

**FRASER RIVER
ACTION PLAN**



**Economic
Incentives
to
Protect
Wetlands:
Selected Issues**



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**ECONOMIC INCENTIVES TO
PROTECT WETLANDS:
SELECTED ISSUES**

A DISCUSSION PAPER
by
Calvin Sandborn

**Submitted to
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1 INTRODUCTION

*“What could not be weighed, measured and priced
had no existence.”*

-- Charles Dickens, *Little Dorrit*

Wetlands are highly valuable to both the natural world and to society. According to the World Conservation Strategy, wetlands are one of the three most important life support systems on Earth, along with agricultural lands and forests.¹ Yet wetlands have been converted to other uses at an astonishing rate. Approximately 50% of all the wetlands on earth have already been lost². In Canada we have lost two thirds or more of the original wetlands in southern Ontario³, the agricultural areas of the Canadian prairies⁴, and the Maritimes coastal saltmarshes⁵ -- and a similar proportion has been lost in the Victoria region⁶, the Fraser River Delta⁷, and the south Okanagan⁸.

¹ The World Conservation Strategy has identified wetlands as one of the three most important life support systems on the planet, along with agricultural lands and forests. *Draft Federal Policy on Wetland Conservation and Highlights of Draft Implementation Plan, Discussion Paper*, (Ottawa, 1989) p. 2.

² Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), p. 45.

³ Clayton Rubec, "The Federal Policy on Wetland Conservation in Canada", in T.J. Davis (ed.), *Towards the Wise Use of Wetlands*, Ramsar Convention Bureau (Gland, Switzerland, 1993) p. 36.

⁴ Clayton Rubec, "The Federal Policy on Wetland Conservation in Canada", in T.J. Davis (ed.), *Towards the Wise Use of Wetlands*, Ramsar Convention Bureau (Gland, Switzerland, 1993) p. 36.

⁵ Clayton Rubec, "The Federal Policy on Wetland Conservation in Canada", in T.J. Davis (ed.), *Towards the Wise Use of Wetlands*, Ramsar Convention Bureau (Gland, Switzerland, 1993) p. 36.

⁶ *Wetlands in Canada: A Valuable Resource*, Lands Directorate, Environment Canada

Why have we squandered this valuable resource? Part of the answer is that market forces have encouraged wetland destruction. The marketplace fails to compensate people that preserve wetlands, while financially rewarding those that destroy them.

The problem is that modern markets fail to recognize and take into account the full value of wetlands. For example, wetlands produce fish and birds, but the landowner generally makes not a dime from such production. Wetlands purify water, control flooding, and ease drought, but the beneficiaries are often far downstream. The fact is that the vast majority of economic benefits produced by a natural wetland are enjoyed by people downstream and society at large -- and not by the wetland owner. It has been estimated that the typical wetland owner may recover less than 1/6 of the economic benefit produced by the owner's wetland.⁹ Simply put, the market fails to pay the wetland owner for what the owner's land produces.

Conversely, when a wetland is destroyed, society and the environment incur enormous costs in lost water quality and flood control downstream, fish and bird productivity, and so forth. Yet the marketplace has failed to charge landowners for the social and environmental costs of destroying a wetland. Often, the owner is able to appropriate and destroy the downstream social benefits of the wetland without paying a cent.

By failing to pay a wetland owner for what the wetland produces, and simultaneously failing to charge the owner for the true cost of destroying a wetland, the market makes it attractive to turn wetlands into subdivisions and cropland. The subdivision or farm may have a far lower value to society than the original wetland -- but the true comparative values have not been reflected in the marketplace. It is a classic case of "market failure".

This paper examines how we can better reflect the full economic, social and

Fact Sheet 86-4, pp. 1 and 7.

⁷ State of Environment Reporting, *State of the Environment for the Lower Fraser River Basin*, Environment Canada (Ottawa, 1992) p. 66.

⁸ Mike Sarrell, *Survey of Relatively Natural Wetlands in the South Okanagan*, BC Ministry of Environment, Lands and Parks, (Penticton, 1990).

⁹ See Michael J. Bardecki, "What Value Wetlands?", *Journal of Soil and Water Conservation* (May-June, 1984) pp. 166-9. Bardecki cites a number of studies showing that a landowner can only internalize as a private benefit less than one-sixth of the total economic benefits produced by the owner's wetland.

environmental values of wetlands -- and create economic incentives that encourage landowners to maintain wetlands.

1.1 WHAT IS THE VALUE OF WETLANDS?

Because they are saturated with water, a substance essential to all living things, and because they form a transition zone between land and water, wetlands are among the most biologically diverse and productive places on earth. A majority of BC's commercial fish depend directly or indirectly upon wetlands during at least one stage in their lives.¹⁰ Wetlands are critically important to both British Columbia and international bird populations.¹¹ Most wildlife -- and most species at risk -- use wetlands at some point in their life cycle.¹²

¹⁰ Personal communication with Otto Langer, Department of Fisheries and Oceans, March 26, 1990. US studies have indicated that approximately two-thirds of American fish and shellfish commercially harvested are dependent on wetlands. See Gordon Meeks Jr. and Cheryl Runyon, *Wetlands Protection and the States*, National Conference of State Legislatures (Denver, 1990) p. 7.

¹¹ The wetlands of the Fraser River Delta help support the highest winter-time densities of waterbirds, shorebirds, and raptors in all of Canada. The Delta is the most important migratory bird habitat on the Pacific Coast between Alaska and California, supporting the entire world's population of Western Sandpipers, 10% of the world's population of Trumpeter Swans, and Russia's last remaining Snow Goose population. [See Robert Butler and Wayne Campbell, *The Birds of the Fraser River Delta: Populations, Ecology and International Significance*, Canadian Wildlife Service, Environment Canada, Occasional Paper No. 65 (no location, 1987) pp. 6 and 62, and Sean Boyd, "The Value of Fraser Basin Wetlands to Birds", paper presented to the Wetlands Valuation Workshop, Simon Fraser University, Vancouver, April 10-11, 1995.] During the peak of migration, up to 1.4 million birds use the Delta -- exceeding the *Ramsar Convention (International Convention on Wetlands of International Importance Especially as Waterfowl Habitat)* minimum criteria for "internationally important wetlands" by some 30- to 60-fold. Other coastal wetlands and interior wetlands also create important bird habitat. For example, the Columbia River Wetlands support Western Canada's second largest concentration of great blue herons.

¹² Wildlife use wetlands for breeding purposes, foraging, thermal and escape cover, and for water. In British Columbia most of our endangered and threatened wildlife species depend upon wetlands -- Bill Harper, endangered species specialist, MELP. Of the 95 species of fish, birds, animals or plants presently classified as Threatened or Endangered in Canada, 40 to 45 species use wetlands as critical habitat. See W.K. Bond et. al., *Wetland Evaluation Guide*, Issues Paper, No. 1992-1, Wildlife Habitat Canada (Ottawa, 1992) p. 17.

Wetlands are Mother Nature's kidneys -- they filter pollutants and sediments out of the waters of our lakes, rivers and streams.¹³ They act as water purifiers for entire watersheds, filtering sediments and pollutants out of the water that goes into our streams and lakes. Wetlands trap nutrients and sediment in runoff, protecting downstream watercourses from algal blooms and fish-threatening sedimentation. They also can retain heavy metals and detoxify chemicals and pathogens. Wetlands are such effective water purifiers that they are now used in the tertiary treatment of industrial and municipal waste water.¹⁴

Wetlands control flood damage and prevent soil erosion. Wetlands along watercourses and water bodies absorb and hold floodwaters, protecting banks and adjacent lands from serious damage.¹⁵ They also ease droughts. During wet seasons wetlands act like giant

¹³ Riparian wetlands are particularly important for protecting watercourses from non-point source pollution, such as leachate from septic systems and stormwater runoff from agricultural fields, lawns, roads and parking lots. Nitrogen from these sources is metabolized by wetland vegetation, before it can cause algal blooms in adjacent streams and lakes. Other pollutants are either recycled or filtered before they can contaminate neighbouring water bodies.

¹⁴ *Protecting America's Wetlands: An Action Agenda -- The Final Report of the National Wetlands Policy Forum*, The Conservation Foundation, (Washington, DC, 1988) p. 10. It has been estimated that one hectare of tidal wetland can do the job of \$123,000 worth of state-of-the-art wastewater treatment. See Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), Introduction page.

¹⁵ It was estimated in 1981 in the United Kingdom that sea walls constructed behind salt marshes would be over 20 times cheaper to build than walls unprotected by salt marshes -- Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), p. 23. When wetlands are converted to other uses, flood damage can increase dramatically. For example, the draining and dyking of wetlands near Abbotsford has led to serious flood problems along the Nooksack River, and to millions of dollars being invested in remedial projects. In the 1970s approximately \$40 million was invested in flood control measures, yet damaging floods continue to occur. (Neil Hamilton, B.C. Ministry of Environment, Lands and Parks, personal communication.) The recent destructive floods along the Mississippi River have been attributed to the loss of the River's wetlands, which once had the capacity to store floodwaters equivalent to 60 days of river discharge. [Gordon Meeks Jr. and Cheryl Runyon, *Wetlands Protection and the States*, National Conference of State Legislatures (Denver, 1990) p. 7.] In contrast, Johnson County, Kansas, saved \$120 million on stormwater controls by setting aside \$600,000 worth of riparian greenways and wetlands; and the preservation of wetlands

sponges, soaking up excess rain, snow and surface waters -- then in drier seasons, wetlands provide wildlife with drinking holes, and slowly release their stored waters into aquifers and streams. Many community water supplies rely upon wetlands for water recharge.

Globally, wetlands are a critical part of the lungs of the Earth, taking in carbon dioxide and releasing oxygen. By absorbing carbon, wetlands form "carbon sinks" that are important in the control of global warming trends.¹⁶ Large wetlands can also influence micro-climates by stimulating local precipitation.

Wetlands also offer unsurpassed educational, scientific and recreational opportunities. Because of their abundant wildlife, wetlands have traditionally been heavily used for fishing, hunting, and trapping. Increasingly, wetlands are being used for non-consumptive recreation, such as bird watching, photography, canoeing and hiking. Wetlands near communities provide students with outdoor classrooms that teem with biological activity.¹⁷ The complex ecosystems found in wetlands provide scientists with the opportunity for research that will increase our understanding of hydrology and complex ecological processes.

In dollar terms alone, Environment Canada has estimated that the economic value of the

along the Charles River in Massachusetts has saved an estimated US\$17 million per year in flood damage. [See Trust for Public Lands, *Healing America's Cities* (San Francisco, 1994) pp. 14-15 and Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), p. 23]. Note that loss of wetlands in DuPage County, Illinois contributed to a catastrophic flood that caused \$120 million in damages and to the need for \$100 million in new flood control devices. See World Wildlife Fund, *Statewide Wetland Strategies: A Guide to Protecting and Managing the Resource*, Island Press (Washington, D.C., 1992) p. 5. Ironically, a number of communities are now involved in expensive efforts to imitate natural wetlands, trying to control streamflows affected by urbanization.

If global climate change leads to more violent storms, wetter winters, and more drought periods, the moderating functions of wetlands will become even more important.

¹⁶ It has been estimated that if the world's peatlands were all drained, that the amount of carbon dioxide in the atmospheric greenhouse would almost triple. This is discussed in Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), Introduction page.

¹⁷ For example, the Reifel Bird Sanctuary in Delta, Swan Lake Sanctuary in Saanich, and the wetland reserve in downtown 100 Mile House.

functions performed by Canada's wetlands is almost \$10 billion annually -- including \$2.7 billion for floodwater control, \$1.35 billion for water purification, and over \$4 billion for recreation, fishing and hunting.¹⁸ A recent study by a team of prominent scientists for the journal *Nature* estimated the economic value of the world's wetland functions at almost \$5 trillion (US) annually.¹⁹ A number of different cost-benefit studies in the US have valued the functions of wetlands studied in the range of \$100,000 per acre and more.²⁰

1.2 ADDRESSING THE MARKET'S FAILURE TO PROPERLY VALUE WETLANDS

The tragedy of wetlands is that so little of the benefit described above accrues to the person who maintains the wetland -- the landowner. Too often the costs of maintaining wetlands have fallen on owners, with little financial recognition of the benefits they were producing for the community. Conversely, the private profit that an owner can gain by converting a wetland has seldom been tempered by a requirement that the landowner pay for the environmental and social costs of the conversion.

It is not surprising, then, that when a landowner has a chance to make a buck by draining a wetland and plowing it, or by filling a wetland and building a subdivision, that the owner will often do so. The total benefit to society may decrease, as valuable wetland is transformed into marginal farmland or boggy subdivision. But the ledger sheet for the owner can be a far different story. After years of receiving little or nothing for maintaining the wetland, the owner can often personally profit by destroying it.

What can we do to change this situation? This paper proposes a number of options for

¹⁸ This includes \$3 billion for non-consumptive recreational uses, 1.2 billion for recreational consumptive sport fishing, and \$234 million for recreational hunting. National Wetlands Working Group, Canada Committee on Ecological Land Classification, *Wetlands of Canada*, Environment Canada (Ottawa, 1988), p. 406.

¹⁹ Robert Costanza et. Al., "The Value of the World's Ecosystem Services and Natural Capital", *Nature*, May 15, 1997, p. 256.

²⁰ Stephen Miller, "The Economic Benefits of Open Space", Isleboro Islands Trust (Maine, 1992) p. 3.

providing economic incentives to landowners who protect wetlands -- and disincentives to those that would destroy them.

The proposals are based on the broadly accepted principle that when marketplace decisions are made, they should reflect environmental costs and benefits. This principle of "full cost accounting" has been endorsed by the United Nations *Rio Accord*, the BC Round table on the Environment and the Economy, and British Columbia's *Land Use Charter*.

Full cost accounting requires government to act when market activities fail to reflect the full cost of an activity such as destroying a wetland -- to ensure that the cost of losing habitat, songbirds, fish, waterfowl, scenic views, and pollution and flood control are taken into account. Through tax adjustments and other means (*e.g.*, wetland replacement requirements), government can ensure that private costs approximate the real full costs -- thereby giving individuals economic signals to minimize such environmental costs. Taxing environmentally harmful activity raises its price, reducing market demand and making alternative, less harmful forms of development more competitive. It raises the price of developing underpriced wetlands to the point where development of alternative, less sensitive lands becomes more economic.

