

Dialogues

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Summer 2007

Land Stewardship



Our Vision

A dynamic and prosperous West in a strong Canada.

Our Mission

A leading source of strategic insight, conducting and communicating non-partisan economic and public policy research of importance to the four western provinces, the territories, and all Canadians.

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In 1970, the **One Prairie Province? A Question for Canada** Conference was held in Lethbridge, Alberta. Sponsored by the University of Lethbridge and the *Lethbridge Herald*, the conference received considerable attention from concerned citizens and community leaders. The consensus at the time was that research on the West (including British Columbia and the Canadian North) should be expanded by a new organization.

To fill this need, the Canada West Foundation was established under letters patent on December 31, 1970. The first Canada West Council was elected in June 1973.

Since that time, the Canada West Foundation has established itself as one of Canada's premier research institutes. Non-partisan, accessible research and active citizen engagement are hallmarks of the Canada West Foundation's past, present, and future endeavours. These efforts are rooted in the belief that a strong West makes for a strong Canada.

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A Note From the Editor

Robert Roach, Director of Research
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City Slickers: **An Urban Perspective on Land Stewardship**

For a city boy like myself, it's easy to forget about nature. From my condo in downtown Calgary, it seems like water comes from a tap or a bottle, that food comes from the grocery store or a restaurant, that most animals are either kept indoors or on leashes, that waste disappears in trucks or down a drain, and that trees and flowers are planted in yards, along roads, or in parks. When I do leave the city, it's to enjoy a leisurely hike along a trail or drink some beer by a lake.

The cycle of life and death that defines nature, the complex ecological systems that produce the air, water and food that I need to live, the trials and tribulations of farmers and ranchers, and the deep mines and wells that supply the raw materials that sustain my lifestyle seem very far away. As more and more Canadians call big cities home, this disconnect is likely to grow.

But we must not forget that urbanites depend on the natural processes and agricultural activities that take place in the countryside. I may live far away and seemingly separate from the glacier that helps feed the water supply of my city and the orchard that produced the apple I'm munching on, but I have a stake—a big stake—in ensuring the long-term functionality of the natural processes that keep me healthy and alive.

It's not just a matter of "protecting the environment" because I think bears are cool or because I don't want my favourite fishing spot to turn into a condo development. It's not an exaggeration to say that it's about self-preservation. This seems a bit strange sitting on the patio of a Starbucks, but it's a useful reminder of how important the ecological goods and services provided by the countryside are to all of us.

So what can we do to make sure nature keeps providing us with what we need? There are three broad interconnected ways that we

can act as stewards of nature: 1) we can engage in preservation; 2) we can change what and how much we consume; and 3) we can change how we use our land and water.

Preservation involves blocking certain activities from taking place (e.g., mining in a sensitive area or building a mall on good farmland) so that natural areas and farmland can do their thing. This is great as far as it goes, but the focus is on what we cannot do with land and water rather than on how to improve the ways we use them.

Changing what and how much we consume involves things like recycling and driving less. As with preservation, this is good as far as it goes, but it does not address the fact that we are still going to use land and water in all sorts of ways. We are going to grow food, we are going to cut down trees, we are going to drill for oil, and so on. Hence, while preservation of key areas and changes to individual consumption patterns are part of what we need to do, they are not sufficient.

This is where changing how we use land and water on working landscapes such as farms, logging areas, residential developments, mines, and well sites comes in. Stewards on working landscapes ask themselves what they can do to reduce their impact on the land and the water system. They ask how they can ensure that the supply of ecological goods and services is maintained or increased while still using the land to grow food, extract resources, or build homes and businesses. They ask how they can leave landscapes, rivers, lakes, and oceans in as good—or better—shape than when they found them so that future generations can use and enjoy them, too.

This often involves an element of preservation (e.g., deciding not to develop close to a river) and individual consumption decisions



can support stewardship on working landscapes (e.g., I can buy organic food), but the key element is changing how land and water are used by farmers and industries such as forestry and oil and gas. I can recycle the paper I use, but a forestry company can sustain an entire forest. I can donate a few dollars to a conservation fund, but a farmer can set aside a quarter section for habitat.

The Canada West Foundation's Land Stewardship Initiative is examining ways that public policy can facilitate stewardship practices on working landscapes. The goal is not to put farmers, miners, loggers or home builders out of business. Indeed, the opposite is true: land stewardship has to be economically viable for the users. Our research shows that there are a lot of innovative public policy options available to achieve this goal. It also shows that Canada is lagging behind other countries when it comes to designing and implementing land stewardship policy. It's time to catch-up, or better, to take the lead and show the world how it's done.

As an urbanite, I rely on working landscapes outside my urban field of vision and I rely on the stewards who look after those landscapes. There are things that I can do in terms of my individual choices, but

I can also learn about and support public policies that facilitate land stewardship on working landscapes such as markets for ecological goods and services and sustainable forest management. I may live a long way from the natural areas and farms that help sustain me, but I can still take steps to help sustain them.

This edition of Dialogues is part of the Canada West Foundation's Land Stewardship Initiative. Funding for the Land Stewardship Initiative has been provided by the Agriculture and Food Council of Alberta and the Investment Agriculture Foundation of British Columbia under Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-Food (ACAAF) program, Alberta-Pacific Forest Industries Inc., Alberta Sustainable Resource Development, AltaLink, the Arthur J.E. Child Foundation, Ducks Unlimited Canada, EnCana Corporation, Shell Canada Limited, Suncor Energy Foundation, and Westcorp Inc. The Canada West Foundation expresses its sincere appreciation for this generous support.

The Canada West Foundation also wishes to thank the contributors to this edition of Dialogues for their excellent articles.



Good Land Stewardship Doesn't Just Happen: Using Property Taxes to Help Conserve Natural Capital

by Cynthia Edwards

For those of us fortunate to live in Canada's prairie region, it's relatively easy to enjoy a sunset over a ripening field of grain, paddle a boat on a nearby lake, or gaze skyward at migrating waterfowl. Even if you live in one of the West's great cities, you're only a short trip away from nature and its clean air, water, wildlife, and stunning beauty. These are memorable parts of everyday life in western Canada that are oh-so-enjoyable and oh-so-easy to take for granted.

The Prairies were settled with the help of incentives provided to people coming to Canada to clear land, drain wetlands, and cut down the trees to make way for crops needed to feed a hungry world. Thankfully, the concepts of sustainability and good stewardship have gained momentum and progress has been made in conserving natural areas instead of trying to get rid of them.

My life job is as a fourth-generation agricultural producer in Saskatchewan; my day job is with Ducks Unlimited Canada (DUC). This provides me with a unique opportunity to combine my farming roots and ethics with the mission of my employer to conserve wetlands and other natural areas that provide benefits to waterfowl, other wildlife, and people. The stewardship of natural capital and the goods and services that flow from these areas is a key focus of DUC.

Good land stewardship doesn't just happen. Individuals manage the majority of the land in Canada's agricultural areas. These individuals work with government agencies, conservation organizations, and farm groups to retain, restore, and enhance rangelands, agricultural fields, wetlands, and woodlands. Despite the efforts of many, Canada keeps losing natural areas.

This loss is in part because traditional commodity markets do not provide producers with a direct financial return for retaining these areas, especially in a grain-based production system. Producers are unable to take the benefit of the ecological goods and services they produce to market. Under the current system, it is often more profitable to drain and clear these areas. But it is becoming increasingly clear that we all suffer when decisions are made to convert natural areas to other uses. We may even be diminishing the ecosystem capacity to support economic activities like agriculture.

In 2002, when DUC was looking for options to help landowners conserve the natural areas they own, the issue of tax credits kept coming up. We already had some experience in tax credit programs through our involvement in a partnered project in Manitoba. However, we felt there was more to learn so we undertook a three-year study to determine the efficiency and effectiveness of using tax credits to conserve wetlands, woodlands, and grasslands in

two rural municipalities in Saskatchewan.

The basic premise of the study was that the loss of natural areas occurs in part because landowners pay municipal taxes (and other costs) to maintain them, and that tax credits are one means through which society can assume some of the financial responsibility for land stewardship. We set out to answer four questions:

- 1) *Are tax credits accepted by landowners?*
- 2) *Will tax credits increase the retention of natural capital?*
- 3) *Do tax credits reward and recognize the contribution landowners make to natural capital retention?*
- 4) *Can tax credits be efficiently delivered using the existing tax system?*

These questions were answered through the use of surveys, analysis of enrollment patterns, and in-field evaluation. Enrollment and survey results were very positive, with good enrollment levels (up to 80% of eligible lands) and survey results that indicated tax credits would encourage landowners to maintain their natural wetlands, woodlands, and grasslands. However, the results from the in-field evaluation painted a different picture. Rates of natural area land loss were not statistically different between areas participating in the program and adjacent areas that were not taking part.

Although some would see this as evidence that tax credits do not work, we see it as an important lesson. Non-compliance might have occurred because we didn't define our expectations clearly enough; because there was confusion about what land was enrolled; or because the agreement didn't specify strong enough consequences for non-compliance. The bottom line is that if these types of incentive programs are put in place, expectations need to be clear and stated in language that all players understand.

“An effective ecological goods and services policy that recognizes and rewards the contribution of agricultural producers can be an important component of an integrated strategy to conserve our natural capital. Good policy and associated programming, including financial incentives, education, technology transfer, and targeting, are needed.

There also needs to be monitoring to ensure that buyers (the public in this case) get what they pay for. Measurable environmental outcomes are needed.

An effective ecological goods and services policy that recognizes and rewards the contribution of agricultural producers

can be an important component of an integrated strategy to conserve our natural capital. Good policy and associated programming, including financial incentives, education, technology transfer, and targeting, are needed. Incentives can be provided through a suite of economic options including direct payments, tax credits, adjustments to the tax system, and conservation easements.

Because different land use actions result in different environmental outcomes, incentive programs must be targeted to generate the desired good or service. Understanding the management practices that result in the provision of a good or service is paramount to designing an effective incentive. There needs to be accountability and a good regulatory framework built into the system to ensure that the interests of all parties (buyers, sellers, and the environment) are looked after. Political and financial support for incentive-based programs is not sustainable unless a return on investment is demonstrated.

There is a lot going on across Canada in the areas of research, program design, agricultural policy development, and an increasingly educated public. We can stop the loss and degradation of these natural areas and sustain the flow of ecosystem benefits to producers and other Canadians. We can do this by investing in the natural wealth that our agricultural producers are managing for both themselves and for the rest of us.

Cynthia Edwards is the National Manager of Industry and Government Relations for Ducks Unlimited Canada (www.ducks.ca). Cynthia was raised on a grain farm near Dinsmore, Saskatchewan and now helps manage a mixed grain and cattle operation near Nokomis, Saskatchewan.

