



Cover Crop Program



**Delta Farmland
& Wildlife Trust**
Partners in Stewardship

*Planting cover crops to
enhance soil health and
cover bare soil.*

Why are cover crops important?

Cover crops consisting of grasses, legumes or grain crops are grown annually between planted cash crops for the purpose of protecting and enhancing soil. Cover crops help maintain soil productivity by preventing erosion from winter rain and wind, and by building organic matter in the soil.

Cover crops also provide foraging resources to over-wintering waterfowl such as Snow Geese, Trumpeter Swans, and Wigeon, which reduces the impact of waterfowl grazing on perennial forage fields.



What is the Cover Crop Program?

The Cover Crop Program (CCP) is a farmer focused cost-share program which provides funding to local farmers for the planting of cover crops in the summer or fall following the harvest of a cash crop. Cover crops are to be left unharvested during the winter months until the spring of the following year. The program aims to provide ecosystem services throughout the winter, when fields would otherwise be left fallow.

What funding is available?

Long season, intercropped or underseeded cover crops planted between June and August 31st: **\$60/acre**

Winter cover crops planted in September*: **\$50/acre**

**Cover crops seeded after September 30th may be considered if there is sufficient plant growth and room in the program. Preference will be given for cover crops seeded before October 1st*



An additional \$10/acre will be applied for multi-species cover crop mixes (3 species or more, from at least 2 different plant families)



An additional \$20/acre will be applied for fields in Delta, Richmond and Surrey due to significant waterfowl grazing pressure in these regions.

Participants must contact Delta Farmland and Wildlife Trust (DFWT) prior to planting cover crops to guarantee funding.

Maximum allowable acres (unless funding remains available) is 400 acres per applicant. Per acre payments will be reduced by \$10/acre for participants planning to harvest cover crops after March 31st for feed.

Agreements are three years in length. By participating in the program, you are agreeing to plant cover crops each year for three years.

Participants agree to work towards completing an agri-risk assessment such as the Environmental Farm Plan.

Ineligible:

- farm fields located on crown land
- cover crops that are harvested or worked up prior to March 31st, 2025
- cover crops that are grazed throughout the year

Why consider this practice?

Resilient soil can help to alleviate challenges when it comes to planting dates and crop yields, as well as helping to lower the costs of fertilizer, nitrogen, and irrigation. Cover crops are an essential tool, and when paired with regenerative management practices, operations can see improvements in their soil health. There are many agronomic advantages of using cover crops, including:

- reducing soil loss due to water erosion;
- maintaining soil surface infiltration;
- improving soil tilth;
- providing valuable organic matter to the soil when ploughed down in the spring; and
- scavenging nutrients that otherwise may leach from the field.

Studies show cover crops can produce chemical factors which directly impact pathogens and help prevent disease in crops. Adding beneficial microbes into the soil to discourage disease and encourage beneficial species of nematodes is a secondary pest-related attribute. Cover crops are also used to attract beneficial insects to fields, which feed on pests.

Why are cover crops especially important in the Fraser Lowland?

In the Fraser River delta, cover crops provide feeding habitat to large numbers of over-wintering waterfowl such as Snow Geese, Trumpeter Swans, American Wigeon, Mallards, and Northern Pintail.

The Fraser Lowland is located along the Pacific Flyway, a major north-south route for migratory birds that extends from Alaska to Patagonia. Every year, over 5 million migratory birds pass through this area, many stopping to refuel and rest during their long journeys. The estuary supports the largest density of over-wintering birds in Canada and is considered Canada's top Important Bird Area (IBA), with 15 species that are of global and continental importance.

Large flocks of heavy waterfowl, such as geese, will compact the soil during overwinter grazing. Fields which become compacted are more difficult to till, inhibit plant root penetration, and water and air infiltration. Planting a cover crop will help protect soil against compaction, and will provide migratory waterfowl with food and habitat resources.

Levels of Intensity of waterfowl grazing pressure on cover crop fields



Intensity 0
No grazing



Intensity 1
<50% of vegetation
height grazed



Intensity 2
>50% of vegetation
height grazed



Intensity 3
Only stubs remain



Intensity 4
No cover crop remains

Species Highlight

The type of crop and time of crop harvest are important factors in deciding which cover crop variety to use and how to plant it. Many planting techniques and cover crop varieties can be used to balance soil health and enhance soil microbiology.

