bulk of feed for dairy cattle herds in Delta. Grass forage fields also benefit herbivorous waterfowl, providing them with a protein-rich food source during staging and wintering periods. Lesser Snow Geese, American Wigeon, Northern Pintail, Mallard, and Trumpeter Swans are all species that frequently feed on grass forage fields. Past research conducted by DF&WT has identified perennial forage fields as providing some of the highest quality foraging habitat for migratory waterfowl.

Waterfowl grazing of perennial grass forage fields creates a considerable cost to many Delta forage producers including lower forage yields, reduced harvest quality (protein), a reduction in cuts (i.e. 5/year to 3/year), and at times destroyed plantings that require re-seeding. Impacts from waterfowl may also result in soil problems such as compaction and ponding. In some cases, grass forage fields must be re-seeded annually (as opposed to every 5+ years) at a cost upwards of \$350-500/acre.

The costs to maintain perennial forage fields in some cases are reaching a level where it is no longer economically viable. This is causing some producers to plant annual forage fields and other forage crops (i.e. corn). The concern with regards to waterfowl is that annual forage fields will be tilled in the fall and left bare over the winter season. Bare fields tend to dry out quicker in the spring, permitting earlier access and planting, which is critical for nutrient management. However, the consequence of this practice is fields that once provided significant foraging habitat for waterfowl will no longer be available over the winter and migratory season. This decrease in perennial fields will exacerbate the issue elsewhere by increasing pressures on remaining grass forage and winter cover cropped fields.

### **Hedgerow Stewardship Program**

Hedgerows in Delta are rows of native trees and shrubs planted along field edges. For more information on Hedgerows, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).

#### **Role in Local Crop Rotation**

The ecology of hedgerows is complex, and although it is difficult to determine exactly how hedgerows contribute to crop production, current research supports their role in providing habitat for predatory, parasitoids and pollinating insects. Beneficial insects are known to support biological pest management and increase crop yields. Pollinating insects are required for fruit set in a number of local agricultural crops, including tomatoes, berry crops (blueberry, strawberry, raspberry, and cranberry) and cucurbits (squash, zucchini, pumpkins, and cucumbers).

#### **Role in Wildlife Conservation**

Hedgerows provide feeding habitat for songbirds and raptors. Many hedgerow songbirds feed upon the berries from fruiting shrubs or the insects living in the hedge. Accipiter hawks like Cooper's and Sharp-shinned Hawk will hunt smaller songbirds within the hedge. Raptors, like the Red-tailed Hawk, Rough-legged Hawk, Short-eared Owl, and Northern Harrier will use hedges as perch sites. Surveys conducted of hedgerows in Delta, including those established through DF&WT's stewardship program, indicate that older, more structurally developed hedgerows provide habitat for a wider variety of bird species.

## **Grass Margin Stewardship Program**

Like hedgerows, grass margins are linear strips of habitat running along the edge of agricultural fields. DF&WT encourages farmers to use the same mixture of forage grass and clover used in grassland set-asides when planting margins. Farmers are eligible to receive \$300/acre for grass margins enrolled in the program. For more information on Grass Margins, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).

### **Role in Local Crop Rotation**

Grass margins can provide physical breaks between fields, especially fields that require buffer zones for organic certification. When margins are planted along ditch edges, the grass can trap soil that would erode off the field during heavy rains, preventing the ditch from filling with sediments. When grass margins contain clover, they can provide feeding habitat for pollinating insects.

### **Role in Wildlife Conservation**

Similar to grassland set-asides, grass margins can provide habitat for small mammals which are prey for raptors and wading birds. Raptors may also roost in grass margins during winter; Short-eared Owls have been flushed from grass margins during field surveys. Grassland songbirds nest and feed in the grass margins.

