

Farmland and Wildlife

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DF&WT Hedgerow Establishment

Of the Trust's six land stewardship programs, the Hedgerow program is unique because of its longevity in the landscape, as hedgerows remain in the place even if land ownership changes.

The Hedgerow Program was initiated in 1995, under the impetus of providing both agricultural and wildlife benefits to farm field margins. Establishing hedgerows can benefit farm operations by functioning as windbreaks, shelter for farm animals, and physical barriers to neighbouring roadways. Hedgerows may also assist in nutrient retention and carbon sequestration - a role that the Trust continues to explore through research projects.

Hedgerows function as wildlife corridors for a wide variety of species, connecting habitats. Red-tailed Hawks and Northern Harriers feed on small mammals within hedgerow habitats, and songbirds such as the Song Sparrow, Orange-crowned Warbler, Rufous Hummingbird, and Spotted Towhee utilize hedges year-round for breeding and feeding opportunities.

Given the capability of hedgerows to support wildlife populations and provide benefits to farming operations, the Trust continues to expand the number of plantings

enrolled in the Hedgerow Stewardship Program. On October 7, 2014, DF&WT established a new planting upon a Westham Island farm. In consultation with the farmer/cooperator, the Trust designed a combination of native trees and shrubs adapted to the site climate and soil conditions. As the hedgerow matures, the farmer

plans on utilizing the hedgerow to provide shelter for cattle as they graze in an adjacent pasture. Deciduous tree species that are anticipated to develop wide-spreading canopies, such as Big Leaf Maple, Black Cottonwood and Red Alder, were selected to fulfill the shelter function. An array of flowering shrubs, including Salmonberry, Red Osier Dogwood,

Indian Plum, Twinberry, Red Flowering Currant and Bald-Hip Rose were selected to provide structural complexity and cover. In addition to establishing habitat for small mammal and avian species, flowering shrub communities within hedgerows also benefit pollinator populations.

The Trust would like to extend our gratitude to the owners and staff of Diamond Head Consulting Ltd, who donated their time and resources (including native Willow seedlings) in order to plant this

hedgerow. Their generous contribution will undoubtedly assist long-term habitat retention for years to come. 🌱



Diamond Head Consulting Ltd. volunteers plant latest Trust hedgerow



Wireworms on Westham Island: an Investigation

Jackson Lai, UBC Student

My name is Jackson Lai and I am currently an undergraduate student at UBC pursuing my major in Biology. As a part of the UBC Science Co-op program, I recently worked with Agriculture and Agri-food Canada under the supervision of Dr. Bob Vernon, and was in charge of collecting data for a large-scale click beetle survey conducted on Westham Island. Click beetles are the adult stage of wireworms. Two invasive species of wireworms have invaded Canada from Europe, and are notorious pests for causing severe damage to potatoes.

As an alternative to potentially harmful pesticides, we are researching the usage of pheromone traps and other tactics as tools for pest management. The pheromone traps, patented by Dr. Vernon, contain a species specific



scent that attract either male *A. lineatus* or *A. obscurus* – the two invasive click beetle species we were interested in. In addition to surveying click beetle populations this year, another goal of ours was determining the trap's effectiveness at various trap spacings along the ground.

I spent most of the winter using GPS coordinates to replicate trap locations laid out by Dr. Vernon a decade ago from his previous work on Westham Island. This surveying was done to examine whether population levels in various regions of the island are relatively stable over time, and to help prepare for click beetle monitoring in subsequent years. Once all 300+ traps were set up by April 2014, I generally checked the traps on a weekly basis. In June, we spent a few weeks conducting a beetle mark-recapture study to properly judge the trap's efficacy at traps spaced 2 – 10 m apart. Over a thousand beetles were caught and marked with metallic paint, released into the vicinity of the traps spaced 2, 4, 6, 8 or 10m apart, and the numbers recaptured were recorded over 3 weeks.

Overall 30,000 beetles (non-marked) were caught from April to July. Westham Island predominantly consists of *A. lineatus* and the population fluctuations witnessed this year highly resembled those seen ten years ago. Preliminary results of the study also suggest that pheromone ranges differ between beetle species. Traps spaced 6 m apart or greater had near zero percent recapture rates of *A. lineatus* while traps spaced 10 m apart still had worthwhile recapture rates of *A. obscurus* but significantly less than those spaced

2 - 8 m apart. This information is useful in determining the optimal trap spacing to use for reducing populations of click beetles by mass trapping.

Research results aside, it has been an astounding experience to work in Delta. I've spent my entire life living in East Vancouver but have always enjoyed being outdoors. Previously, my impression of the outdoors centered around jogging in a local park, doing field research out at UBC, or the occasional hike in North Vancouver. Then I arrived at Westham Island. Despite my initial (and fearful) impressions from the old bridge or the Westham Island Gun Club warning sign, I found myself falling in love with its beautiful scenery. I never tired of visiting the same sites over a seven month period and it was a privilege to witness every season on the island, from the windy, wet winter to the hot summer. Specifically, I recall the serene, frozen, and snow-blanketed fields back in February and, more recently, the gorgeous and vast fields of barley, strawberries, potatoes, beans, and livestock during the summer! All of which were completely new to a city dweller such as myself.

However, the thing that stands out most to me is the hospitality of every single individual that I have met here in Delta. From the farmers who welcomed my research with enthusiasm (or pulling my car out of the mud) to the residents who took the time to chat with me whenever I was working along the roads, I was always left smiling after every encounter.

