Farmland & Wildlife

The Delta Farmland & Wildlife Trust Newsletter Vol. 15, No. 1 July 2009

Short-eared Owls and Grassland Set-asides

Recent research conducted by DF&WT indicates that fields enrolled in our Grassland Set-aside Stewardship Program are providing important roosting habitat for short-eared owls. The short-eared owl is a species that was once common across the Fraser River delta, nesting in the marshes and old fields of the area. However, the population of this unique owl has declined in the area over the past 40 years. This decline is attributed to the loss of tall grass habitat, which supports the dense populations of Townsend's vole that the owl relies upon for food. Short-eared owls also rely on tall grass as a safe roosting place where they can hide from larger raptors and aggressive crows until they begin hunting at dusk. DF&WT monitoring programs have already shown that grassland set-asides are home to high densities of voles, but it was unclear if short-eared owls were using these fields as roosting habitat. To determine exactly how important set-asides were for roosting short-eared owls, DF&WT biologists enlisted the help of over 40 volunteers and BCIT students to survey several grass field types. Together they looked at hay fields, 2, 3 and 4 year old grassland set-asides, and old fields (fields overgrown with grasses for over 5 years).

During the surveys, short-eared owls were flushed almost exclusively from 3 and 4 year-old set-asides. The tall grass of the surveyed fields appeared to provide ample cover for large congregations of short-eared owls. Short-eared owls will roost communally and during the survey up to 6 owls were flushed from a single roost site in a grassland set-aside.

These results show that grassland set-asides established by farmers in Delta are having a positive impact on short-eared owls, providing one more example of how appropriate management can be used to conserve wildlife in an agricultural landscape.

a day at the farm 2009

Mark September 12 on your calendars! It's time for the 4th annual "Day at the Farm" presented by DF&WT and the Westham Island Herb Farm. The event will give you the chance to explore a real working farm with your family and friends, while learning about the importance of local agriculture in your community. "A Day at the Farm" will feature over 25 agriculturally related commodity and interest groups who will be on hand to discuss their role in local food production. Expect to see a diversity of farm equipment, including heavy tractors, grain combines, and an assortment of beautifully restored antique tractors. There will be plenty of livestock including the newest addition to the Westham Island Herb Farm, Bucky the Highland Steer and the BC Dairy Foundation is attending to give live milking demonstrations in their mobile dairy classroom. The event will also feature live entertainment and locally produced food. And no "Day at the Farm" would be complete without a hay wagon tour led by 3rd generation farmer Gordon Ellis. Visit our website (www.deltafarmland.ca) for event details.

DF&WT would like to acknowledge the Delta Agricultural Society, Ducks Unlimited Canada, and the British Columbia Waterfowl Society for funding a significant portion of our stewardship programs. Thank you for your continued support!

Delta Agricultural Society

Ducks Unlimited Canada
Conserving Canada's Wetlands

BRITISH COLUMBIA WATERFOWL SOCIETY

National Wildlife Areas by John Hatfield

During the 1960's and early 1970's the Canadian Wildlife Service (CWS) acquired its existing National Wildlife Areas (NWA) either by buying private holdings or by long term leasing from the Nature Trust of BC. Later small private holdings were bought or Provincial Crown land was swapped to consolidate individual NWA's. The majority of the NWA's were purchased to protect their unique habitat for various wildlife species, mainly waterfowl. Some are noted for their natural habitat, some have farming operations on them and some have been converted into grasslands. All NWA's are located along major migration routes of birds and mammals, and provide year round homes for animals like deer, foxes, badgers, and other small mammals.

The largest and first NWA in Canada is the Last Mountain Lake in Saskatchewan. Alberta has an NWA on the Suffield Army range and in BC there are five; Alaksen on Westham Island, Vaseux – Bighorn between Okanagan Falls and Oliver, Columbia in the East Kootenays, Marshall – Stevenson on Vancouver Island and Wigeon Creek off the Pitt River.

Management activities on NWA's consist of prescribed burns and farming. At both Last Mountain Lake and Alaksen NWA's haying and livestock grazing are encouraged under permit to enhance habitat for grazing wildlife and hedgerows have been planted with an assortment of trees and shrubs to provide shelter and food for wildlife. The planting of lure crops (such as cereal cover crops) and forage crops for waterfowl helps alleviate crop damage to surrounding farms by waterfowl and large mammals. The necessary farming operations are carried out by local farmers under contract, who save CWS from purchasing specialised machinery. These partnerships are beneficial to both the farming community and CWS.

The Alaksen NWA (lower right of photograph) is a mosaic of farm fields, hedgerows, and woodlots that provides habitat for wildlife on the Fraser River delta.

NWA's also provide benefits to the public, such as hunting, fishing, wildlife viewing, photography and hiking. College and university students can carry out research on wildlife and/or habitat to meet some of their requirements for a degree. Some of the NWA's have interpretive programs (such as Last Mountain Lake & Alaksen).