On the other hand, when market activities don't fully recognize the environmental and social benefits of an activity like preserving a wetland, then targeted government subsidies can give economic signals to individuals to continue with this activity that benefits society as a whole. Alternatively, government can financially reward good wetland stewards by changing legislation -- for example, by providing density bonuses elsewhere for developers that protect wetlands; or by changing laws to make it easier for farmers to run "nature retreat bed and breakfasts". Or government can provide information and technical assistance to help owners optimize the economic return from keeping wetlands natural -- for example, by helping them farm in a way that pays off for both birds and the bottom line.

In sum, through taxation, replacement requirements, subsidies, law reform, technical assistance, education and other measures, government can help to remedy market failure -- and can help ensure that the full value of wetlands is taken into account when economic decisions are made.

It should be noted that economic incentives are not the whole answer to the wetlands problem. Clearly economic incentives need to be implemented as part of a broader wetland policy. British Columbia needs to follow the lead of the federal government and seven provinces, and proceed with the development of a provincial wetland policy²¹ that is multi-faceted and comprehensive. Improving provincial, municipal and federal regulation of wetland disturbance is clearly necessary.²² The ability of government to acquire key wetlands needs to be enhanced²³, as does the ability of community land trusts to protect lands.²⁴ Educating landowners and the public about the value of wetlands can play an important role in protecting wetlands.²⁵ Providing technical assistance to help landowners

²¹ In 1991 the federal government adopted the *Federal Policy on Wetland Conservation*, which among other things, commits the federal government to encourage provincial governments to develop their own wetland policies. Current proposals that are being considered by the British Columbia make BC the eighth Canadian province to initiate the development of a provincial wetland policy.

²² See Calvin Sandborn, *Towards a Provincial Wetland Policy*, BC Ministry of Environment and Canadian Wildlife Service, (Victoria, March, 1966).

²³ Possibly through: the dedication of net revenues of the Crown Land Account to the purchase of conservation lands; a voluntary income tax checkoff system where taxpayers can donate returns to land purchases; the sale of environmental licence plates; dedicating revenue from abandoned beverage container deposits; the sale of conservation bonds; an environmental lottery; or through any of a number of other funding options. See Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities*, Commission on Resources and Environment (Victoria, March, 1996) chapter 6 for discussion of these and other funding alternatives.

²⁴ For example, through government providing support services for fledgling land trusts, providing "challenge grants" to match privately raised funds, providing a high profile information campaign to urge people to donate and bequeath to land trusts. See Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities*, Commission on Resources and Environment (Victoria, March, 1996) chapter 1.

²⁵ In some cases education alone can change a landowner's stewardship practices. One study found that education and moral persuasion can be more influential than existing underbudgeted monetary incentives in changing landowner behaviour. Often, imperfect information and ignorance can lead owners to adopt wildlife-destructive practices that could have been avoided at little cost. In an interesting educational approach, the North American Waterfowl Management Plan distributes economic worksheets that help farmers systematically calculate the cost-revenue impacts on their own operations if they converted their wetlands. [Richard Gray and Kim Rollins, "Economic Instruments to Preserve and Enhance Wildlife Habitat in Canada's Agricultural Landscape", in *Exploring Alternatives: Exploring Application of Economic Instruments to Address Selected Environmental Problem in Canadian Agriculture* (Agriculture and Agri-Food Canada, April, 1996) p. 191.]

properly manage their wetlands is vital.²⁶

However, the fact remains that pursuit of the dollar drives human behaviour to an extraordinary degree. Marketplace decisions made by developers, farmers and other landowners may shape the landscape far more than all of government's attempts to plan, regulate, educate and assist. Therefore, it is vital that we carefully consider how economic incentives and disincentives can be used to protect wetlands.

²⁶ For example, by demonstrating ways of watering cattle that keep the cattle from entering and degrading wetlands, or by showing how to plant winter cover crops that both support wetland birds and simultaneously protect soil integrity for the farm's summer crops. Fortuitously, such technical assistance can often enhance the landowner's agricultural operation as well as wetland values. Technical assistance programs have been highly successful in Delta, Comox, White Lake, and elsewhere in BC.

2 INCREASING THE COST OF WETLAND DESTRUCTION

“The trouble...is that they are accustomed to dealing with cheap labor, the mighty hand of God.”

--Victor Yannacone Jr.

There are a number of actions that could be taken to ensure that those who destroy wetlands pay a price that better reflects the environmental and social cost of such actions. The following measures would do so, and thereby create financial disincentives to the destruction of wetlands.

2.1 IMPLEMENTING A “NO NET LOSS” POLICY: REQUIRING DEVELOPERS TO COMPENSATE FOR THE LOSS OF WETLANDS FUNCTIONS

Instituting a provincial policy of “no net loss of wetlands” could be one of the most effective financial disincentives for discouraging wetland destruction. Such a policy would require a developer to compensate for wetland damage by providing equivalent wetland enhancement, creation or protection elsewhere. The cost of providing compensatory wetlands can often be considerable, and could be one of the most significant economic incentives possible. In addition, such a policy is attractive because it provides not only a financial deterrent, but tangible restoration of the environment.

There is ample precedent for requiring compensation to achieve "no net loss". The federal government has enforced such a policy under the *Fisheries Act* since 1986 -- and this policy has been cited as the turning point in the effort to arrest the rapid loss of saltwater

wetlands in Greater Vancouver and elsewhere.²⁷ Similarly, some US states, such as Pennsylvania, issue permits for wetland conversion on the condition that the wetland loss must be balanced by the construction of a replacement wetland or other means.²⁸

The federal government has spent several years refining the specific criteria and rules for wetland compensation under the *Fisheries Act*. This federal experience should assist the province in moving quickly to implement a requirement for compensation for the loss of wetland functions.

RECOMMENDATIONS

The provincial government should institute a policy of no net loss of wetlands function within each watershed.

The province should immediately afterward implement specific criteria and rules for wetland compensation²⁹ under the new wetland policy.

2.2 INCREASING STATUTORY PENALTIES AND CIVIL LIABILITY

Landowner liability for wetland destruction could be increased by increasing fines under the *Fisheries Act* and fines for illegal draining and filling under the provincial *Water Act*. Fines for pollution under the provincial *Waste Management Act* could also be increased, increasing financial incentives to not pollute wetlands and other areas. Fines under municipal and other legislation should also be reviewed.

In addition, civil liability for those who damage wetlands could be enlarged. For example, the rules of who has “standing” to sue for damage to public property could be changed to enable private citizens to sue for damage done to publicly owned wetlands.³⁰ A new civil

²⁷ Personal communication with a number of Department of Fisheries and Oceans staff.

²⁸ Jon Kusler, *State Wetland Regulation: Status of Programs and Emerging Trends*, The Association of State Wetland Managers (Berne, N.Y., 1992), p. 18.

²⁹ And, of course, mitigation of damage.

³⁰ See Murray Rankin, "Public Interest Standing -- Public Nuisance", in Calvin Sandborn, *Law Reform for Sustainable Development in British Columbia*, Canadian Bar Association (BC Branch) (Vancouver, 1990) p.173 and following.

remedy could be created which would allow an award of damages payable to compensate the public for harm done to the environment *per se*, above and beyond any compensation payable for damage incurred by individuals or corporations.³¹ The rule of strict liability could replace the more lenient rules of negligence for certain types of activities (eg, chemical spills) that may harm wetlands.³² Finally, in environmental cases the rules of proof for those suing for environmental damage could be relaxed, to take into account the difficulty of proving probability of harm in pollution cases, and the fact that present rules can undercompensate for environmental harm.³³

RECOMMENDATIONS

Consideration should be given to increasing penalty provisions under the Fisheries Act, the Water Act, the Waste Management Act, municipal legislation and other legislation used to protect wetlands.

The proposed new BC Environmental Protection Act should:

- *increase penalties for polluting activities,*
- *provide standing for citizens and conservation groups to sue those who cause environmental damage,*

³¹ See Calvin Sandborn, *Preventing Toxic Pollution: Towards a British Columbia Strategy*, West Coast Environmental Law Association (Vancouver, 1991) p. 121 for a discussion of this point and the Ontario Law Reform Commission recommendation to this effect.

³² See Kathleen Segerson, "Incentive Policies for Control of Agricultural Water Pollution" in J. Braden, *Agriculture and Water Quality: International Perspectives*, Lynne Rienner Publishers Inc. (Boulder, 1990) pp. 52-55. Also, see Calvin Sandborn, *Preventing Toxic Pollution: Towards a British Columbia Strategy*, West Coast Environmental Law Association (Vancouver, 1991) p. 119 for a discussion of the US Superfund law and the Ontario Spills Act, which both apply strict liability as opposed to the more lenient rules of negligence in certain types of cases (involving hazardous wastes for the former act, and chemical spills for the latter).

³³ See P. von Wilmsky and G. Roller, "Civil Liability for Waste -- An Analysis of the Amended EC Draft Directive of 1991, *Environmental Law Network International* 1(1991) 3 and Calvin Sandborn, *Preventing Toxic Pollution: Toward a British Columbia Strategy*, West Coast Environmental Law Association (Vancouver, 1991) p. 121.

- *extend the rules of strict liability to a wider spectrum of environmentally-destructive activities, and*
- *liberalize rules of proof for those suing.*

2.3 TAXING NONPOINT SOURCES OF POLLUTION

As industrial pollution faces stricter regulations, the pollution threat to wetlands increasingly comes from nonpoint sources (NPS). Nonpoint pollution doesn't come from "point source" industrial discharge pipes, but from a thousand different hard-to-regulate sources -- from pesticides, herbicides and fertilizers used on farms and lawns; stormwater runoff carrying pollutants from gas stations and car exhaust; faulty septic fields; people dumping their automobile oil in storm gutters; bulldozing of streets and lots; and a host of other activities.

Nonpoint pollution is intrinsically difficult to regulate effectively, because of the cost of monitoring and enforcing regulations on thousands of different sources. However, economic measures may be well suited for dealing with certain NPS problems.

For example, a number of jurisdictions now impose taxes on pesticides, herbicides and fertilizers.³⁴ This provides a measure of deterrence against overuse of such chemicals. Furthermore, revenues from such a special tax can be dedicated to providing funds for farmers to institute Best Management Practices to further reduce NPS pollution.³⁵ For example, in Iowa the state taxes pesticides and dedicates the funds to a Groundwater

³⁴ For example, Norway imposes a surcharge of 13% on wholesale pesticide prices. A number of US states levy fertilizer taxes. [Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) pp. 26-7, 127.] Also, see OECD, *Agriculture and the Environment in the Transition to a Market Economy*, (Paris, 1994) p. 54.

³⁵ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 10.

Protection Fund which addresses pesticide contamination of groundwater.³⁶ Denmark has a similar system of funding pesticide research and development of alternative pest control with a tax on pesticides.³⁷ Sweden has a 30% tax on pesticide use, part of which is dedicated to research, extension services and other actions to reduce pesticide risk.³⁸ And the Netherlands is planning a similar program of taxing pesticides to fund pesticide-reduction programs.³⁹

In British Columbia a tax on pesticides, herbicides and fertilizers could be used to establish a Groundwater and Wetland Protection Fund, to fund research and mitigation of chemical-related problems.

It has also been suggested that British Columbia could impose a Nonpoint Pollution Control Fee on service station operations, septic fields and other source of NPS pollution. The fee could then be rebated if certain preventative measures (e.g., installing the best preventative technology) were taken.⁴⁰

A deposit-refund system on automobile oil might provide an incentive for more people to return used oil for proper recycling -- although it might lead to people adulterating the oil to maximize their refund.⁴¹

³⁶ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 27. The Iowa tax is a fee charged to pesticide sellers.

³⁷ Lester Brown et al, *State of the World 1988: A Worldwatch Institute Report on Progress Toward a Sustainable Society*, W.W. Norton & Co. (N.Y., 1988) p. 134.

³⁸ OECD, *Agriculture and the Environment in the Transition to a Market Economy*, (Paris, 1994) p. 54.

³⁹ OECD, *Agriculture and the Environment in the Transition to a Market Economy*, (Paris, 1994) p.54.

⁴⁰ Washington State at one point was proposing a Nonpoint Pollution Control Fee, which would assess a fee on operations that contribute to certain types of operations -- and rebate the fee if certain preventative measures were taken. See Calvin Sandborn, *Preventing Toxic Pollution: Toward a British Columbia Strategy*, West Coast Environmental Law Association (Vancouver, 1991) p. 64.

⁴¹ See Calvin Sandborn, *Preventing Toxic Pollution: Toward a British Columbia Strategy*, West Coast Environmental Law Association (Vancouver, 1991), chapter 4, section on deposit-refund systems.

Segerson has suggested taxing⁴² farmers, based on the ambient concentrations of farm chemicals in receiving water bodies. This could provide an incentive for all farmers around a water body to clean up. Such an approach could work in small watersheds with relatively homogenous farms, easily monitored water quality and short time lags between polluting activities and delivery. However, such a system could easily fail in situations where an individual farmer did not perceive that his/her individual effort would be enough to change ambient conditions in a water body that many farms affect.⁴³

Marketable permit systems have also been proposed to control pollution from agricultural chemicals, although the administration and enforcement of such market schemes amongst BC's many small farmers would likely be an onerous administrative task.⁴⁴

As can be seen, there are numerous options available to provide incentives for control of NPS pollution. However, fashioning an optimal mix of incentives will likely be extraordinarily complex. As Jim Shortle has pointed out, the optimal policy will likely involve a mixture of instruments and be watershed specific, given the complexity of the biophysical processes and heterogeneity of physical and economic factors.⁴⁵ The upcoming BC *Environmental Protection Act* and other new environmental legislation will need to be carefully considered, to provide a full set of tools that can be targeted to produce appropriate solutions.

⁴² Or giving a subsidy to.

⁴³ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) pp. 61-2.

⁴⁴ On the other hand, it is argued that marketable permit systems economize on the need for public information on the specific level of tax or subsidy needed to achieve specific limits on pollutants. See Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) pp. 38, 66-8, for discussion of marketable permit system proposals.

⁴⁵ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 9.

RECOMMENDATIONS

In the upcoming review of the proposed BC Environmental Protection Act, the draft legislation should be reformed to ensure that NPS pollution is addressed.