Who should have the greatest responsibility for reducing Canada's greenhouse gas emissions: governments, industries or individuals?

Canada West Foundation 2007 STUDENT ESSAY CONTEST

Student Essay Contest Returns for 2007

\$5,000 cash prize for the winning essay

ESSAY CONTEST RULES

2007 Essay Question:

Who should have the greatest responsibility for reducing Canada's greenhouse gas emissions: *governments, industries or individuals?*

The 2007 Canada West Foundation Essay Contest is open to students attending a post-secondary institution in BC, Alberta, Saskatchewan, or Manitoba as of December 1, 2007.

The essay must be between 750 and 1,000 words in length.

The essay must be submitted to the Canada West Foundation via email no later than December 1, 2007. The essay must be sent as a standard Microsoft Word file.

The essay must have a title.

The author's first and last name, mailing address, phone number, post-secondary institution and field of study must appear at the beginning of the essay.

The best essays will be published in the Canada West Foundation's *Dialogues* Magazine.

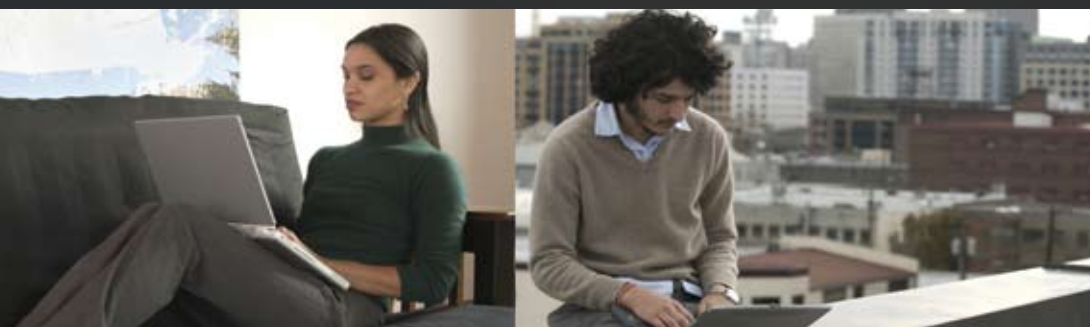
The winning essay and runners-up will be chosen by a panel of judges.

The winner will be required to show proof of post-secondary enrollment.

Current and former employees of the Canada West Foundation, and their immediate family members and members of the immediate families of the Canada West Foundation Board of Directors, are ineligible for this contest.

Essays should be emailed to:

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Coast to Coast Farmland Preservation Blossoms in the US

by Keith Schneider

This article by the Michigan Land Use Institute is reproduced here by permission of the author. The article is the first of a three-part series on farmland preservation programs across America. To read the other articles in the series ("Farmland Conservation's East Coast Pioneers" and "Farmland Preservation Takes Flight"), please visit the Michigan Land Institute website (www.mlui.org).

LOWELL, Mich.—As it happened, the rain stopped on the morning of May 15, 2006 just before a caravan of late-model vehicles dropped a swirl of local dignitaries—including a state senator, one of Michigan's wealthiest philanthropists, and two TV reporters—on Lloyd Flanagan's farm in the green countryside 25 miles from Grand Rapids. Mr. Flanagan, a sturdy man whose family has raised crops and livestock since 1947 on the corner of 4 Mile Road and Lake Murray Avenue, greeted his guests with a smile and a hearty handshake.

In this part of West Michigan modesty is a virtue. So Mr. Flanagan listened quietly, shifting his weight and fingering the bill of his worn baseball cap as speaker after speaker extolled the farm's natural beauty, the family's good work, and the \$580,000 that Kent County raised to buy the development rights to Mr. Flanagan's 145 acres of good earth, assuring it would be forever used solely for agriculture. At the program's end, Mr. Flanagan and his wife, Kathleen, who have two sons and a daughter, received a handsome sign commemorating the occasion.

"It's been in the family all these years," Mr. Flanagan said afterwards of his spread. "I want it preserved. I want to see it stay a farm and see it set up so my son can take over."

The ceremony, gracious in its simplicity, marked the second farm permanently protected by Kent County's four-year-old Farmland Preservation Program. But what was most significant was the event's location in a county that not only is among the largest farm producers in Michigan, but also is among the state's fastest growing and most politically conservative. Here in a region where mixing the basic ingredients of farmland preservation—open ground, government oversight, and public spending—often arouses considerable ire, a new, more supportive attitude about the value of farms, farmers, and farmland is quickly developing.

The switch in allegiance is as evident in this part of Michigan as it is in many other regions of the nation where local and state

campaigns to protect farmland have surmounted partisan, class, and political impediments to become a powerful, though little-noticed economic and political movement in the United States.

Voters across Michigan are being asked to reach into their pockets to increase property taxes to pay for conserving farmland. The results are mixed. Lapeer County voters, for instance, turned down a property tax increase this past Tuesday that would have conserved thousands of acres of farmland and open space in that rapidly growing region. Two years ago, though, voters in Acme Township, east of Traverse City, and in Ada Township, in Kent County, approved tax increases to protect farmland. Three years ago, voters in the Ann Arbor area approved a 10-year property tax that will fashion a "greenbelt" around that city. And this coming November, voters in Leelanau County, west of Traverse City, have the opportunity to approve the state's first publicly financed countywide farmland preservation program.

Coast to Coast All of this is part of a national trend. From New England to southern California, Florida to Washington State, and countless places in between, local planning officials are teaming up with elected leaders, non-profit conservancies, and the farm community to spend nearly \$500 million annually to preserve more than 400,000 acres of orchard and crop land, according to farmland conservancies.

Though the nation's farmland protection efforts also include enacting new zoning rules, taking steps to enhance farm profitability, and enforcing state right-to-farm laws in order to help farmers stay in business, paying farmers to permanently set aside land solely for agriculture is seen as far and away the most effective solution to farmland loss. The reason?

"It's voluntary," said Eric Larson, executive director of the San Diego County Farm Bureau, who's working to establish a farmland protection program in southern California, in one of the nation's largest farm counties. "The other important element is it doesn't



cost much. It's much less expensive than building roads and sewers and all the other costs that come out of land development."

According to state and federal agriculture departments, this year alone Pennsylvania, Maryland, and New Jersey will spend \$386 million on farmland preservation. The number of local land trust organizations, institutions critical to farmland protection, grew to 1,537 in 2003, according to the Land Trust Alliance, 324 more than in 1998. The Trust for Public Land, a national land conservancy, found that since 1994, 384 local and state ballot measures to protect farmland have been put before voters; 312, or 81 percent, were approved.

"We're seeing farmland conservation initiatives approved by voters by equal margins, usually more than 60 percent, in counties carried by George Bush, and counties carried by John Kerry," notes Will Abberger, the associate director of conservation finance based in the Trust for Public Land's office in Tallahassee, Florida. "This is not, by any stretch, a partisan issue at the local or state level."

More than an Annoyance Neither is it in Kent County. Here as in most of the other regions concerned about the loss of farmland, a tide of new homes is pushing out of a nearby metropolitan area—in this case Grand Rapids, the state's second largest city—and steadily topping one ridge after another. Here that tide is now approaching this bedroom and farm community of 4,000. The spread of new homes and families, and their attendant needs—wider roads, longer sewer and water lines, new schools and retail developments—is becoming an ever heavier tax burden for the county's 594,000 residents. Rampant construction also has intruded on Kent County's view of itself as a

largely rural, quiet, almost changeless place apart from everywhere else.

But as any planning official who's put their toes in the farmland conservation pond knows, nothing happens without convincing the producers themselves to also wade in. In the 1990s, as Kent County grew twice as fast as the state, adding 7,400 new residents a year, it dawned on farmers that the effect of rapid development was becoming more than an annoyance.

While farmers understood that growth increased their land's value—a powerful motivation for allowing such development to continue—it also congested rural roads, sprouted subdivisions on the edges of fields, and produced enough general clamor to impede farmers' ability to efficiently participate in a countywide farm economy that supported 318 commercial farms, 4,500 farm-related jobs, and \$150 million in annual farm sales.

"It's happening very fast," Mr. Flanagan said. "They just built an elementary school out here in the country."

"It's just getting harder and harder with all the growth to farm around here," added Jay Hoekstra, a planner with the Grand Valley Metro Council, the regional planning agency.

Though several popular farmland conservation measures are available in Michigan and in Kent County—agricultural zoning, farm profitability enhancement programs, Michigan's right-to-farm statute, and a state farmland property tax reduction program—the tool of choice

in Kent and in many other Michigan counties is purchasing farmland development rights. Four years ago, United Growth of Kent County, a civic organization affiliated with Michigan State University, played an influential role in convincing the Kent County Board of Commissioners to approve a county-sanctioned program.

No Longer Wacky First implemented by Suffolk County, N.Y., in 1974, a purchase of development rights program pays farmers a substantial per-acre fee that amounts to the difference in value of the land as farmland and its value as land sold for new residential and business development. In exchange for selling such "development rights," farmers attach a permanent conservation easement to the deed that puts the ground off limits to anything other than farming.

Until 1994, when Peninsula Township, north of Traverse City, established the Midwest's first local program, the idea of buying and selling such rights and drawing up conservation easements was considered a wacky idea, appropriate for the coasts, but not considered palatable or needed in the heartland.

That's no longer the case. Kendall and Kane counties in Illinois have established programs, as have two towns in Dane County in Wisconsin. Michigan now has six publicly-funded township programs and the potential in Leelanau County to establish the first county-financed farmland conservation program.

Meanwhile Kent County, along with some of its townships, has among the most active farmland preservation programs in the Midwest. Some 112 families in 12 townships have submitted applications for funding to preserve more than 8,000 acres of farmland. Nearly \$3 million has been raised from foundations, state and federal farmland preservation programs, local donors, Ada Township taxpayers, and the landowners themselves.

All told, efforts in Kent County have amassed enough money to conserve 700 to 750 acres at the going rate of roughly \$3,500 to \$4,000 per acre. Perhaps two more farms, including one owned

by a neighbor of Mr. Flanagan, are likely to be preserved before the end of the year.

"I can tell you there is a lot of interest here in preserving farmland," says Kendra Wills, a land use educator at Michigan State University who staffs the Kent County Agricultural Preservation Board. "I get at least one call a week from a farmer asking about the program."

A Pro-Preservation Slate Still, there is unease in and out of the farm community.

Farmers tend to be suspicious even though the farmland purchase program is becoming more familiar. "It takes some time, but I've been talking to a lot of farmers here. More are interested than they've ever been in this program," observes Mr. Flanagan.

A more important critic is the land development community, led by local homebuilder and realtor organizations, which view farmland conservation as an intrusion on the free market and a way for taxpayers, in the words of the Grand Rapids Association of Realtors, to "foot the bill to permanently preserve land they have no access to."