Planting Guidelines

| Planting Dates | Before August 31 | Between September 1 and 15 | After September 15 |
|--------------------|--|-------------------------------|-----------------------|
| Cover Crop Variety | <u>Minimum*</u> Seeding Rates (lbs/ac) | | |
| Spring Barley | 100 | 125 | 135 |
| Oats | 100 | 125 | 135 |
| Spring Wheat | 100 | 125 | 135** |
| Fall Rye | 100 | 125 | 135** |
| Annual Ryegrass | 20 | 25 | 30 |
| Winter Wheat | 100 | 125 | 135 |

* These are minimum seeding rates; higher rates are recommended if broadcast, particularly late in the season

** Best crops to plant in late fall in areas likely to be heavily grazed by waterfowl

Scan here to receive up-to-date program information, including program changes and important reminders:



Considerations for successful plantings

The earlier a cover crop is established, the greater its soil and conservation benefits will be. A well-established cover crop by mid-September will provide excellent soil cover and may withstand or recover from repeated waterfowl grazing events over the winter.

Growers may wish to try underseeding an early-planted spring cereal or pea crop with clover, leaving an established cover crop after the harvest. Cover crops can also be relay cropped with silage or sweet corn. Italian ryegrass (Tetrone) has been shown to provide excellent results.

If the cover crop is planted after a late harvested crop, seed should be drilled if possible and/or applied at a higher rate. Cover crops seeded in early October or into poorly structured or drained soil will have little capacity to provide good soil cover.

Why consider a mix?

The ideal selection of cover crops will vary depending on the desired outcomes for each grower. When selecting an ideal cover crop mix it is important to consider species growth periods, nitrogen requirements, pest pressures and soil coverage. The species selected must compliment one another.

For example, a mixture of oats, clover, and annual ryegrass have a complimentary growing period, where the oats will establish in the fall to help suppress weeds and scavenge nitrogen remaining in the soil but will not endure prolonged freezing temperatures. The clover and ryegrass in this mix are moderate winter-hardy crops, and will be able to continue growing in the springtime, which provides additional nitrogen fixation and soil cover until termination. This type of complementary mixture ensures soil cover throughout winter, providing soil protection from erosion, as well as resources and habitat for beneficial insects.

If operators are experiencing high amounts of soil pests, which are limiting crop yield, a legume-brassica cover crop may be a viable management strategy. Legumes, such as clover or hairy vetch will work to help fix nitrogen in the soil, as well as help enhance beneficial organisms. Pairing this crop with a brassica such as radish will attract pollinators to the field as well as suppress detrimental nematodes and soil borne diseases which will improve soil health for following crops.

Planting a variety of cover crop species with a diversity in ecosystem functions can provide multiple benefits to farm fields throughout the winter season, and by considering soil characteristics, growers can recognize maximum benefits from cover crop varieties.

Am I eligible?

Cost-share funding is open to farmers or landowners with farmland in Metro Vancouver and the Fraser Valley on crop fields.



What's the application process?

Participants must apply to DFWT before planting to ensure funding remains available.

1. There are three ways you can start your application:

- call (604) 970-7640 or email programs@dfwt.ca to discuss your project
- complete the online agreement at: form.jotform.com/240035486879265
- visit deltafarmland.ca to find PDF versions of our cover crop agreements

2. Once you receive notification that your application is formally approved,, you can plant your cover crop knowing funding has been allocated to your project.

3. After your acres have been approved, you will receive a request to submit maps of the fields seeded.

4. DFWT Field Technicians will verify the project area, and conduct wildlife monitoring throughout winter months where appropriate.

5. Cost-share payments will be made through automatic funds transfer in December.

Carbon Sequestration Information

Climate change has been a prominent issue for farmers over the past several years. With extreme weather events happening more frequently, such as flooding, extreme heat during the summer, and extended periods of wet weather during the spring, it is important to factor climate change into farm management decisions.

Plant residue left from crops is the main source of carbon in agricultural soil. Living plants are also able to store carbon in the soil through photosynthesis. This means farm soils have a larger potential to store carbon through management practices such as cover cropping. Winter cover crops help build organic matter throughout winter, and the plant matter is then left in the field as green manure. The increase in soil organic matter from the cover crop is then able to reduce the agricultural emissions of greenhouse gases by sequestering atmospheric carbon and storing it in the soil.

Accumulation of soil organic carbon may be a slow process, but the long-term health of the soil will help keep crops growing in the fields. Fields planted with cover crops have been observed to have 26% to 36% greater carbon in the soil compared to plots without cover crops, with some reports noting up to a 400% increase in carbon in long-term studies. Soil carbon can be used as a source of nutrients in the soil, it also helps soil aggregation, increases microbial activity, and increases the availability of water for plant use.

