

Derin Langhorst

“Conservation is getting nowhere,” Aldo Leopold lamented in his foreward to *A Sand County Almanac* in 1948. **It’s taken too long, but conservation is getting somewhere in Canada**, and will take a major leap forward as agriculture undergoes a major transformation from low-price commodity agriculture toward conservation agriculture.

Tens of thousands of Canadian farmers and ranchers are taking action right now to improve the environmental health of their lands in spite of the enormous pressures of the global marketplace and often poor crop prices. This is happening across the country because of the united support by provincial and federal governments, as well as conservation groups such as Ducks Unlimited Canada (DUC).

“Good environmental stewardship is good farm management,” says Dean Smith, manager of steward-

ship coordination at Agriculture and Agri-Food Canada. Good environmental practices prevent problems such as poor water quality, and help enhance farm productivity while optimizing the use of fertilizer and pesticides, says Smith. “The public also wants to buy their food from greener and more sustainable healthy farms.”

Environment is one the five pillars that will shape Canadian agriculture policy in the 21st century under the Agricultural Policy Framework (APF). The APF is a comprehensive five-year strategy for Canadian agri-

By Stephen Leahy

catching the green wave

good environmental stewardship is good farm management



A prairie pothole wetland nestled side-by-side with productive agricultural land. Through the APF, farmers are able to access financial and technical assistance to preserve and enhance marginal agricultural lands for the benefit of waterfowl, other wildlife and people. DUC has requested that four additional on-farm practices within BMPs be included for federal funding, including growing winter wheat (far left).



culture. After consultations with producers, industry and public, the provinces and territories are now implementing the APF.

One of the rapidly developing benefits of the APF is a wider recognition of the value of ecological goods and services provided by the agricultural landscape, says Shane Gabor,

today will cease to exist or become more costly if the current decline continues.

DUC AND OTHER CONSERVATION GROUPS HAVE been at the forefront in bringing a wider understanding of the value of ecological goods and services. Most recently, through the partnership with the Canadian Boreal Initiative, DUC was involved in a report titled *The Real Wealth of Canada's Boreal Region: An Assessment of Canada's Boreal Ecosystem Values* by Mark Anielski and Sara Wilson, which examined the value of ecosystem services of Canada's expansive boreal region. Prior to that, in 2004, DUC and the Nature Conservancy of Canada commissioned economist Nancy Olewiler of Simon Fraser University to produce one of the first economic assessments of ecological goods and services in Canada.

Olewiler determined that the economic value of the goods and services of wetlands in the Lower British Columbia mainland is between \$5,792 and \$24,330 per hectare annually. Olewiler also found that some of the land in western Manitoba would be worth more to society as natural landscapes rather than being farmed. However, Olewiler's analysis illustrates that agricultural lands have an important economic value in producing food and providing other ecological goods and services.

"Those services are critical to the health of the Canadian economy," says Gabor. "If our society benefits from them, then we should be paying farmers to maintain and enhance them."

DUC research biologist. "Acceptance that natural areas provide important services that should be valued both environmentally and economically has grown by leaps and bounds in the last two years," says Gabor.

Canadian society, agriculture, business, and each one of us are dependent on the goods and services provided by nature. A natural landscape – a woodlot or marsh, for example – generates oxygen, cleans water, prevents erosion, captures excess carbon dioxide, provides habitat for many other species, and much more. And the healthier the woodlot or marsh ecosystem, the more resilient it is and the better it works for all, including humans.

However, a four-year scientific assessment of the earth's ecosystems by 1,360 experts from 95 countries concluded last year that 15 of the 24 ecosystem services that support life on Earth are being degraded or used unsustainably. The Millennium Ecosystem Assessment experts reported that those services freely available

Under the APF farmers are now getting financial and technical help to do just that. The first step for landowners is to complete an Environmental Farm Plan or EFP. EFP workshops and detailed manuals identify potential impacts on the environment and show landowners how to enhance their stewardship and address any environmental risks.

