

Hunting for Habitat

The Rise and fall of an Alberta Proposal for the Private Production of Ecological Goods and Services

Rainer Knopff and Cormack Gates

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Executive Summary

Farms and ranches produce not only the familiar agricultural goods but also such ecological goods and services as healthy watersheds, wildlife habitat and wildlife. While farmers and ranchers are paid for their agricultural products, there has traditionally been no market for their ecological goods and services. This is a matter of concern when economic pressures, often rooted in urban centres, degrade the capacity of landscapes that are needed to produce ecological goods and services for those same urban centres. Several mechanisms have been devised to provide financial returns for the private production of ecological goods and services, thus ensuring that ecological costs are no longer an externality that can be ignored in market transactions. Hunting for Habitat, the name for one such mechanism recently considered in Alberta, sought to provide some market incentives to enhance the private production of wildlife habitat, with corollary benefits for other ecological goods and services, while simultaneously enhancing public access to wildlife resources on private lands. The competing interests were difficult to reconcile, especially given that it has hitherto been mostly illegal for landowners to receive any financial consideration for giving hunters access to the publicly owned wildlife upon their lands (in contradistinction to their ability to charge companies for access to publicly owned minerals beneath it). This paper analyzes the politics involved in the Hunting for Habitat proposal and compares the proposal with other ways of rewarding the private production of ecological goods and services.

Introduction

We inhabit an increasingly urbanized world, with over half of the world's people and about 80 per cent of Canadians living in urban centres (Gibbins 2007). The cities in which we live depend in myriad ways on a surrounding countryside that is increasingly foreign to most of us except for its recreational potential. We urbanites may travel to enjoy amenities such as lakes, streams, fields and mountains, but fewer and fewer of our rural excursions are visits to the family farm or ranch, because our families have been urban for generations. We are aware that our supermarket purchases originate on working agricultural lands—often from around the world (even for a single meal)—but many of us do not appreciate what those working landscapes contribute to the clean air and water we expect and take for granted in our cities. Indeed, we often erode and degrade the local and regional production of such ecological goods and services by exerting our economic muscle in ways that turn sensitive landscapes from agricultural to recreational or development purposes. Cottages, condos, golf courses, mineral development, forestry and the like fragment the landscape in ways that undermine its ecological capacity.

What to do? Where public lands are available in sufficient quantity, one answer is to rely on them for the provision of ecological goods and services, typically by setting some of them aside as parks or preserves of various kinds and regulating the type and quantity of development on the remaining public lands. This valuable response is obviously not possible in jurisdictions with little or no public land, and it often will not suffice even where public lands are substantial. In southern Alberta, for example, the system of parks (national and provincial) and other public land is, thankfully, significant, particularly in landscapes not amenable to tillage for crop production. Nevertheless, private agricultural lands, particularly privately owned native rangelands, provide critical habitat for many wildlife species and sustain the health of important watersheds. Such private land represents about 75 per cent of the agriculturally developed area of the province (known as the White Area¹). The question thus becomes how to stabilize and improve the ecological contributions of privately owned rural lands in the face of mounting pressure to fragment and develop these landscapes.²

This paper examines Hunting for Habitat (HFH), a 2008 policy proposal designed to contribute to rural stabilization in southern Alberta. HFH, which sought to give rural landowners a modest commercial stake in the public wildlife resource, was one-half of the two-pronged Open Spaces Alberta (OSA) initiative. The other half of OSA—the Recreation Access Management Program (RAMP)—proposed to assist enrolled landowners in managing hunting access on their lands and provide them with modest financial compensation for the costs and inconveniences associated with such access. RAMP, which was tested in two areas in southern Alberta from 2009 to 2010, was an access management program, not a land stabilization program. Its financial compensation component was too small to represent a land stabilizing form of diversification for many landowners. HFH, by contrast, sought to give large landowners (or landowner co-operatives) an economic stake in the public wildlife resource. HFH pilot projects were to test the proposition that the opportunity to realize some return from hunting would not only diversify economic opportunities for rural landowners, thereby perhaps stabilizing otherwise marginal ranches, but would also give landowners incentives to maintain and enhance ecologically productive landscapes (Anderson and Huggins 2006).