Research and Verification

Research and project verification are critical components of DFWT programs. Our cost-share programs are grounded in science and require annual surveying efforts to ensure projects have the desired effect on wildlife and soil health.

Winter Monitoring

DFWT Field Technicians conduct winter monitoring on cover crop fields from November to March.

Cover crop vegetation is assessed to determine the extent of grazing pressure throughout the season, as well as the species using these habitats for overwintering.

Soil Health Baseline

Several studies have been conducted on cover crops to demonstrate the significant impact of this practice on soil health. We conduct our own soil monitoring efforts on a select number of fields to gain a sense of soil condition. Results are not shared publicly. DFWT utilizes this information as a resource to understand the change in soil parameters over time.

Field Technicians
may measure:

- Soil pH
- Bulk density
- Water holding capacity
- Water infiltration
- Soil organic matter
- Soil workability

Questions about the program? Get in touch with us:



604-940-3392



programs@dfwt.ca



www.deltafarmland.ca

Nutrient Spotlight

Cover cropping can help prevent the loss of nutrients from the soil ecosystem. After harvesting summer crops, many soil nutrients can become inaccessible and lost in deeper layers of the soil. By planting a cover crop, such as cereal rye, the roots of these plants scavenge for soil nutrients which have leached into deeper parts of the root zone. These crops can help accumulate nutrients such as nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur, in the upper layers of soil.

The scavenged nutrients will remain and break down in the soil following cover crop termination and become available for uptake by spring crops. When a cover crop is incorporated into the soil as a green manure, soil microorganisms will multiply to help break down the plant material. The breakdown of plant material will release nutrients which were held in the plant tissue into the soil for use by the following crop.

Who is Delta Farmland & Wildlife Trust?

DFWT is a grassroots organization that promotes the preservation of farmland and wildlife habitat in the Fraser River and Fraser Valley estuary by providing funding to support stewardship projects. Soil health and on-farm habitat are our two critical priorities. We work with farmers to enhance production systems through science-based approaches. Our Field Technicians survey projects to understand the impact they're having on wildlife and soil health.

DFWT has been delivering cost-share programs for farmers in Delta for 30 years. These partnerships have led to transformative change and support for wildlife on farms in this region. Starting in 2023 we have expanded some of our cost-share programs to be delivered throughout Metro Vancouver and the Fraser Valley. Our farmer-focused approach ensures participants receive the funding they need to get projects in the ground without a complex program process. Our organization is led by farmers and conservationists working together to support collaborative and practical efforts on farms.

Terms and Conditions

1. Applications to the Cover Crop Program should only be made for acreage within Metro Vancouver and the Fraser Valley, BC.
2. Approval is dependent on funding availability. New applications are date stamped upon arrival and are treated on a first-come, first-served basis.
3. Applications for cover crops planted after September 30th will only be considered eligible for funding if there is sufficient plant growth and if additional funds remain after all September 30th and earlier plantings have been allocated funding.
4. To receive payment, participants must maintain and manage the field as a cover crop from the planting date to March 31st, 2025.
5. Participants agree to allow DFWT to monitor the cover crop for wildlife use, vegetation structure or soil quality.
6. Participants agree not to receive reimbursement or exchange for rent payment for the cover crop from any other program or agreement.

Information contained within this document is accurate at the time of printing (January 2024) and may be subject to change.





Story from a farmer who uses cover crops

Brent Harris and his family operate a 6th generation organic farm in Delta, where they grow cranberries (non-organic), peas, beans, barley, cattle corn, and potatoes.

As an early adopter of cover crops, Fraserland Organics has been experimenting with various species mixes to maximize the benefits. Now, 30 years later, Brent considers the current mix a work in progress, suggesting that every year the cover crop mix is carefully reevaluated and adjusted. "We'll put things in the mix and assess how they do. Depending on the weather conditions, certain plants will do better than others," notes Brent. The farm can cover its bases by planting various species, knowing that varieties that can handle dry conditions will be more successful in dryer years. Recently, the mix of cover crops used at Fraserland

Organics has been adjusted to support beneficial insects and pollinators by incorporating flowering species.

For this organic farm, the soil health benefits of cover crops are significant. Soil covered during winter months helps reduce weed pressure, improves water infiltration, builds organic matter, secures excess nutrients remaining from the previous crop and demonstrates resilience to volatile weather.

"Our number one reason [to plant cover crops] is because it's the right thing to do for our farming system and soils, but having the cost-share programs with Delta Farmland and Wildlife Trust helps us to try something new and allows us to experiment," says Brent.