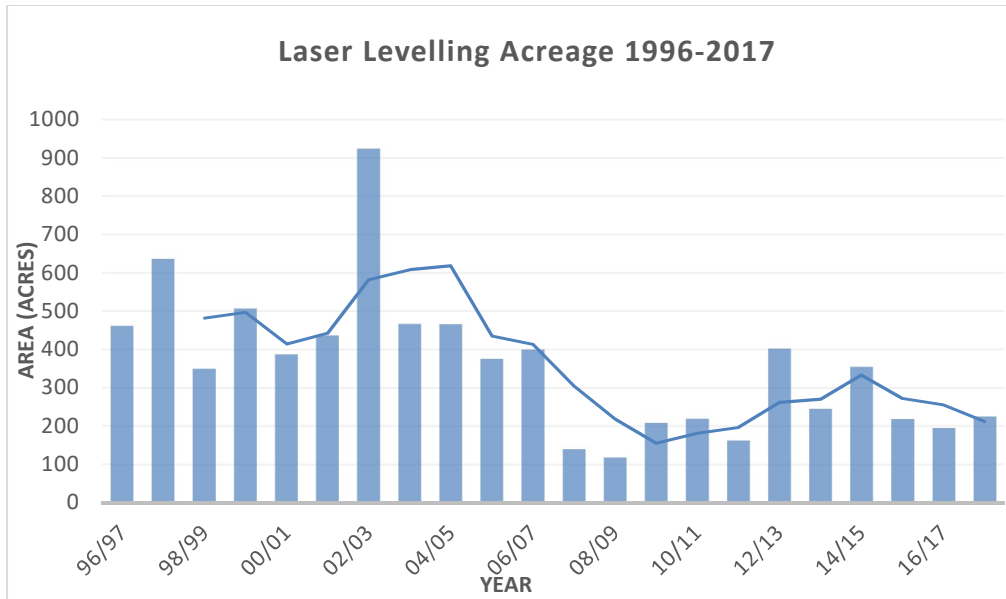
## **Laser Leveling Stewardship Program**

DF&WT has been offering its Laser Leveling cost-share program to farmers since 1996. Through the program, co-operators are eligible to receive up to 50% of the cost of leveling, up to a maximum cost-share of \$125/acre (\$309/ha) and a maximum of 50 acres (20 ha) leveled. For more information on Laser Leveling, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).

### **Role in Local Crop Rotation**

Drainage is an essential component of productive agriculture, especially in areas that experience periods of heavy rainfall. On the Fraser delta, heavy rains occur during the winter months and poor field drainage can lead to soil erosion, soil compaction, and salt accumulation. Field topography plays an important role in how water is drained from a field. Steeply sloped fields can lose significant amounts of topsoil as fine particles are washed away by water runoff. Water pools in low areas and is unable to drain, and the weight of water in these areas is significant enough to cause compaction. Furthermore, these areas take longer to dry in spring, delaying farmers' access to portions of their fields. When the puddles do dry, the osmotic pressure can pull significant amounts of salt from deeper in the soil profile to the surface, thereby impacting crop production.

Delta farmers have access to laser leveling services which can recontour their fields to maximize drainage, and minimize water ponding and soil erosion. Using GPS, stationary laser towers, and computer software, a laser leveling plough is pulled by a powerful tractor and can accurately recontour a field. The plough fills in low areas and removes soil from high points, and fields can be contoured to either be completely level, sloped, or crowned, depending on the field's characteristics.



**Figure 5: Historical acreage of Laser Leveling program enrollment from 1996 to 2017 (The line is a 3-year running average).**