Because of the important role NWA's can play in conservation, there is a need to provide more resources to support and acquire additional National Wildlife Areas if we are to maintain our wildlife heritage.

UBC Agroecology Students Gain Field Experience with DF&WT by Dr. Tom Sullivan

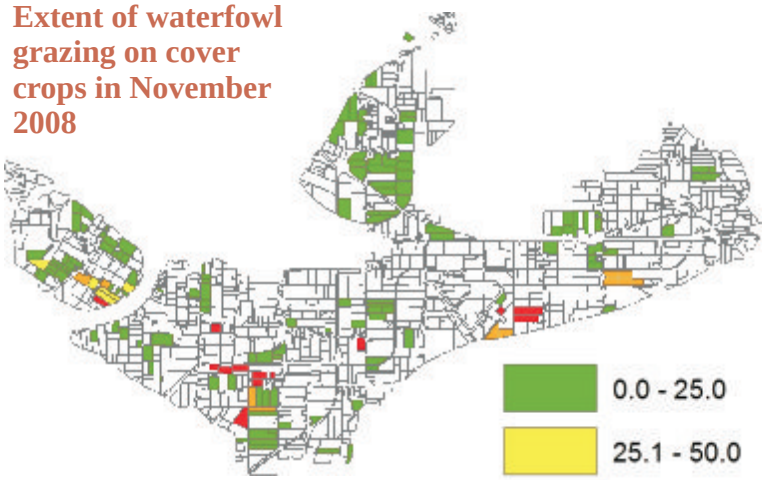
The lower Fraser River valley is recognized as a vital wildlife and agricultural area along the West Coast of North America. More recently (in the last 4 decades), increasing pressures related to urbanization and industrialization in the Fraser delta area are resulting in an incremental loss of soil-based farmland and associated wildlife habitat. As portions of the land base are used for other purposes, the remaining area will need to accommodate a greater density of wildlife per unit area if maintaining current population numbers and diversity is a management goal. This can only be achieved if an increasing proportion of the remaining land base is managed in such a manner as to provide wildlife value within an agricultural context.

Fourth-year agroecology students from the University of BC's Faculty of Land and Food Systems visit Delta farmlands annually to learn about agriculture and wildlife with the Delta Farmland and Wildlife Trust. Delta farmlands provide an "agroecology showcase" whereby research and demonstration can show how food is produced in a sustainable manner using ecological principles. Students are exposed to grassland ecology, including studies of small mammal population dynamics, raptor foraging behaviour, and waterfowl habitat use patterns. Diversity of crop production and habitat management for various wildlife species provide an excellent research and education opportunity for students to study agroecology in this farmland mosaic. Students collect field data and these class datasets are used to prepare technical reports on their research projects. Students thrive with a hands-on approach that allows them to see real in-field examples of agroecological principles that are set in a project or problem-solving format. This format gives the students an opportunity to analyze data, organize the results into a meaningful document, and provide management implications of their work to farmers and related resource managers. I have had excellent feedback from field trip attendees, particularly when they participate in the on-site activities (e.g., field measurements, samples, data collection). By conducting field studies with the Delta Farmland and Wildlife Trust, students gain valuable experience that will prepare them for their careers as agroecologists after they graduate.

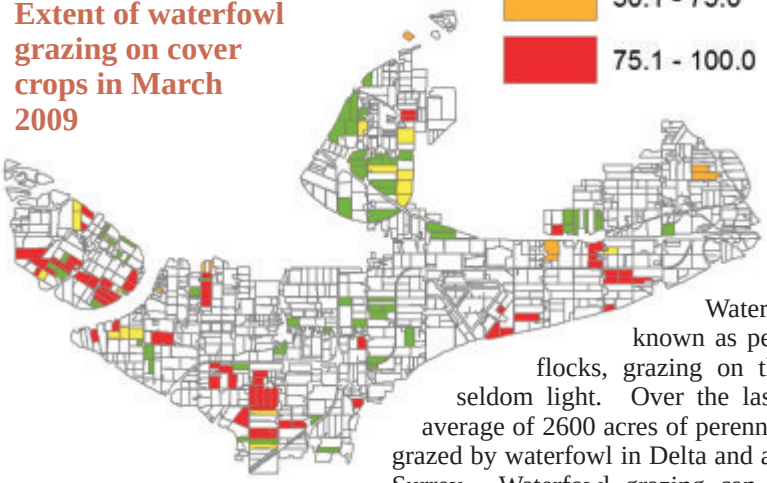
UBC Agroecology students measure vegetation and small mammal abundance in a grassland set-aside.