The HFH component of the OSA initiative raised considerable controversy just before and during the 2008 Alberta election, and consequently the government shelved it. Even if HFH represented a substantively valuable policy initiative—and this is obviously a matter of considerable controversy—the development process was procedurally flawed, because it lacked the public engagement that might have generated trust. This dimension of the policy's failure is critical and deserves full treatment in a separate paper. Here, we limit ourselves to examining some of the substantive policy conundrums and political positions generated by the HFH proposal. We do so, moreover, from a particular vantage point: we both served on the Land and Wildlife Stewardship Working Group (LWSWG) that produced the OSA proposal.⁵

This paper proceeds in several stages. First, we describe the land-use and ecological problems in southern Alberta, the part of the province to which HFH was primarily directed. Second, we briefly situate the Hunting for Habitat proposal within the broader range of policies aimed at stabilizing



ecologically productive open spaces in the threatened landscape found in southern Alberta. The policy arsenal is large and has many valuable components. The market-based approach represented by HFH is, by itself, no magic bullet. While HFH cannot fully address the problems on its own, however, it has its comparative strengths and might thus make a useful contribution. Third, we describe HFH's attempt to balance public and private interests. While the proposal gave landowners a commercial interest in wildlife and their habitat, it rejected a complete privatization of wildlife. The proposal strongly affirmed the continued public ownership of and interest in wildlife. Far from excluding or diminishing the tradition of unpaid public hunting, the proposal saw a limited commercial sector as a way of subsidizing and enhancing public access to some wildlife on private lands. That is not how critics received the proposal, however. In the paper's fourth section, we describe the political opposition that resulted in shelving the HFH proposal. This opposition came primarily from hunters who saw HFH as a threat to Alberta's hunting tradition and to a valuable hunting economy, the very values that the program's backers thought they were promoting and protecting. The fifth section of the paper analyzes this quarrel among hunters. In our concluding remarks, we suggest that, while HFH has failed for the foreseeable future, finding other ways to harness private interest to the public good has enduring value in the effort to preserve ecologically important open spaces.

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SOUTHWESTERN ALBERTA

Threats to an ecologically critical landscape

Similar to other near-urban areas in the Intermountain West (see 1000 Friends of Oregon undated), southwestern Alberta is experiencing rapid changes in settlement patterns and land ownership and use. A study of land use encompassing Cardston County, the Municipal District of Pincher Creek, the Kainai and Piikani First Nations' reserves and Waterton Lakes National Park revealed some important emerging land-use trends that have major implications for the sustainability of ecological goods and services. A number of stakeholders including government, industry, First Nations, landowners, NGOs and Parks Canada commissioned the Chief Mountain Study (Silvatech Consulting 2008). The study area (approximately 9,250 km² or 2.28 million acres) consisted of cultivated agriculture (43 per cent), native grasslands (30 per cent) and forests (18 per cent). Among emerging land-use trends, the growth in settlement and transportation networks represents the most significant threat to the integrity of the grasslands. Acreage development on private lands is projected to surpass the number of agricultural residences in the area by the middle of the century as the population grows from 23,000 to 55,000. Wind farms are becoming a significant land use, and the number of turbines is projected to quadruple by the middle of this century. Confined to private lands, wind turbines have a small footprint but a high visual impact on the scenic landscape of the Foothills. The demand for outdoor recreational activities is increasing rapidly, and it is predicted to exceed the footprint of the energy sector before the middle of the century. The footprint of the hydrocarbon energy sector (conventional oil and gas, coal bed methane, coal mining) will continue to increase but is projected to be small relative to other land uses.

In response to concerns about balancing growth in relation to social and environmental goals, the government of Alberta released a Land-use Framework in 2008. Among its proposed strategies, the framework identified the need for new policy instruments for sharing costs in order to encourage conservation and stewardship of public ecological goods and services on private lands. Furthermore, it targeted southern Alberta as a priority region for land-use planning. The HFH pilot program was designed to further the objectives of the Land-use Framework.

