

Farmland & Wildlife

The Delta Farmland & Wildlife Trust Newsletter

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New Software Aids Trust in Research and Tracking Stewardship

Spatial analysis of complex data spread over large geographic regions is made easier these days with the use of computer software that can complete hundreds of thousands of calculations in an instant. Some of the most used software programs worldwide are components of the ArcGIS family of products produced by the Environmental Systems Research Institute (ESRI).

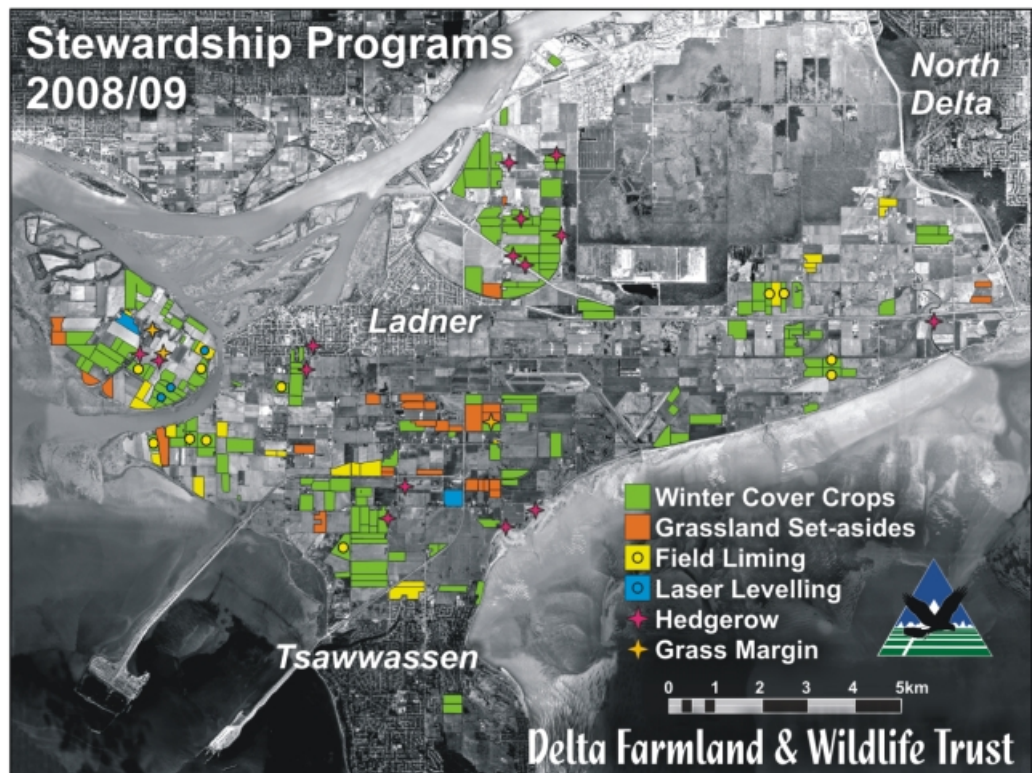
The ESRI Conservation Program (ECP) is a non-profit support arm of ESRI and has helped to create and develop spatial analysis, computer mapping and geographic information system (GIS) capability among thousands of non-profit organizations and individual projects of all sizes and types worldwide. They do this by donating and providing computer technology and training for groups working at the cutting edge of conservation biology and spatial sciences.

Recently the Delta Farmland & Wildlife Trust received ArcView GIS software to be used in the geo-spatial and time series analysis of our stewardship programs and land use. The software will aid in mapping various habitats, stewardship activities, crop changes and patterns of wildlife use and movements on the Fraser delta.

Much of the work that DF&WT conducts is spread across the broad agricultural landscape of Delta; for instance cover crops and grassland set-asides enrolled in our stewardship programs span from the eastern end of Boundary Bay to the western tip of Westham Island. Our new GIS software allows us to present the impact of our stewardship programs clearly and concisely. Data from this year's stewardship programs have already been entered as shown in the image to the right. Affected lands include 2854 acres of winter cover crops, 503 acres of grassland set-asides, 877 acres of field liming, 117 acres of laser levelling and 10 acres of hedgerows and grass margins combined.

