

Farmland and Wildlife

Newsletter of the Delta Farmland & Wildlife Trust

Vol. 16. No. 2 Dec 2010



Record Rainfalls Impacts 2010 Crop Harvest

The 2010 crop harvest in Delta was severely impacted by heavy rains that fell in late August and September. On average, September has 53.5 mm of rainfall, however, this year, a total of 166.4 mm of rain fell in addition to the 55.8 mm that fell on August 31. The rains saturated the soil and overwhelmed drainage systems, turning the farm fields of Delta into a slurry of silt, clay, and water.

When saturated, the soils of the lower Fraser River delta are

extremely prone to compaction. Farmers had no choice but to attempt the harvest of their crops. In between in the rain, teams of harvesters worked all day (and sometimes through the night) to salvage as much crop as possible. Several bean fields had to be abandoned because the combines simply could not drive in the mucky soils. Many potato harvesters became stuck in the soft mud as well, and hours were spent

digging the equipment out. Some farmers decided to hire extra labour to hand dig their potato crops.

The high water table in the fields meant that some potatoes began to rot before they could be harvested. By the end of October, over 1,800 acres of potatoes were left in the field, along with bean, silage corn, grain, and cole crops. Delta farmers are now in the process of tallying their losses. Bills for fertilizer, sprays, equipment, diesel fuel, and labour must all be paid and lost crop means there will be less money to pay those bills.

Farmland Wildlife: Western Meadowlark

by Olga Lansdorp & Courtney Lahue

Western Meadowlarks are conspicuous grassland songbirds known for their loud, melodic song. About the size of a robin, they are recognizable by their bright yellow chest and throat, a black "v" on their chest, and a camouflage pattern of white and brown on their back. Meadowlarks feed on the ground, mostly eating arthropods and some seeds, using their strong bills to pry open tight spaces in search of food. They nest on the ground; their nests often have a partial or full "roof," and their eggs are greyish with brown speckles.

Western Meadowlarks can be found in all western Canadian provinces during the summer, but only the mild coast of

The unusual weather this year demonstrates the challenges that Delta farmers face with regards to drainage. Farmers rely on surface and tile drains to move

water out of their fields and into the ditches. The ditches must then be drained into the Fraser River, Boundary Bay, or Roberts Bank. Some ditches have pumps that allow the

movement of water when the tide is high, but others are drained by flood boxes. These boxes cannot move water out until the tide is lower than the top of the box and this year, the existing drainage systems were inadequate for water removal.

The effects of the heavy rains will pose even more challenges for farmers during the upcoming year. The higher cost of

labour and the lower volumes harvested meant that growers were not able to secure a profit on many of their crops. Hundreds of acres of seed potatoes were lost, reducing the seed stock available for the next crop. And potatoes left in the ground can re-sprout, acting as disease reservoirs for fungal and arthropod pests. Migratory waterfowl like Snow Geese, Trumpeter Swans, and Mallards will find a rich feast of food in the fields this winter, and it is hoped that they will remove much of the unharvested potato crop. 🦅

British Columbia has Meadowlarks during the winter. Some say they used to be so abundant and loud in Delta in the early summer that children were distracted by their song while at school. This is no longer the case, as they are now seldom seen in the summer. Could it be due to a loss of undisturbed grassland in the region?

Grasslands are one of the most imperilled habitats in North America. Much has been converted to row-crop agriculture, changed by forest encroachment, and lost to industrial resource extraction and urban development. Within the municipality of Delta, 12% of grasslands present prior to European contact remain, in the form of old fields and grassland set-asides. **Continued on back page...**

Potato truck with a full load stuck in a Delta field.



Clover as a Cover Crop

Clover is an amazing plant. Its tap root can pierce compacted soils, its flowers provide nectar for pollinating insects such as bumblebees, it is grazed by waterfowl in winter, and it can be tilled into the soil to increase organic matter. If that isn't enough, it works with symbiotic bacteria living in its roots to filter atmospheric nitrogen out of the air and into its own tissue! DF&WT provides farmers with a \$45/acre cost-share to plant clover as a relay crop with their summer grain crops.

Researchers from UBC's Faculty of Land and Food Systems have been working with farmers in Delta to explore the roles clover can play in local crop rotations, including its ability to provide Nitrogen (N) for subsequent crops. Many of the soils in Delta have high levels of Phosphorus (P) and Potassium (K); therefore, the only plant macronutrient that is limiting maximum crop production is N (read the inset to learn about researcher that will potentially reduce the need for P and K fertilizers).

The UBC researchers established test plots on local farms in 2008 and 2009 to determine how much N is actually provided by clover to subsequent crops. In May 2009, the clover was planted into several trial plots on a spring barley field. Seeding clover into a grain crop that has already started growing is an effective way of establishing clover; this practice is



Clover that has been relay cropped with barley.

called "relay cropping." The clover survived the winter (and thousands of hungry Snow Geese) and was tilled in during early summer the following year. Just before the cash crop of potatoes was planted, the researchers measured the content of N in the soils.