HFH pilot projects were proposed for two cattle ranching areas in southwestern Alberta, one in the foothills bordering Waterton Lakes National Park and the other on the Milk River Ridge south of Lethbridge. Both are areas of great natural beauty, characterized by rolling grasslands that are better suited to grazing than to cultivation. The Milk River Ridge is a particularly valuable oasis of natural grasslands dominated by a small number of very large ranches. The foothills near Waterton are representative of the southern foothills region generally and reflect all of the land-use pressures outlined by the Chief Mountain Study. Containing the headwaters of watersheds that are important to the nearby urban centres of Calgary and Lethbridge, the foothills are particularly susceptible to the pressures of rural residential development (acreages) and recreational demands.

Traditionally, cattle ranching sustained the ecologically important open spaces on these landscapes, but the economics of ranching is becoming increasingly marginal. In many cases, the survival of ranch operations depends on additional revenue streams. Some revenue diversification (though often not enough) comes through access payments by companies involved in mineral exploration (Eaton, Ingelson and Knopff 2007, 483-84). Selling part of a ranch for rural residences or other forms of development can sustain the rest of the operation for a time, but this way of diversifying revenue streams does little to maintain the ecological integrity of valuable open spaces. Might some degree of commercial hunting make a significant contribution? The HFH pilots were supposed to test that proposition in the stressed cattle ranching regions of southern Alberta.

No one thought HFH was the magic bullet that would, by itself, solve the problem. At best, it might be a valuable addition to a broader suite of policy approaches to stabilizing open spaces.

The policy range

A wide variety of policies to stabilize privately held open spaces exists. One method is to purchase land (using public and/or private funds) and set it aside for ecological purposes. The Nature Conservancy of Canada has actively employed this strategy in the foothills near Waterton National Park, one of the proposed HFH pilot areas. This is certainly a useful approach, but it is expensive and unlikely by itself to stabilize enough rural land to achieve ecological goals. A closely related strategy—employed by the Nature Conservancy and similar organizations—is to purchase conservation easements on private lands. Conservation easements are less expensive than outright purchase but are still costly, and landowners vary considerably in their willingness to sell such easements. Again, while easements certainly have a valuable contribution to make, they cannot fully address the problem. Thus, for many environmentalists, the conservation of working private lands—unencumbered by easements—remains essential to the optimal production of ecological goods and services (Brunson and Huntsinger 2008).

A common way of stabilizing working farms and ranches is through zoning regulations and restrictions on subdivision. The problem with this approach is that it often pits the economic interest of landowners against the public interest in maintaining agricultural open spaces. On ecologically sensitive and recreationally attractive landscapes, landowners are often cash poor but (potentially) land rich. This is certainly true of the economically stressed cattle ranches in southern Alberta's scenic foothills. When the next generation does not wish to continue the agricultural operation—as is increasingly the case—unlocking the land rich potential is often the landowner's effective retirement fund as well as an inheritance for the children. However, zoning and subdivision restrictions may depress the value of land outside designated development zones (Brunson and Huntsinger 2008, 143), leading to inevitable pressures to relax the restrictions. As Brunson and Huntsinger (2008, 141) put it, "Having substantial equity tied up in land that can only be cashed out when land is sold for alternative uses is hardly a scenario for sustainability."

The tendency of zoning regulations to create inequities among landowners on opposite sides of a development boundary can be addressed in some circumstances by market-based instruments (MBIs) (Stirrett, Rolfe and Shewchuk 2012). Transferable development credits (TDCs) are one example. Under this approach, a developer wishing to add units within a designated development zone can do so only by purchasing development credits from landowners outside the development zone. The sellers of TDCs sign legal agreements—much like conservation easements—that protect their lands from future development. TDCs allow landowners in non-development zones to share in the financial benefits of development while preserving the rural and agricultural character of their land. For any given amount of development, the TDC approach works against tendencies to spread that development thinly across an increasingly fragmented landscape. Instead, it promotes denser, more concentrated development surrounded by preserved open spaces (Beale and Fay 2006).