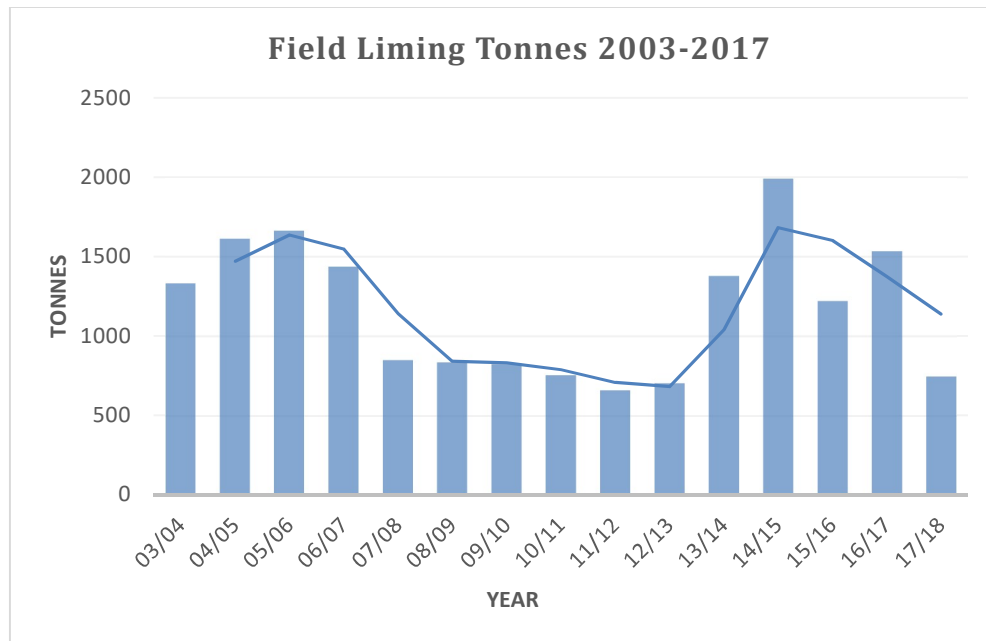
## Field Liming Stewardship Program

Farmers in Delta have had access to DF&WT's Field Liming cost-share since 2004. Through the program, farmers are eligible to receive \$30/tonne of lime applied, to a maximum of 2 tonnes/acre applied on a maximum of 100 acres. For more information on the Field Liming Stewardship Program, visit [www.deltafarmland.ca](http://www.deltafarmland.ca).

### Role in Local Crop Rotation

Soils become acidic when there is an accumulation of positively charged hydrogen ions (called cations). There are several ways soils become acidic. Heavy rains can leach away positively charged ions like calcium, magnesium, potassium, and sodium. Excess nitrogen fertilizer that is not taken up by crop plants can be oxidized to acids by soil microbes. When soils become too acidic, plants are unable to take up nutrients efficiently. The application of lime to fields allows farmers to adjust soil pH to approach a level that maximizes yield potential, particularly for vegetable crops. While many factors, such as the kind of crop, soil type, and climate, influence the effect of liming a field, it can be generally stated that the application of lime on all moderate to strong acid soils will improve and maintain productivity. At a cost of over \$85 per tonne (which includes transportation to the field and spreading), lime is an important investment in the stewardship of agricultural soils.





**Figure 6: Historical tonnage of Field Liming program enrollment from 2003 to 2016 (The dark green line is a 3-year running average).**

# Summary of Research Completed in 2017

## **Nitrogen Dynamics Following Incorporation of 3-Year Old Grassland Set-asides in Delta, British Columbia – Khalil Walji (MSc. Thesis)**

In 2015, DF&WT in partnership with the University of British Columbia's Faculty of Land and Food Systems began a five-year research project with federal funding delivered by Investment Agriculture Foundation of BC. The project is evaluating the effects of short (2 year) to medium (4 year) term recurrent Grassland Set-asides on enhancing soil quality. Results will assist farmers in optimizing the management of their set-asides and will ultimately contribute to sustaining agriculture as a viable industry in Delta for the foreseeable future.

*Nitrogen Dynamics Following Incorporation of 3-Year Old Grassland Set-asides in Delta, British Columbia* is the first of four theses to be produced through this five-year research project entitled: *Demonstrating Long-term Improvements in Soil Productivity on Delta Farmland*. The objectives of this project are to evaluate:

- 1) The effects of Grassland Set-asides (GLSA) on soil quality;
- 2) How the effects of GLSA on soil quality vary with the duration of set-aside;
- 3) How the incorporation of GLSA into a crop rotation affects soil nutrient cycling and subsequently crop yield; and
- 4) How differences in soil nutrient cycling and yield vary with the duration of the set-aside.