The resistance has convinced the Kent County Commission not to invest any of its general funds in farmland conservation. But a new farmland preservation advocacy organization, co-chaired by a prominent farmer, formed in May. The group, Citizens for Kent County Farmland and Open Space Preservation, promotes county investment in farm conservation, and supports a slate of county commission candidates that want to spend public money on farmland and open space protection.

"We are not an outside group with a secret agenda," explains Rob Steffens, the co-chair and a fourth-generation fruit farmer from Sparta Township. "We simply feel that over the long haul, urban sprawl will destroy the character of Kent County and have huge negative consequences for future generations living here."

A nationally known environmental writer and commentator, **Keith Schneider** founded the Michigan Land Institute in 1995 and served as its Director until 2000. He is currently the Institute's Director of Program Development.

A longer version of this article was published in the Summer 2006 issue of the *Planning Commissioners Journal*. The full article is available to order and download at: www.plannersweb.com/ag.html. Reach Keith Schneider at keith@mlui.org.

Enlisting Farmers and Rural Communities to Satisfy the Environmental Demands of Society

by Robert O. Bailey

If you study landscape features through the windshield of a vehicle traveling across the farmlands of southern Canada, you will observe a landscape that has been transformed from an earlier state to the way it appears now by market pressures. Gone are many of the earlier wetlands and marshes. Forests have been cleared back to woodlots, creeks straightened into municipal drains and many habitats for wildlife reduced in size and abundance.

Farmers are only paid for the crops and livestock that they produce. With traditionally low commodity prices and falling farm incomes, farmers are not in a financial position to conserve natural capital where it can be readily converted into economic capital, nor can farmers finance the increasing public demand for environmental benefits from agricultural landscapes in Canada.

Colliding social, economic, and environmental pressures have brought agricultural and environmental policy to a crossroads on Canada's farms. Regulatory measures have lost their luster with unproven effectiveness and the tarnish of political expediency. Institutional divisions of governments along departmental lines have snared policy innovation in a web of mandates, while traditional land purchase-based NGO conservation philosophies weigh heavily against policy reform and have had limited impact on agricultural landscapes.

Alternative Land Use Services, or ALUS, has arisen from the grassroots end of the policy spectrum as a simple, eloquent solution that has enjoyed broad support among grassroots farm constituencies. ALUS essentially converts environmental risks and liabilities on farmland into economic opportunity—a vision stretching well beyond the restraints of the status quo. ALUS helps to bring together farm and environmental programs and people at the community level, which is the prerequisite for cross-cutting policy solutions.

Farmers face economic challenges, but they are also uniquely positioned to seize opportunities and contribute solutions to an emerging environmental agenda driven in part by an urban-based electorate that is demanding new products from farmers such as clean air and greenhouse gas reductions, clean water,

wildlife, protection of species at risk, and pastoral landscapes. These environmental goods or “products” are often referred to as ecological goods and services (EGS).

Variants of the ALUS model have been used for decades in other countries to deliver EGS from farmland. US Farm Bill initiatives such as the Conservation Reserve Program have enrolled millions of acres of farmland, producing a wide array of environmental benefits. The European Union and most industrialized nations have similar programs, and EGS programs have been widely used in developing nations. EGS programming is permissible under WTO “green box” provisions, and Canada is the only industrialized nation not taking advantage of green box opportunities. Only an enhanced public and private investment in EGS has a chance of off-setting traditional market rewards.

The foundation for a business agreement between farmers and Canadians on the environment lies in the shared responsibility for the stewardship of environmental resources found on farmland. Most environmental resources in Canada, including water, air, fish and wildlife, are in public ownership, even if they occur on private land. Since there are no real markets for these public resources, farmers must maximize revenues from crops and livestock. Farmers have used this model to provide Canadians with the best food in the world as well as the essential raw materials for a significant agri-food industry. Canadians are now demanding even more from farmers.

ALUS balances the environmental demands of society with the needs of farmers and farm communities. Under ALUS, agricultural producers are provided with incentives in return for the provision of benefits to society by conserving the public environmental resources that exist on private land. ALUS is an alternative to regulating private land use under the authority of various acts and regulations. The regulatory approach has not worked because it is antithetical to the “culture of agriculture” while ALUS is part of that culture. ALUS is also an alternative to rising social concerns and activist pushback to government-sponsored, NGO-delivered conservation programs in

rural Canada (e.g., Saskatchewan's moratorium on land purchases by conservation organizations and Ontario's "Rural Revolution").

ALUS builds rural community capacity to deliver conservation and changes the way producers and their clients think about the environment. ALUS pushes environmental decision-making down to the community level and incorporates new grassroots ways of delivering environmental benefits. Farmers deliver the conservation program under ALUS and are held accountable by their peers and communities. Farmers and rural communities are given the information and resources needed to make good environmental decisions and implement them in their own back yard. Existing agricultural organizations will monitor environmental services under ALUS, because producer institutions, such as crop insurance, can facilitate good relationships with landowners and have the capacity to deliver an accountable, transparent program.

It is time to move beyond studies to action on EGS programming in Canada. Canadians are demanding action on the environment that results in real environmental progress on the ground. EGS-type programs have been in existence for two decades around the world, ALUS is simply a Canadian version adapted to rural communities.

The ALUS concept is rapidly gaining momentum in Ontario, Manitoba, Saskatchewan, Alberta, and PEI. ALUS is endorsed as an official policy of the Canadian Federation of Agriculture, and several farm and conservation groups across the country. A voluntary

program to encourage the production of environmental goods and services from private farmland was recently recommended by the House of Commons Standing Committee on Agriculture and Agri-Food. ALUS has been recommended in several agricultural reports commissioned by federal and provincial governments, and has been a regular agenda item on federal-provincial-territorial Agriculture Ministers' Conferences over the past three years.

The grassroots popularity of ALUS is founded on the precept that environmental stewardship must be socially and economically sustainable on working landscapes. Market failure is recognized as the primary factor in biodiversity loss and environmental degradation as farm incomes plunge, communities decline, and industry consolidation proceeds apace. ALUS can meet the environmental challenge with a \$780 million national investment that would deliver over \$800 million in benefits and savings to current programs. Social and economic dynamics are inextricably tied to the environment at all levels, and this "triple bottom line" thinking must be proactively and locally incorporated in environmental and agricultural policy solutions. ALUS does this in a straightforward community-driven, producer-delivered concept that makes sense to farmers, and has far reaching implications for agriculture, the environment, and the food system in Canada.

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Dr. Robert O. Bailey is Vice President, Policy for Canada at the Delta Waterfowl Foundation (www.deltawaterfowl.org).

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Walking the Talk on Urban Sprawl: Learning From Florida's Rural Land Stewardship Program

by Bethany Beale

We often expect attitudes and behaviours to match. For example, we expect that people who feel that urban sprawl is a problem will not buy homes in sprawling neighbourhoods.

But according to the recent Canada West Foundation Looking West 2007 Survey, even though the majority of western urbanites and Torontonians believe that governments should protect the natural areas and farmlands around their cities and that urban sprawl is a problem, our choices suggest that we don't care as much as we say we do.

Recent figures released by Statistics Canada show that the growth rate of peripheral municipalities, those that surround the country's large urban areas, is twice the national average.

Why are we not walking the talk?

This trend may be fueled by the affordability of homes outside of urban centres . To paraphrase Karen Wilkie of the Canada West Foundation: "What are you more willing to buy? A brand new big home on the outskirts of town or a tiny fixer-upper in the inner city?" Unfortunately, the market has given consumers very little choice when it comes to choosing affordable AND sustainable housing, often at the price of natural areas and prime agricultural land.

All is not lost. Several policy options are available to curb sprawl and protect our natural capital. We can make the market work to bring us the results we desire: the protection of wild landscapes, the viability of agriculture, sustainable urban landscapes, and consumer choice.

For example, while BC's Agricultural Land Reserve (ALR) has protected farmland for over 30 years, there have been recent concerns about its ability to stand up to development pressure, especially in the highly populated south. Market-based tools could be used to complement regulations to better promote farming and environmental protection in the face of increasing urban and industrial development pressure.

One option is to look at how other jurisdictions resolve these issues. Florida's Rural Land Stewardship Program recognizes the value of natural capital, rewards agricultural stewardship, and creates a market for a sustainable rural economy.

In Florida, if a county adopts the Rural Land Stewardship Program as part of their growth management strategy, a landowner has the option of profiting from preventing the land from being used for things like residential development.

Credits based on restricting certain land uses are sold to a developer who is then permitted to use them on more suitable land (for example, areas that are less ecologically sensitive or less economically viable for agriculture) using innovative planning techniques that reduce the development footprint and provide services for a projected population at least 25 years into the future. Legislation in Florida also includes provisions for a mix of affordable housing options. By participating in the program, counties are able to create a long-term blueprint for how development will take place as they respond to increasing growth pressures.

What makes this program unique is that it explicitly gives natural capital—such as endangered species habitat and water retention areas—a value above and beyond converting the land to residential or industrial uses. It is in the landowner's best interest to act as a steward of natural resources because credits can be earned that can be sold to a developer and then reinvested into the landowner's operation. This is all done at a fraction of the cost of public acquisition of land for conservation and still allows for development while promoting the viability of agriculture. It's a win-win-win.

Eastern Collier County was the first to implement the Rural Land Stewardship Program in Florida. Through the program, thousands of acres of panther habitat and water resources will be protected in perpetuity. In St. Lucie County, a proposal is in place to designate a

12,000 acre portion of a historic ranch as a stewardship area—allowing only ranching and conservation uses. In exchange, a 6,000 acre town will be built in a more suitable area. The proposed town would have taken up over twelve times more land under current Florida zoning rules.

This program is a good springboard for accounting for the ecosystem services provided by landowners through stewardship. There's no need for us to completely reinvent the wheel—decision-makers can learn a great deal from other jurisdictions to shape our current market system for a public with a not so contradictory desire for conservation, a secure food supply, and a place of their own to grow.

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Bethany Beale is a former Canada West Foundation Intern.

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Land Stewardship in Action: Corner Brook Pulp and Paper and the Newfoundland Pine Marten

by Stephen Balsom

Wildlife resources are a fundamental part of Newfoundland and Labrador's lifestyle and environment. Twenty-six mammal species, more than sixty species of birds, and four amphibian species make their home in the forest managed by Corner Brook Pulp and Paper Limited (CBPPL). CBPPL is working to ensure the protection, conservation, and recovery of the Newfoundland pine marten.

Two core populations of the Newfoundland pine marten are located on CBPPL timber limits. The areas known as Little Grand Lake and Main River contain over half of the known marten in Newfoundland. CBPPL, as a partner of the Western Newfoundland Model Forest, has been involved in research work with the Newfoundland and Labrador Wildlife Division, investigating the potential impacts of forestry on pine marten and in determining the habitat types used by marten.