Consideration should be given to a broad variety of potential economic tools, including:

- *Taxing products that contribute to nonpoint source pollution and using the proceeds to provide research, technical assistance to landowners, and mitigation of NPS pollution;*
- *Using such tax revenues to provide subsidies for those employing Best Management Practices, above those statutorily required;*
- *Charging higher permit fees for those operations that fail to use the most advanced technologies and practices to minimize pollution;*
- *Charging landowners if ambient water pollution in their area exceeds specified levels; and*
- *Marketable permit systems and other financial incentives to discourage NPS pollution.*

2..4 PRICING WATER TO ENCOURAGE CONSERVATION

One important threat to wetlands is the overuse and waste of ground and surface water for human purposes. If we want to maintain the integrity of watersheds and associated wetlands, we need to ensure that we are not wasting water. A key mechanism to encourage efficient use of water is to apply demand management -- i.e., reduce society's waste of water through water pricing, education, conservation and regulatory efforts. BC Hydro's Power Smart program has quite successfully applied the principles of demand management to reduce wastage of electricity, and a similar program is needed to reduce water wastage.

The BC Ministry of Environment, Lands and Parks has adopted the principle of demand management as a strategic objective.⁴⁶ The Ministry has also proposed a comprehensive water pricing strategy for the province⁴⁷ and produced a discussion paper on how water pricing could reduce waste of water⁴⁸. In exploring the option of using pricing to promote efficient use of water, British Columbia is in good company -- out of the three other western provinces, all but Manitoba are proposing to use pricing to promote water efficiency.⁴⁹ Australia, France, New Zealand, and many other jurisdictions are moving towards more realistic pricing of water.⁵⁰

The province needs to proceed with its reform of water pricing, ensuring that the price of water not only discourages waste but also reflects the full value of water -- including its value for biodiversity and environmental functions.

⁴⁶ Water Management Program, Ministry of Environment, Lands and Parks, *Water Pricing: Towards the Establishment of a New Policy: A Discussion Paper on the Goals, Principles and Strategies for Non-Power Water Uses* (Victoria, February, 1994) p. 2.

⁴⁷ Ministry of Environment, Lands and Parks, *Stewardship of the Water of British Columbia: 2 -- Water Pricing* (Victoria, 1993).

⁴⁸ Water Management Program, Ministry of Environment, Lands and Parks, *Water Pricing: Towards the Establishment of a New Policy: A Discussion Paper on the Goals, Principles and Strategies for Non-Power Water Uses* (Victoria, February, 1994).

⁴⁹ Water Management Program, Ministry of Environment, Lands and Parks, *Water Pricing: Towards the Establishment of a New Policy: A Discussion Paper on the Goals, Principles and Strategies for Non-Power Water Uses* (Victoria, February, 1994) p. 6.

⁵⁰ OECD, *Agricultural and Environmental Policy Integration: Recent Progress and New Directions*, (Paris, 1993) p. 50.

The Southeast Kelowna Irrigation District Metering Project is a step in the right direction. Green Plan money has been used to install agricultural water meters. At the same time, the project is demonstrating water efficient technology to farmers, including trickle irrigation, use of soil moisture measuring devices, and climatic measuring. The plan is to eventually raise water prices above a certain minimum level of usage, to encourage conservation⁵¹ -- with an ultimate aim of reducing agriculture usage by more than fifty percent.⁵²

Water pricing reform could be supplemented by subsidies for consumers to purchase water efficient technology. BC21 Power Smart is already providing free water efficient showerheads and other devices to many BC homes. Further subsidized technology could well pay for itself by reducing costs for building new dams and other infrastructure -- just as Power Smart subsidies for energy-efficient products have more than paid for themselves.

RECOMMENDATIONS

The provincial government should proceed with its reform of water pricing as soon as possible.

Expanding existing subsidies for the purchase of water-efficient technology should be considered, particularly if it lowers government's long-term costs.

⁵¹ Personal communication, Ted Van der Gulick, Ministry of Agriculture, Fisheries and Food.

⁵² Personal communication, Larry Bomford, Ministry of Agriculture, Fisheries and Food. In the end, the project will likely save farmers money on both water costs and chemical costs. On a related issue, in Spain farmers are actually being paid to reduce their use of farm irrigation, in order to reduce the aquifer depletion that jeopardized local wetlands. [OECD, *Agriculture and the Environment in the Transition to a Market Economy*, (Paris, 1994) p. 56.] In specific localities this may be an option that government should consider.

3 REDUCING TAXES FOR THOSE WHO PROTECT WETLANDS

3.1 PROPERTY TAX BREAKS FOR ECOLOGICALLY SENSITIVE LANDS

The broadly-based Canadian Wetlands Conservation Task Force⁵³ has recommended that all provinces should provide preferential tax treatment for ecologically sensitive lands.⁵⁴ Other groups have made similar recommendations, arguing that such tax preferences will encourage the maintenance of natural lands -- and will compensate owners for the social benefits that they provide the community, consistent with the principles of full cost accounting.⁵⁵

Although some wetland areas already pay low taxes because of farm tax preferences or classification as "waste land", other wetlands and associated upland areas do pay substantial property taxes. Therefore, there may be potential to encourage the protection of wetlands by reducing such taxes.

3.1.1 MECHANISMS USED ELSEWHERE

A number of North American jurisdictions have already gone beyond the traditional property tax breaks offered to agriculture and forestry, and now offer preferential property tax treatment for important conservation lands. Examples of North American jurisdictions that offer conservation tax preferences include:

- The state of Minnesota exempts undisturbed wetlands and ungrazed native prairie

⁵³ With members from the Canadian Institute of Planners, the Canadian Federation of Agriculture, the National Round Table on the Environment and the Economy, the Canadian Pulp and Paper Association, Ducks Unlimited, Wildlife Habitat Canada, Environment Canada and the North American Wetlands Conservation Council (Canada).

⁵⁴ Kenneth Cox et al., *Wetlands: A Celebration of Life*, North American Wetlands Conservation Council (Canada), (Ottawa, 1993) p. 30.

⁵⁵ This approach is appealing to landowners. A 1984 study found that preferential property tax treatment was the protection method most preferred by southern Ontario wetland owners. Mark Van Patter, *Landowner Incentive Mechanisms to Promote Wetland Protection in Ontario*, Federation of Ontario Naturalists (Don Mills, 1986) p. 13.

from property tax. Other states and provinces reduce assessments for wetlands.⁵⁶ For example, Alberta's assessment manual formally provides for a method of assessment that commonly assesses wetlands at little or no value, resulting in little or no taxes on such lands.⁵⁷

- In Ontario, the *Conservation Land Act* has offered up to a 100% tax rebate to owners of class 1,2, and 3 wetlands, provincially significant Areas of Natural and Scientific Interest, areas designated as "natural areas" in the Niagara Escarpment Plan, and to non-profit groups that own land for conservation purposes -- if the owners agree to leave the area in a natural state.⁵⁸
- In Washington state, the *Open Space Taxation Act* provides for a reduction in property tax assessments, if the owner agrees to keep land in open space for 10 years. The legislation allows counties to establish a Public Benefit Rating System which establishes the criteria for eligibility, and the amount of the tax benefit in that county. Special points are normally awarded to wetland areas.
- Oregon provides complete property tax exemption for farm and forest lands 100 feet landward of any stream channel, if the owner manages the land according to an agreement with the Department of Fish and Wildlife.⁵⁹

⁵⁶ *Property Taxes*, Minn. Stat. Para. 272.02(10)(11) (1993). See Mark Van Patter, *Landowner Incentive Mechanisms to Promote Wetland Protection in Ontario*, Federation of Ontario Naturalists (Don Mills, 1986) p. 11 and 16. Mississippi provides for exemption of coastal wetlands from tax assessment, and Connecticut, New York, and Michigan reduce tax assessments for wetlands that are legally protected. See Kusler, Jon et al., *State Wetland Regulation: Status of Programs and Emerging Trends* The Association of State Wetland Managers (Berne, N.Y., 1992) pp. 33-4. Also see Hank Fischer and Wendy Hudson, *Building Economic Incentives into the Endangered Species Act*, Defenders of Wildlife (Washington, D.C., 1994) p. 79.

⁵⁷ Kenneth Cox et al., *Wetlands: A Celebration of Life*, North American Wetlands Conservation Council (Canada), (Ottawa, 1993) p. 30.

⁵⁸ The agreement is not a binding agreement. If the landowner wishes to withdraw from the program they must repay the rebate received over the previous ten years, plus interest. Note that the government of Ontario is undergoing a massive review and revision of its environmental policies.

⁵⁹ Oregon Department of Fish and Wildlife, *Riparian Tax Incentive Program* pamphlets, Portland, Oregon. *Oregon Revised Statutes* 496.260, 308.794-5, and 498.248; Also, see *Oregon Administrative Rules*, Chapter 635, Div. 9 -- Dept. of Fish and Wildlife, 635-09-300-360.

3.1.2 THE NEED TO CAREFULLY DESIGN TAX BREAKS

An important issue with property tax preference schemes is the fact that they can be very expensive for government, and may fail to change the behaviour of many beneficiaries. Many landowners will be "free-loaders", receiving the preference and not changing their behaviour at all, because they never intended to convert the land.⁶⁰ Others will take advantage of such preferences for a time, and then, when development opportunities arise, proceed to develop the land.

By themselves, tax preferences for broad classes of landowners don't normally stop landowners from developing land.⁶¹ Most changes in land use are not motivated by high property taxes, but by personal considerations such as the death of a family head.⁶² And the benefits of preferential taxation are simply dwarfed by potential profits of development near urban areas.⁶³ As Greenwood and Whybrow have noted in a study of agricultural tax preferences:

Property taxes, which typically are about 1 percent of assessed value...are simply not a major factor in determining the viability of a farm. Rising property taxes imply land values rising at 100 times the rate. What really closes down the farm in the end is the simple observation that the farm can be sold to nonfarmers for many times what a farmer could or should pay.⁶⁴

⁶⁰ See Jane Malme, *Preferential Property Tax Treatment of Land*, Lincoln Institute of Land Policy (Cambridge, Ma., 1993) p. 7.

⁶¹ A number of studies have concluded that differential assessment statutes are ineffective at protecting land, by themselves. See the studies cited in Robert Blewett and Julia Lane, "Development Rights and the Differential Assessment of Agricultural Land", *American Journal of Economics and Sociology*, (April, 1988) pp. 199, 202.

⁶² Although there is anecdotal evidence of people on the Gulf Islands selling their trees for timber in order to pay property taxes.

⁶³ In fact some observers argue that unless preferences are linked to other protective mechanisms (eg, zoning), that they may actually encourage speculation and urban sprawl by reducing holding costs for developers on the urban edge. See Julian Greenwood and Jennifer Whybrow, "Property Tax Treatment of Agricultural and Forestland in Canada: Implications for Land Use Policy", *Property Tax Journal* (June, 1992) pp. 166 and 179.

⁶⁴ Julian Greenwood and Jennifer Whybrow, "Property Tax Treatment of Agricultural and Forestland in Canada: Implications for Land Use Policy", *Property Tax Journal*

However, while tax breaks may not always save land by themselves, they may be a necessary incentive for landowners to agree to long-term protection, either through government action or voluntary action. For example, the Agricultural Land Reserve could never have been implemented without the provision of special farm tax breaks. The land reserve protects the land, not the tax breaks. But the tax breaks help make the reserve system politically acceptable.⁶⁵ In addition, for some conservation-minded owners, a tax incentive may be enough to get them to agree to permanent or very long term protection of their particular piece of land.

In principle, tax breaks should aim to encourage long-term protection of key wetlands that might otherwise be converted.

RECOMMENDATIONS

A committee of all interested stakeholders and agencies should examine possibilities for providing property tax incentives for the maintenance of wetlands. The committee should consider targeting tax preferences to:

- *Reduce taxes on land that is placed, voluntarily or through government action, in a Conservation Land Reserve.*

Like the Agricultural Land Reserve, land in a Conservation Land Reserve would be difficult to remove, requiring approval of a special Commission. In compensation, inclusion would offer the benefit of reduced property taxes. Such a Reserve could eliminate the problem of people profiting from a special tax break, only to develop the land later. At a recent forum sponsored by the Islands Trust, a working group endorsed the idea of such a Conservation Land Reserve.⁶⁶ There would need to be debate about

(June, 1992) 159 at 165.

⁶⁵ See Julian Greenwood and Jennifer Whybrow, "Property Tax Treatment of Agricultural and Forestland in Canada: Implications for Land Use Policy", *Property Tax Journal* (June, 1992) 159.

⁶⁶ See Vincent Verlaan, *People on Islands Report*, Islands Trust (Victoria, 1996) p. 6. In many jurisdictions an agriculture, open space or conservation tax preference is only

whether entry into the Reserve would be totally voluntary, or whether government should attempt to identify and protect critical conservation lands in such a Reserve. Given current political trends, a voluntary Reserve might be more acceptable.

- ***Reduce the taxes of persons who provide long-term or permanent protection to their land, through such instruments as long-term conservation covenants.***

A number of governments are taking this approach. For example, Maryland provides a property tax credit equal to 100% of the assessment value, for owners that have donated conservation covenants that permanently restrict development. The credit is granted for 15 years.⁶⁷ Perinton, New York reduces taxes on a sliding scale, based on the number of years the protective covenant runs.⁶⁸ In Ohio a landowner who dedicates his land for conservation purposes may retain ownership and other rights to the land and be totally exempt from property taxes.⁶⁹ Maine offers open space tax breaks that range from 25% if no permanent conservation covenant is put on the land, to 50% if a covenant is created that allows forestry and farm use, to 75% if a permanent covenant is placed on the land that restricts such economic uses.⁷⁰ In Prince Edward Island, landowners that register a long-term or perpetual restrictive agreement on provincially designated "Natural Areas" receive an exemption from the Provincial Property Tax.⁷¹ British Columbia recently took a tentative step in a similar direction with its proposed new fish protection legislation, which would allow for a tax exemption for riparian property for up to ten years, if the

available if the land is in a protected zone. The planning system in Ontario prohibits development in many of the areas under tax preference (e.g., provincially significant wetlands and provincially significant Areas of Natural and Scientific Interest). Note that the Ontario system is in the process of revision.

⁶⁷ Maryland, *Tax-Property Article, S. 9-107*. After the 15 years the owner would still receive a lower tax bill, as a result of the market value being reduced by the development restrictions.

⁶⁸ Samuel Stokes, *Saving America's Countryside: A Guide to Rural Conservation*, Johns Hopkins University Press (Baltimore, 1989) p. 167.

⁶⁹ Russ Cohen, "Progress and Problems in Preserving Ohio's Natural Heritage Through the Use of Conservation Easements", 10 *Capital City Law Review* (1981) 731 at 744.

⁷⁰ Personal communication, Jay Espy, Maine Coast Heritage Trust. Maine Department of Conservation, *Open Space Planning*, M.D.C., (Augusta, undated) p. 11.