The Trust, with the help of a BCIT GIS Technology practicum student, will be entering stewardship program data collected over the last decade to look at patterns of program enrolment and the cumulative impact of our programs.

Trust biologists have already completed an inventory of field types on the Delta during winter 2008/09 and have established a geo-referenced database to document the amount and distribution of agricultural fields important to wildlife conservation. Overall, our new software will allow the Trust to refine programs, identify opportunities and further evaluate wildlife and soil resource management at the landscape level.✂



Small Scale Winter Wheat Trial

Finding the perfect cultivar is an ongoing challenge for farmers wanting to grow winter wheat as a cover crop or cash crop. In 1990 Delta farmers were provided with a cultivar of winter wheat developed in Germany for wide-spread use in Delta. This variety, Monopol, is well-suited to grow in Delta (it can tolerate cold temperatures and high water tables), however, it is susceptible to leaf rust which can affect yields if it is being harvested for grain. It is also vulnerable to intensive waterfowl grazing, particularly if it is late planted. Furthermore, Monopol seed stocks are in short supply.



Snow covered winter wheat seed trials

The DF&WT recently received several varieties of winter wheat and planted them in small trial plots on a farm in west Delta. The object of the trials is to identify which of 18 wheat varieties perform well in the absence of waterfowl grazing, then expand the seed to facilitate field trials under grazing pressure. Some of the new varieties have shown good germination and growth while others have not. Stay tuned for updates.✂

The Greenfield's Bulletin

DF&WT's Winter Cover Crop Program

This year 2,853 acres of cover crops were planted under the Greenfields program across Delta, including 985 acres of wheat, 1,128 acres of barley, 525 acres of oats, and 215 acres of ryegrass. Additional crops were established under Ducks Unlimited farm management agreements and at the Alaksen National Wildlife Area. These cover crops protect soils from erosion caused by heavy winter rain and will shade out weeds that would otherwise germinate on bare fields. In the spring the cover crop will be tilled into the soil to improve soil fertility.

Waterfowl that migrate to the Fraser delta feed extensively on winter cover crops and there was clear evidence of this during grazing surveys conducted in October and November. A large proportion of wheat cover acreage (41%) showed signs of grazing early in October and by November over 76% of wheat acreage showed signs of being grazed by waterfowl. Late planted oats were also grazed heavily by waterfowl, with 58% of oat acreage showing signs of waterfowl grazing by November. Only 17% of barley acreage was grazed by November. As late planted wheat and oat crops become depleted, waterfowl will likely begin foraging more intensively on the remaining barley crops.

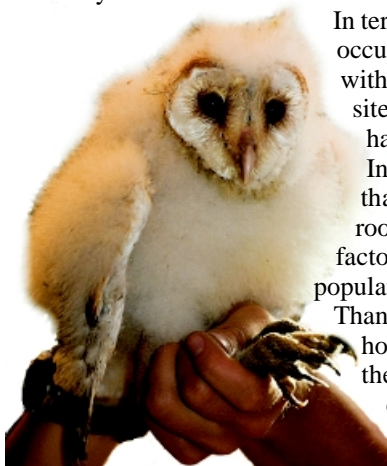
During the recent grazing surveys, a number of wildlife species were observed foraging within winter cover crop fields. Dabbling ducks including American wigeon, mallard, and northern pintail were seen grazing cover crops in early November. In December, mixed flocks of dabbling ducks, continued to use cover crops. Not only did these flocks contain high numbers of American wigeon and mallard, there were also several northern shovellers! Dunlin were seen probing the

Barn Owl Research Update (Sofi Hindmarch, SFU)

Despite the cold spring, the barn owls took me by surprise once again by laying their egg clutches early this year. Based on last year's field season I was not expecting any eggs before the beginning of March. This was until a farmer phoned me on the 11th of March and told me that there was quite a bit of noise and activity in his nestbox at night. I quickly gathered together my field gear, and headed over the next evening. The farmer was right, there were six chicks in the nestbox and the oldest must have been a good two weeks old!