CBPPL has helped to establish two protected areas on its timber limits important to pine marten conservation, the Little Grand Lake Provisional Ecological Reserve and the Main River Waterway Park. CBPPL has also stopped harvesting in proposed pine marten critical habitat, which encompasses over 185,000 hectares of timber limits.

Research investigating habitat utilization by pine marten indicates that marten in Newfoundland use a much broader range of stands than previously thought. This research has provided us with a better definition of suitable habitat. This understanding has led to the development of habitat assessment models that can be used in the forest management planning process. In 2006, modeling exercises were conducted by the Newfoundland Wildlife Division and CBPPL using the recent wood supply analysis information and projections for current and future harvesting by CBPPL. Results from the exercise indicated that there is currently an abundance of marten habitat available, and provided that long-term harvest plans are followed, suitable marten habitat will be protected for marten use into the future.

Through direct contribution to the establishment of protected areas, support of research work with the pine marten, and the use of up-to-date modeling tools, CBPPL is helping to conserve and protect the pine marten and its habitat. Core areas have been protected and forest management planning incorporates the conservation of suitable marten habitat on the landscape, now and into the future, to promote the recovery of the Newfoundland pine marten.

As part of the Newfoundland Marten Recovery Team, CBPPL is proud of the work done over the last 20 years related to Pine Marten protection and recovery which has seen the population grow from an estimated 300 breeding animals to the current estimate in 2007 of 622 and a change in status from endangered to threatened.

Stephen Balsom, R.P.F., is a Planning Forester with Corner Brook Pulp and Paper Limited (www.cbpppl.com).

Alberta's Economic Prosperity and Ecological Footprint: The Mining of Her Natural Capital

by Brad Stelfox

Alberta is a young place, where few of European descent can re-tell stories of their great-great grandparents homesteading in a fledgling province. For me, it was my grandparents who first arrived in Alberta in the early 1900s. Since Alberta's birth in 1905, those generations fortunate to reside here have experienced the phenomenal natural capital of a province that has cultivated a global reputation for its majestic foothills and mountains, pristine rivers, vast boreal forest, and expansive native grasslands. As new generations replaced previous ones, so have a suite of landuse trajectories that have created an Alberta that would startle my grandfather if he were alive today.

Alberta now boasts an established position as an economic and political power-broker within Canada, and an emerging energy giant in a global market eager to consume her hydrocarbon wealth. To understand how Alberta ascended to this privileged economic status, we must recap the major landuse trajectories that characterized its first century.

As the decades of the 20th Century rolled forward, different natural resource landuses emerged, prospered, and in some cases, declined to be replaced by the next entry in the landuse queue. In a very general chronological order, the major landuses were trapping, agriculture, forestry, mining, and most recently, the energy sector. From their modest beginnings, these landuses have grown impressively to current (2005) annual production values of:

- 2.5 million head of cattle harvested
- 3.1 million head of swine harvested
- 114 million kg of poultry harvested
- 30 million tonne of crop harvested
- 23.4 million m³ of timber harvested
- 159 billion m³ of natural gas produced
- 33 million m³ of conventional oil produced
- 68 million m³ of bitumen produced
- 30 million tonne of coal produced
- 1,375 petajoules of electricity produced

Collectively, these levels of natural resource production today are the economic foundation that supports an affluent human population of over 3 million. Having grown at an annual rate of ~2.1% during the past century, the human population now occupies 2,250 km² of towns, cities, acreages, and farmyards. This growth in settlement footprint has occurred at the expense of natural plant communities and surrounding agricultural lands. Although the rate of child-birth among Albertans has declined in recent decades, provincial human growth rates have not, buoyed by the high immigration rates required to support a super-heated economy.

The economic inputs and outputs of this impressive growth are apparent everywhere you look in Alberta, whether it be investment capital, affluent lifestyle, sprawling cities, employment rates, wage income, or GDP levels. As quickly as risk capital and job seekers arrive in Alberta, this province consumes these inputs and mixes them with production systems that convert natural capital (soil, air, water, hydrocarbons, forests, native grasslands) into products (fuel, petrochemicals, electricity, dimension lumber, paper, crops, meat). It is hard to imagine Alberta's position as anything but a fairy tale but, like so many fairy tales, the truth is actually much more complex.

Rapid economic growth has transformed the province at a profound scale, rate, and intensity. Consider the following landscape descriptions that chronicle the consequences of the so-called "Alberta Advantage":

- as of 2005, 11,000,000 hectares of Alberta were used for cultivation; 14,000,000 hectares for livestock grazing; 24,200,000 hectares for forestry within Forest Management Agreement Areas (of which we are harvesting ~65,000 hectares each year); 225,000 hectares for residential; 518,000 hectares for the energy sector; and 620,000 hectares for transportation.
- ~11 million hectares of Alberta's native grassland have been converted to industrial croplands
- our beef cattle population, which now outnumbers the human population by 2 to 1, is intensively managed and largely finished in intensive feedlots



- ~65% of Alberta's provincially owned forest area has been allocated for fiber production
- ~70% of Alberta's prairie wetlands (ponds, sloughs, streams) have been lost to wetland drainage initiatives
- ~6 billion m³ of water is required annually to meet provincial landuses requirements
- runoff of nitrogen, phosphorus, and sediment from land into water (an index of water quality) has increased by approximately 300% since 1905
- since 1905, ~941,000 km of seismic lines, 174,000 km of pipelines, 300,000 wellsites, 300,000 km of roads, and 225,000 hectares of settlement have been constructed; today, 341,000 km of seismic lines, 67,000 km of pipelines, 300,000 wellsites, and 245,000 km of roads still remain on the landscape
- none of Alberta's surface water is now considered safe for human consumption if not physically or chemically treated
- distributions of most wildlife species have experienced profound changes and reductions, and populations of several species (sage grouse, grizzly bear, boreal caribou, leopard frog) are precariously low

Whereas the economic advantages of landuses have been widely proclaimed to citizens by both industry and government in Alberta, economic and ecological liabilities have received scant discussion.

Few Albertans appear to understand that all landuses, without exception, contribute both benefits and liabilities, and as such require a meaningful dialogue that seeks to balance both risk and opportunity. Key to this cost/benefit equation is the recognition that all landuses require inputs of natural capital (land, water, soil, carbon, energy) to generate products for sale (livestock, crops, wood fiber, hydrocarbons, cities, electricity). Proper stewardship of Alberta requires us to evaluate this trade-off in an open and accurate fashion; this is where we have failed ourselves and our descendants in a sobering fashion.

Put bluntly, the "average" Albertan has received a reasonable education about the benefits of landuses (jobs, royalties, rents, GDP) but remains unaware of the costs incurred to receive these benefits. If this imbalance is not corrected, Alberta is destined to bequeath future generations with an eroded landbase unable to provide benefits at the levels it did for their ancestors.

Key to this discussion is the recognition that Alberta is a finite landscape (660,000 km²) that has an equally finite capacity to contribute water, land, carbon and soil to the production of natural resource products. Whereas Alberta used to be described as a vast landscape, it is becoming increasingly clear that Alberta is relatively small in comparison to the rate at which it is producing

products from natural resources. This trend is exacerbated by the rapid evolution of Alberta into an export economy, whose production of natural resources has little to do with provincial demand, and everything to do with global appetite for wood, crops, livestock, and energy. Consider the following summaries computed from industrial websites—for each of the major landuse commodities, the portion exported annually for the period of 2005-2006 is as follows:

- 87% of cattle production
- 79% of pig production
- 62.9% of conventional oil production
- 70.9% of natural gas production
- 50.6% of wood fiber production

As the production of landuse commodities has grown, so too has the area disturbed such that man-made features now cover over one quarter of the province. The result is that natural capital has dramatically declined.

If Alberta is to become successful at generating economic performance while also maintaining the integrity of our natural resources, then new

approaches to evaluating economic performance must emerge that recognize the value of natural capital and both the benefits and liabilities of landuses. Honest application of these approaches can help identify a sustainable balance between growth and conservation. In pondering this balance, it may be wise for Albertans and our provincial policy-makers to ask whether our desired destiny is best served by becoming a global exporter of natural resources where wages and immigration rates are high, but where we have long-ago abandoned our reputation as a landscape with natural vistas, abundant wildlife, and clean waters and skies.

The statistics presented in this article may be surprising to some, but I believe that most Albertans have a subconscious awareness, call it a disquieting feeling in their guts, that we have been doing a damn poor job of managing our natural capital. I suspect many Albertans wonder why current government policy reflects such an urgency to rapidly extract finite oil and gas reserves, to build larger livestock populations, to convert the remaining wildlands into “productive” landuses, to allocate our remaining waters to “good” use, and to turn our wild forests into merchantable fiber.

As a member of Alberta’s business community, I am not advocating an anti-business message. Rather, I am asking for Albertans to demand pro-business philosophy and policies from government, but ones whose foundation recognizes the fundamental primacy of natural capital required to ensure economic performance through “meaningful time and space,” and the need to ensure that the ecological goods and services provided by Alberta’s land, water, air, and wildlife are enshrined in law and respected by all government ministries and industries.

Should my grandchildren hear the term “the Alberta Advantage” in the decades to come, it is my hope that it is accompanied by a second statement: “the Alberta Advantage: Where Natural Resources are Managed as If We Intend to Stay.”



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Dr. Brad Stelfox established Forem Technologies (www.foremtech.com) and the ALCES Group in 1995 and is the architect and developer of the ALCES (A Landscape Cumulative Effects Simulator) model.



MAKING THE CONNECTION: Cities and Land Stewardship in Surrounding Areas

by Catherine Cone

When you bathe in the morning what do you think about? Getting the kids off to school? The staff meeting you're not prepared for? What to wear?

What is often not thought about is the vast watershed that provides the water. For those of use who live in cities, it's not easy to link everyday life to a dependency on nature when obtaining food and water takes relatively little effort. If you need food, you go to the market or a restaurant and purchase it; if you need water, you turn on the tap. This is deceiving because it obscures the complex ecological processes that make these things possible.

People need clean water and food to survive and these are provided by landscapes outside city borders. Surrounding areas are also critical

in terms of recreation opportunities and aesthetic enjoyment. For this reason, many cities have become land stewards by developing initiatives to protect, enhance, and manage the environment beyond their borders so as to help maintain the sustainability of the environmental goods and services they need and use.

One such city is Albuquerque, New Mexico. The City's Open Space Division seeks to preserve the natural features of the metropolis by conserving resources, natural environments, and recreation/educational opportunities inside and outside of the city's border. Through the acquisition of farmland, Albuquerque's Open Space Farmlands Program (OSFP) aims to protect Albuquerque's food; recharge Albuquerque's aquifer; provide habitat for wildlife; and maintain living landscapes.