⁷¹ Island Nature Trust, "Private Stewardship: The Landowner's Options" (Charlottetown, 1989), p. 4.

municipality holds a conservation covenant on the land.⁷² However, the proposed legislation is unlikely to be widely used because of the limited scope of the exemption and unwieldy prerequisites, such as a vote of 2/3 of council plus deemed or actual approval of the municipality's electors. Furthermore, because the tax preference is limited to 10 years, it is unlikely to persuade landowners to grant permanent covenants on their land.

- ***Make the tax reduction granted proportional to the public benefit that conservation of the land achieves.***

Tax breaks should be given where they will do the most good, and benefit the public the most. Tax subsidies should not be squandered on poor quality conservation land, or on land that is unlikely to be developed in any case. And the more permanent the protection, the bigger the tax break should be. A number of jurisdictions are moving towards basing their tax preferences for conservation lands on the quantifiable public benefit achieved.⁷³

For example, several Washington state counties use a "Public Benefit Rating System" that awards "points" for land that provides benefit to the public. For example, in King County points are awarded to the owner if the land provides recreation value, shoreline, scenic value, habitat value, a water quality buffer, a trail linkage, buffer to public park lands, or historic value. Bonus points are earned for providing public access to the land, or for placing a permanent conservation covenant on the land.⁷⁴ Depending on points earned, tax reductions range from 50% to 90% on property approved as open space land. For example, a landowner can receive a 90% reduction in property taxes for conserving a high priority resource, if the owner provides public access and a permanent conservation covenant. San Juan County calculates its point system somewhat differently, but provides a 20% point bonus if a permanent conservation covenant is placed on the land.

A Public Benefit Rating System could be adapted to award extra points for critical lands that are under the greatest threat of development (e.g., adjacent to a rapidly growing

⁷² See *Bill 26-1997, Local Government Statutes Amendment Act, 1997, s. 343.1. (Second Reading.)*

⁷³ Washington state has such a system, and Maine and New York are considering a similar system.

⁷⁴ As well as for contiguous properties, additional water quality buffers, or for restoration plans.

community) -- thus focusing aid on the most critically threatened land.⁷⁵

- ***Recapture tax breaks if the land is later developed.***

Some owners will be unwilling to provide permanent protection of their natural lands. Therefore, in granting tax breaks based on public benefit there may be utility in granting scaled down breaks for non-permanent protection. However, there needs to be some disincentive to utilizing such tax breaks and later developing the land -- such activity almost makes government a co-investor in the ultimate development of the land. To counter this possibility, a substantial penalty should be imposed if the land is later converted to other uses.

Most governments that offer agriculture, forestry or open space tax breaks make provision for recapture of such tax breaks if the land is converted. And at least seven states go beyond such recapture and impose a conversion penalty based on a percentage of the market value.⁷⁶ For example, in California, if an owner wants to cancel the ten year contract which the farmers must sign to get the tax break, a "cancellation fee" equal to 12.5% of the market value can be charged. And Maine imposes a penalty of 40% of the land's market value if the land is removed from its agricultural tax preference program in the first five years.⁷⁷

3.1.3 MAKING FARM TAX BREAKS CONDITIONAL UPON GOOD STEWARDSHIP OF WETLANDS

A special situation applies to the 42% of private land in BC that is in the farm class for tax purposes. The farm classification already makes farm property taxes quite low.⁷⁸ The amount of tax payable in farm class can be 10% (or less) of the amount payable if the land

⁷⁵ Local governments could administer the public benefit rating system, much as they now grant permissive tax exemptions for charitable organizations. Discussion should focus on which level of government should pay for the tax reductions. In many places senior governments pay for the tax breaks by directly reimbursing local governments for reduced revenue or directly rebating taxes to taxpayers.

⁷⁶ Jane Malme, *Preferential Property Tax Treatment of Land*, Lincoln Institute of Land Policy (Cambridge, Ma., 1993) p. 15.

⁷⁷ Jane Malme, *Preferential Property Tax Treatment of Land*, Lincoln Institute of Land Policy (Cambridge, Ma., 1993) p. 15.

⁷⁸ As well, there are property tax benefits if one's land is in the Agricultural Land Reserve.

were in the residential class.⁷⁹ For example, a 75 acre farm in the Fraser Valley can pay net taxes of around \$2000; a 5 acre farm as little as \$600.⁸⁰ Therefore, there is little additional property tax incentive to be created for such landowners.

However, two possible property tax incentives could be created to encourage farmers to not convert wetlands. First, a system of cross-compliance could be initiated for property taxes. Just as the US federal government makes all federal subsidies conditional upon not converting wetlands,⁸¹ existing property tax breaks could be made conditional upon not converting presently existing wetlands. This would create a very substantial disincentive to wetland destruction. The Christian Farmers Federation of Ontario has already endorsed the idea of requiring farmers to meet environmental requirements in order to receive the Ontario farm property-tax rebate.⁸² It should be noted, however, that one agricultural economist has cautioned that tying tax breaks to wetland protection could backfire, causing farmers to drain their wetlands immediately to avoid a later penalty.⁸³

Second, farmers that maintain their wetlands could be provided with transferable tax credits that could be sold for cash to other taxpayers. The Costa Rican government operates a transferable reforestation tax credit scheme, where an owner gets credit for keeping land forested, and after extinguishing his/her own tax liability, can sell the rest of the credit to other landowners.⁸⁴

RECOMMENDATIONS

The Committee should consider proposals to:

⁷⁹ William Andrews, "Property Tax Incentives for Voluntary Conservation of Private Land in BC", West Coast Environmental Law Association (Vancouver, 1996) p. 2.

⁸⁰ Personal communication, Ron Townshend, BC Assessment Authority.

⁸¹ See discussion below.

⁸² Mark Ziegler, *An Examination of the Feasibility of Using Environmental Cross Compliance in Canadian Agriculture*, Environment Bureau, Agriculture Canada (Ottawa, 1995) pp. 4-5.

⁸³ Personal communication, John Girt.

⁸⁴ Tim Clairs and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO, Division of Wildlife and Ecology (Canberra, Australia, April 28, 1995) p. 26.

- *require landowners to maintain existing wetlands as a condition of continuing to receive farm property tax preferences, and*
- *provide transferable property tax credits to wetlands owners who maintain natural wetlands.*

3.2 OTHER PROPERTY TAX ISSUES

3.2.1 PROPERTY TRANSFER TAX

In some cases the provincial Property Transfer Tax can discourage efforts to purchase and protect conservation lands. Although land trusts are normally exempt from this tax, the provincial government is not. This means that when the provincial government purchases land on behalf of a multi-party partnership, this tax must be added to the price. On a million dollar purchase, this tax adds \$18,000⁸⁵ – which then must be raised by the partners.⁸⁶

RECOMMENDATION

The Province should exempt itself from the Property Transfer Tax, when purchasing land for conservation, park or similar purposes.

3.2.2 RESEARCH ON THE MUNICIPAL COST OF MAINTAINING WETLANDS AND OTHER OPEN SPACE

Proponents of tax breaks for conservation lands point to the many studies that have shown that open space preservation can often be cheaper for a community than developing the land into subdivisions, and providing all the new school, road, water, sewer, police, fire and other services needed by new residents.⁸⁷

⁸⁵ One percent on the first \$200,000, then 2% on the balance.

⁸⁶ Personal communication, Bill Turner, formerly with the Nature Conservancy of Canada, and now of The Land Conservancy.

⁸⁷ New Jersey Department of Environmental Protection, *Keeping Our Garden State*

A number of American studies have shown that undeveloped land is usually overtaxed, when compared to the amount of services it requires. Wetlands and fields do not require schools, water, road, sewer and other municipal services. A review of studies done in ten American communities showed that open space land pays an average of 3 1/2 times as much as it costs in services.⁸⁸

However, apparently there has not been an equivalent study done in British Columbia.⁸⁹ There is an urgent need for such a study, to provide information to support rational property tax reform that would create incentives for owners of conservation lands.

Wetlands can be particularly beneficial to the municipal ledger sheet, because they perform functions that must otherwise be performed by expensive stormwater, sewage, flood control and water supply infrastructure systems.⁹⁰ The study should look specifically at the cost/benefit ratio of wetlands.

RECOMMENDATION

The provincial government should conduct a study to determine whether or not the amount of taxes paid by open space lands is out of proportion to the services consumed.

3.2.3 TAXPAYER NOTICES

Currently many wetlands are considered waste land by assessors, and the value of the lands is adjusted downward accordingly. However, the property owner may not be aware that the wetland is actually saving the owner money -- and that the assessment would go

every dollar of revenue from residential development there, a dollar and a quarter was spent on additional county services. See Henry Diamond, Patrick Noonan, *The Use of Land: Reflections and Directions*, unpublished draft, 1995, p.35.

⁸⁸ Stephen Miller, "The Economic Benefits of Open Space", Isleboro Islands Trust (Maine, 1992) p. 1.

⁸⁹ Personal communication, Ron Townshend, BC Assessment Authority and Professor Gerald Walter, economist, University of Victoria.

⁹⁰ See the Introduction and the section on the value of wetlands, above.

up if the wetland were converted. It would be useful to highlight the tax savings that wetlands are already providing to landowners. A high-profile notice could be sent along with assessment notices and tax bills, pointing out that a particular wetland is saving the owner a specified amount of money. The notice should be accompanied by educational materials pointing out the benefits to both the owner and society of maintaining wetlands.

RECOMMENDATION

The province should consider appending a notice to assessment notices and tax bills, pointing out the role of a land's wetland area in lowering the tax bill.

3.2.4 CONSULTATION ISSUES

Regular consultation takes place between the BC Assessment Authority, the Ministry of Finance and the Ministry of Agriculture regarding taxation of agricultural land. An economist from the Ministry of Environment, Lands and Parks should participate in such meetings, to seek the integration of environmental concerns into tax decisions.

RECOMMENDATION

The Ministry of Environment, Lands and Parks should actively participate in intra-government consultations on property tax policy.

3.3 FEDERAL TAXES

In the US, land trusts and other private conservation organizations have protected over 11 million acres of land.⁹¹ Part of the reason for their success is that US tax laws encourage landowners to give their land to conservation groups and environmental agencies. If we want to protect Canada's wetlands, we should consider similar encouragement.

Perhaps most important, Canada should exempt gifts of conservation lands from capital

⁹¹ Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities*, Commission on Resources and Environment (Victoria, 1996) pp. 15-16.

gains tax, as the US and the United Kingdom have done⁹² -- and as the 1994 report by Canada's National Task Force on Economic Instruments and Disincentives to Sound Environmental Practices unanimously recommended.⁹³

Although recent liberalization of tax rules has now eliminated the grossest injustices -- e.g., requiring owners to actually pay taxes for the privilege of giving away their land -- people who donate land are still likely to receive less tax credit for their charitable donations than if they donated land in the US. And they continue to be in a worse situation than if they donated Canadian cultural property (like an oil painting of their land) of equivalent value.

The tax rules for donation of land should be made similar to those applying to the donation of cultural property in Canada, and to the rules applying to donation of lands in the US.

The government could even go further, and adopt the proposal of Eugene Odum of the University of Georgia, who has proposed that land donors be given tax credit for the non-market values of wetlands donated, e.g., for the wetland's flood control, habitat, clean water and other values.⁹⁴

⁹² The US exempts such gifts as long as the gift of land meets specified criteria. Personal communication, Samuel Stokes, US National Park Service. The United Kingdom exempts gifts of heritage property such as scenic, historic or scientifically significant property. See Tim Clairs and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO Division of Wildlife and Ecology (Canberra, Australia, 1995), p. 25.

⁹³ This task force, appointed by the federal Ministers of Finance and Environment, consisted of business leaders, academics, environmentalists and government officials. See Clayton Rubec, "Establishing the Process for Implementing Changes to the Federal Income Tax Act for Donation of Ecologically-Sensitive Property", Canadian Wildlife Service (Ottawa, May 1995).

⁹⁴ See *Journal of Soil and Water Conservation* (Sept./Oct., 1983) p. 380.

RECOMMENDATION

The federal government should exempt gifts of conservation lands from capital gains tax.

3.3.1 OTHER FEDERAL TAX ISSUES

Federal tax laws could also be changed to exempt charitable land trusts from paying GST on land purchases. At the present time, such trusts have to pay GST on bare land purchases from corporations, and are only eligible to a 50% rebate of the GST paid. This federal tax is a direct economic disincentive that discourages charitable groups from performing the public service of purchasing conservation lands.⁹⁵ The province already exempts land trusts from paying the provincial property transfer tax for specified purchases of conservation land, and the federal government should be urged to follow suit.

Finally, the federal *Income Tax Act* has been criticized for providing tax deductions to farmers for the draining and conversion of wetlands. Allowing farmers to receive a tax advantage from draining wetlands encourages an activity that is environmentally and socially negative. The broad-based Sustaining Wetlands Forum called for revision of the *Income Tax Act* to reduce incentives for draining activities.⁹⁶

RECOMMENDATIONS

Federal tax laws should be amended to:

- *exempt charitable land trusts from paying GST on land purchases; and*

⁹⁵ For an excellent (although somewhat dated) discussion of taxes and their impact on the donation of conservation lands, see Marc Denhez, *You Can't Give It Away*, North American Wetlands Conservation Council (Canada) (Ottawa, 1992).

⁹⁶ Wildlife Habitat Canada, *The Status of Wildlife Habitat in Canada: Realities and Visions* (Ottawa, 1991) p. 85.

- *remove tax deductibility for farmers' expenses incurred in the draining and conversion of wetlands.*

4 FURTHER INCENTIVES FOR FARMERS AND OTHER RURAL LANDOWNERS

4.1 REFORM OF AGRICULTURAL SUBSIDIES

Creating special incentives for farmers to maintain wetlands could have substantial impact on wetland conservation. Almost half of British Columbia's private land is presently classified as farm land.⁹⁷ And agriculture has historically been responsible for the vast majority of wetland losses in BC and around the world.

Historically, agriculture has been one of Canada's most heavily subsidized industries. In 1991-92, Canadian governments spent \$8 billion subsidizing agriculture.⁹⁸ Over the last decade subsidies of Canadian agriculture have typically exceeded 40% of the market value of production.⁹⁹ Although BC farmers have not been as highly subsidized as in some provinces, BC farmers did benefit from \$100 million in subsidies and tax reductions in 1992-93.¹⁰⁰ Many of the traditional subsidies harmed the environment by encouraging expansion of agriculture onto marginal and sensitive lands, including wetlands.