So my 2008 field season got to a flying start, but it was a great season; overall we monitored 31 nest sites. The number of eggs laid and the number of chicks hatched were significantly higher than last year, but fledgling success was not as great.

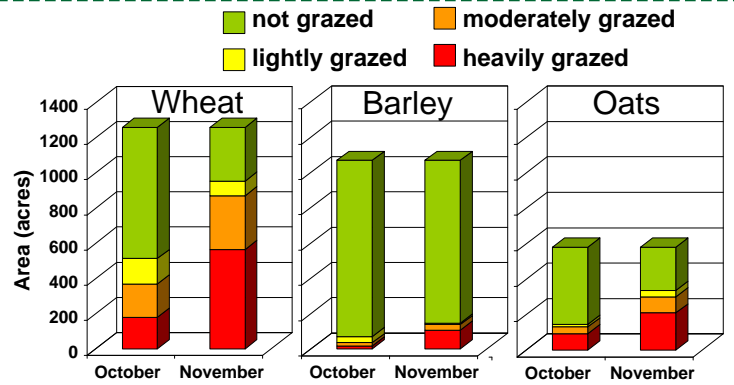
This year, I also monitored old barns, buildings, and trees for barn owl occupancy. It would appear that there has been a 38% decline in the barn owl occupancy of previously monitored nest sites in Delta and Surrey over the last 18 years. Most of the attrition (70%) has been caused by nest site demolition.



In terms of what influences a site being occupied by barn owls, highways within a 1 km of a potential nest/roost site is the one factor that appears to have a significant negative effect.

In summary, my results are showing that the reduced availability of roost/nest sites and highways are two factors that are limiting the barn owl population in Delta and Surrey.

Thanks so much to all the farmers and homeowners who have let me access their nestboxes. Without your cooperation my research would not have been possible. 🦉



soil in search of soil organisms on heavily grazed cover crops in December. During both surveys, swans were sighted, the majority of which were trumpeter swans. However, several swans were heard making higher pitched calls, indicating that there were some tundra swans amongst the flocks. Wilson's snipe were also frequently flushed from tall stands of cover crops during both surveys. 🦉



This year conditions for potato harvest were ideal leaving little crop residue for wintering swans. As a result, they will be more dependent on winter cover crops relative to last year. These trumpeter swans have hunkered down in a winter wheat cover crop.



Biodiversity Planning made available to BC Farmers and Ranchers

The Canada BC Agriculture Environmental Farm Plan (EFP) Program was designed to help producers identify environmental risks associated with their farms and ranches and opportunities to reduce those risks. Launched in 2003, the program has since worked with farms across BC to design and implement farm/ranch specific plans that employ best management practices that complement and enhance environmental stewardship practices traditionally used by British Columbia producers.

This fall, the EFP Program released its latest tool in making BC farmers better stewards of their land. "Planning for Biodiversity: a guide for BC farmers and ranchers" is now one of the reference guides used in the EFP process and helps farmers and ranchers who wish to increase their understanding of biodiversity and what it means to their operations. The Guide can be used in designing, implementing and monitoring a Biodiversity Management Plan and offers ideas and examples of how agricultural producers can enhance biodiversity on their farms/ranches.