"Interest in doing EFPs is extremely high because it shows farmers where their environmental risks are and helps them develop an action plan to deal with them," says Smith. Soil erosion, water quality, pesticide storage and use, and soil nutrient loading are just a few of the issues that farmers are addressing in their EFP action plans in order to address neighbour and public concerns as well as government regulations.

ASERIES OF BENEFICIAL MANAGEMENT PRACTICES (BMPs) to help fix existing problems and enhance stewardship are available to all landowners who have EFPs. BMPs are specific on-farm practices producers can use to avoid environmental problems and/or enhance habitat such as fencing stock out of streams or planting a buffer strip. Best of all, the federal and provincial governments and conservation groups like DUC will not only provide the technical expertise, they will pay a portion of the cost to evaluate BMPs uptake by producers.

"We're very encouraged by our producer enthusiasm for BMPs," says Steve Thomson, executive director of the British

Columbia Agriculture Council. The Council represents the collective interests of all agricultural producers in B.C. and delivers environmental funding support to producers. For its previous success in delivering some 80 environmental projects, the Council received the Canadian Agri-Food Award of Excellence for Environmental Stewardship in 2005.

"DUC involvement has been of great benefit and sometimes makes the difference in whether a program goes forward," says Thomson.

DUC has an official memorandum of understanding with the Council to help deliver BMPs that benefit waterfowl and wetland habitat. That help takes the form of technical advice, financial support and partnerships, says Ian Barnett, director of regional operations of DUC's Pacific Region. "We're shifting about 20 per cent of our staff and resources to help deliver BMPs," says Barnett. "This has the potential to deliver an important part of future conservation programs."

IN THE B.C. INTERIOR BMPs TAKE THE FORM OF FENCING cattle from riparian areas and dispersing stock watering areas more widely. That might mean installing a system to pump from a wetland so cattle have better quality water and minimal impact on habitat, Barnett says.

In the lower Fraser River, DUC provides technical support for improved nutrient management and other practices that improve the health of wetland habitat. Some of these have long been part

above: Darin Langhorst

left: Andrew McLachlan

of DUC programs but with the additional federal and provincial support more landowners than ever are signing up, he says.

“We have multiple levels of involvement including hiring an agrologist to provide on-farm technical advice and conduct workshops for landowners.”

Both Barnett and Thomson agree that producers are interested in being greener if they have financial support.

The National Farm Stewardship Program funds about 30 different types of BMPs, with several eligible activities within each BMP. Each province chooses the BMPs it wants to focus on and creates a provincial list of eligible BMPs for landowners to access. Landowners who have completed an EFP apply for the BMPs on their province’s list. Funding varies depending on the BMP and the province. For example, a BMP that deals with farmyard run-off can get 50 per cent funding from the federal government. Each producer has a cap of \$30,000 to implement BMPs on their farm, says Cynthia Edwards, DUC’s manager of industry and government relations for the Prairie Western Boreal Region.

“Landowners can count their time and equipment use as part of their cost share,” says Edwards.

DUC has asked that four additional practices within BMPs be eligible for federal funding: restoring drained wetlands, wetland and riparian stewardship, the stewardship of native and natural lands, and modified annual cropping (winter wheat). Late last year wetland restoration was approved for federal funding as an eligible activity within an existing BMP. “This sets the stage for increased wetland restoration across Canada,” says Edwards.

“Wetland restorations are a very simple but very effective way to improve biodiversity,” says Cynthia Paszkowski, associate professor, University of Alberta. In 2001, a comprehensive study of small restored wetlands in Saskatchewan and Alberta showed that the diversity of wildlife, including wetland plants, was nearly identical to natural wetlands, Paszkowski says. “Lots more of these could have a big impact.”

The restorations were done on DUC property or lands which DUC leases and often involved little more than plugging a ditch to reflood a one- or two-acre area. “In many cases, these low-lying areas probably weren’t very productive for agriculture, but do provide societal benefits if restored to wetland” she says.

The value of such restorations led to a creative partnership between DUC and the provinces of Nova Scotia, New Brunswick and Prince Edward Island, where the wetland restoration BMP is being made available to farmers through provincial agri-

cultural programs. Nova Scotia was the first province in Canada to adopt the wetland restoration BMP with the Maritime agriculture departments being the only ones in Canada to have implemented a wetland restoration BMP in 2005.