⁹⁷ Approximately 42% is assessed as farm class by the BC Assessment Authority. (Personal communication, Ron Townshend, BCAA.)

⁹⁸ Robert Sopuck, *Canada's Agricultural and Trade Policies: Implications for Rural Renewal and Biodiversity*, National Round Table on the Environment and the Economy, (Ottawa, 1993), p. 31.

⁹⁹ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 176.

¹⁰⁰ Rob Wright, Deputy Minister of Agriculture Canada, "Agriculture's Response to Item #4 of First Minister's Decision Status Report", Agriculture Canada (Ottawa, February, 1993): Attachment, pp. 1, 2, 9, 34. Note that total government agriculture/food expenditures in BC were \$190 million and total market receipts in BC that year were \$1.17 billion.

However, commodity production subsidies are now being phased out, because they violate new international trading rules. Fortuitously, this phase-out will help the environment by reducing incentives to cultivate sensitive areas like wetlands. In fact, this reduction of harmful subsidies is one of the most effective environmental reforms of farm subsidies possible.¹⁰¹

Many analysts recommend that such traditional subsidies be replaced by agricultural subsidies designed to conserve the environment. Such new environmental subsidies would offer a number of advantages. Since they are not payment for commodity production, they do not violate international trade rules. Yet they will help support farmers, farm communities, and the retention of working agricultural lands. In addition, since farms sit on some of the most biologically productive lands, an investment in these fertile valley lands can yield great environmental benefits.

In Europe and the US, agricultural subsidies are being reshaped to pay farmers to protect the environment. In 1992 the European Parliament decoupled subsidy payments from commodity production, and introduced environmental subsidies for farming less intensively, conservation land set-asides, afforestation and other "agri-environmental" measures.¹⁰² Similar measures have been taken in the US.

The Federal-Provincial Agriculture Committee on Environmental Sustainability has recommended that Canadian Governments accelerate reform of traditional policies and programs, and reallocate resources to support environmental sustainability.¹⁰³ Similarly, a

¹⁰¹ Gray and Rollins have concluded that elimination of existing distortions caused by commodity production subsidies will be more effective at preserving habitat than using new instruments for habitat preservation. Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 11. A study done by the New Zealand Ministry of Environment for the OECD has concluded that New Zealand's elimination of traditional farm subsidies reduced cultivation of marginal land, reduced soil and water quality problems, and reduced pesticide and fertilizer contamination problems. [New Zealand Ministry of Environment, "Environmental Effects of Withdrawal of Agricultural Support" (Auckland, 1990).]

¹⁰² International Institute for Sustainable Development; *Making Budgets Green*; I.I.S.D. (Winnipeg, 1994) pp. 15-16.

¹⁰³ Federal-Provincial Agriculture Committee on Environmental Sustainability, *Growing*

report to the National Round Table on the Environment and the Economy has recommended the redirection of agricultural subsidies to pay farmers for the production of ecological benefits such as wildlife habitat, soil preservation, and clean water.¹⁰⁴

Such a reform could have enormous economic, as well environmental, benefits. It has been estimated that the US Conservation Reserve Program -- which pays farmers to "set aside" environmentally sensitive lands -- costs the US government about \$1.6 billion annually. However, the **economic** benefits to society from the program are estimated at over \$10 billion annually, due to such things as flood control, improved soil productivity, improved water quality, and improved air quality.¹⁰⁵

In comparison to the US and Europe, Canadian governments are doing very little to financially encourage farmers to protect environmental resources such as wetlands. British Columbia should consider doing more, including the measures discussed below.

4.1.1 PAYING FARMERS TO SET ASIDE WETLAND AREAS

Internationally, there has been a great deal of experience in paying farmers to set aside wetlands for conservation purposes. Under the European Environmentally Sensitive Areas program, farmers are paid for setting aside critical lands for at least 20 years.¹⁰⁶ In the United Kingdom, farmers are paid for managing environmentally sensitive areas in a

Together, (Ottawa, 1990), p. 4. The Committee was following up on the National Agriculture Strategy prepared by Canada's Agriculture Ministers. The Strategy recommended that governments review federal and provincial programs and policies to ensure they do not adversely affect soil and water conservation. [Federal-Provincial Agriculture Committee on Environmental Sustainability, *Growing Together*, (Ottawa, 1990), p. 9.]

¹⁰⁴ Chris Rolfe, "Using Subsidies to Promote Environmental Protection in Agriculture", West Coast Environmental Law Association, (Vancouver, 1993) p. 5.

¹⁰⁵ Robert Sopuck, *Canada's Agricultural and Trade Policies: Implications for Rural Renewal and Biodiversity*, National Round Table on the Environment and the Economy, (Ottawa, 1993), p. 41.

¹⁰⁶ D. McLaren, *Encouraging Rural Communities and Land Stewardship*, paper done for BC Ministry of Agriculture, Fisheries and Food (Victoria, March, 1995) p. 11 and Appendix C.

sensitive way, and capital grants are given for wetlands restoration.¹⁰⁷ In the US, the federal government's Wetlands Reserve Program provides for government purchase of perpetual easements on wetlands that have previously been cultivated.¹⁰⁸ In addition, the US Conservation Reserve Program protects many wetlands by paying farmers, under ten year contracts, to take erodible soil out of crop production. Almost one-tenth of all US croplands have been set aside under this program alone -- protecting an area twice the total size of all the national wildlife refuges and all the state wildlife areas in the lower 48 states.¹⁰⁹

In Canada, provinces outside of BC have more experience with set-aside programs. Since 1988, Agriculture Canada and the Prairie Farm Rehabilitation Administration have protected over one million acres of marginal prairie farm land under the Permanent Cover Program -- which provides long-term contracts that pay farmers to take cropland out of production on wetlands, floodplains, and other sensitive lands.¹¹⁰ Ontario, Alberta, and Manitoba have run similar provincial programs.¹¹¹ Historically, from 1963-1975 the Canadian Wildlife Service ran the Land Easement Program, making annual payments to landowners who placed wetlands under protective easements.¹¹²

¹⁰⁷ International Institute for Sustainable Development; *Making Budgets Green*; I.I.S.D. (Winnipeg, 1994) pp. 15-16. Alan Mowle, "Changing Countryside: Land Use Policies and the Environment", *Geography* (1988) p. 323.

¹⁰⁸ *Exchange*, (Fall, 1994) p. 10. In 1994-95 the US allocation to the Wetlands Reserve Program was \$300 million. [Federation of B.C. Naturalists, et al., *Stewardship 94 Proceedings*, FBCN et al. (Vancouver, March 3-5, 1994), p. 125.]

¹⁰⁹ Samuel Stokes, *Saving America's Countryside: A Guide to Rural Conservation*, Johns Hopkins University Press (Baltimore, 1989), p. 219. Also see *Exchange*, (Fall, 1994) p. 10 and Dana Clark and David Downes, *What Price Biodiversity?* (Draft), Center for International Environmental Law (Washington D.C., 1995) p. 36.

¹¹⁰ Nationally, 1.2 million acres of marginal agricultural land was to be converted to permanent cover by Spring, 1995, out of 20 million acres of marginal lands in the Canadian prairies. See the description of the Permanent Cover Program in International Institute for Sustainable Development; *Making Budgets Green*; I.I.S.D. (Winnipeg, 1994) pp. 14-15.

¹¹¹ Ontario's Permanent Cover Program, Alberta's Landowners Habitat Program, and Manitoba's Habitat Enhancement Program.

¹¹² 37,485 hectares of wetlands were enrolled by 1975, when the program ended. John Morgan, "Private Stewardship/Landowner Contact", *Wildlife Conservation on Private Lands: Proceedings of the Private Stewardship/Landowner Contact Workshop*, Wildlife Habitat Canada (Winnipeg, 1987), p. 5.

A few BC farmers in the Peace River Valley have been paid to set aside land under the Permanent Cover Program. Currently, the Delta Farmland and Wildlife Trust is paying a few farmers from \$150-\$300/acre per year for setting aside important grassland habitat on their farms.¹¹³

Paying farmers to set aside areas around wetlands can effectively protect such areas for the term of the set-aside contract. And set-aside payments are popular with farmers, as evidenced by the broad acceptance of such agreements by U.S. farmers. Farmers in the Delta area have also reacted positively to set-aside offers, with more farmers willing to sign up than the program can accommodate.¹¹⁴ In addition, officials in the BC Federation of Agriculture and the Ministry of Agriculture have been positive about such payments, although one ministry official had some caveats.¹¹⁵

One of the biggest problems with set-aside programs is that they can be quite costly. However, one should keep in mind that the benefits to society likely will outweigh the cost of the program. As mentioned, the US Conservation Reserve Program is estimated to return its costs **six-fold**, in economic benefits such as flood control, improved soil productivity, improved water quality, and improved air quality.¹¹⁶

Cost of a set-aside program could be controlled by carefully targeting critical wetlands that are worthy of special protection. For example, enhancing the protection of B.C. salmon-producing wetlands could be especially cost-effective for society. It may well be that such special targeting is best done by a group of local people -- representing farmers, environmentalists, and others familiar with the area -- selecting areas of particular importance. (See below.)

John Girt, the noted economist specializing in agricultural/environmental issues has pointed out that this may be a very good time to purchase permanent set-asides of key

¹¹³ *Farmland and Wildlife: The Newsletter of the Delta Farmland and Wildlife Trust*, June 1996. The fees start at \$150/acre per year, and rise to \$300 over time.

¹¹⁴ Personal communication, Mary Tait, Delta Farmland and Wildlife Trust.

¹¹⁵ One person at the Ministry was concerned that set-asides not be large scale, because of our scarcity of agricultural land, and was concerned that land set-aside must be properly managed for conservation, and not simply be abandoned and left unmanaged.

¹¹⁶ Robert Sopuck, *Canada's Agricultural and Trade Policies: Implications for Rural Renewal and Biodiversity*, National Round Table on the Environment and the Economy, (Ottawa, 1993), p. 41.

wetlands. Since much of Canadian agriculture is operating far below capacity now, it may be opportune to purchase permanent protection of particular wetlands that could be drained and plowed in the future. Payment might be made in cash, or with in-kind payments, such as paying for a farmer's crop insurance premium for a period of years.¹¹⁷

RECOMMENDATION

An Agricultural Wetlands Incentives Committee representing farmers, environmentalists, the Ministry of Agriculture, Fisheries and Food, and environmental agencies should be established to consider ways of providing practical and effective financial incentives to farmers to maintain wetland areas.

Working with local farmers, environmentalists and others, the committee should consider ways in which farmers could be paid to set aside carefully-selected significant wetland areas.

4.1.2 ENCOURAGING WILDLIFE ENHANCEMENT ON FARMS

Overall, British Columbia's use of subsidy programs to encourage farmers to manage and enhance their land for habitat values has been very limited, compared to other jurisdictions.¹¹⁸ As a BC Ministry of Agriculture official ruefully noted after a visit to the US: "Substantial public funds are being used to implement environmentally sound farming practices. The levels of assistance are much greater than what is available to producers in British Columbia."¹¹⁹ Although a handful of local waterfowl programs have provided limited amounts of money for enhancing waterfowl habitat, such programs are very limited, both geographically and financially.¹²⁰

¹¹⁷ Personal communication with the author.

¹¹⁸ Chris Rolfe, "Using Subsidies to Promote Environmental Protection in Agriculture", West Coast Environmental Law Association, (Vancouver, 1993) pp. 10, 28.

¹¹⁹ Ron Bertrand, Ministry of Agriculture, Fisheries and Food, "Trip to Maryland" memo, (Abbotsford, August 1992).

¹²⁰ For example, the Delta Greenfields project and the Comox Valley Waterfowl Management Project pay very small amounts (e.g., \$30 per acre) for the seeding of winter

British Columbia should consider the plethora of programs that have been used elsewhere to encourage farmers to protect wetlands and otherwise enhance wildlife habitat:

- Nineteen US states compensate owners directly for maintaining wildlife habitat and/or providing public access to wildlife, while others reduce taxes.¹²¹
- At least 26 states have programs designed to foster land conservation for wildlife management objectives. The programs include tax benefits, state management of habitat, lease payments, payments for game damage and/or fee payments to owners collected by the state, and reduction of liability for accidents befalling hunters and fishers.¹²²
- Eleven States reduce taxes for landowners who spend money improving habitat or whose lands are open to the public for recreation.¹²³
- Oregon provides an income tax credit for up to 25% of the costs of fish habitat improvement projects, such as fencing to protect the streambank or instream habitat improvement structures. As mentioned elsewhere, Oregon provides a complete property tax exemption for farm and forest lands 100 feet landward of a stream channel, if they manage the lands according to a conservation agreement with the state.¹²⁴
- The US federal government's Stewardship Incentives Program provides cost-sharing and technical assistance to landowners to enhance timber, fish and wildlife habitat, soil,

cover crops to support migratory waterfowl.

¹²¹ Phyllis Myers, "New Directions in Conservation Strategies", in Northern Forest Lands Council, *Technical Appendix* (Concord, N.H., February, 1994), p. v.

¹²² Gordon Meeks Jr., *State Land Conservation and Growth Management Policy: A Legislator's Guide*, National Conference of State Legislatures (Denver, 1990), p.26.

¹²³ Phyllis Myers, "New Directions in Conservation Strategies", in Northern Forest Lands Council, *Technical Appendix* (Concord, N.H., February, 1994), p. 39.

¹²⁴ See Oregon Department of Fish and Wildlife, *Riparian Tax Incentive Program* pamphlets, Portland, Oregon; *Oregon Revised Statutes* 496.260, 308.794-5, and 498.248; and *Oregon Administrative Rules*, Chapter 635, Div. 9 -- Dept. of Fish and Wildlife, 635-09-300-360.

recreation and aesthetics.¹²⁵

- Numerous programs across Canada pay farmers to maintain habitat. Frequently such programs are sponsored by both government and by non-government conservation agencies. For example, programs under the Prairie Habitat Joint Venture provide payments to farmers to maintain waterfowl habitats. The programs include the Manitoba Habitat Heritage Program, the Prairie Conservation of Agriculture, Resources and Environment (CARE) program, and the Alberta Buck for Wildlife Program. The HELP program in Manitoba, the Saskatchewan Prairie Pothole Project, Alberta's Habitat Retention Program, the Private Stewardship projects of Wildlife Habitat Canada, Ontario's Landowner Stewardship Program, and the Montague County Program in PEI are all paying farmers to conserve habitat.
- In the early 1980s a highly successful pilot program in Red Deer County, Alberta gave tax rebates to farmers for protecting habitat, and not modifying (clearing, burning, spraying or grazing) the fish and wildlife habitat on their lands. The program also provided farmers with fencing, pheasant facilities, water dugouts, etc.¹²⁶
- Switzerland makes contracts with farmers, paying for management practices that protect wildlife habitat.¹²⁷
- Baden-Wurttemberg, Germany offers a sophisticated set of payments to farmers depending on the number of "eco-points" they have earned by adopting certain practices.¹²⁸
- The Netherlands restricts certain farming practices in designated water-protection zones and then pays compensation based on the number of hectares affected by the restrictions.¹²⁹

¹²⁵ Kirk Johnson, *Building Forest Wealth*, Northwest Policy Center, (Seattle, 1995), p. 31.