TDCs harness development dollars to the cause of ecological conservation. Biodiversity offsets are another MBI that can be harnessed to the same end. Under this approach, a developer offsets the ecological cost of a development project by contributing financially to ecological conservation elsewhere. Thus, if a development project compromises wetland, the developer offsets this by contributing to the preservation of wetland (or something of equal ecological value) elsewhere. Insofar as the site to be preserved is situated on (or overlaps) private lands, offsets are another way to stabilize such lands (Canada West Foundation 2007).

In addition to turning private development dollars to the preservation of privately owned open spaces, public funds can be used more broadly to subsidize the private production of ecological goods and services. Here, the goal is to shift existing subsidies from ecologically perverse to ecologically valuable purposes. That is, instead of subsidizing otherwise uneconomic crop or livestock production on agriculturally marginal but ecologically valuable land, funds would directly subsidize the maintenance or renewal of the latter. This is the goal of Alternative Land Use Services (ALUS), a Canadian incentive-based ecological goods and services program that emphasizes the value of conserving and restoring natural capital while respecting and rewarding the important role that farmers play in environmental management (www.



alus.ca). ALUS recognizes that a mix of public and private ownership of resources exists on private agricultural land and that the stewardship of natural capital and environmental resources must be a responsibility shared by governments and landowners. A key principle of ALUS is that stewardship and conservation are services that must be assigned a fair market value. ALUS has implemented projects on farmlands in Manitoba, Ontario, Saskatchewan, Alberta and Prince Edward Island. In 2008, PEI adopted ALUS as official government policy.

In contrast to traditional zoning and subdivision regulations, TDCs, biodiversity offsets and direct public subsidy enable the private owners of undeveloped rural land to reap a financial return for their production of ecological goods and services. They create positive, market-based incentives to promote ecological ends. This strategy has the advantage of providing economic diversification that might keep otherwise marginal agricultural land viable enough to resist the fragmentation pressures coming from recreational and development demands, in part by making continued operation more attractive to subsequent generations. Unlike a policy of regulatory restrictions, a strategy of market-based incentives works with, rather than against, the economic interests of landowners. "As the famed ecologist Aldo Leopold [1934, 202] put it, 'conservation will ultimately boil down to rewarding the private landowner who conserves the public interest" (Anderson and Huggins 2006, 11). Or, in a common formulation, "[I]f it pays, it stays" (Ibid.).

By giving ecological goods and services a positive financial value, market-based incentives integrate ecological production into the rural economy. It is no easy task, however, to assign a market value to ecological goods and services. Consider biodiversity offsets, which in principle are like carbon offsets but in practice pose much greater difficulties. "[T]he trading of one tonne of carbon between companies in Alberta and in British Columbia is straightforward, as it represents one less tonne of carbon emitted into the atmosphere." In contrast, "the outcome of trading a wetland in Alberta for one in British Columbia is not as clear because the particular ecology of each wetland may differ substantially and may not be equivalent in terms of offsetting the negative effects of development" (Canada West Foundation 2007). Similarly, how does one assign the value of TDCs across ecologically varied landscapes? Or how do we ensure that the public is getting value for its money when it directly subsidizes private landowners for their production of ecological goods and services?

Clearly, the marketing of ecological goods and services is fraught with difficulties that do not occur in markets where value is set by traditional calculations of supply and demand among many individual producers and consumers (Gowdy 2000). Imaginative ways of addressing these difficulties are being devised and tested, and the resulting advances in programs such as TDCs, biodiversity offsets and public subsidy will be critical to the preservation of privately owned and ecologically productive open spaces. We should not ignore the potential of more traditional market mechanisms, however. An example is the HFH proposal examined in this paper, which would have allowed landowners to sell limited hunting opportunities in a traditional market (Anderson and Huggins 2006, 10-11). Under HFH, landowners would have acquired a positive stake in maintaining habitat for utilitarian species, that is, species highly valued for recreation and whose abundance and health depend on functioning ecosystems. Moreover, maintaining and enhancing the ecological-goods-and-services potential of their land would, under HFH, have been economic diversification and thus, potentially, land stabilization.