“This partnership was a result of converging programs where DUC was becoming more active in supporting environmental farm planning, riparian area management, soil conservation and nutrient management to benefit wetlands in agricultural areas while agricultural departments were becoming engaged in planning for biodiversity and for watershed management,” says Mark Gloutney, manager of Atlantic Operations for DUC.

“One of the key advances has been the integration of our program within the provincial agriculture programs. This makes the process more visible to farmers and facilitates the implementation of program. The Maritimes continue to demonstrate world class leadership in environmental agricultural practices.”

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Cynthia Paszkowski
associate professor,
University of Alberta

MEANWHILE, UNDER A special Ontario program, 90 per cent of the nutrient management BMP costs are funded to a maximum of \$90,000. “That level of funding catches people’s attention,” says Andy Graham, Ontario Soil and Crop Improvement Association (OSCIA) Stewardship Program Co-ordinator. The Association manages the delivery of BMPs in Ontario.

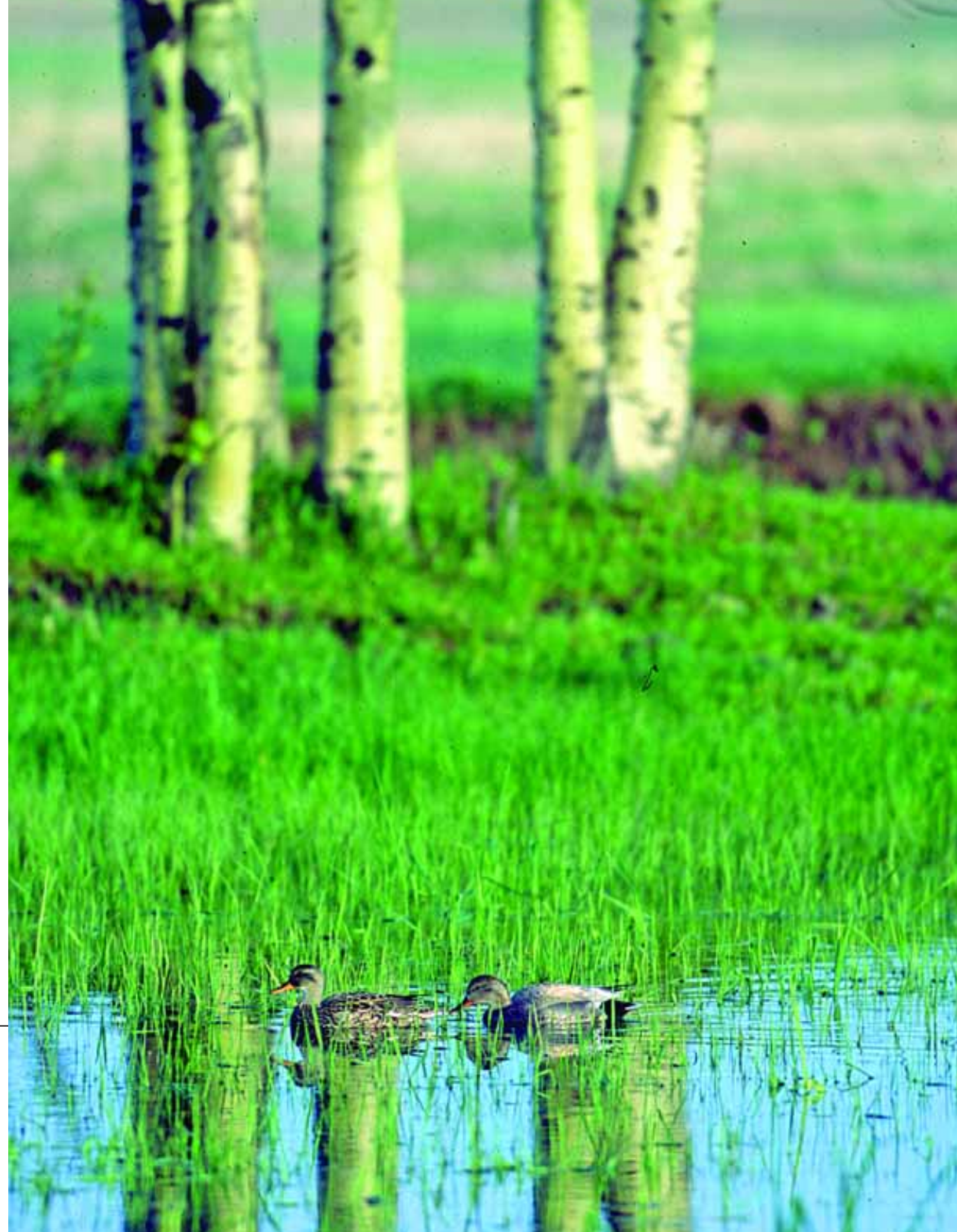
Following the Walkerton water disaster, Ontario allocated \$20 million for improving nutrient management, with another \$14 million coming from the federal government. More than 2,500 projects have been