*Nitrogen Dynamics Following Incorporation of 3-Year Old Grassland Set-asides in Delta, British Columbia* addressed objective three of the project, which entailed the quantification of nitrogen benefits to crop production after the incorporation of three-year-old GLSA. Results support that three-year-old set-asides can potentially improve nitrogen availability. However, benefits were determined to depend on a number of different variables including the C:N ratio of the GLSA biomass, timing between incorporation and crop planting, precipitation, temperature and type of fertilizer applied. In the 2015 growing season, GLSA were found to supply an additional 18 kg of plant available nitrogen (PAN) per hectare, but supplied no additional PAN in 2016. In both sampling years, PAN following GLSA incorporation was also identified to peak later in the growing season compared to control fields. Complete results can be accessed at <https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0347623>.

## **Evaluating Field Margins for Wild Bee Conservation at the Farm- and Landscape-Scale in the Agricultural Land Reserve of Delta, British Columbia – Martina Clausen (MSc. Thesis)**

In 2015, DF&WT in partnership with the University of British Columbia's Faculty of Land and Food Systems began a two-year research project that evaluated the quality of pollinator habitat and diversity of pollinator species (primarily bees) present in Delta hedgerows. Results concluded that wild bees were significantly more abundant, species rich and diverse in grass margins compared to both DF&WT planted and remnant hedgerows. Floral abundance was found to directly correlate with bee abundance, but was identified to be one of many factors. Results also concluded a bee preference for non-native, herbaceous plant species predominantly found in grass margins, whereas only a few species found in DF&WT hedgerows were visited by bees. Areas most critical for habitat connectivity and habitat availability were also identified. Recommendations included revising plant species in the DF&WT Hedgerow Stewardship program in order to support higher levels of pollinators; greater promotion and enrollment in the Grass Margin Stewardship Program; and augmenting the current Grassland Set-aside seed mix to include a

greater proportion of flowering species. The thesis can be accessed at <https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0357033>.

### **Comparison of Landbird Abundance and Diversity in Hedgerows in Delta, BC between 2016 and 2017 – Lori Schlechtleitner (BCIT Ecological Restoration Program Summer Internship)**

In 2015, DF&WT in partnership with the British Columbia Institute of Technology Ecological Restoration program began a multi-year summer internship that is evaluating landbird use (i.e. species richness and abundance) of DF&WT planted hedgerows throughout Delta. The internship is assessing the relationship between hedgerow age and vegetation composition and landbird use. Results from the 2017 internship, which included a comparison between 2016 and 2017, found that generally older hedgerows had significantly higher species abundance and richness. A total of 61 different species were observed utilizing hedgerows. Hedgerow sites with greater anthropogenic features and connectivity were also identified to support higher species diversity. The final report is available upon request.

### **Assessing Waterfowl Use of Agricultural Lands in Delta & Richmond, BC – Olga Lansdorp (DF&WT Field Technician)**

In 2016, DF&WT in partnership with Canadian Wildlife Service and Ducks Unlimited Canada began a multi-year project assessing waterfowl use of agricultural land throughout Delta and south Richmond. Existing information on waterfowl use of agricultural lands has become dated. This project intends to collect up-to-date information by surveying a selected sub-set of fields in Delta and south Richmond throughout the migration and winter periods. Surveys will quantify and assess patterns in waterfowl use between crop types and over time. Surveys will also be used to quantify the benefit of cover crops to waterfowl.

This updated information will enable accurate assessments of the degree to which current waterfowl populations are supported by agricultural land, and will support efforts to conserve and maintain farmland and 'waterfowl-compatible' agricultural practices. The project will also assist in quantifying the value of the DF&WT's Winter Cover Crop program for waterfowl, to garner continued and additional support for the program.

Over the course of 20 survey days conducted between November 2017 and March 2018, a total of 82,624 waterfowl were observed, comprising nine different species. The waterfowl species observed from greatest to least abundant were Mallard (*Anas platyrhynchos*), American Wigeon (*Anas americana*), Snow Goose (*Chen caerulescens*), Trumpeter Swan (*Cygnus buccinators*), Northern Pintail (*Anas acuta*), Canada Goose (*Branta Canadensis*), Green-winged Teal (*Anas crecca*), Northern Shoveler (*Anas clypeatae*), and Greater White-Fronted Goose (*Anser albifrons*). The majority of the birds observed were Mallard (33,271) and American Wigeon (31,597), together accounting for 78% of the waterfowl observed during the study period.