¹²⁶ Helen Corbett, "Sharing the Land with Wildlife", *Environment Views* Nov./Dec., 1982, p. 26.

¹²⁷ OECD, *Agricultural and Environmental Policy Integration: Recent Progress and New Directions*, (Paris, 1993) p. 54.

¹²⁸ OECD, *Agriculture and the Environment in the Transition to a Market Economy*, (Paris, 1994) p. 50.

¹²⁹ OECD, *Agricultural and Environmental Policy Integration: Recent Progress and New Directions*, (Paris, 1994) p. 58.

Some officials within the Ministry of Agriculture, Fisheries and Food have long called on the province to provide greater financial incentive to farmers to protect waterways and other environmental values.¹³⁰ An interview with an official from the BC Federation of Agriculture indicates that farmers would react positively to expanded payments for enhanced management of habitat, specifically wetlands. At this point it would be useful for environmental agencies to work closely with farmers and others representing the farm community to identify those enhancement incentive programs that would create optimum protection for wetland values.

RECOMMENDATION

The Agricultural Wetlands Incentives Committee should discuss the most effective way of paying farmers to manage their operations so as to maintain and enhance wetland values. Options considered should include:

- * *cash payments*
- * *cash payments accompanied by technical and material assistance*
- * *income tax or property tax reductions.*

4.2 GREEN BOUNTIES

Historically, the "bounty" system worked as a very effective financial incentive -- to extirpate certain species that were considered "pests". However, a bounty system could work in reverse, by offering bounties to landowners if their land produces rare species. This would encourage landowners to maintain and enhance the habitats of such rare species.

There are precedents. In Scotland, Scottish Natural Heritage pays farmers per head of

¹³⁰ For example, see Ron Bertrand, Ministry of Agriculture, Fisheries and Food, "Trip to Maryland" memo, (Abbotsford, August 1992).

Greenland White-Fronted Goose recorded on their land.¹³¹ The Defenders of Wildlife in the US pays \$5000 to private landholders if wild wolves successfully raise a litter of pups on their land.¹³² Farmers in the Peak District Dales in the United Kingdom are paid on the basis of the number of wild flower species found in their meadows.¹³³

Economist Richard Stroup has proposed that government pay property owners for every mating pair of spotted owls found on their property. This could counteract landowner perceptions that an endangered species discovery on their land is an economic problem that can be solved through eradication.¹³⁴

Wetlands provide critical habitat for most of the province's endangered and threatened species.¹³⁵ In specific areas it may be quite useful to offer a bounty to landowners who can show that their wetland still supports such a species. For example, the spadefoot toad is believed to be endangered in BC. If a \$10,000 bounty was offered to any landowner whose land supported such a toad, the bounty could encourage the protection of the toad's habitat.

RECOMMENDATION

The Agricultural Wetlands Incentives Committee and the provincial government should consider the possibility of instituting a bounty system for species at risk, and should determine what bounties, if any, should be offered for what particular species.

¹³¹ Tim Clairs and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO Division of Wildlife and Ecology (April 28, 1995, Canberra, Australia) p. 19.

¹³² Tim Clairs and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO Division of Wildlife and Ecology (April 28, 1995, Canberra, Australia) p. 19.

¹³³ Tim Clairs and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO Division of Wildlife and Ecology (April 28, 1995, Canberra, Australia) p. 19.

¹³⁴ Hank Fischer and Wendy Hudson, *Building Economic Incentives into the Endangered Species Act*, Defenders of Wildlife (Washington, D.C., 1994) p. 110.

¹³⁵ Personal communication, Bill Harper, endangered species specialist, BC Ministry of Environment, Lands and Parks.

4.3 GETTING FISH CONSUMERS TO PAY FOR WETLANDS ENHANCEMENT

Wetland owners supply the spawning and rearing grounds for much of British Columbia's fisheries. Yet the economic benefit created by wetlands is often harvested by fishers hundreds of miles away. Some mechanism is needed to properly reward those landowners who help create a healthy fishery.

The multistakeholder Pacific Policy Roundtable recently recommended that governments explore the possibility of charging royalties on harvested fish, and using such royalties to finance habitat restoration projects.¹³⁶ Fisheries Renewal BC should be given the ability to charge royalties on harvested fish, and pay a portion of those royalties to landowners who conserve habitat. Such a system would give a tangible financial incentive for landowners who maintain and enhance wetlands.

Similarly, water districts that owe their water quality to local wetlands might impose a small surcharge on their water fee in order to pay wetland owners for the contributions such wetlands make to the water supply. In Adelaide, South Australia, a water surcharge is already imposed to raise money for watershed restoration.¹³⁷ Perhaps we could take this principle a step further and pay wetland owners directly for their contribution to watershed quality and flow control.

RECOMMENDATION

The provincial government should consider:

** the imposition of a royalty on harvested fish, with a portion to be paid to landowners who maintain and enhance wetland areas and other fish habitat.*

¹³⁶ Pacific Policy Roundtable, *Report to the Minister of Fisheries and Oceans on the Renewal of the Commercial Pacific Salmon Fishery* (no location, December 1995). The Roundtable included representatives of the processing sector, the fishermen's union, aboriginal groups, coastal communities, the three commercial gear groups and provincial government agencies.

¹³⁷ Personal communication, Australian delegate to the United Nations Conference on Cities, Istanbul, Turkey, June, 1996.

** authorizing water districts to impose water surcharges, with proceeds to be paid to owners of wetlands for their contribution to the water resource.*

4.4 DELIVERY MODELS FOR INCENTIVE PROGRAMS

Serious consideration should be given to the mechanism to be used for delivering financial incentives to rural landowners. Three principles should be respected:

1. Local people should be involved in designing and delivering incentive programs.

Local people know which lands are most at risk, and what effect different incentives will likely have on local landowners' behaviour. They know the lay of the land and the minds of the landowners. This knowledge can never be replicated by public servants in Victoria or Ottawa.

Increasingly it is understood that government needs to decentralize decision making. As the UN Centre for Human Settlements has stated, the key to creating sustainable communities is to mobilize local resources and encourage bottom-up problem solving, rather than top-down decision making.¹³⁸ In countries from Brazil to the Netherlands government spending powers are being formally delegated to local groups, on the understanding that local people can often make budgets go farther, and accomplish more.¹³⁹

¹³⁸ UN Centre for Human Settlements, "Sustainable Cities and Local Governance" (Istanbul, June 7, 1996) p. 5.

¹³⁹ Approximately 70 municipalities in Brazil are now involved in Participatory Budgeting, a process that aims to have citizens, not just the state, decide where community budgets should be spent. The process blends representative democracy with direct democracy. [Zander Navarro, *Participatory Budgeting -- The Case of Porto Alegre (Brazil)*, The World Bank and Universidade Federal do Rio Grande do Sul (Porto Alegre, 1996) p. iii.] In a similar approach, local governments in the Netherlands have allocated funding to the residents themselves, on the condition that the neighbourhood group is run democratically and can ensure continuity of services. [Presentation Note from the French Presidency, *Urban Territories and Social Cohesion: What Public Action?* (Paris, May 19-20, 1995) p. 79.]

In British Columbia, the Delta Farmland and Wildlife Trust is a model worth emulating in delivering incentives to landowners. This group of local farmers, environmentalists and others has been notably successful at delivering wildlife stewardship programs in the Delta area, paying farmers to plant winter crops and set aside grassland areas, as well as bringing former adversaries together to seek innovative win-win solutions to problems. Because the trust is a local group, they are able to successfully mount landowner contact programs, and communicate and work collaboratively with their neighbours. The Salmon River Watershed Roundtable is another successful multistakeholder local group that is not only seeking consensus on a watershed stewardship plan, but has successfully coordinated delivery of funding for restoration projects.

Serious consideration should be given to prioritizing delivery of incentives through local multistakeholder groups.

2. Partnerships should be sought with nongovernment organizations and other levels of government.

Many of the most successful programs delivering financial incentives and stewardship programs to landowners are partnerships with NGO groups and several different government agencies.¹⁴⁰ Wildlife Habitat Canada, Ducks Unlimited, the World Wildlife Fund and local NGO groups have been valuable partners in such programs. And bringing in a number of local, provincial and federal agencies has reduced the financial burden on a single agency, while contributing to a creative synergy.

An interesting partnership idea that has been suggested would be to get a number of organizations that provide services to farmers to agree to contribute a small benefit to those landowners that agree to protect wetlands. Under such a "Wild Wetlands" initiative, the local water board might give farmers a bit of a break on their water rates, BC Hydro might give a small discount on electricity, farm supply stores might give a small discount on seed and supplies, Wildlife Habitat Canada might provide an aerial photograph of the land and an honorary plaque signed by the premier, and governments

¹⁴⁰ See Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities*, Commission on Resources and Environment (Victoria, 1996) chapter 7 for a description of the many partnerships involved in delivering stewardship programs and chapter 8 for a discussion of partnerships that have delivered economic incentives.

might chip in a cash payment or a tax reduction. None of the partners would have to pay too much, and the PR value will be valuable to each partner. Yet, although individual contributions might not be large, the aggregate benefit to the farmer might be substantial enough to motivate the farmer to set aside land, covenant it, or take other protective steps.¹⁴¹

3. Financial incentives should be combined with other stewardship programs, including education and technical assistance.

For optimum effectiveness, financial incentives should not be provided in isolation. They need to be integrated into a comprehensive stewardship program -- financial incentives are enhanced if they are combined with education efforts, technical assistance, and recognition awards.¹⁴²

Some of the most effective incentive programs have been ones where government has provided not only cash and materials, but also advice and technical assistance. An Ontario survey indicated that landowners preferred advisory/technical help more than any other kinds of assistance, while another survey ranked such help with tax relief as the most popular incentive.¹⁴³ Such technical assistance will often be aimed at purely ecological aims. But technical assistance will be doubly effective if it also shows how the farmer can

¹⁴¹ The cooperation between the Automobile Retailers Association and BC Transit in working together to offer incentives for people to junk their high-polluting old vehicles is a model to be considered. BC Transit offers a free one year bus pass to those who surrender their car. Or the car owner can take advantage of a \$500-750 discount from the Automobile Retailers Association. Both Transit and the retailers get good publicity, and the person getting rid of the polluting auto is given a broader choice of incentives. Personal communication, Lawrence Alexander, Ministry of Environment, Lands and Parks.

¹⁴² Some analysts have concluded that education programs may be more effective at encouraging stewardship efforts than low-budget financial incentives. Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 191. For further discussion of the importance of education, technical assistance and recognition awards, see Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities*, Commission on Resources and Environment (Victoria, 1996), Chapter 7.

¹⁴³ Mark Van Patter, *Landowner Incentive Mechanisms to Promote Wetland Protection in Ontario*, Federation of Ontario Naturalists (Don Mills, 1986) p. 30.

economically prosper with good stewardship – e.g., showing how fencing cattle out of the wetland will not only protect water quality, but reduce health problems for the rancher's cattle.

RECOMMENDATIONS

Programs for delivering financial incentives to landowners should:

- *involve local people in design and delivery,*
- *where possible, involve partnerships of both NGOs and different levels of government, and*
- *be combined with other stewardship programs, including education efforts, technical assistance, and recognition awards. Technical assistance and education should, when possible, show landowners how the owner can financially benefit from a natural wetland.*

4.5 REDUCING DISINCENTIVES

4.5.1 COMPENSATION FOR CROP DAMAGE

One of the most important current financial disincentives deterring farmers from protecting wetland values is the potential for wetland-dependent birds to seriously damage a farmer's crops. If a farmer stands to lose a crop to birds attracted by a wetland, the farmer will not be inclined to protect and maintain such a wetland.

Fourteen states and four Canadian provinces provide some sort of compensation for wildlife damage to farm crops.¹⁴⁴ On the prairies a federal/provincial fund has paid out an

¹⁴⁴ Allons Weersink and John Livernois (eds.), *Exploring Alternatives: Potential Application of Economic Instruments to Address Selected Environmental Problems in Canadian Agriculture* Environment Bureau, Agriculture and Agri-food Canada (Ottawa, 1996) p. 188-9.

average of \$8.1 million annually to compensate farmers for waterfowl crop depredation.¹⁴⁵

Such payments for wildlife damage can reduce farmers' concerns about fostering wildlife on and near their lands. While BC has some local programs to deal with local waterfowl issues, such a compensation approach should possibly be considered across the province.

However, one US study found that such compensation programs are expensive, hard to monitor, and also create an incentive for the landowner to not abate wildlife problems. Another study has countered by showing that government may be able to deal with such problems by creating an optimal combination of abatement effort and compensation that can reduce cheating and monitoring costs, while reducing overall wildlife damage.¹⁴⁶

At least one Canadian official involved in the prairies program takes the view that an enormous amount of money is being given to farmers, when they don't have a right to it. His view is that waterfowl are like any other factor in nature, and that government should not compensate for natural damage.¹⁴⁷ This view has been reflected by some BC Ministry of Environment personnel.

While this view may have its merits, the fact remains that farmers may otherwise take measures to defend their farm from depredation -- by draining the their own wetlands, or encouraging neighbours to drain theirs.

Ultimately, paying farmers for bird damage would probably increase the support for other wetland-related measures in the farm community -- and, in the long run, support wetlands

¹⁴⁵ Richard Gray and Kim Rollins, "Economic Instruments to Preserve and Enhance Wildlife Habitat in Canada's Agricultural Landscape", in *Exploring Alternatives: Exploring Application of Economic Instruments to Address Selected Environmental Problem in Canadian Agriculture* (Agriculture and Agri-Food Canada, April, 1996) pp. 188-9. In addition to the above payments, the provincial and federal governments on the prairies have spent \$700,000-900,000 annually for crop damage prevention.