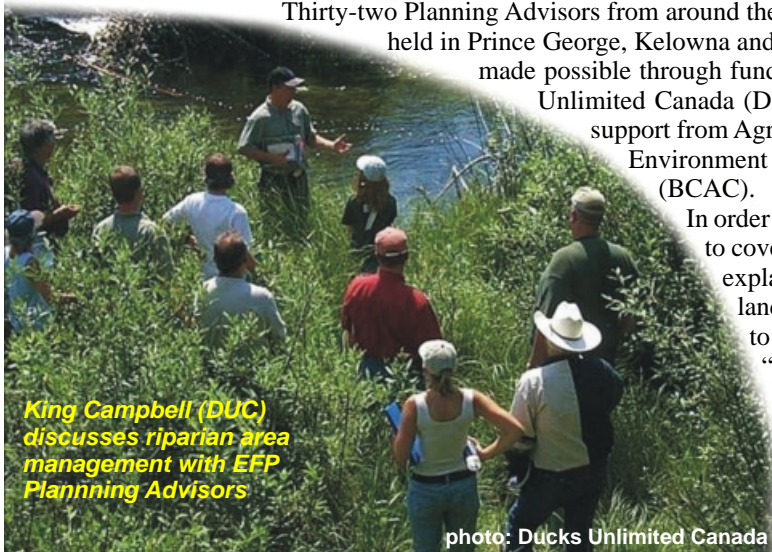
"This publication is a first attempt to provide an on-farm assessment and planning tool for biodiversity in North America" said David Trotter, Agroforestry Specialist with the Ministry of Agriculture and Lands. "It differs from the other EFP documents in that this publication is not a risk assessment but rather an assessment of opportunities that producers might want to consider."

Thirty-two Planning Advisors from around the province recently completed a one day biodiversity training program held in Prince George, Kelowna and Abbotsford. The development of the publication and the training was made possible through funding from the EFP program, The Ministry of Environment and Ducks Unlimited Canada (DUC) and extensive staff support from those agencies as well as staff support from Agriculture and Agri-food Canada, the Ministry of Agriculture and Lands, Environment Canada, Fisheries and Oceans Canada and the BC Agriculture Council (BCAC).

In order to test the Guide, Ducks Unlimited Canada has made funding available to cover the costs of completing 60 on-farm plans. King Campbell with DUC explains that "biodiversity planning has benefits for the producer and the landscape and we want to be part of that process." All 60 plans are expected to be completed by the end of 2008.

"Biodiversity is one of the four Agriculture Policy Framework pillars and it has had the least amount of attention to date" said Linda Allison, Chair of the EFP Working Group, "we hope that producers will take advantage of the opportunity to explore management options for their farms and ranches".

For more information on the new Guide contact The BC Agriculture Council or your EFP planning advisor. ✎



King Campbell (DUC) discusses riparian area management with EFP Planning Advisors

photo: Ducks Unlimited Canada

Eco-friendly Crop Rotations (Drs. Art Bomke and Wayne Temple - UBC Agroecology)

Intensive cereal management research conducted in cooperation with Delta farmers by our UBC team some 20 years ago led to the creation of the current "Greenfields" cover crop program. New work in collaboration with the Delta Farmers' Institute and funding from BC Investment Agriculture Foundation and Ducks Unlimited Canada will help Delta farmers deal with clearly identified gaps and priorities in our understanding of environmental sustainable "eco-friendly crop rotations" as Best Management Practices (BMPs).

Our new research focuses on "break crops", a traditional management practice in need of some fine-tuning. A break crop is a secondary crop used within intensive crop rotations whereby a physiologically different crop is inserted into the cropping plan in order to provide a "break" from the cycle of weeds, pests and diseases encountered with the main cash crops. The long-term goal is to optimize yields of the primary crops and therefore income while reducing the costs of weed and/or pest controls.

Added nutrient benefits can also be achieved particularly by including legumes in association with the break crop. With the rapid rise in fertilizer costs, the use of break crops in association with cover crops and/or biological nitrogen fixation could help producers reduce production costs. Our research will help identify and demonstrate nutrient conservation efforts and/or green manures as benefits to subsequent intensive crop production.

