



# natural advantage:

THE ON-FARM WILDLIFE AND  
BIODIVERSITY PLANNING SERVICE

## New thinking on biodiversity

Bee losses may be a strong signal that the agricultural industry needs to look at wildlife habitat in a new way, say industry leaders.

Farmers are like most businesspeople – they want to know the bottom-line benefits before they invest time and money into a new idea. They may agree with the idea in principle, but ultimately, its ability to help get more grain in the bin, keep the heat and electricity going, and pay for new technology or equipment that will determine its place on their list of priorities.

One challenge in selling biodiversity stewardship to farmers is that the equation is usually not that simple, yet the benefits – and risks – are no less real. Perhaps the clearest example lies in the recent, unexplained phenomenon of declining bee populations in North America. Rycroft, Alberta producer Harry Schudlo considers this a threat to his ability to produce high yielding canola, and he wonders



if there isn't a bigger message involved in terms of its connection to natural habitat.

"I really believe many producers are taking bees for granted and the role they play in cross-pollination and in the production of other flowering vegetation," he says. "I don't know if we can afford to take the chance of destroying remnant habitats."


Although there are few straightforward answers when it comes to the relationship between remnant habitats and agricultural processes, there are some key things we do know, says Dan Johnson, a professor of environmental science at the University of Lethbridge and a prominent researcher in the field of sustainable grassland ecosystems. We know, for example, that remnant areas are not the detriment to crop production that they have often been thought to be. At the same time, managing them is a challenge that may not be met by conventional thinking.

"Nature is variable, quite messy, and more wired together than highly balanced," he says. "But we're seeing that if we can identify some general patterns, there may be some rules of thumb that can be used for telling pests from non-pests, getting the most from the beneficial species, and for managing remnant areas, not only for sustainability, but for the real economic benefits that they can provide."

*(continued on page 2)*



### Sign up for Natural Advantage

Farmers can sign up for the Natural Advantage program or get more information by calling DUC biologist Julie Pierce toll free at 1-866-479-3825 or 780-930-1255 or by email at [j\\_pierce@ducks.ca](mailto:j_pierce@ducks.ca). Kim Schmitt can be reached by e-mail at [k\\_schmitt@ducks.ca](mailto:k_schmitt@ducks.ca) or by phone at (403) 342-1314. 

(continued from page 1)

## BENEFITS OF INSECTS

There are some strong but highly variable relationships geographically and year-by-year between remnant habitats and insects, says Johnson. Despite some popular misconceptions, however, their value is more often positive than negative.

"In general, it's been found that, more often than harbouring pests, natural vegetation will harbour the natural enemies of pests – for example, spiders or tiny wasps that attack the eggs of pest species," he says. "They also provide habitat for native pollinators such as bees; soil fertility contributors; decomposers that do the job of removing carrion and breaking up dead vegetation; and other contributors to ecological processes."

However, when producers see large populations of grasshoppers in the field, remnant vegetation areas such as shelterbelts or "unimproved" pastures are often singled out as the source. Johnson says the question is whether the grasshoppers the farmer is seeing are pests, as not all grasshopper species consume crops to the same extent, or even at all.

"Some people say grasshoppers hide out in remnant areas and then come back, and this can happen in rare years. But in most cases, the grasshoppers they see in remnant areas are rarely the pest species. In fact, many of the grasshopper species found in remnants and shelterbelts do no damage and simply support birds and the parasites and diseases that attack insects, and these natural enemies may even offer some help when the pests return. But granted, in a rare outbreak year, pests may be everywhere," says Johnson.

It's also important to remember that, in those rare instances in which remnant areas provide habitat for pest species, that it's not always a bad thing from a resistance perspective, says Johnson. "There are cases in which some pest refuge populations that have not been subjected to insecticides are actually good for slowing down the acquisition of insecticide resistance."

**"Nature is variable, quite messy, and more wired together than highly balanced"**

*-Dan Johnson*



## LAND USE INCENTIVES ARE KEY

The question is what it will take to change farmers' perceptions of and approach to wildlife habitat. Long-time farmer Harry Schudlo has been through implementation of many programs and he believes that in addition to effective extension efforts, appropriate incentives for producers to preserve these areas, backed by supporting land use policy, will be a key driver in getting them to think differently about the value of wildlife habitat.

"Provincial land use policy is going to be very critical in the future – we have to better define what we use the land for. If we have a policy and if incentives exist for farmers to hold certain properties for certain uses, they will value that. But if there is no value for what they're doing, they likely won't be nearly as committed."

## A RESOURCE FOR DECISION-MAKING

In many cases, putting management practices in place requires a connection to a greater level of scientific and technical knowledge than many farmers possess. That's why Natural Advantage: The On-Farm Wildlife and Biodiversity Planning Service has been developed as a free service for Alberta producers. In 2007, the pilot version

of the service quickly sold out with 62 farms and ranches covering over 90,000 acres across the province filling available spots. This year's program is attracting strong interest.

Offered by Ducks Unlimited Canada (DUC), the Natural Advantage process starts by signing a simple letter of understanding which outlines to producers in straightforward terms how the work is carried out. From that point, trained biologists from DUC analyze the habitat resources on the property and conduct a phone interview to discuss the project with the participant.

Habitat areas are then analyzed and classified using aerial photography and Geographic Information System (GIS) mapping. Biologists then spend up to half a day meeting with the landowner to discuss their findings, also taking time to complete field verification and a rapid assessment of the condition of the areas identified.

The final product for producers is a comprehensive written report on the knowledge gathered, including resource materials and contact information to assist with implementing the report's recommendations. "Last year, the majority of responses indicated that clients were most impressed with the information and professionalism of the final personal report, with several saying that it exceeded their expectations," says Kim Schmitt, program director.



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