¹⁴⁶ Richard Gray and Kim Rollins, "Economic Instruments to Preserve and Enhance Wildlife Habitat in Canada's Agricultural Landscape", in *Exploring Alternatives: Exploring Application of Economic Instruments to Address Selected Environmental Problem in Canadian Agriculture* (Agriculture and Agri-Food Canada, April, 1996) p. 189.

¹⁴⁷ Personal communication with official who wishes to remain anonymous.

protection. However, further discussion among the parties is needed to determine if the cost would be worth it.

RECOMMENDATION

The Agricultural Wetlands Incentives Committee should determine if the cost of paying compensation to farmers for wetland-dependent bird damage would be worthwhile -- and the most efficient and effective way of delivering such compensation.

4.5.2 OCCUPIERS' LIABILITY

Another potential financial disincentive to maintaining a wetland is the possibility that the owner may be sued by a recreationist who is injured while enjoying the wetland and its wildlife. A number of jurisdictions have acted to reduce the legal liability of owners who allow recreationists access to their lands. Almost every state in the US now has a recreational use statute that gives limited liability protection to landowners who allow free public access to their property.¹⁴⁸ Ontario and Nova Scotia have passed legislation to reduce occupier's liability.¹⁴⁹ The Outdoor Recreation Council of BC and other organizations have long urged similar reform here in BC. British Columbia needs to pass such reform legislation, to avoid the penalization of those who maintain natural features on their land and allow the public access to those features.

RECOMMENDATION

The provincial Occupiers Liability Act should be amended to reduce the liability of landowners who allow recreationists to have access to their land.

¹⁴⁸ Phyllis Myers, "New Directions in Conservation Strategies", in Northern Forest Lands Council, *Technical Appendix*, (Concord, N.H., February, 1994), p. 16.

¹⁴⁹ David Brown, "Reclaiming Deserted Corridors", *Alternatives* (May/June, 1993), pp. 27-8. Also, see Outdoor Recreation Council of BC, *Recreation Access Discussion Papers*, O.R.C. (Vancouver, August 1990) pp. 9-10.

4.6 ADDITIONAL POSSIBILITIES

4.6.1 SWAMPBUSTER LEGISLATION – CROSS-COMPLIANCE

Since 1985 the US has had "swampbuster" legislation that creates a powerful financial disincentive against destroying wetlands. This "cross-compliance" legislation states that if a farmer drains or otherwise converts a wetland, the farmer loses any federal agricultural subsidies and other benefits.¹⁵⁰

Many have called for Canada to adopt swampbuster-type legislation. The Federal-Provincial Agriculture Committee on Environmental Sustainability recommended that Canadian Governments immediately examine whether cross-compliance measures should be applied to federal and provincial agriculture programs.¹⁵¹ The legally required Environmental Assessment of the federal NISA farm income support program recommended that Agriculture Canada implement swampbuster provisions that would apply to currently distributed subsidies.¹⁵² The formal Environmental Assessment of the federal Crop Insurance program suggested that new or increased benefits be given to farmers using environmentally sensitive farming practices.¹⁵³

A recent draft report by Agriculture Canada's Environment Bureau has concluded that a cross compliance program would be feasible in Canada, and has the potential for being an effective instrument if is properly designed, implemented and monitored. It also concluded that cross-compliance could be a cost-effective means of accelerating best

¹⁵⁰ The US legislation also provides for withdrawal of federal subsidies if a soil conservation plan is breached. See the US *Food Security Act, 1985*, and successor legislation. Similarly, farmers in Australia who receive drought assistance must develop environmentally-sensitive management plans. [Clairs, Tim and Mike Young, *Approaches to the Use of Incentives to Conserve Biodiversity*, CSIRO Division of Wildlife and Ecology (April 28, 1995, Canberra, Australia) p. 32.]

¹⁵¹ Federal-Provincial Agriculture Committee on Environmental Sustainability, *Growing Together*, (Ottawa, 1990), p. 4.

¹⁵² Mark Ziegler, *An Examination of the Feasibility of Using Environmental Cross Compliance in Canadian Agriculture*, Environment Bureau, Agriculture Canada (Ottawa, 1995) p. 11.

¹⁵³ Mark Ziegler, *An Examination of the Feasibility of Using Environmental Cross Compliance in Canadian Agriculture*, Environment Bureau, Agriculture Canada (Ottawa, 1995) p. 12.

management practices in a period of fiscal constraint and program rationalization.¹⁵⁴

However, the US cross-compliance system has been criticized as requiring a great deal of enforcement -- which has not been forthcoming. It has also been argued that such a system doesn't have much impact when subsidies dwindle (e.g., during good market years). And it doesn't impact farmers who are not receiving subsidies -- or farmers who still find it more profitable to degrade the environment than to collect subsidies.

In addition, recent draconian cuts to agricultural subsidies have reduced the amount of leverage that cross-compliance would deliver.¹⁵⁵ British Columbia farm industry and Ministry of Agriculture spokesmen express great concern about applying cross compliance to current subsidy and benefit programs.¹⁵⁶ However, they are much more open to the idea of attaching cross-compliance conditions on new subsidy and benefit programs. In fact, the new BC Grazing Enhancement Fund program is a type of cross-compliance program, requiring recipients to prepare and comply with an environmental management plan.

See the discussion above of the possibility of using cross-compliance to make farm property tax breaks contingent on not destroying wetlands.

RECOMMENDATION

The issue of cross-compliance should be jointly studied by the Agricultural Wetlands Incentives Committee. If adopted, such a program must be implemented carefully, to ensure that it does not increase the overall regulatory burden on BC farmers.

4.6.1.1 FEDERAL LOANS AND MORTGAGES

¹⁵⁴ Mark Ziegler, *An Examination of the Feasibility of Using Environmental Cross Compliance in Canadian Agriculture*, Environment Bureau, Agriculture Canada (Ottawa, 1995) pp. iv and v.

¹⁵⁵ John Girt, agricultural economist, estimates that federal agricultural subsidies have declined from \$4-5 billion to only \$.5 billion next year. Larry Bomford estimates that direct B.C. provincial transfers to farmers are now at about \$13 million per year. Personal communications.

¹⁵⁶ Personal communication, Larry Bomford, Ministry of Agriculture, Fisheries and Food; Margaret Crawley, BC Federation of Agriculture.

In considering cross-compliance, the federal and provincial governments could also study the advisability of making farm mortgages and loans subject to conservation conditions.

In the US, cross-compliance policy makes the extension of low-interest agricultural credit contingent upon the farmer not draining or filling wetlands.¹⁵⁷ Before a federal agricultural loan is extended to a farmer, the US Fish and Wildlife Service reviews the loan and advises the Farmers Home Administration as to whether it would result in wetland drainage.¹⁵⁸

In addition, if a farmer can't keep up mortgage payments and wants to restructure debt payments, there is express provision allowing the farmer to pay for the debt by granting a conservation covenant on wetlands.¹⁵⁹ If the federal financing agency actually takes possession of the property, they are explicitly given the power to sell conservation covenants to conservation agencies and groups.¹⁶⁰

The provincial and federal governments should consider emulating these measures when providing loans or loan guarantees to farmers and other owners of wetlands.¹⁶¹ Governments should consider making money available at low interest rates for owners that are willing to take measures to protect wetlands. Although the ALDA loan program has been phased out for farmers, it may be possible to provide farmers with advantageous wetland-friendly loans through CMHC, the Farm Credit Bureau and other government agencies.

¹⁵⁷ Soil and Water Conservation Society, *Implementing the Conservation Title of the Food Security Act: A Field-Oriented Assessment*, (Ankeny, Iowa, 1992) p. 71. Also, see Simon Valteau, *Loan and Mortgage Assistance in the Prairies: A Conservation Perspective*, Wildlife Habitat Canada (Ottawa, 1989) for a discussion of proposals for using government loans and mortgages to protect wetlands and other habitat.

¹⁵⁸ Simon Valteau, *Loan and Mortgage Assistance in the Prairies: A Conservation Perspective*, Wildlife Habitat Canada (Ottawa, 1989) p. 33.

¹⁵⁹ Or other portions of the property. Vance Clark, "Implementing Conservation Covenants", *Journal of Soil and Water Conservation* (January-February 1986) pp. 31-2.

¹⁶⁰ Or other portions of the property. Vance Clark, "Implementing Conservation Covenants", *Journal of Soil and Water Conservation* (January-February 1986) pp. 31-2.

¹⁶¹ For a useful discussion of this matter, see Prism Environmental Consulting Services, "Mortgage Relief and Habitat Retention on Private Land", a paper apparently done for Wildlife Habitat Canada for a proposed WHC mortgage relief project.

Although farmers would likely oppose cross-compliance imposed on existing benefits, they would likely be more receptive to a program that offered new benefits, in exchange for some environmental safeguards.¹⁶² It should be noted that current Farm Credit Corporation mortgages already contain environmental requirements to avoid contaminating the land with toxics, and wetland provisions could simply be added to the existing environmental conditions.

RECOMMENDATION

Federal and provincial loan and mortgage policies should be reviewed to determine whether:

- *protection of wetlands should be made a condition of low-interest government-backed loans*
- *farmers should be allowed to pay down loans by conveying conservation covenants.*

¹⁶² Personal communication, Larry Bomford, BC Ministry of Agriculture, Fisheries and Food and Margaret Crawley, BC Federation of Agriculture.

5 INCENTIVES FOR DEVELOPERS TO PROTECT WETLANDS

5.1 REWARDING SENSITIVE DEVELOPMENT DESIGNS

Although historically most of our wetlands have been lost to agriculture, increasingly wetland losses are caused by residential development and related urban sprawl. It is important that regulations be instituted to restrict such development of significant wetlands. However, economic incentives can play a role in supplementing regulations -- for example, by providing motivation to protect important upland areas and other unregulated portions of the wetland-related ecosystem.

Local governments can create a powerful incentive if they make it profitable to cluster homes on less sensitive areas of a property, and leave wetland-related areas natural. This can be done by granting developers a density bonus for such development -- allowing just as many, or more, units than if the land had been developed conventionally.

British Columbia already has some mechanisms to encourage cluster housing. For example, a subdivision developer can choose to cluster housing and leave greater green space by using the Bare Land Strata regulations under the *Condominium Act*, which provide for strata plan subdivisions. In addition, the provincial government has enacted legislation¹⁶³ that specifically allows municipalities to offer density bonuses to developers that offer amenities, including bonus green space. Also, the City of Surrey has established zoning bylaws that provide for density advantages to developers that set aside at least 15% of the parcel in significant open space. Developers that contribute are allowed to count 50% of their **undevelopable** land toward their allowable density. This undevelopable land is land that they would not otherwise get density credit for.¹⁶⁴ This "density for open space" mechanism has helped Surrey establish a successful riparian linear park system.

However, the incentive mechanisms discussed are not being taken up by most developers.

¹⁶³ Section 963.1 of the *Municipal Act*.

¹⁶⁴ See Surrey's Single Family, Half-Acre, and Acreage Residential Gross Density Zones.

It continues to be easier to just proceed with conventional development, rather than try to negotiate a creative development design with local government. The basic problem is that it is easier to get approval for standard, gridiron designs, with standard engineering, than for creative open space developments. In order to do ecologically sensitive development, a developer is likely to require a number of variances from standard municipal rules -- and the project is likely to be delayed as a result. In other words, the current system penalizes a developer for doing the right thing.

RECOMMENDATION

A Green Development Committee, with representatives of the provincial and federal governments, the Union of BC Municipalities, the Urban Development Institute, the BC Homebuilders Association and environmental agencies and groups should jointly develop proposals for cutting red tape for developers that want to create creative subdivisions with a large amount of open space and clustered housing.

In addition, bylaws should be enacted to make open space design mandatory in certain areas. A growing number of US municipalities have adopted requirements that require open space development design, at least in certain environmentally sensitive areas. In these areas applicants are either required to submit plans for clustering, with 50-80% of the property as open space, or receive only a fraction of otherwise permissible density.¹⁶⁵

Over 50 communities in the US have adopted a form of open space subdivision bylaw, and the number is growing rapidly. In British Columbia, Surrey Council has approved in principle a Cluster Residential bylaw creating a zone that requires new developments to retain 50-80% of the site for open space. Such open space subdivision bylaws have become an extremely important tool for conserving natural areas in the suburban/rural interface.

¹⁶⁵ For example, see the zoning regulations of Cecil County Maryland, Gloucester County, Virginia, Fauquier County, Virginia, Clallam County, Washington, Clarke County Washington, and Marin County, California, as discussed in Randall Arendt, *Designing Open Space Subdivisions: A Practical Step-by Step Approach*, Natural Lands Trust, U.S. Environmental Protection Agency and W. Alton Jones Foundation (Media, Pa., 1994) p. 95.

RECOMMENDATION

Local governments should be encouraged to consider enacting open space subdivision bylaws that would create zones around key wetlands that would require:

- *that development be clustered on less sensitive areas, and*
- *that 50-80 % of the property to be retained as green space.*

Such zones should aim to provide developers with a fair profit.

5.2 TRANSFERABLE DEVELOPMENT RIGHTS

Another possible way of providing economic incentives to landowners to leave wetland areas in a natural state could be through a transferable development rights (TDR) system. Under a TDR system a landowner is allowed to transfer "development rights"-- the allowable number of units the developer can build on the land --to a different property, which can then be developed at an increased density. This is done to compensate the owner for not fully developing the original, environmentally sensitive land, which remains protected.

A typical TDR program establishes both a "preservation" district and a "development" district. Zoning in the preservation district severely restricts landowners rights to develop, but the owners are assigned "development rights" as compensation. They are then allowed to sell these development "rights" to an owner in the development district who can use the "rights" to build at higher densities than are allowed under current zoning. TDR compensates landowners in the preservation district for low density zoning, by giving them both marketable rights and lower property tax assessments after the rights are sold.¹⁶⁶

A few TDR programs in the US have been quite successful -- notably the programs in the New Jersey Pinelands and Montgomery County, Maryland. However, the problem with TDR programs is that they may damage a community's ability to regulate land use,

¹⁶⁶ After restrictive conservation covenants have been placed on title, the market assessment will usually go down.

because it can create a perceived right to compensation for restrictive zoning. The TDR concept has been chiefly developed in the US, where property rights are more entrenched, and where the argument that planning restrictions should be paid for in some way is much stronger. In contrast, in British Columbia there is generally no compensation for zoning changes unless the only land use permitted is a public one.¹⁶⁷ By giving marketable "rights" to those in a protected zone, TDR may raise expectations that compensation should regularly be given to those that do not have maximum zoning. In fact, TDR programs could serve to undermine the zoning regimes of the Agricultural Land Reserve and the Forest Land Reserve. Owners in such zones might argue that they, too, should be given transferable development rights as compensation for their restrictive zoning.