There are two designations for farms acquired by Albuquerque: working and protected. Working farms produce food for Albuquerque and return a profit to fund the OSFP. An interesting option for residents is the possibility to buy into the Community Supported Agriculture Program and have fresh local produce delivered to them weekly. At the same time, protected farms generate wildlife forage that feed migrating and resident wildlife while acting as an educational opportunity for city residents. Farms are either run by the city or leased to farmers. In both cases, best practices farm management is used (e.g., milk products are rGBH-free and produce is certified organic).

Albuquerque has faced both success and challenges with the OSFP. Successes to date include the purchase of five farms; the availability of local produce; the preservation of local heritage; and the protection of city aquifers. Challenges to date include limited funding for farm infrastructure improvements; commercial irrigation and city water demands can leave OSFP low on the list of priorities; and habitat restoration projects can be limited, as they must fit into the pre-existing farm layout.

Albuquerque is exemplary in its recognition of nature and the OSFP demonstrates the connection that exists between city and rural/natural landscapes. The quality of life in Albuquerque is influenced by the availability of clean water and fresh food, a matter that OSFP addresses through the preservation of farming landscapes. By preserving these farms, essential habitat, water quality and quantity, and local heritage are protected for current and future city residents.

In this way, Albuquerque is taking responsibility for the demand pressures that its population places on the environment by purchasing and ensuring the continued existence of neighbouring farms, thus benefiting residents and the surrounding environment. Additionally, by involving the community and providing educational opportunities, Albuquerque is developing a greater community understanding and acceptance for future land stewardship projects.

"People need clean water and food to survive and these are provided by landscapes outside city borders. Surrounding areas are also critical in terms of recreation opportunities and aesthetic enjoyment. For this reason, many cities have become land stewards by developing initiatives to protect, enhance, and manage the environment beyond their borders so as to help maintain the sustainability of the environmental goods and services they need and use."

Albuquerque and the OSFP are but one example of how cities can formulate land stewardship projects that benefit residents and the larger environment. In New Brunswick, Moncton protects its water supply through forest management; in Australia, Townsville approaches land stewardship in the form of a Creek to Coral program that embraces watershed management; and in Namibia, Walvis

Bay protects the unique ecosystem of the adjacent Namib Desert with an Integrated Waste Management Plan. These and many other examples demonstrate how cities can be active stewards of their surrounding areas—often in partnership with other jurisdictions.

The message is the same for all cities: it is time to recognize nature and the fundamental dependency that exists between urban centres and the surrounding environment. If cities continue to ignore their reliance on the supply of environmental goods and services derived from adjacent landscapes (and their responsibility to protect it), not only will the environment continue to be strained, but the quality of life of city residents will be negatively affected. Local decision-makers should remember this the next time they take a shower.

Catherine Cone is a former Canada West Foundation Intern and a student in the University of Calgary's Faculty of Environmental Design. She is the author of *Conscious Cities: International Examples of Urban Land Stewardship*. The report can be downloaded from the Canada West Foundation website (www.cwf.ca).



Transferable Development Credits: **Tools for Smart Growth**

by Marian Weber and Chris Arnot

Local governments face difficult decisions regarding how much development to allow and where to allow it. Development creates jobs and housing and helps feed the local tax base, but municipalities are also concerned with the effects of growth on natural capital and quality of life.

Traditionally, local governments have relied on zoning to achieve land use objectives. However, restrictive zoning can face strong public opposition, particularly if it causes uncompensated losses to landowners for whom the development value of land represents a retirement fund or an inheritance. Transferable Development Credits (TDCs)—Transferable Development Rights (TDRs) in the US—are tools that support zoning by allowing private landowners in areas designated for conservation to sell development credits in areas targeted for intensive growth. Landowners receive the financial benefit of development for their conserved land while growth is accommodated in target areas.

Under TDC programs, municipalities establish baseline development limits such as subdivision development densities or building height restrictions through zoning. Zones targeted for preservation are designated as “sending” areas. Sending areas can be any properties containing features that are important to the community. Zones targeted for intensive development are designated as “receiving” areas and are often chosen because of their proximity to existing developments, commercial areas, or other urban services.

Landowners in sending areas can either develop their land up to zoning limits or conserve below allowable limits. Landowners who conserve below the baseline can create development credits through easements restricting allowable uses of their land. Development credits are sold to developers in receiving areas who wish to develop their land beyond the base zoning restrictions up to a maximum “bonus” or limit.

Unlike in conventional markets, supply and demand conditions for TDCs are determined administratively. The supply of credits is determined by the number of TDCs created for a given development restriction in the sending area and is usually based on existing zoning rules. The demand for credits is determined by the bonus which is the additional development allowed at a receiving site through the purchase of TDCs. Examples of bonuses include variances for height restrictions, frontage and landscaping requirements, and subdivision density limits.

Since TDC programs are completely voluntary, their success depends on ensuring that the price for credits is high enough to make it worthwhile for landowners in the sending areas to forgo development while at the same time ensuring that developers are willing to pay for development beyond the baseline zoning. Many programs in the US have failed because demand and supply conditions were not sufficient to support the market for development credits.

In practice, this means that administrators should consult with developers in order to determine what types of zoning variances are of value and what developers are willing to pay for a bonus. Public input is also necessary to ensure support for particular zoning features in the program. The public hearing process for municipal development plans is a good place for municipal governments to begin a conversation about TDCs with their constituents.

One of the strengths of TDC programs is their flexibility since sending and receiving areas can be selected by any criteria. For example, if the objective of the program is open space preservation, then sending areas can be designated in agricultural reserve zones. Alternatively if the objective is habitat corridor protection, undeveloped lands buffering habitat corridors can also be designated as sending areas. Similarly other environmentally sensitive features can be preserved or buffered through being designated as “sending areas.”

Development objectives may also be highlighted in receiving areas. For example, density bonuses can be designed so that builders of affordable rental or owner-occupied housing units receive an additional density bonus.

Municipalities face a number of challenges in selecting appropriate instruments for encouraging conservation. Impacts on municipal budgets are often barriers to using tools such as municipal tax credits. The effect of TDCs on property taxes is a concern since property taxes are an important fiscal instrument for municipalities. But while property values, and hence the tax base, may decrease in sending areas, these decreases are offset by increases in development values in receiving areas, so that the net effect on budgets tends to be neutral. Furthermore, research shows that property values may actually increase by up to 10% in sending areas due to proximity to open space and environmental amenities.

Another barrier to conservation programs—particularly in jurisdictions facing rapid growth pressures—is concern over affordable housing.

In this respect, TDC programs have an edge on other tools since in principle they are “development neutral.” That is, rather than changing the level of overall development, TDC programs are aimed at redistributing development spatially to achieve conservation objectives. In fact, research suggests that it is primarily policies such as low maximum density requirements that have negative impacts on affordable housing.

Finally, because of the potential for development to leap-frog into neighbouring jurisdictions, a multi-jurisdictional approach may be warranted, particularly if local governments are working together to achieve regional conservation objectives such as source water protection. However there are often challenges to regional co-ordination of TDC programs—including reconciling different development pressures facing primarily urban versus primarily rural counties, and ensuring an equitable redistribution of the tax base if changes in development patterns benefit some jurisdictions and hurt others.

The rapid pace of development in many municipalities is a growing challenge for municipal governments. TDCs provide economic incentives to support zoning and other planning tools used by municipalities to achieve land use objectives. Because TDC programs are designed to redistribute rather than curtail development, TDCs have certain advantages over other instruments. In particular, budget and development implications may be lower than for instruments such as municipal tax credits or development charges.

In addition, TDCs offer flexibility so that multiple land use objectives can potentially be addressed within a single program. As of 2003, there were 142 TDR programs in the United States, with objectives ranging from protection of open spaces and environmentally sensitive areas to preservation of historic sites. To date, there are no examples of TDC programs in Canada. However lessons from US experience provide guidance for Canadian municipalities considering these approaches.

Marian Weber is a Research Scientist with Alberta Research Council (www.arc.ab.ca) who investigates market-based instruments. **Chris Arnot** is a Research Associate with the Department of Rural Economy, University of Alberta (www.re.ualberta.ca). For more in-depth discussion of the issues raised in this article, see Dorfman, Jeffrey, et al. (2005). “The Feasibility of a Transferable Development Rights Program for Athens-Clarke County Georgia,” Alliance for Quality Growth, University of Georgia Land Use Clinic (www.law.uga.edu/landuseclinic/index.html) and Fulton, William, et al. (2004). “TDRs and Other Market-Based Land Mechanisms: How They Work and their Role in Shaping Metropolitan Growth.” Washington, DC: The Brookings Institution.

Enhancing Natural Capital Through Community Effort

by Stewart Chisholm

Land stewardship is a broad term that applies to a variety of landscapes, from farmers' fields to boreal forests to our own backyards. The concept is also becoming increasingly important in the places we don't often associate with the natural world—the built environment within our cities.

As the population of our cities and towns grows, greater pressures are placed on natural green spaces both within existing built-up areas and on the urban fringe. Underlying this challenge is the fact that the process of city building has had little regard for the ecological features and functions that support the natural world upon which we depend.

To make way for streets, buildings, and bridges, forests have been cleared, wetlands drained and waterways polluted or buried altogether. Compared to the rich habitats that once existed, the urban green spaces that remain are often fragmented with limited ecological value and biodiversity. As a result, it is not surprising that urban dwellers often feel a sense of disconnection from the natural world and have developed the perception that cities and nature are separate entities.

But every challenge presents opportunity.

Across Canada, an increasing number of volunteer-based community organizations are taking direct action to transform barren open spaces into dynamic, natural areas. This movement, referred to as *community stewardship*, is about people taking collective action to achieve the shared goal of improving the quality of life and liveability of their communities by literally getting their hands in the dirt. It is about caring for the land and building a sense of connection to it. It can include restoring degraded habitats by planting native trees and shrubs, tending a community garden, or removing debris from a river's edge.

Although these projects are usually driven by environmental goals, the benefits extend much further. Academic research and anecdotal evidence alike show that community stewardship strengthens community ties, empowers marginalized individuals, and can be a driving force behind renewed local economic development.

