



Hedgerow Stewardship Program



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

*Increasing wildlife habitat
in the farm landscape.*

Why are hedgerows important?

Hedgerows consist of native trees, shrubs, and grasses planted along field margins. They provide important habitat for birds and pollinators in the farm landscape. They can also offer agronomic benefits including reducing wind erosion and supporting beneficial insects. Hedgerows also have aesthetic value, adding to the beauty of the local landscape.

What is the Hedgerow Stewardship Program?



The Hedgerow Stewardship program provides funding to establish new hedgerows along field margins to support wildlife. The hedgerows are planted by Delta Farmland Wildlife Trust in consultation with landowners and consist of a diverse mix of native trees and shrubs. DFWT will assist with maintenance during the initial three years following planting and will provide an annual cost-share payment for land removed from agricultural production for three years with the potential for extension as funding allows.

As the hedgerows are for the long-term benefit of wildlife habitat conservation, they are expected to remain in place for at least ten years. DFWT has assisted in establishing 16 km worth of hedgerows throughout Delta.

Why consider this practice?

Hedgerows provide many benefits to both crop production and wildlife:

Biodiversity Conservation

Habitat loss is the most significant driver of biodiversity loss. One approach to mitigate this continued decrease in biodiversity is to enhance farmland with natural habitat through hedgerows of native plants.

Within an agricultural landscape, hedgerows provide year-round habitat for various species including beneficial birds and insects (i.e. wild pollinators and predatory insects). Hedgerows can have a significant influence on biodiversity conservation. Preserving existing hedgerows and planting biologically diverse hedgerows has been identified as one of the most significant contributors to improving biodiversity on farmland.¹ Increasing biodiversity on farmland can improve crop yields and reduce pressures from crop pests.

Wildlife Habitat

Hedgerows provide food, offer concealment and thermal cover, provide breeding sites, and function as travel corridors connecting habitat fragments for wildlife. In agricultural landscapes, these habitats are critical in supporting wildlife communities, particularly breeding, migrating, and wintering birds. Surveys of DFWT hedgerows have identified over 70 different species of songbirds utilizing these habitats. However, the worldwide intensification of agriculture has resulted in a significant loss of these critical ecosystem components.

Water Management

Hedgerows can improve water infiltration and the water-holding capacity of the soil, potentially reducing ponding and flooding in adjacent areas.

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



Enhance Crop Pollination

Recent research has demonstrated the importance of wild pollinators for crop pollination and overall yields. One BC study found that wild pollinators are required to maximize pollination in pollinator-dependent crops such as blueberries.² They found that highbush blueberry yields in BC could potentially increase by 30% if pollination was maximized through wild pollinators² and that Duke and Bluecrop blueberries could generate an additional \$7,800/ha and \$18,400/ha, respectively if pollination was maximized.² Another BC study found that bumble bee abundance had a greater influence on blueberry and cranberry berry mass than honey bee abundance.³ A study in the US Midwest found that blueberry fields adjacent to wildflower plantings have been found to have a higher percentage fruit set, berry weight and mature seeds per berry, resulting in higher yields.⁴

Finally, a study from the UK found that field beans pollinated through open pollination with wild pollinators compared to self-pollination resulted in a 185% increase in yield.⁵

Biological Pest Management

Hedgerows on farmland have also been shown to support biological pest management. Research has identified that agricultural landscapes with more non-crop habitat such as hedgerows and grassy margins support higher populations of predatory insects.⁶ Another study found that landscapes with more semi-natural areas had either fewer crop pests or more biocontrol.¹¹ Hedgerows have also been found to support higher ratios of beneficial insects to pests compared to weedy field edges⁷⁻¹⁰.

Windbreak

Hedgerows act as windbreaks, which can reduce wind erosion, improve microclimates, and mitigate wind damage to crops. Although crops immediately adjacent to a hedgerow (i.e. at a distance equal to the height of the hedgerow) may be negatively impacted, studies have shown that, depending on the crop and local conditions, there may be a net increase in total yields^{12,13}.

Climate Change Mitigation

Hedgerows can act as sites of carbon storage in the farm landscape. In addition to accumulating carbon in the woody biomass of the trees and shrubs, hedgerows can also increase carbon in the soil. Soil beneath hedgerows in Delta has been found to have 40% higher organic carbon than soil in nearby cropped fields.¹⁴

Increased Revenues

Between increased pollination services and biological pest control, incorporating hedgerows into a farm operation can result in increased revenue due to higher yields for pollinator-dependent crops and decreased costs associated with reductions in required pesticide applications.

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What funding is available?