In our experience, the idea that hunting revenue can be a land-stabilizing form of economic diversification is often met with incredulity by urbanites. It is thus worth pointing out that the famous King Ranch in Texas, one of the world's largest, considers the sale of hunting opportunities to be a significant part of the diversification that enables it to persist as an extensive rural open space (www.king-ranch.com/hunting_overview.html; Eaton, Ingelson and Knopff 2007, 481)—though, to be fair, the King Ranch has many other sources of income, and it uses a hunting model that HFH rejected (see below). An example more relevant to the HFH proposal is Utah's Cooperative Wildlife Management Unit (CWMU) program, which organizes ranches into units that can sell hunting and related recreational opportunities. In a survey of operators involved in managing CWMUs in Utah (Haynes McCoy et al. 2003), the average



income from 48 CWMUs was 26.5 per cent of all income-generating enterprises (see also Anderson and Huggins 2006, 12). Goods and services provided by these operations included camping, meals, lodging, transportation, maps, scouting, animal retrieval, taxidermy, meat processing and shipping, horses and sightseeing tours. The CWMU program opened private land to public hunting. Prior to enrolling in the CWMU program, 33.3 per cent of respondents did not allow public hunting and only 29.2 per cent allowed public hunting at no charge if hunters asked permission.

Clearly, hunting revenue can be a non-trivial source of economic diversification. Alberta's HFH proposal sought to exploit this potential after having learned from U.S. and other examples and thus avoiding some of their pitfalls. No policy proposal would have been necessary, of course, if wildlife were privately owned by the landowner while on his or her land. However, wildlife in Alberta, as elsewhere, is a publicly owned resource. HFH thus raised complicated issues concerning the management of public resources on private lands.

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Public resources, private lands

The HFH proposal would have allowed landowners to sell a particular kind of ecological good and service. But why, one might ask, does anyone need to allow landowners to market such wares? Surely, entrepreneurial farmers and ranchers are perfectly free to charge hikers, campers and bird watchers for access to desirable terrain on their properties. Or cross-country skiers for the trails they maintain and groom. Or trail riders for horses and guides. True, but in all these instances, the landowner markets privately owned resources—access to the land itself, rental horses, guiding services and the like. Wildlife, in contrast, is a public resource. In Alberta, private landowners do not own the wildlife on their lands any more than they own the mineral resources under it. If farmers and ranchers are to realize financial returns from these resources, they need permission to do so from the public owners. In the case of wildlife, the Alberta public has mostly refused its permission. It is generally illegal for landowners to realize any revenue from hunting on their land (exceptions exist for landowners who become outfitters and acquire an allocation of tags and for game bird hunting on licensed farms and shooting grounds). At the same time, if the public wants access to its wildlife resource on private lands, it needs the landowners' permission. Moreover, as we have seen, the public owners of the wildlife resource often need the cooperation of landowners to produce the resource. Clearly, the overlap of public resources and private lands raises a special set of conundrums and sensitivities. While our exploration of these difficulties focuses on the case of wildlife and hunting, we often use an oil and gas comparison to clarify the issues.

The very idea of private property entails the right to exclude others, a right that exists in tension with the public ownership of valuable resources on or under private lands. In such cases, the public can access its resources in three main ways: 1) through the compulsion of landowners, 2) through the interest of landowners, and 3) through the altruism of landowners. The cases of wildlife/hunting and mineral exploration are starkly different on all three dimensions, resulting, we argue, in an ecologically perverse incentive system that favours industrial development over wildlife habitat.

Compulsion

Like all rights, the private property right against trespass is not absolute and sometimes has to give way to the public interest. There may need to be public rights of way or transportation for emergency reasons, for example. As regards mineral resources (with their immense significance for the provincial economy), the public interest in exploiting them has been deemed sufficient to compel landowners to provide access in certain circumstances (Eaton, Ingelson and Knopff 2007, 483). In contrast, hunters cannot compel access to wildlife on private lands; landowners are free to deny hunting access to whatever degree they wish.

Interest

The capacity to compel landowners to provide access to mineral resources rarely has to be exercised, because public policy engages the pecuniary interest of landowners in such exploration by allowing them to charge for access. No doubt, the background possibility of compulsion depresses the market for access to some extent, but on otherwise marginal agricultural operations the access payments for mineral exploration are often welcome, if not necessary (Brooymans 2004, 46). Indeed, given that access to oil and gas reserves is compensated on what amounts to a per-well basis, landowners often have an ecologically perverse interest in pushing companies to engage in more drilling, hence creating more land disturbance, than is technologically necessary (Ibid., 47).