Enhancing natural capital is also fundamental to our health and well-being. Naturalized landscapes filter stormwater runoff, improve air quality, moderate air temperature, and reduce the need for



chemical pesticides. At the individual level, this work involves physical exercise with proven health benefits such as the reduced risk of heart disease. The presence of green space in the urban environment can also have a profound positive impact on people's mental health by reducing stress, lowering blood pressure and increasing their capacity to concentrate on tasks. Studies even show that hospital patients with a view of trees through their windows had faster recovery rates compared to those without¹

For the past 17 years, Evergreen, a Canadian charity with a mission to bring nature back to our cities, has supported the efforts of grassroots organizations and decision-makers across the country to create and sustain healthy, natural outdoor spaces in our cities and towns. As the community stewardship movement continues to gain momentum, the scope, complexity and diversity of projects—including the landscapes upon which they are occurring—are growing dramatically. Furthermore, groups undertaking this work are not just those with an environmental mandate. Increasingly, projects are being led by non-traditional groups including social service agencies, youth support groups, senior's centres, community health centres, service clubs and more. For example:

- in Calgary, a service agency that supports new Canadians is helping recent immigrants meet their neighbours and learn about the city's natural and cultural heritage through a community gardening program involving food and native plants;



- in Vancouver, a neglected urban park in a neighbourhood with a large First Nations population was transformed through a community project that involved designing an Aboriginal native plant circle garden and collaborating with a local artist to carve and raise a traditional totem pole; and

- in Winnipeg, a conservation organization is working with the municipality and other partners to connect the community to the local environment through stewardship activities focused on stabilizing river banks, enhancing shoreline vegetation, and celebrating the watershed.

Although the benefits of urban greening can be widespread, these projects do not occur on their own. In order for the benefits to be fully realized, community-driven projects require considerable upfront planning, leadership, and ongoing support. Although there is a growing legacy of successful initiatives, those engaged in this work still face significant challenges.

A survey of 25 municipalities across Canada undertaken by Evergreen found that, although nearly all offer some type of support to community stewardship groups on an *ad hoc* basis, few offer extensive, fully integrated coordination and support programs.² Examples of individual support that municipalities provide include: materials (such as plants and mulch); equipment; technical expertise; administrative support; and in some cases, direct grants.

As the following comments made by survey respondents illustrate, more comprehensive approaches are needed to better leverage the

¹For a summary of supporting research into the benefits of urban greening, see Evergreen's publication *Ground Work: Investigating the Need for Nature* in the City published online at: www.evergreen.ca/en/cg/resources/gw2000/index.html

²This study, entitled *Green Space Acquisition and Stewardship in Canada's Urban Municipalities: Results of a Nation-Wide Survey*, is available at www.evergreen.ca/en/cg/cg-parkland.pdf



efforts of community organizations and to make the most of the time, energy and expertise that they bring to the table:

“There are a number of stewardship groups active in our watershed but we do not have the resources to coordinate their activities and ensure that they are working in areas that are in most need of restoration.”

“The value of community volunteers is recognized, but often they are perceived as a burden because staff do not have the time to provide them with the support and guidance that they need.”

Creating a supportive environment that allows for community efforts to flourish yields significant payback. Local groups can be a tremendous source of knowledge about the community’s natural and cultural heritage. Community members are in the best position to assess the key priorities in their neighbourhoods, be they enhancing the

local environment, engaging youth, or creating a stronger sense of community identity and sense of place.

This investment also pays off financially. Many community organizations are very resourceful at raising dollars to support their work. A dollar invested by a municipality can potentially be leveraged several times by its community partners, making the most of limited public resources.

Developing a culture of stewardship should be viewed as an ongoing process that involves participatory decision-making, flexibility to apply lessons learned, and creativity to seize opportunities as they emerge. Because each project is a unique undertaking, there is no single formula for ensuring success. But when these principles are taken into account and adapted to meet the needs of the community, the ability of a project to significantly strengthen both our natural and social capital will be maximized.

Stewart Chisholm manages Evergreen’s Common Grounds program which supports community groups and land use professionals in their efforts to bring nature back to their cities. Visit www.evergreen.ca for more information.

Out of the Woods: Woodlot Owners, Stewardship, and the Search for a Better “contract” with Canadian Society

by Peter deMarsh

As we understand the notion of stewardship, it is about a web of relationships. These include, obviously, the relationship between people and the land they own, relations between the generations within the family, and to some extent, with neighbours. Less obvious is the relationship with the larger community and society. All of these relationships combine interests and obligations and are reflected, for better or worse, in the care with which the land, in our case, forestland, is used.

The concept of “sustainability” is widely applied these days in forestry circles to capture the broad objective to which stewardship should be directed. Stewardship is about the quality of practices on the ground, and also has a strong ethical dimension, rooted to a considerable extent in our religious traditions. There is a clear aspect of individual/family choice and motivation based on the “right” attitudes and values.

About 9% of Canada’s productive forests are owned by 450,000 families. The percentage is much higher, more than 50% in many areas, if we consider forests across the inhabited parts of Canada. A typical size of woodlot is a quarter section in the prairie provinces, and 100 acres in the east. Average ownership by family across the country is 120 acres. In many areas, woodlot owners have supplied an important share of raw material for the sawmill and pulp and paper industries as well as a range

of other products. As a large part of the landscape in the parts of Canada where most Canadians live, our woodlots provide much of the clean water, wildlife habitat, and roadside scenery enjoyed by Canadians.

As woodlot owners, we have our own traditions of good stewardship, often stretching back for several generations. Earlier generations managed their woodlots as a fully integrated part of their farms for a perpetual source of building materials, fuel, and to some extent, food (and didn’t need terms like “sustainability” to describe and understand what they were doing).



The incidence of bad forest practices has increased in many areas in the past 10-15 years. The main pressures accounting for this are the increasing value of timber, the ongoing mechanization of forest harvesting, the long-term trend of specialization in farming, and the increasing financial stress on rural economies. The sudden clearcutting of a large number of woodlots in response to a boom in the market for timber is an example of bad practice and one that catches the attention of the public. Entire woodlots are stripped

of trees in these liquidation cuts and no regard is given to the age of the trees that are cut (with important implications for future timber supplies), the impact on wildlife, and the health of water courses. Since these are the forests most often seen by Canadians, the

drastic change in the appearance of the countryside has provoked significant protests.

The response of municipalities and provincial government agencies to these developments has often been to impose land-use restrictions such as tree cutting bylaws and water course buffer regulations. We recognize that the public has a legitimate interest in the issues these measures seek to address, and we understand better than most the long-term impact of bad harvesting practices. This does not diminish the hostility with which most of us respond to imposed regulations. We view them as the antithesis of, and seriously damaging to, our traditions of stewardship.

Regulation removes, or at least attempts to remove, the element of choice. In practice, regulations are perceived to be designed by bureaucrats with little or no practical experience in producing timber and complete obliviousness to the financial implications of the increased operating costs that are imposed. Worst of all is the indifference of the regulators to good practices and to the efforts and struggles behind them.

Even the most liberal among us tend to develop a very red neck when we perceive that our stewardship efforts are taken for granted by folks who are ignorant of the work involved, and of the delicate balance we struggle to maintain from day-to-day between the financial viability of our small businesses and proper and respectful care for the land. These feelings have been exacerbated in recent years with our growing sense of injustice at the fact that the beneficiaries of regulations—the consumers of clean water, wildlife, and pleasing roadside scenery—contribute nothing to the cost of providing these services.

The best and most effective way for society to support stewardship, from our perspective, is through well-funded incentive programs and education services. These are, by and large, provincial responsibilities, and most provinces have some small assistance programs in place. However, even the provinces with the strongest

"Even the most liberal among us tend to develop a very red neck when we perceive that our stewardship efforts are taken for granted by folks who are ignorant of the work involved, and of the delicate balance we struggle to maintain from day-to-day between the financial viability of our small businesses and proper and respectful care for the land. These feelings have been exacerbated in recent years with our growing sense of injustice at the fact that the beneficiaries of regulations—the consumers of clean water, wildlife, and pleasing roadside scenery—contribute nothing to the cost of providing these services."

programs have a long way to go in providing a full and coherent set of programs.

We have also had some modest success through the efforts of our associations in reducing the disincentives present in the federal Income Tax Act (in 2001, the capital gains deferral available for farmers, when ownership is transferred to the next generation in the family, was extended to woodlot owners). Much work remains to be done in ensuring that disincentives and unfairness are removed from the tax system.

For example, a method is urgently needed to allow for the averaging over several years of income from large salvage harvests required by a natural disaster such as the mountain pine beetle in BC and Alberta.

Our top priority at the present time is to establish programs that correct the problem of the unpaid services enjoyed by many Canadians at the expense of woodlot owners. Payment for ecological goods and services, as this has come to be called, is the subject of exciting work by farmers across the country, in the form of the Alternate Land Use Services pilot projects. We hope to build on this growing interest and awareness by establishing an effective program for woodlot owners. Progress in this area would go a long way to establishing a new relationship between woodlot owners and Canadian society, one that reflects a better balance between the respective rights and obligations of woodlot owners and the larger community that are at the heart of stewardship of family-owned woodlots.

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Peter deMarsh is a woodlot owner in Taymouth, New Brunswick and has been President of the Canadian Federation of Woodlot Owners since 1989.



Lake Winnipeg Stewardship and Ecosystem Services: Update from Manitoba

by Henry David (Hank) Venema

In 1997, American scientist Robert Costanza and his colleagues published a remarkable study in the journal *Nature* ascribing very large dollar amounts to the value of goods and services provided to humans by the global environment and helped birth a new discipline called Ecological Economics. In a sense, Costanza and his colleagues merely formalized the obvious: the environment provides the basic elements of human well-being (drinkable water and breathable air) and the cost of engineering alternatives would be astronomical. The scientific community was nonetheless staggered by the enormity of the number: \$33 trillion of ecosystem services per year.

Faced with serious threats to the health of iconic Lake Winnipeg, Manitobans would do well to heed the insights of Professor Costanza. According to the Manitoba Department of Water Stewardship, fully two-thirds of the phosphorus generated within Manitoba comes from agricultural watersheds—about half of this is from human activities, and about half from natural sources. Through better management, these same watersheds can be a big part of the solution by providing cost effective ecosystem services like filtering and removing algae-causing nutrients.

At the same time that Costanza's study was being derided by many mainstream economists, New York City was demonstrating the point that properly managed ecosystem services provide enormous, but largely unrecognized, benefits. Watersheds in the Catskill Mountains had provided a pristine water supply to New York, but by the 1990s, this water supply had fallen below acceptable standards due to poorly managed agricultural and sewage runoff. The city could have spent \$6-8 billion building a filtration plant to replicate the water purification service it used to get free, but chose instead to spend about one-tenth of that amount restoring the natural capital in its surrounding watersheds. New York City again enjoys its pristine water supply, having raised an Environmental Bond for

\$660 million to fix sewer systems and to compensate landowners for ecosystem protection and environmentally sustainable agricultural practices.

A landmark 2005 UN study, the Millennium Ecosystem Assessment, also used the Ecological Economics framework, arguing that human well-being fundamentally depends on ecosystems that provide provisioning, regulating, and cultural services. These services, however, are in decline everywhere primarily because we don't account for the real value of ecosystems in economic decision-making.