DWFT covers the cost of establishing a native-plant hedgerow including plants, labour, and mulch



an additional \$500/acre

for the first three years of the agreement for farmland that is removed from active agriculture, with the potential for extension as funding allows.

The design of the hedgerow consists of consultation with the farmer/landowner and is finalized by a third-party landscape contractor. Hedgerow plantings include all plant materials, labour, equipment, and mulch. Irrigation components may also be eligible.

Am I eligible?

Cost-share funding is open to farmers or landowners with farmland in Metro Vancouver and Abbotsford. This program is available on a first-come, first-served basis. Please contact DFWT to discuss your project.

What's the application process?

Participants must contact DFWT to start the application process. The Hedgerow Stewardship Program is first-come, first-served, and funding will be allocated to projects as requests are received.

There are two ways you can start your application:

- call (604) 970-7640
- email programs@dfwt.ca

Planting Guidelines

Hedgerows are best planted in the fall but can also be planted in the early spring. Fall plantings are preferred because the plants are becoming dormant at this time of year and transplant survival is considered best. The fall and winter period allows plant roots to settle into the soil to ensure good root contact for subsequent growth in the spring.

The hedgerow site needs to be prepped and cleared of vegetation before planting, and mulch is applied to retain moisture and reduce weed pressure while the hedgerow is established. Irrigation is also essential for hedgerow survival for the first few summers.

General Recommendations

- Maximizing hedgerow size (length, width & height) supports greater bird diversity and abundance.
- The best hedgerows are a minimum of 4 – 5 meters wide.
- Native species adapted to regional conditions benefit wildlife most.
- Locally grown plants are likely to thrive best.
- A diverse mix of species, including trees and shrubs, will provide a varied food supply throughout the year.
- A mix of coniferous and deciduous trees will provide thermal and security cover throughout the year.
- Connecting hedgerows to woodlots, natural areas, and other hedgerows allows the movement of animals between areas.
- Including a grass margin or ditch adjacent to hedgerows increases habitat value.

Hedgerow Species

Selecting a diverse mix of native trees and shrubs while planting hedgerows on your farm will improve the wildlife value of planted areas on your farm. It is important to select species suited to your farm's soil and moisture conditions. The table below identifies several native species planted on farms in the Fraser Valley and Metro Vancouver and outlines some of the wildlife benefits they provide.

Trees		Height	Soil Moisture	Providing For			Important For		
Common Name	Scientific Name			Mammals	Birds	Insects	Winter Cover	Flowers	Seed/Fruit
Western Red Cedar	<i>Thuja plicata</i>	>20	m-w	✓	✓		✓	✓	
Western Hemlock	<i>Tsuga heterophylla</i>	>20	d-w	✓	✓		✓	✓	
Shore Pine	<i>Pinus contorta</i>	7-10	m-d	✓	✓		✓	✓	
Douglas Fir	<i>Pseudotsuga menziesii</i>	>20	d	✓	✓		✓	✓	
Sitka spruce	<i>Picea sitchensis</i>	>20	m	✓	✓		✓	✓	
Black Hawthorn	<i>Crataegus douglasii</i>	6	m	✓	✓	✓	✓	✓	
Pacific Crabapple	<i>Malus fusca</i>	6	m-w		✓	✓	✓	✓	
Bitter Cherry	<i>Prunus emarginata</i>	10-20	m		✓		✓	✓	
Red Alder	<i>Alnus rubra</i>	>20	m		✓	✓	✓	✓	
Paper Birch	<i>Betula papyrifera</i>	>20	m-w		✓	✓	✓	✓	
Black Cottonwood	<i>Populus trichocarpa</i>	>50	m-w		✓	✓		✓	
Big Leaf Maple	<i>Acer macrophyllum</i>	>20	d-m	✓	✓		✓	✓	
Douglas Maple	<i>Acer glabrum</i>	5-10	d-m	✓	✓		✓	✓	
Vine Maple	<i>Acer circinatum</i>	5-7	m-w	✓	✓		✓	✓	
Mountain Ash	<i>Sorbus sitchensis</i>	10	m-w	✓			✓	✓	
Willow (many species)	<i>Salix spp.</i>	12	w		✓		✓	✓	