In control plots that had no clover, residual soil N was approximately 40 kg N/ha (not bad, but inadequate for maximum crop yield). In plots with white and red clover, soil N was as high as 110 kg N/ha. This means that clover can provide up to 70 kg N/ha (62 lbs/acre)! The clover has a low carbon to nitrogen ratio, so the nitrogen in the clover will mineralize more rapidly than in other cover crop types (e.g., barley and wheat), ensuring that the N is available when the subsequent cash crop requires it.✂

Growing Clover and the Benefits

How should you seed the clover?

Clover can be easily established in a crop of cereal grain (e.g., spring wheat, barley, or oats). Seed for double-cut red clover costs \$2.35/lb and can be planted at a rate of 5-8 lbs/acre (\$11.75-\$18.80/acre). The clover can be seeded at the same time as the grain, or when the grain first begins to tiller. If you are growing a short-stalked variety of grain, we recommend that you do not seed the clover at the same time as the grain, or use white clover. Red clover can grow vigorously and will reach the same height as the seed heads of short-stalked grains. The shorter growing white clover is therefore a safe alternative, but costs more (\$3.96/lb for a cost of \$19.80-\$31.68/acre). If you have fertilized or sprayed your grain crop just after it begins to tiller, try spreading the clover seed by driving down the sprayer tracks. Be sure to test how far you are able to broadcast the seed, though. Light clover seed may be more difficult to broadcast than heavier grain seed.

What can you expect from your clover once it is planted?

It will germinate under the cereal crop, and once the grain and straw is removed, it should thicken substantially. Avoid spilling a lot of grain when you combine, otherwise you may choke the clover with the cereal, and it will therefore fix less N. Waterfowl like Snow Geese and Wigeon will graze the clover, but well-established stands should withstand the birds and survive until spring. In the spring, till in the clover approximately 4 weeks before planting your next cash crop to ensure the N is compatible with the crop plants' uptake.

How much N will the clover provide, and how does it affect your bottom line?

Based on the results of the UBC researcher's clover trials in 2008/2009, both red and white clover can supply 62 lbs N/acre, at a maximum seed cost of \$18.80/acre and \$31.68/acre, respectively (note, that this doesn't take into account the cost of seeding the clover). To achieve a similar rate of N application, you would need to apply 135 lbs of urea (which contains 46% N). At a cost of 28 cents/lb for urea, you would pay \$38/acre. Consider that DF&WT provides growers with \$45/acre to seed clover as a cover crop, so the cost of establishing the clover is covered. Essentially, you should be able to save \$38/acre in urea fertilizer costs by planting clover.

Integrated Nutrient Management Pilot Project

Most farms in Delta already contain high levels of Phosphorus (P) and Potassium (K) and there can be little benefit of adding fertilizer on crop yields. A coalition of researchers from UBC Land & Food Systems, the Ministry of Agriculture, and ES Cropconsult is proposing to help farmers with their on-farm nutrient management plans to identify fields where additional P and K inputs are unnecessary. Trial areas will be set up on fields to compare crop yields between soils fertilized with P and K, and those without. To learn more about this trial or to take part, contact DeLisa Lewis (duhlisa@yahoo.com). This is an excellent chance to identify where you can reduce your fertilizer costs! 🦋

The Greenfields Bulletin

DF&WT's Winter Cover Crop Report

This year, approximately 2,000 acres of cover crops were planted and enrolled in DF&WT's Winter Cover Crop Program, compared to an average of 3,000. The lower acreage was a result of heavy rainfall that saturated soils and interfered with the fall crop harvest. Farmers were busy attempting to harvest vegetables during breaks in the rain, and most fields were too saturated to risk driving seeding equipment onto.

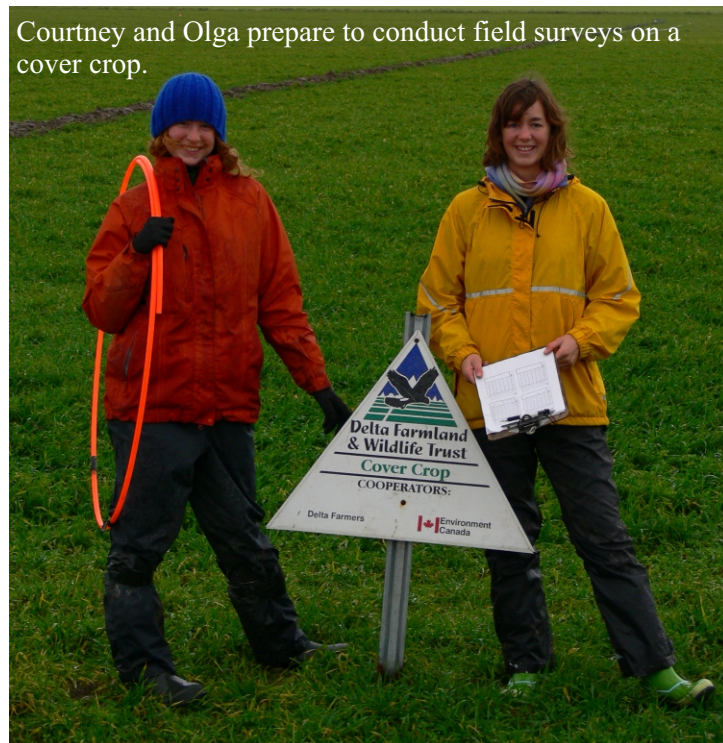
While it was a lower than average year for enrollment in the Program, DF&WT was able to introduce new guidelines for planting cover crops. The new guidelines are designed to encourage local farmers to try new planting practices for winter wheat and clover. These practices are designed to increase the food available for wintering waterfowl while improving soil fertility.