We may not want to set a precedent of paying landowners simply because they are restrictively zoned. This would undermine the integrity of our land use control system in a fundamental way. However, it may well be useful to try to develop a TDR system that would provide tradable development rights in situations where landowners already have a right to be compensated under Canadian law.¹⁶⁸ For example, transferable development rights could be granted to an owner:

- When an entire property is so environmentally sensitive that all development or economic use of the land should be prohibited. For example, Portland, Oregon has instituted a TDR program to compensate owners who are totally prohibited from developing their land.¹⁶⁹

or

- When an owner voluntarily places a conservation covenant on the land that permanently restricts development of the land, above and beyond any government-

¹⁶⁷ See section 972 of the *Municipal Act*.

¹⁶⁸ It should be noted that the *Vancouver Charter* empowers the City of Vancouver to use TDR for heritage preservation, but only where the owner had a pre-existing legal right to compensation. See *Municipal Affairs Statutes Amendment Act*, S.B.C. 1995, s. 595A.

¹⁶⁹ Portland has prohibited development of privately-owned infill lands within one of the City's parks, and compensates the owners by providing them with transferable development rights that can be used to increase density in a receiving zone. The City is contemplating making such rights usable anywhere in the City. See Title 33, *Portland Planning and Zoning Code*, 33.575.300. Private communication, Bob Clay and Tom McQuire, Portland Planning Bureau.

imposed restrictions.

In the former case, a complete restriction on economic use would normally constitute a "taking" and would require government to compensate the owner anyway. The granting of TDRs would be one economical way for government to pay for such a taking. In the latter case, government would be essentially paying the owner for an interest in the land -- i.e., the development rights on the land. In neither case would government be setting the dangerous precedent of paying for the right to regulate land -- they would simply be paying for property rights that already require compensation. As with Vancouver's heritage legislation¹⁷⁰, TDR would be limited to situations where the owner of the sensitive land had a pre-existing right to compensation.

The granting of TDRs to wetland owners who permanently protect their land with conservation covenants could provide a very real economic incentive. It could motivate the owners of key wetlands to place covenants on those land. Best of all, the incentive could be provided without a cash outlay by government.

In principle, the concept is not much different from the current system of allowing density bonuses on one piece of land in exchange for leaving green space elsewhere on the same land.¹⁷¹ Essentially, a limited TDR program would aim to accomplish the same purpose when the protected area and the density bonus area happen to be on two different properties.

Since one of the drawbacks of the large-scale TDR programs in the states has been high administrative costs,¹⁷² efforts should be made to keep the system here as simple as possible. TDR programs have been noted for their high administrative costs, but a limited program as described should be comparatively easy to administer.

RECOMMENDATION

The Green Development Committee should consider options for establishing a

¹⁷⁰ See the footnote above.

¹⁷¹ S. 963.1 of the *Municipal Act* now allows a local government to give bonus density on one part of a property, in exchange for leaving another part undeveloped.

¹⁷² See Calvin Sandborn, *Green Space and Growth*, Commission on Resources and Environment (March, 1996) pp. 116-118.

transferable development rights system to:

- *create incentives for owners of key wetlands to place conservation covenants on their land, and*
- *reimburse owners of land that cannot be used for economic purposes because of environmental laws.*

5.3 PERFORMANCE BONDING FOR DEVELOPERS

Many times developers promise that there will be little environmental impact from their project, but in the end damage is caused to a wetland or other natural feature. This kind of breach of promise could be deterred if developers were required to pay if they failed to fulfill their environmental promises. Developers could be required to file a performance bond to ensure that wetlands are not damaged by their development.¹⁷³ If damage occurs, the bond money would be available to help fix the damage.

Performance bonds have been applied for years on mine operations and certain polluting industries in British Columbia. Municipalities currently have the power to require similar performance security in certain very narrow circumstances -- in order to pay for remediation of unsafe conditions or inadequate landscaping arising from activities authorized by certain permits.¹⁷⁴ Perhaps it is time to empower local governments to require environmental performance bonding whenever development occurs.

The requirement for such bonds will give developers a tangible financial incentive for protecting natural features such as wetlands. And if promises are broken, at least some funds will be available to deal with the mess left behind.

RECOMMENDATION

¹⁷³ OECD, *Market and Government Failures in Environmental Management: Wetlands and Forests* (Paris, 1992) p. 36

¹⁷⁴ I.e., tree cutting permits, development permits and other defined permits. *Municipal Act*, section 980.

The Green Development Committee should consider amendments to the Municipal Act that would explicitly empower local governments to require environmental performance bonds whenever development occurs.

6 ENCOURAGING LANDOWNERS TO PROFIT FROM WETLAND CONSERVATION

6.1 PROFITS FOR FARMERS FROM WETLAND HUNTING

“When the well is dry, we know the worth of water.”

-- Benjamin Franklin

Although much wildlife is dependent upon the good stewardship of private wetland owners, the market provides no economic incentive for such stewardship. On the other hand, wildlife is generally available to hunters as a free, public good. The person who pays for habitat management gets nothing, while the person who tangibly benefits from the wildlife pays nothing.

This is a classic market failure, or missing market. The market fails to adequately value the present and future economic interests of society in wildlife preservation. Since the full value of wildlife is not reflected in any market, markets have tended to undervalue habitat and overvalue competing land uses. Why maintain a wetland for ducks when you can drain it and raise a cash crop? And farmers have done just that.

Some jurisdictions have addressed this problem by encouraging landowners to directly profit from the wildlife that the landowner's stewardship has helped produce. Landowners are allowed to collect hunting fees, leases and blind rentals from people who hunt on their land. They can also charge for services such as accommodation, meals, transportation, guiding, provision of hunting dogs, entertainment, etc. In some places

farmers actually now make more from hunting than from farming.¹⁷⁵

US landowners have sold hunting rights in a number of ways, for example:

- by providing guests with accommodation and full hunting services for \$100-1500 per day¹⁷⁶;
- by selling individual or group permits or leases for access to the land. Over one million US fishermen and hunters either lease land for hunting or belong to a group that leases such land.¹⁷⁷ In Delaware and Maryland such lease fees run from \$4000-40,000 annually, with a common fee of about \$10,000;¹⁷⁸
- by setting up a hunting club that sells lifetime shares for up to \$100,000 each;¹⁷⁹

¹⁷⁵ Personal communication, Ron Bertrand, BC Ministry of Agriculture, describing the situation he observed in Maryland. For example, in Kent County, Maryland, hunting is big business, with 179 farms leased to hunters for over \$1 million annually. Total hunting guide services sold in the county amount to over \$4 million annually, with another \$4.5 million coming into the community for lodging, meals, accommodation, etc. In Val Verde County, Texas, over half the ranches are leased for hunting each year. See William Grafton et al (ed.) *Conference Proceedings: Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access*, West Virginia University Extension Service, (Morgantown, 1990) pp.123 and 147.

¹⁷⁶ *Wildlife Management: Investment and Income Opportunities for the Private Landowner*, Clemson University Cooperative Extension Service (Clemson University, undated) p. 5.

¹⁷⁷ William Grafton et al (ed.) *Conference Proceedings: Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access*, West Virginia University Extension Service, (Morgantown, 1990) p. 190. In the U. S. South, leases are the commonest type of wildlife fee access system found on private lands. In the past, Lower Mainland guns clubs have paid fees to Fraser Valley landowners for the right to hunt on their land. Personal communication, Ray Halladay, BC Director of Wildlife.

¹⁷⁸ William Grafton et al (ed.) *Conference Proceedings: Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access*, West Virginia University Extension Service, (Morgantown, 1990) p. 150.

¹⁷⁹ There is something of a precedent for this approach in BC. The *Wildlife Act* has authorized two private clubs to release and hunt pheasants on their properties in the Fraser Valley and on Vancouver Island. (Personal communication, Ray Halladay, BC Director of Wildlife.) Although these operations have not made big profits, in the US some clubs sell memberships for as much as \$100,000 each. See Grey Yarrow, *Wildlife Management: Investment and Income Opportunities for the Private Landowner*, Clemson University

- by charging for fishing in wetlands and other waterbodies on their land; and
- by joining into cooperatives with their neighbours to form a large enough area to be managed for wildlife and to accommodate recreationists.¹⁸⁰

A number of states, such as California, Washington, Utah, New Mexico and Colorado have strongly encouraged such initiatives, giving a number of tangible advantages that can be turned into cash by landowners who have prepared a wildlife management plan for their land. The Private Lands/Public Wildlife programs in those states provide a specified number of hunting permits directly to the landowner, to be used in landowner-sponsored hunts. They also give landowners the advantage of a flexible hunting season on the privately enrolled lands.¹⁸¹

British Columbia farmers who own wetlands and upland areas might be able to similarly profit from the bird production that wetlands support. A few attempts at hunting initiatives have been tried in the past. A Cowichan Valley farmer was apparently successful in attracting US hunters to come to his land to hunt geese and ducks, but was shut down by a municipal bylaw regulating shooting. Lower Mainland guns clubs have paid fees to Fraser Valley landowners for the right to hunt on their land. And the *Wildlife Act* has authorized two private clubs to release and hunt pheasants on their properties in the Fraser Valley and on Vancouver Island.¹⁸² However, there has never been a concentrated effort to encourage such initiatives as part of a broader conservation and sustainability strategy.

Yet the potential for such hunting incentives would appear to be significant. In particular, migratory bird hunting could well become profitable for farmers along the Pacific Flyway

Cooperative Extension Service (Clemson University, undated) p. 5.

¹⁸⁰ See Grey Yarrow, *Wildlife Management: Investment and Income Opportunities for the Private Landowner*, Clemson University Cooperative Extension Service (Clemson University, undated) pp. 5-7.

¹⁸¹ Kaush Arha, University of California, Berkeley, "Sustaining Wildlife Value on Private Lands: A Survey of State Programs for Wildlife Management on Private Lands in California, Colorado, Montana, New Mexico, Oregon, Utah, and Washington", pp. 4 and 7, in *Proceedings of the North American Wildlife and Natural Resources Conference* (Tulsa, Oklahoma, March, 1996).

¹⁸² Personal communication, Ray Halladay, BC Director of Wildlife.

on Vancouver Island and the Fraser Valley, as well as along other flyways in the Peace River area, along the Columbia wetlands and in the Vanderhoof area. Fortuitously, waterfowl hunting season tends to be the slack season for BC farmers, and could provide significant off-season income.

RECOMMENDATION

The province should consider ways of assisting landowners to directly profit from ecologically sound hunting that provides an economic incentive for landowners to maintain and enhance wetlands. Measures considered should include giving landowners some control over advantageous hunting permits.

Many states take a more indirect approach, charging hunters for permits or stamps, and directing part of the revenue to landowners who allow public access to hunters. Still others lease private lands to allow public access for hunters.¹⁸³ Another approach, used in Louisiana and Wisconsin, is to compensate the farmer by providing favourable tax treatment and paying for wildlife-caused crop damage -- but only if the landowner grants free public access to hunters. Wisconsin levies a surcharge on hunting licences, which is then used to compensate landowners for damages caused by foraging geese.¹⁸⁴

RECOMMENDATION

The province should consider directing (1) proceeds from hunting licences, (2) favourable tax treatment, and (3) wildlife damage compensation (See above) to those landowners who maintain and enhance wetlands.

¹⁸³ Grey Yarrow, *Wildlife Management: Incentives for the Private Landowner*, Clemson University Cooperative Extension Service (Clemson University, undated) p. 2.

¹⁸⁴ Richard Gray and Kim Rollins, "Economic Instruments to Preserve and Enhance Wildlife Habitat in Canada's Agricultural Landscape", in *Exploring Alternatives: Exploring Application of Economic Instruments to Address Selected Environmental Problem in Canadian Agriculture* (Agriculture and Agri-Food Canada, April, 1996) p. 178.

6.2 NATURE TOURISM

It may well be that wetland owners can make more money from nature tourism than from hunting. There is a very large market for people who want to get away from the city to enjoy nature.¹⁸⁵ And the market is growing -- the 45-65 year age group will grow at three times the rate of the general population, and they are keen consumers of such nature getaways.¹⁸⁶ Because wetlands have such abundant wildlife and plant values, wetlands can be a very attractive destination. Farmers and other owners may be able to profit from establishing bed and breakfast retreats that feature their wetland's bird life, croaking frogs at night, and other wildlife.

Although the Ministry of Tourism and the Agricultural Land Commission have done some work supporting such farm-nature bed and breakfast ventures,¹⁸⁷ far more could be done. For example, the Ministry of Tourism could produce a provincial wildlife viewing guide that would list "nature reserve" bed and breakfasts, as has been done in Oregon.¹⁸⁸

¹⁸⁵ A recent study showed that in Seattle, San Francisco, L.A., Dallas, Chicago, Toronto and Winnipeg alone, there may be up to 3.2 million people interested in BC and Alberta ecotourism. And this doesn't count the Vancouver-Victoria weekend and "getaway" market. [ARA Consulting Group, Inc, et al., *Ecotourism: Nature/Adventure/Culture: Alberta and British Columbia Market Demand Assessment* (BC Ministry of Small Business, Tourism and Culture, 1995) p. ES-1.] A recent US study estimated that three out of four persons are involved in the non-consumptive, appreciative use of wildlife. See William Grafton et al (ed.) *Conference Proceedings: Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access*, West Virginia University Extension Service, (Morgantown, 1990) p. 28.

¹⁸⁶ Statistics Canada, *Population Projections for Canada 1993*.

¹⁸⁷ For example, the *Agricultural Land Commission Order No. 1157/93* now allows a farmer to operate a small Bed and Breakfast (up to three bedrooms rented in the farmer's house) without special application to the commission. The Ministry of Tourism ran a promotion of farm vacations a few years ago.

¹⁸⁸ State and federal agencies have worked with private groups to create the *Oregon Wildlife Viewing Guide*. See William Grafton et al (ed.) *Conference Proceedings: Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access*, West Virginia University Extension Service, (Morgantown, 1990) p. 29.

RECOMMENDATION

The Ministry of Tourism, Ministry of Agriculture, Fisheries and Food, and the Agricultural Land Commission should work together to encourage ecologically sound, nature-oriented bed and breakfast operations on BC farms.