"Since society as a whole depends on the produce of the land for its present and future existence, society as a whole must share in the responsibility and costs of maintaining land in a productive state"
- Hugh Hammond Bennett

Extent of waterfowl grazing on cover crops in November 2008



Extent of waterfowl grazing on cover crops in March 2009



The Greenfields Bulletin

Cover crops established under the DF&WT Winter Cover Crop Program were used extensively by waterfowl during the winter of 2008/09. In total 2,853 acres of cover crops were planted in Delta and by March, just under 60% of all acreage had been grazed by waterfowl. As usual, late planted wheat cover crops were grazed more extensively than earlier planted barley and oats. Over 85% of all wheat acreage showed signs of grazing, whereas 64 % of oat acreage showed grazing. Barley was the least grazed of all the cover crops (only 24% of all acreage showed signs of grazing), primarily because it was planted early and winter-killed by frost and snow during December and January.

Waterfowl and Farming: Co-existence and Conflict

It is important to recognize that forage growers in Delta are providing a service to the greater public by tolerating waterfowl grazing on their fields. Waterfowl that over-winter on the Fraser River delta can find a variety of foods on farm fields that can be consumed without causing conflict. Potato fields, harvested in September, provide an abundant source of energy for waterfowl (especially snow geese) when they arrive early in the fall. Farmers appreciate this because the waterfowl feed on all of the leftover potatoes out of their fields, which reduces the chance that a potato pathogen could be lurking in a tuber, waiting to infect next years crop.

However, waterfowl can also graze overwintering crops. Waterfowl will graze grasses grown for hay or pasture (collectively known as perennial forage) and because the birds tend to move in large flocks, grazing on these fields is seldom light. Over the last 8 years, an average of 2600 acres of perennial forage was grazed by waterfowl in Delta and adjacent South Surrey. Waterfowl grazing can be costly for farmers; lost revenue from reduced yields and reseeding costs on heavily grazed fields can be substantial. The picture at right shows just how much grass can be grazed by waterfowl (only grass within the protective exclosure remains). Cover crops can offset some the of the damage waterfowl do to perennial forage by acting as an attractive lure crop, but there is rarely a complete abatement in damage. Along with other agricultural crops, perennial forage crops support internationally important migratory waterfowl populations.

Wildlife Tidbits
by John Hatfield

Just like little boys, dabbling ducks (mallards, wigeon, pintails, and gadwall) are attracted to puddles. Following heavy winter rains, large ponds and sheets of water accumulate on farm fields. These puddles are important for waterfowl, especially if there is food in the same fields such as cover crops or potatoes that were too small for the harvester to pick up. However, puddles on hay and pasture fields can attract large numbers of unwanted ducks. This is where laser leveling can be a very important tool on farm fields. Laser leveling involves a laser-guided plough that precisely contours a field to remove low spots where water will accumulate. A level field creates better drainage, limiting the number of ducks that will descend on the field. The added bonus is that the grasses and clovers will not be drowned by standing water. DF&WT administers the Laser Levelling Stewardship Program to help Delta farmers pay the cost of leveling their fields.

Winter Wheat Trial Reveals Stripe Rust Susceptibility

Last fall DF&WT biologists established a small plot screening trial for 18 varieties of winter wheat on a farm in Delta. Winter wheat is so called because it requires cold temperatures to vernalize (reach maturity and set seed). The objective of the trial was to identify varieties of winter wheat that can be used as a cover crop and grain crop in the wet climate of the Pacific Northwest. Currently, growers are using winter wheat varieties that come from the prairies, as well as tried and tested "Monopol," a variety brought from Germany in 1990.

Stripe rust on winter wheat

The results of the trial are in…and they are not good! All of the varieties used in the trial showed moderate to heavy susceptibility to stripe rust (also known as yellow rust). This plant disease is caused by fungus and is pronounced by small, yellow pustules on the leaf. In severe cases, the pustules will form lines down the leaf (hence the name "stripe"), killing the tissue and destroying the plants ability to photosynthesize. Interestingly, the only variety that exhibited resistance to the rust was Monopol! At the very least, this trial has shown that Monopol is relatively resistant to stripe rust. UBC Agroecology researchers are currently conducting larger scale trials of grain varieties in Delta, and the work conducted by DF&WT will be integrated into their findings to identify varieties that can be used by local farmers for cover crops and grain production.

"Monopol" winter wheat planted in September as a cover crop. It survived grazing by snow geese and American wigeon and will be harvested for grain in July. Notice that there is no stripe rust on these plants.

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.

BCIT GIS and DF&WT

With the help of BCIT student Joe Champagne, DF&WT has increased its ability to utilize GIS (geographic imaging software) to map out agricultural fields and wildlife habitat. Joe recently completed a work practicum with DF&WT where he developed software tools and procedures that can be used to increase our capacity to map agricultural habitats on the. Some of the tools will help DF&WT biologists to study spatial patterns of wildlife habitat use in more detail, including patterns of waterfowl use of farm fields.

Electronic Newsletter..... If you would like to help us conserve resources by receiving an electronic version of this newsletter, send an e-mail to us (dfwt@dccnet.com) with **"electronic newsletter"** in the subject line. If you would like the best of both options use **"both newsletters"** in the subject line. In the body of the e-mail include your name as it appears on the mailing label on your newsletter envelope.

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.

Your donation will work for Farmland and Wildlife in Delta

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