completed or are underway with 50 new applications coming each week, says Graham. Ontario had 17,600 environmental farm plans completed before the BMP program went into place. In just the past year 2,550 landowners have participated in a new set of EFP workshops, he says. “There’s a strong willingness by farmers to make these changes and lots are doing other things on their own.”

Ontario’s farming landscape is visibly different from 20 years ago, Graham says. There are many vegetative buffer strips, cattle are fenced out of most riparian areas, windbreaks are once again in evidence and conservation tillage is becoming very popular.

Right: Beneficial management practices will positively affect habitat for nesting and migratory waterfowl. As more farmers complete Environmental Farm Plans, steps begin to be taken towards improving the quality of their land.

gathwells: Brian Wolinski



We must bring all stakeholders together to develop effective programs for the funding and delivery of BMP programs. This is a multi-partner endeavour where landowner input is critical to its success.

Dr. Henry Murkin
director of conservation programs,
Ducks Unlimited Canada

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BMPs are being evaluated for their impacts as part of a larger National Agri-Environmental Health Analysis and Reporting Program, says Smith of Ag Canada. Science-based environmental sustainability indicators are being used to measure and track the environmental performance of Canadian agriculture. "These indicators will reflect how successful these programs are at helping producers improve the environment," he says.

One of the most comprehensive studies underway is a four-year, \$5.65 million project, including a \$1.25 million contribution from DUC, led by Agriculture and Agri-Food Canada. Called Watershed Evaluation of BMPs, it will look at the environmental and economic benefits of BMPs for water quality at seven small-scale watershed sites across the country. "We need to find out where and what activities bring the biggest environmental benefits for the least cost," says Shane Gabor.

ONE SITE IS A FARM NEAR MIAMI, MAN., WHERE five BMPs that impact water quality are being evaluated. Although BMPs have been evaluated previously on small test plots and individual fields, this is the first time their effectiveness is being tested in a small watershed setting over a number of years. The goal is to extrapolate the results of these small watershed studies to somewhat larger Canadian watersheds using computer modelling. "It's our hope that this project will turn into a long-term monitoring and evaluation program," says Henry Murkin, DUC's director of conservation programs.

Everyone agrees that better environmental stewardship is a long-term endeavour in terms of the effort required and the payoff. "There should be good levels of participation by the end of the APF in 2008 but the job will be far from done," says Graham. "A 10- or 20-year commitment is crucial for lasting results and to get large numbers of farmers to participate."

There are many questions yet to be answered, but it is critical that we move ahead, says Murkin, pointing to the annual review of BMPs as a valuable opportunity for input.

"We must bring all stakeholders together to develop effective programs for the funding and delivery of BMP programs. This is a multi-partner endeavour where landowner input is critical to its success," Murkin says. "There needs to be agreement on the types of instruments and incentives that are needed to make the program sustainable. The programs must also be driven by science and research to ensure we are getting the maximum environmental benefit in the most economical manner possible."

And above all else, everyone needs to work together to assist in the conservation in of some of our country's most important assets: our green infrastructure and our national capital. ✈

*"When we see land as a community to which we belong,
we may begin to use it with love and respect."*

— Aldo Leopold
Sand County Almanac