Research conducted in 2009 found that the earlier winter wheat was planted, the more waterfowl a field supported throughout the winter. With these results, the Winter Cover Crop Program cost-share was adjusted to pay more per acre for earlier planted winter wheat. Unfortunately this did not seem to influence landscape-level cover cropping patterns this season. Although early planted winter wheat receives the highest cost-share per acre, it is the least abundant cover crop type this year. This is due to both the wet weather and the unavailability of winter wheat seed. The seed is mainly grown in Alberta and Saskatchewan, and flooding in those provinces negatively impacted the winter wheat harvest.

DF&WT is encouraging farmers to plant clover and a number of farmers experimented with planting it this year. The seeding methods are still being perfected but several thick stands of clover have been established. It is still too early to tell how resistant the clover is to waterfowl grazing, but a field that was extensively grazed and trampled in west Delta is showing signs of re-growth.

In order to quantify the quality of these new management practices, Courtney and Olga, DF&WT's winter field technicians, are conducting surveys to determine how many ducks and geese are feeding on the winter cover crops. Courtney is a recent BCIT Fish and Wildlife graduate, and Olga is recent UBC Agroecology graduate. These two young women (who are self-professed bird nerds) can be seen carrying bright orange hula hoops across farm fields. Waterfowl field use will be quantified via fecal pellet counts, a reliable way to determine how much time ducks, geese, or

Courtney and Olga prepare to conduct field surveys on a cover crop.



swans have spent on a field. 10 plots per field have been setup on 36 fields including winter wheat, barley, unharvested grain, unharvested potato, harvested grain, and clover fields. Within a 1 m² area (inside the hula hoop) fecal pellets are counted every week, in continuation of research that began last year.

Waterfowl were first noticed feeding on farmland in early November. There have also been signs of duck feeding on an unharvested potato field on Westham Island, as well as a newly seeded forage field.

It is possible that waterfowl will spend less time feeding on cover crops because of the abundance of unharvested potato. According to one local farmer, potatoes will begin to rot after the first frost and Snow Geese, Trumpeter Swans, and Mallards will smell that and turn up in large numbers. When visiting Delta, watch for large congregations of waterfowl on farm fields. 🦋





Wildlife Tidbits by John Hatfield

During my time at Last Mountain Lake National Wildlife Area, Saskatchewan, I was living in an old former farmhouse that had the bare essentials. This included an old phone system that consisted of a large wooden box located in the kitchen (no cell phones or even pagers in those days). In order to hear the phone while outside there was a bell attached to an outside wall. One day while working outside I heard what I thought was the phone ringing – I rushed towards the house only to realise the ringing was coming from another direction – from a nearby yard light. Upon a closer look I realised that a Northern Flicker was “hammering” on the metal shade of the light. Male Flickers hammer on trees to attract potential mates, and will sometimes use metal as well. I guess someone *was* trying to make a call, but it wasn't for me! 🐦

Western Meadowlark (photo by Matt Knoth)



Farmland & Wildlife welcomes articles and letters. If you would like to contribute your agriculture-wildlife story, please let us know. For more information or to be put on our mailing list, contact us at the address or telephone number listed below.

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A Day at the Farm Wins Award

DF&WT's annual agricultural awareness event, was recognized with a “Hats off to Excellence Award.” The award was presented by the Delta Chamber of Commerce for the Special Events and Tourism Category. 🐦



Western Meadowlarks (cont'd from front page)

The Delta Farmland and Wildlife Trust encourages the establishment of grassland set-asides by providing a cost-share to farmers who plant a mix of forage grasses and clover, and then leave a field fallow for up to five years.

Though not breeding, flocks of Western Meadowlarks spend the winter in Delta. In fact, this season's field crew has been keeping a close eye out for Meadowlarks, and have spotted groups on a variety of agricultural fields including harvested grain, cover crop, unharvested grain, potato fields, and grassland set-asides. One large flock of twenty-nine Meadowlarks was seen on a harvested grain field in west Delta.

While farm management can be detrimental to Meadowlark nesting, some areas could function as nesting habitat. Grassland set-asides and old fields are not disturbed during the spring and summer, so could be used as nest sites. Perhaps with time, by providing suitable habitat, we could live to see a return of breeding Western Meadowlarks to Delta. 🐦

DF&WT has redesigned our website.

It will go live on January 10, 2011!

Visit www.deltafarmland.ca
in the New Year!

Thank-you to Stewardship Program Supporters

DF&WT would like to recognize the significant contribution made by Vancity enviroFund and Habitat Conservation Trust Foundation to our Grassland Set-aside and Winter Cover Crop Stewardship Programs. 🐦



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