Shrubs

Common Name	Scientific Name	Height (Metres)	Soil Moisture	Mammals Providing For	Birds	Insects	Winter Cover	Flowers	Seed/Fruit
Red Elderberry	<i>Sambucus racemosa</i>	2-6	m		✓	✓		✓	✓
Oceanspray	<i>Holodiscus discolor</i>	2-4	d-m		✓	✓		✓	
Pacific Ninebark	<i>Physocarpus capitatus</i>	2-4	w		✓	✓		✓	
Beaked Hazelnut	<i>Corylus cornuta</i>	2-6	m	✓	✓	✓		✓	✓
Salmonberry	<i>Rubus spectabilis</i>	2-4	m-w	✓	✓			✓	✓
Thimbleberry	<i>Rubus parviflorus</i>	1-3	m		✓			✓	✓
Nootka Rose	<i>Rosa nutkana</i>	1-2	d-m		✓	✓	✓	✓	✓
Baldhip Rose	<i>Rosa gymnocarpa</i>	1-2	d-m		✓	✓	✓	✓	✓
Red Flowering Currant	<i>Ribes sanguineum</i>	1-3	d-m		✓			✓	✓
Stink Currant	<i>Ribes bracteosum</i>	2-3	d-m		✓			✓	✓
Red-osier Dogwood	<i>Cornus stolonifera</i>	2-5	m		✓			✓	✓
Saskatoon Berry	<i>Amelanchier alnifolia</i>	2-5	d-m		✓	✓			✓
Snowberry	<i>Symphoricarpus albus</i>	1-2	d-m		✓				✓
Tall Oregon Grape	<i>Mahonia aquifolium</i>	1-2	d-m	✓	✓	✓		✓	✓
High Bush Cranberry	<i>Viburnum edule</i>	1-3	m-w		✓	✓		✓	✓
Hardhack	<i>Spirea douglasii</i>	3-4	m-w		✓	✓	✓	✓	
Mock Orange	<i>Philadelphus lewisii</i>	5	d-m		✓	✓		✓	
Twinberry	<i>Lonicera involucrata</i>	3-5	m-w			✓		✓	✓
Salal	<i>Gaultheria shallon</i>	2	m-w			✓			✓
Osoberry	<i>Oemleria cerasiformis</i>	2-6	d-m		✓	✓		✓	✓
Chokecherry	<i>Prunus virginiana</i>	6-9	d-m	✓	✓	✓		✓	✓

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.

Hedgerows may be visited by Field Technicians throughout the year to assess the species using these habitats. Field technicians conduct songbird monitoring within hedgerows to help us understand how important these hedgerows are in supporting songbird diversity and abundance during the wintering season, spring migration, breeding season, and fall migration. Individual results from your farm can be shared with you if requested.

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 Abbotsford. 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.

Questions about the program? Get in touch with us:



604-940-3392



programs@dfwt.ca



www.deltafarmland.ca

Terms and Conditions

1. Applications to the Hedgerow Stewardship program should only be made for acreage within the Municipalities of Metro Vancouver and Abbotsford, BC.
2. Approval is dependent on funding availability.
3. The hedgerow must be left in its established state, save for maintenance as set out in the agreement, for the extended period of ten (10) years.
4. Participants agree to allow the DFWT to monitor the hedgerow for wildlife use and the occasional educational tour upon notification and permission of the Cooperator.
5. Participants agree not to receive reimbursement or exchange for rent payment for the hedgerow 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 hedgerows

Crescent Island Farms, in Ladner, BC, has been in the Malenstyn family since 1961. Today the farm's 25 acres grow hay, vegetables, and hops for Barnside Brewing Co., a farm-based brewery owned by Ken Malenstyn's family, along with three other Delta farm families.

"My Dad was great at learning and adapting – early on, he recognized the value of the programs DFWT was offering," explains Ken. The Malenstyns have been planting hedgerows with help from DFWT since the late 1980s. For Ken, the hedgerows are both an aesthetic and practical choice. "I like the look of hedgerows, and they provide habitat for beneficial insects that help to pollinate the market garden and prey on pests. We don't use pesticides in our garden and predator insects like ladybugs, ground beetles and wasps help us keep things clean."

The hedgerows on Crescent Island Farms are a mix of mature trees and low-growing bushes. They are working so well that Ken plans to plant a new

hedgerow along the back of the market garden field this fall, and one along the front of the brewery.

Like his dad, Ken is a lifelong learner who continues to expand his sustainable farming practices. In the hop yards, he grows a cover crop of clover between the rows to fix nitrogen in the soil, keep weeds down, and reduce the dusty conditions that spider mites thrive in. A flock of sheep prune the base of the hop vines so that mildew can't grow and spread in damp vegetation at the base. He is also planting more strips of clover along his field edges to support the thriving hives that sit in the hedgerows.

The cost-sharing programs offered by DFWT are so important to farmers like Ken. "Family farms can't be expected to absorb the full cost of providing more pollinator habitat, or rest stops for migrating Snow Geese that can wipe out a pasture in two or three nights," he explains. "DFWT programs take away the 'us and them' sentiment that sometimes exists between naturalists and farmers, and unite us over our shared love of the land."