The Millennium Assessment also identified dryland agro-ecosystems as "hotspots" for future ecosystem service degradation because of the combined effects of climate warming and nutrient over-enrichment. Unfortunately, the algae blooms on Lake Winnipeg indicate that we may have one of these global hotspots in our backyard.

Part of the Millennium Assessment's work involved speculating on different development pathways for the world and how these would affect the quantity and distribution of ecosystem services. The only development pathway they identified that increased provisioning, regulating, and cultural ecosystem services was a scenario where decentralized natural resources management organized along watershed boundaries became the central organizing principle for environmental management.

The Millennium Assessment recommended greatly expanding the use of economic instruments that mitigate or reverse serious ecosystem degradation such as:

- Payments to landowners in return for managing their lands in ways that protect ecosystem services, such as water quality and carbon storage, that are of value to society.

- Market mechanisms to reduce nutrient releases and carbon emissions in the most cost-effective way.
- Developing institutions and instruments for watershed-based payments for ecosystem services.

The Winnipeg-based International Institute for Sustainable Development (IISD) played a major role in shaping the ecosystem services framework applied by the Millennium Assessment, and through the work of its Sustainable Natural Resources Management Program, IISD is acting on its key recommendations. Specifically, IISD conducts policy research on how to use economic instruments and the logic of ecological goods and services to improve the health of Lake Winnipeg.

Manitoba is an incubator for innovations in ecological economics and IISD's work builds on many important initiatives currently taking place around the province. Ducks Unlimited Canada, headquartered at Oak Hammock Marsh just north of Winnipeg, has been a strong advocate of the natural capital approach, emphasizing the economic benefits of retaining wetlands on agricultural landscapes. Wetlands—our prairie potholes—are truly an enormous economic asset, providing waterfowl habitat, removing excess nutrients from water, sequestering carbon, and reducing the impacts of floods and droughts. Ducks Unlimited is very active in both the practice of wetlands conservation and wetlands research.

The Manitoba Habitat Heritage Corporation (MHHC) also works to conserve, restore and enhance natural habitat on Manitoba's agricultural landscapes. MHHC uses conservation agreements with private landowners, farm organizations, conservation groups, corporations and government agencies to protect valuable habitat. Although landowners retain title to the land, through the conservation agreement or conservation easement, MHHC buys an assurance that the habitat under the agreement will always be protected.

Another pioneering program for rewarding farmers as environmental stewards also has its roots in Manitoba. Farmers enrolled in the Alternative Land Use Services (ALUS) program currently being piloted in Manitoba's Rural Municipality of Blanshard are paid annually for protecting ecosystem services provided by grazing lands, riparian areas, and wetlands on their farmland. ALUS is very popular and the program is expanding to other provinces. Over 70% of eligible farmers participate in ALUS and other municipalities and conservation districts around the province have expressed interest.

The popularity of ALUS is quite understandable. With farm incomes so depressed, the prospect of being paid not to cultivate land which is usually marginal anyway is indeed attractive. Therein lies the rub: although farmers have embraced this new income opportunity,

governments who invariably must fund such programs are more cautious and need assurances that ecological goods and services programming provides good value to the taxpayer.

Demonstrating that soft infrastructure approaches like payments for ecosystem services are cost-effective and workable is a scientific and institutional challenge, but the New York example shows that the pay-off can be enormous.

The State of Government of Victoria, Australia is testing an ingenious solution to the always vexing question of how many public dollars should be spent buying ecosystem services. The EcoTender concept is an auction-based approach to buying ecosystem services, where a physical model of a watershed is used to rank competing bids from farmers to produce ecosystem services on their land. An auction-based approach like EcoTender assures governments that they're getting the best possible value for always scarce dollars.

The designers of the EcoTender program visited Manitoba in 2006 and 2007—generating much interest—and IISD is currently working with the province to investigate the potential for applying EcoTender in Manitoba. Although auctions like EcoTender assure governments that they're getting the best possible value for the available ecosystem services budget, they don't help answer the question of how big that budget should be. IISD is therefore also conducting research on the public benefit of best management practices in agricultural watersheds, which includes benefits like the avoided costs of water treatment and damage to infrastructure from flash floods. In collaboration with the University of Manitoba and Ducks Unlimited, IISD is also involved in very innovative research to quantify the potential for the huge Netley-Libau Marsh complex at the mouth of the Red River to simultaneously filter nutrients and produce bioenergy. The cost-effective restoration of this marsh could play an important role in reducing the phosphorus load on Lake Winnipeg.

Billions of taxpayer dollars will be spent expanding the Winnipeg Floodway and upgrading Winnipeg's sewage treatment plants. These hard infrastructure investments are appropriate and well-intentioned. However, rather than continue to burden future generations with the maintenance liability of more hard infrastructure we would be well-advised to recognize that well-managed ecosystems can provide many of the equivalent services very cost-effectively. The institutions for watershed-based ecosystem management are a public investment well worth our serious consideration.

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Stewardship Pays But Who Pays for Stewardship?

by Kelsey Spicer-Rowe

Stewardship, specifically environmental stewardship, is the act of caring for our natural resources—land, water, wildlife, and air—to sustain, conserve, protect, and restore the environment for our generation and the generations still to come. Environmental stewardship pays big dividends in the form of clean water, forage productivity, biodiversity, and water storage. But who pays for stewardship and how much do we owe?

Social or environmental change often begins with a change-maker, a group or individual willing to stick their neck out and be the harbinger of change. The Alberta nonprofit organization Cows and Fish is doing just that. For the past 15 years, Cows and Fish has been delivering change-making messages to Albertans on how to better manage their riparian areas and watersheds.

Floodplains, shorelines, and stream banks are collectively called riparian areas. The word riparian is derived from Latin *ripa*, meaning riverbank or shore. Riparian zones are the interface between land and water. You can think of them as wetter than dry and drier than wet. These areas, although small in size and abundance, as compared to uplands, are key producers of ecological goods and services. Clean water, abundant forage production, habitat for fish and wildlife, water storage and erosion control are all benefits to society from a healthy riparian area.

Stewardship of riparian areas commonly involves management considerations. Using agricultural examples, management options vary from extremely simple, such as moving a salt block away from the waters edge, to a complex rotational grazing system designed to optimize forage productivity and sustainability of use over time.

Results of a recent independent evaluation of the Cows and Fish program estimate that 6 out of every 10 agricultural producers working with Cows and Fish make a change to their management practices. Picture in your mind a relatively simple management change—an agricultural producer opts to install a solar-powered watering system, pumping water from the stream to an upland location. Ultimately, this will alter the distribution or pattern of grazing on the land, encouraging livestock to spend less time in the sensitive riparian zone. This particular management change is relatively inexpensive in terms of capital costs—but moving back to the original question of who pays for stewardship—can we determine

the costs to deliver stewardship messages to that producer which result in these types of management changes?

Recognizing that not all producers change practices due to the influence of some outside organization, but in this case, with this particular producer, let's agree this change in practice resulted from interactions with Cows and Fish. Perhaps this producer is a member of a community-based watershed group that has been working with Cows and Fish over the last few years. Our experience has shown that it takes between 3 to 5 years from initial contact for most people to make their first practice change. In those 3 to 5 years this producer may have participated in a long list of community watershed activities with Cows and Fish staff in the categories of awareness, team and tool building, community-based action and monitoring. Examples include presentations on riparian ecology and grazing management, riparian health field days to learn what a healthy riparian area looks like, plant identification workshops and tours of riparian management demonstration sites to learn what's working for other producers. Patience and persistence are key virtues when initiating stewardship on the landscape. Providing a diverse array of mechanisms to promote change, in that time span, to build awareness and encourage, reinforce, and motivate change is necessary.

Annually, Cows and Fish staff interact with approximately 5,000 individuals, of which roughly 1,200 are agricultural producers. For the 720 producers (60% of 1,200) making a management change, approximately \$300.00 is spent on each interaction with each individual to realize that practice change, based on the Cows and Fish annual budget averaged over 3 years. In total, if the producer who invested in a solar watering system, interacted with Cows and Fish 3 to 5 times over 4 years, the investment by Cows and Fish is between \$900.00 to \$1,500.00. It is impossible to measure the exact value of this particular practice change in terms of the impact on our natural resources and the ecological goods and services provided, but we do know that it is likely to have a positive impact. Research shows that healthier riparian areas support more abundant and diverse bird communities, better filter runoff and flood water (thus reducing water treatment costs), and store more water (this mitigating the impacts of flood and drought). All of these ecological provisions have value to society in both the short-term and long-term.

Who do we owe for abundant, clean water, maintenance of biodiversity and flood protection? First and foremost, we owe the farmers, ranchers and other land managers who invest time, effort, and money to care for the land, water and air which we all utilize on a daily basis. Second, we owe conservation organizations, such as Cows and Fish, and their supporters, funding associates and members who invest annually in stewardship. How much we owe depends on the value society places on those particular ecological goods and services.

Should organizations like Cows and Fish continue to invest in stewardship? Is environmental stewardship a good deal? Are

Albertans getting bang for their buck when it comes to stewardship? The way I see it, long-term funding of stewardship programs will be matched by long-term investment in stewardship by landowners with the future generation in mind. The health of our natural resources—grasslands, forests, water, riparian areas, fish and wildlife—depend on it.

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Kelsey Spicer-Rawe is a Riparian Specialist with the Alberta non-profit society Cows and Fish (www.cowsandfish.org). Cows and Fish works with communities and agricultural producers to promote riparian awareness.

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Helping Wetlands Compete with Wheat: Ecological Goods and Services in Agriculture

by Ian Campbell

If the price of wheat was zero, farmers wouldn't allocate much land to wheat. Yet farmers face a similar choice when considering practices that provide biodiversity, carbon sequestration, and other ecological goods and services (EGS).

Ecological goods and services can be defined as the benefits that human populations derive, directly or indirectly, from healthy functioning ecosystems. Healthy agro-ecosystems provide numerous EGS, such as flood control, carbon sequestration, and wildlife habitat. EGS policies focus on providing public benefits that are not covered by existing markets or regulations.

While there are few incentives for farmers to supply EGS, headaches abound when it comes to choosing policies and programs to fill these gaps. This article describes how federal and provincial ministries of agriculture are looking for ways of connecting farmer decisions with society's demand (and need) for environmental quality.

There are good reasons to consider policies on EGS. The agricultural sector has a huge land base that affects all Canadians through the quality of soil, water, air, and biodiversity. While markets provide incentives for agricultural goods, they rarely provide incentives for public goods or disincentives for environmental damage. This sometimes leads to overuse of resources and an under-supply of ecological services.

For example, producers may drain wetlands for crops in spite of the significant benefits to society such as maintaining waterfowl habitat, sequestering carbon, or purifying water.