With the large increase in cereal grain prices, growers in Delta are interested in, once again, using grains as a break crop to improve their current crop rotation. Newer "low-input" varieties of good yielding grains and cereals that are suitable for growing in our region need to be identified and field-tested. Spring and fall planted cereal and grain varieties from the Washington State University cereal breeding program and possibly from the United Kingdom will be evaluated.

Short growing period cereals, such as barley break crops, could also be under-seeded or relay cropped with red or white clovers to provide benefits for:

- subsequent soil cover crop and uptake of fall residual soil nitrogen;
- over-winter habitat to wildlife; and/or
- "green manure" crop to supply the subsequent spring planted cash crop with soil available nitrogen.

A regional soil nutrient survey will also be conducted to help identify and conserve soil residual nitrogen and to reduce fertilizer costs with "low-input" break crops and/or legumes within the crop rotation.

Our research seeks to improve the economic sustainability of vegetable crop rotations via increased incomes from newer low input and disease resistant cereal varieties used as break crops.

A fertilizer cost comparison between the project's proposed "eco-friendly crop rotation" to that of current "traditional" crop rotations will also be calculated. Delta producers interested in

participating or in seeking further information about the project should contact Art or Wayne at

UBC. ✎



Wayne Temple and Ron Harris (Fraserland Farms) discuss progress in research plots



Wildlife Tidbits

by John Hatfield

Alluring Crops

Alternative foods for waterfowl wintering on the Fraser delta are important in luring ducks, geese and swans away from hay and pasture fields. We have learned that potato-, carrot-, barley- and cabbage-residue, in addition to cover crops, are well used over the winter months.

Other, not so common, crops could also be used as diversionary feeding areas. For instance, fava beans can be grown on the delta for silage. They have a long growing season and ripen slowly from top to bottom. If these beans are left in the fields into late fall mallards and northern pintails will converge on them. Wind & driving rain will eventually knock the bean stalks over for easy access by waterfowl. Fava beans have been grown on Alaksen National Wildlife Area in the past and like corn could provide a long lasting nutritional food source for overwintering waterfowl. A mature buckwheat crop will also provide a great food source for early migratory waterfowl such as pintails and mallards. If it is sown in April the buckwheat can be ripe by August. Because it is easy to pick by waterfowl it does not last as long as corn.

The trick in mitigating waterfowl damage is to ensure that sufficient alternative foraging areas are available throughout winter so that waterfowl don't have the need to utilize hay or pasture fields for sustenance. 🐦



UBC's Agora String Band entertained a soggy crowd at the 2008 "Day at the Farm"

Words worth reading...

"Farming might look easy when your plow is a pencil and you're a thousand miles from a corn field."
Dwight D. Eisenhower



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Delta Farmland and Wildlife Trust is a non-profit, charitable society whose mission is to promote the preservation of farmland and associated wildlife habitat in the Fraser delta through sustainable farming and land stewardship.

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

A Day at the Farm - wet but wonderful

Despite less than optimal weather, hundreds of families donned their rain slickers and gumboots to come to Westham Island Herb Farm for the 3rd annual "Day at the Farm." The wet weather couldn't keep children from enjoying the entertainment provided by Cariboo Moose, and the Agora String Band's smooth bluegrass melodies made everyone feel a little warmer. Visitors learned about the many facets of local farming from over 30 agriculture-related interest and commodity groups that attended. Many local farmers also lent their equipment and livestock for display and Gordon Ellis took many visitors on a hay wagon tour of his farm. Sharon Ellis of the Westham Island Herb Farm provided great local food creatively named after past and present members of the Ellis family. The day captured the spirit of local agriculture and provided a chance for lower mainland residents to reconnect with the land that feeds them. Special thanks to Vancity, Ducks Unlimited Canada, the Delta Agricultural Society, Farm Credit Canada, BC Fresh, The South Delta Leader, Roddick's Farm Feed and Supply, Envision Financial and Hardbite Potato Chips for their generous support of the event. Thanks to all the volunteers and especially Sharon and Gordon Ellis for once again opening their farm for the community! 🐦