Waterfowl were observed foraging in crop fields and DF&WT's cover cropped fields. American Wigeon, Canada Goose, Mallard, Northern Pintail, Snow Goose and Trumpeter Swan were all observed on cover cropped fields. Snow Goose was recorded at the highest abundance at 19.6/hectare per field visit. Additional surveys over the next couple seasons will be required in order to provide an accurate assessment of waterfowl use of traditional and novel cover crops.

**STATEMENT OF FINANCIAL POSITION**  
**Unaudited, for the year ended December 31, 2017**

**ASSETS**

	<u>2017 (\$)</u>	<u>2016 (\$)</u>
<b>Current</b>		
Cash	<b>139,115</b>	169,372
Term deposits	<b>189,797</b>	79,921
Contributions receivable	<b>115,194</b>	156,132
GST receivable	<b>2,690</b>	4,564
Prepaid Expenses	<b>12,000</b>	12,000
<b>Total Current Assets</b>	<b>458,796</b>	421,989
<hr/>		
<b>Restricted cash</b>	<b>201,266</b>	212,130
<b>Long term investments- at cost</b>	<b>96,416</b>	93,041
<b>Capital assets</b>	<b>388</b>	512
	<b>756,866</b>	727,672

**LIABILITIES**

	<u>2017 (\$)</u>	<u>2016 (\$)</u>
<b>Current</b>		
Accounts Payable	<b>59,417</b>	29,575
Payroll liabilities	<b>2,295</b>	3,026
<b>Deferred revenue</b>	<b>201,266</b>	212,130
<b>Total Liabilities</b>	<b>262,978</b>	244,731
<hr/>		
<b>Net assets</b>	<b>493,888</b>	482,941
<hr/>		
<b>Total Liabilities and Net Assets</b>	<b>756,866</b>	727,672



**STATEMENT OF OPERATIONS AND CHANGES IN NET ASSETS**  
**Unaudited, for the year ended December 31, 2017**

	<u>2017 (\$)</u>	<u>2016 (\$)</u>
<b>REVENUE</b>		
Funding:		
Delta Agricultural Society	135,000	135,000
Vanc Fdn: YVR Wildlife Stewardship Fund	113,474	109,093
Gov't of Canada Cdn Wildlife Service	144,000	145,000
Ducks Unlimited Canada	25,000	25,000
Investment Agriculture Foundation (I.A.F)	48,518	48,518
HCTF	20,000	20,000
Vanc Fdn: Boundary Shores	19,383	18,635
Corporation of Delta	15,000	15,000
TG&CC Habitat Compensation Fund	13,750	13,750
Wildlife Habitat Canada	30,000	30,000
B.C. Waterfowl Society	35,380	25,000
City of Richmond	10,000	8,500
Other:		
Donations	21,600	24,640
Fundraising - BBQ	745	119,936
Fundraising - DATF	21,800	16,100
Interest and other income	7,914	7,661
<b>Total revenue</b>	<b>661,564</b>	<b>761,833</b>
<b>EXPENSES</b>		
Projects:		
Remittances to co-operators	417,248	410,858
Program coordinator	29,336	30,085
Travel and mileage	2,467	1,215
Program supplies	1,839	30,482
Monitoring and evaluation	11,492	6,752
Farmscape maintenance	8,000	6,384
Farmscape construction	-	-
I.A.F Project	60,957	56,000
<b>Total project expenses</b>	<b>531,339</b>	<b>541,776</b>
General:		
Administration, office, society costs	89,908	98,046
Fundraising - BBQ	20	75,764
Fundraising - DATF	24,337	17,165
Conservation education, communication - newsletter	5,013	3,192
Total general expenses	119,278	194,167
<b>Total expenses</b>	<b>650,617</b>	<b>735,943</b>
<b>Excess of revenue over expenses</b>	<b>10,947</b>	<b>25,890</b>
<b>Net assets, beginning of year</b>	<b>482,941</b>	<b>457,051</b>
<b>Net assets, end of year</b>	<b>493,888</b>	<b>482,941</b>