However, there are also reasons to be careful about EGS policies:

- Risk of overpayment: Without the discipline of a competitive market, governments and the public want to be sure that they are getting measurable results in return for new public expenditures.
- Information gaps: On the scientific side, it is often very difficult to measure the environmental impacts of implementing particular

farm practices. On the economic side, we often do not know how to value these services to society. How much is the public willing to pay for 100 hectares of wildlife habitat or a reduction in flood risk?

- Perverse side-effects: For example, annual payments to set aside a piece of farmland quickly get capitalized into the property value, raising start-up costs for new farmers and creating expectations for future government payments. A program that pays for restored wetlands could incite a landowner to drain a wetland in order to be eligible.
- Maintenance or incremental benefits: Should a producer who restores a wetland be rewarded, while one who did not drain one is not? But should landowners be paid to keep doing what they are already doing, with no new net benefit to the public?



- Polluter pay principle: In agriculture, it is often hard to draw the line between minimal environmental stewardship and positive benefits for the public. For example, should farmers be entirely responsible for their contribution to phosphorous in watercourses, or should the public support beneficial nutrient management activities?

- Equity: Many EGS, such as wildlife habitat, can be provided by non-farm landowners as well as farms, implying that non-farm landowners should also be eligible for any new incentives that are put in place. Furthermore, other sectors are often subject to the polluter pays principle and often receive less income support than agriculture.

- Multiple benefits: Many beneficial agricultural practices provide a bundle of benefits, such as a buffer strip along a waterway that increases wildlife habitat, sequesters carbon, purifies water, and reduces erosion. Integrating a variety of beneficiaries into one policy tool complicates administration and accountability.

These complications create a messy stew for policy-makers. On one hand, many producers would like to receive regular compensation for

actions on their land that provide environmental services. On the other hand, many governments are leery of EGS programs due to their potential cost, uncertain benefits, and other potential headaches.

Canada already has some programming that supports the provision of EGS from agriculture. For example, Environmental Farm Plans (EFPs), the National Farm Stewardship Program, and Greencover Canada all increase the environmental benefits flowing to society.

Recognizing the increasing importance of EGS to the public, federal, provincial and territorial ministers created a federal-provincial working group to analyze EGS policy—without committing to a particular option. This initiative spawned a National Symposium on EGS in Winnipeg in 2006, eight pilot projects on innovative EGS approaches worth over \$4.5 million, a cost-benefit analysis of EGS options due in 2008, and other policy research.

This initiative and the efforts of other policy organizations in Canada, such as the Canada West Foundation, have brought attention to new approaches that could link environmental demand with farm-level decisions. In addition to traditional acreage-based subsidy programs, policy-makers are analyzing options such as:

- greenhouse gas (GHG) offset trading, where producers who sequester or reduce emissions of GHG certify and sell credits to emitters in other sectors;
- reverse auctions, where public agencies would seek bids for environmental services from farmers on a competitive basis;
- water quality trading, where beneficiaries of nutrient reductions support adoption of improved nutrient management by landowners; and
- best management practice insurance, where producers receive compensation when their net income decreases due to adoption of environmental practices.

During the next few months, federal and provincial departments of agriculture will be elaborating on *Growing Forward*, the new framework that will guide agricultural policy for the next five years. This initiative could include incentives that encourage the sector to take environmental action beyond what is required by regulation. Policy tools inspired by EGS are one way to bring farm-level decisions that affect the environment into line with ongoing decisions about market commodities.

For more information on *Growing Forward*, consult www.agr.gc.ca/pol/grow-croiss/index_e.php. For information on agricultural EGS, consult www.agr.gc.ca/pol/egs-bse/index_e.php.

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Ian Campbell is Manager, Long-Term Strategic Policy, Agri-Environmental Policy Bureau, Agriculture and Agri-Food Canada (www.agr.gc.ca).

Land Steward

The notion of land stewardship has a very seductive appeal to our ethical nature. It captures our interest in sustainability and implies that we are not only using the land, but are also engaged in its preservation for generations to come.

More broadly, the idea of stewardship is one that we can readily apply to many parts of our lives. It expresses a moral standing, almost a religious or spiritual conviction, that is deeply attractive. “Roger, Steward” has a much nicer ring to it than does “Roger, Consumer.”

The fact is, however, that most of us are hardcore urbanites who are so far removed from the land that we will never be stewards in any active sense. We may tend our own small patch of suburban lawn, or an even smaller spice garden on our condo balcony, but the things we can do day-to-day have little impact on the broader Canadian land base. If the future of land stewardship rests in the hands of Canada’s overwhelmingly urban population, that future may be bleak.

While we may try to use our consumer power to encourage what we believe to be best stewardship practices, the reality is that it is very difficult to establish linkages between what we buy in Safeway and specific producers or methods of production.

It is for this reason that the policy ideas captured in this edition of *Dialogues* are so important. Of necessity, public policy becomes our substitute or proxy for individual action. If we cannot be stewards ourselves, we can direct others down this path through public policy tools that encourage, require or enable effective land stewardship practices.

Stewardship and Land Stewards



Dr. Roger Gibbins
President and CEO
Canada West
Foundation

However, encouraging land stewardship makes little sense unless we also recognize the need for stewards: those individuals, corporations or communities that bring stewardship to life. The leverage of public policy comes from having levers to pull.

Effective land stewardship ultimately relies on those who work the land, and work with the land, on a full-time basis. If we want to encourage stewardship behaviour, we have to ensure that we have stewards on the land. And, if we want to find land stewards, then by necessity we must first look towards the agricultural community.

In so doing, we have to be careful not to mythologize that community; we have to be careful not to assume either good stewardship practices or a deeply engrained stewardship ethic. Many agricultural producers may in fact be poor or neglectful stewards, while others may have an interest in the land that is almost exclusively financial. Moreover, some of the economies of scale inherent in corporate farming may run against the grain of optimal stewardship practices.

The larger concern stems from the economic viability of the agricultural community in the face of robust global competition and climatic uncertainty, with the latter highlighted by growing worry about drought in many parts of Canada's prairie breadbasket. Too often, farming is a marginal economic activity in Canada, and the pressures on producers to sell up and get out can be immense. Even if we have good stewards, keeping them on the land cannot be assured. If we can't keep stewards on the land, if the financial returns from agricultural production becomes evermore precarious, then stewardship incentives will fail.

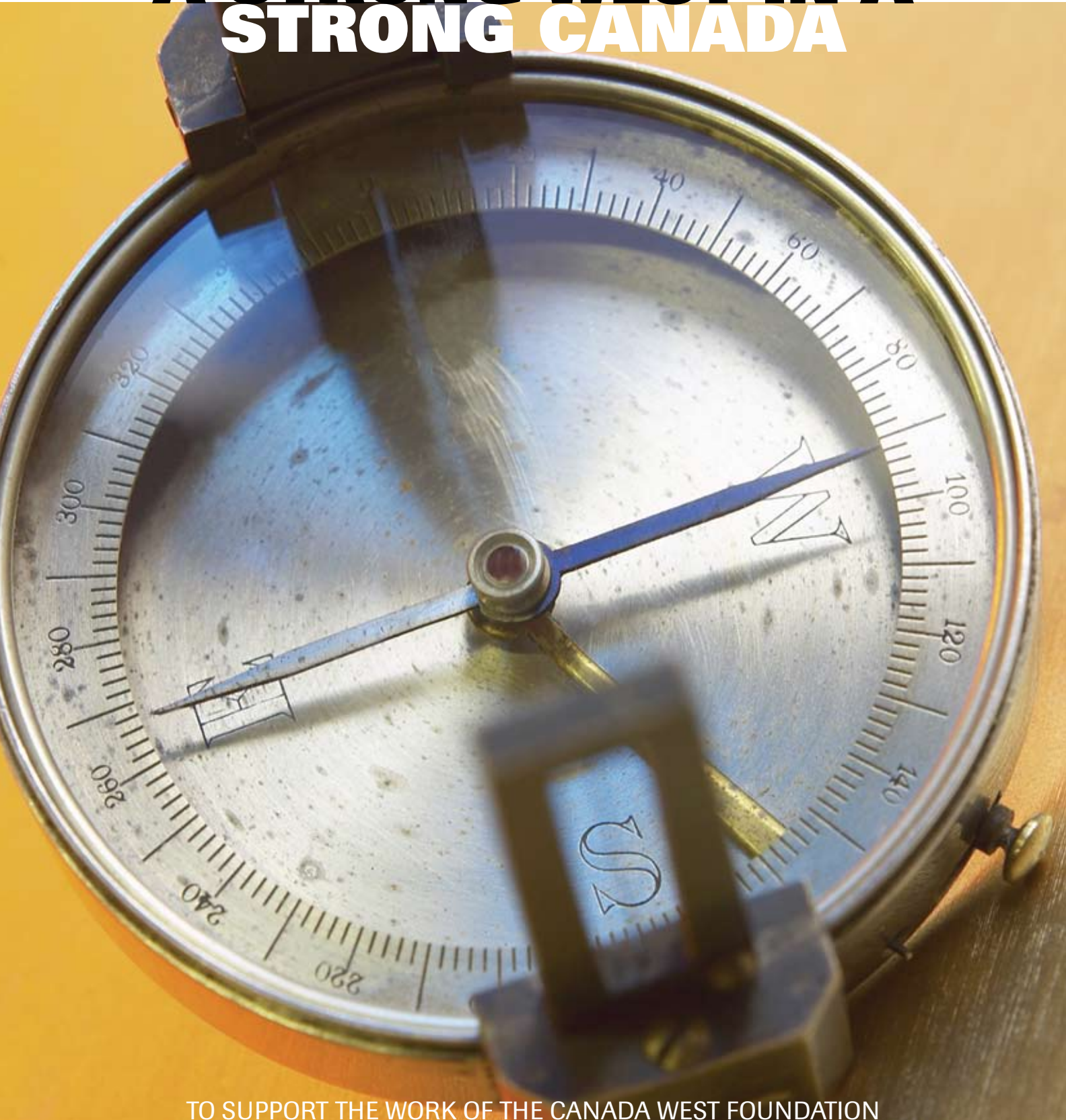
In the long-term, and perhaps even in the short-term, we may have to do

more to keep stewards on the land. We may have to do more, and perhaps much more, to reward those producers for the ecological goods and services they produce, and more generally for the stewardship they provide.

It is here that the proverbial rubber hits the road for wanna-be suburban and inner city land stewards. Are we prepared to pay, through our tax dollars or higher consumer costs, to help keep stewards on the land? If we are not prepared to pay, if the land stewards are driven off the land, it really won't matter how well we tend to our suburban lawns and condo spice gardens. The larger stewardship battle will be lost.



A STRONG WEST IN A STRONG CANADA



TO SUPPORT THE WORK OF THE CANADA WEST FOUNDATION
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