There was even an occasion where a morning jogger offered to help carry one of my many boxes after seeing me struggle to carry them all by myself! Lastly, I wish to acknowledge the help I received from the staff at the Canadian Wildlife Service, Delta Farmland and Wildlife Trust, Reifel Bird Sanctuary, Agriculture and Agri-food Canada, and everyone who lent me a hand when I needed it. It has been a challenging but highly gratifying experience conducting this study!



Pheromone trap on Westham Island. Photo: Jackson Lai

Summer Barn Swallow Monitoring

Rowan Rampton and Maria Nguyen, SFU students

From May to July of 2014, two SFU undergraduate students had the opportunity to conduct an observational study in Delta, which involved tracking Barn Swallow behaviour in local farm fields. This work is an extension of Olga Landsorp's SFU Masters project, which is examining Barn Swallow and Tree Swallow habitats and nesting success in the Metro Vancouver area. Rowan and Maria shared their experience with the Trust:

In this study, we compared number of Barn Swallows feeding in Grassland Set-aside fields to those feeding on vegetable crop fields such as potatoes and corn. This data was important to assist in determining whether or not set-asides can support more, less or equal numbers of Barn Swallows than a vegetable crop field. Our initial thoughts were that we may observe more Barn Swallows feeding on Grassland Set-asides due to the diversity of grasses present within the fields. We hypothesized that there also may be a greater diversity of insects within set-aside fields that perhaps could be linked to minimal field management for up to four years (e.g. lack of tillage).

We collected data from 5 pairs of vegetable and set-aside fields with binoculars and an anemometer (a device that measures wind speed and temperature). We counted the number of barn swallows feeding over a 10 minute period, along with some basic vegetation estimates such as average height and percent cover. We also noted any general items that could be of interest, for example, noticing a higher than normal amount of insects or if there was any activity performed by a farmer in a given field (eg preparing fields for planting).

Surveying on farmland can provide some challenges, especially to those like us who haven't spent much time on farms. Throughout the course of our surveying, one of the fields we needed to walk through to get to a set-aside was a cow pasture. Given that we weren't accustomed to being in contact with large, curious farm animals, this was somewhat unnerving even though logically they wouldn't be likely to bother us.

As is the case with many observational studies, there were days when we saw almost no Barn Swallows, and days when we saw almost more than

Maria scanning a set-aside for Barn Swallows



we could count. The observations we made over the course of the summer seemed to support our hypotheses, although our data needs to be analyzed in the context of Olga's larger study of nesting sites to draw any foraging preference conclusions. Along with Barn Swallows, we saw various other types of wildlife, such as coyotes, wild rabbits, various birds of prey. Specifically, we observed Bald Eagles nesting on a power line bordering a set-aside field. Lastly, it was quite interesting seeing the changes that occur on a farm over a growing season. For example, what started out as a field with minimal vegetation transformed into corn field with 6 foot tall or greater plants. This was a very obvious demonstration of the crop production cycle that occurs with each growing season in Delta. We enjoyed being able to perform Barn Swallow surveys in the amazingly quiet farmlands, all thanks to the Delta Farmland & Wildlife Trust and the farmers who allowed us to perform these surveys on their land. The results from our surveys will be incorporated into Olga's Masters thesis, and hopefully will assist the Trust in understanding the role Grassland Set-asides play in supporting Barn Swallow populations in Delta.



*Left: Nesting Barn Swallow in Delta barn
Photo: Markus Merkens*

Thank-you to our Stewardship Program supporters:

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Wildlife Tidbits *by John Hatfield*

During my early days as a Biologist (late 1960's) at Last Mountain Lake National Wildlife area , Saskatchewan, I wanted to familiarize myself with the lay of the land, its habitat and wildlife.

One project was to locate Sharp-tail grouse dancing grounds . I had seen alot of these grouse on my travels in the area so I figured there had to be a good number of dancing grounds. Early Spring I set out to locate them, hopefully by sound. While dancing, the male Sharp-tails utter a low guttural clucking sound to attract the females. I thought that if I was close enough to a dancing area I would hear it. I knew I had to be up before day break , then drive to various locations where I had previously spotted sharp-tail's. I quickly learned that this wasn't going to work! Last Mountain Lake is on a major migration and nesting route for many thousands of bird species. The gobbling of thousands of Sandhill cranes, the squawking of thousands of gulls, the peeping of thousands of shorebirds, the quacking and honking of thousands of waterfowl and of course the calling of hundreds of raptors and other birds found on this vibrant grassland and shelter belt drowned out any chance of hearing a dancing ground. However , in late fall /early winter I did manage to find quite a few Sharp-tail dancing grounds by observations and seeing their tracks in the snow. Keeping in mind the males will use the grounds at that time of year also.



As Margaret wraps up her time at the Trust, we would like to express our gratitude for her years of service and dedication to the organization. **Thank-you, Margaret!** DF&WT is pleased to welcome incoming Office Coordinator, Anna Wyman.

From left: Christine Terpsma (Program Coordinator), Margaret Paterson (outgoing Office Coordinator), and Anna Wyman (incoming Office Coordinator).



Did you see fields of sunflowers growing in Delta this fall? They are part of a trial cover crop mix in the DF&WT Winter Cover Crop Program!

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