In contrast, as indicated above, it is generally an offence in Alberta for landowners to charge for hunting access. This does not mean that interest plays no role in hunting-access decisions. Many farmers and ranchers consider certain wildlife species pests-elk are a prominent example in southwestern Albertaand may welcome hunting on their lands as a means of pest control. For example, Blaine Marr, a thirdgeneration rancher in the Waterton area (one of the proposed HFH pilot areas), noting that his hay feeds the local elk all winter, tries to encourage hunters to harvest females as a means of population control. He has had little interest among trophy hunters. Marr reports that some ranchers address their population-control needs by inviting local Aboriginals to harvest the game (Marr 2008). Such a negative interest in pest control is obviously quite different—and has distinctly different economic and environmental consequences—than a positive commercial opportunity in hunting (which would, among other things, turn a pest into a valued species). Well drilling might, of course, also be considered by the landowner something of a pestilence on an attractive and peaceful landscape, just as elk might contribute to that landscape's beauty, but insofar as our public policies engage the landowners' financial interests rather than their aesthetics, they have a tendency to increase wells and decrease elk - which does not seem the best way to optimize the production of ecological goods and services or, indeed, the economic balance between such goods and services and more traditional commercial products such as oil and gas. Imagine if landowners were permitted to consider the opportunity costs in lost elk hunting revenue that might result from more well drilling than is technologically necessary. Might the result not be a better balance of overall economic and ecological benefits?

Altruism

No one imagines that landowners should open their properties to oil and gas exploration simply out of the goodness of their hearts, which is why our public policies emphasize a mix of interest and compulsion. In the case of wildlife, by contrast, access cannot be compelled and interest is limited to pest control. In the case of hunting, access to the public wildlife resource thus depends substantially on landowner altruism, especially in the case of species that are not costly pests from a landowner perspective (e.g., upland game birds). Indeed, many agricultural landowners, often hunters themselves, welcomed hunting on their land, in part out of altruism and often fuelled by a sense of tradition. In 1986 for example, a survey of Alberta landowners indicated that 92 per cent of landowners were prepared to allow hunting access to those who sought permission (Bateman 1986). In 2009, a baseline survey of landowners in the HFH pilot areas showed that 88 per cent of landowners in these areas were similarly prepared to allow hunting access (lower than the 1986 pan-Alberta rate, but still impressive) (Chapman et al. 2010). Such altruism is admirable, but it can come with costs that eventually overwhelm it. Blaine Marr, the Waterton-area rancher quoted above on the population-control issue, colourfully described the inconveniences that sometimes come with providing hunting access. Writing in the *Pincher Creek Echo*, Marr (2008) provided the following excerpt from his journal for November 23, 2007:

- Hunter knocking on door at 6:00 a.m. wakes my family up. He wants access to hunt. I take his name, and direct him to the pasture where there are no cattle but plenty of deer.
- During breakfast, two trucks of hunters drive in wanting access; I give out more directions.
- I take the tractor to the hay field to rebuild fence that 30 head of elk we fed all summer tore down during the first day of hunting season.
- Later I find truck tracks in the long, dry grass. I follow the tracks to where the driver stopped and threw out beer cans and garbage. At least they didn't start a fire in the tinder-dry grass.
- Many road hunters driving around just after legal shooting light; there's a shot in the hayfield, go to check and see tail lights leaving and gate left open for our horses to get out. They loaded the deer fast and tore up the grass. This hunter never intended to ask for access.
- In the evening, I answer telephone calls from hunters until 10:30 p.m.

Marr's concerns are not new. In 1971, a study commissioned by the Western Stock Growers Association referred to an annual invasion "by an army of hunters [the landowner] cannot control, with all the inherent risks of fire, damage to fences, wounding of livestock and disruption of productive activities on the farm or ranch" (Hedlin and Hedlin 1971, 5). Such issues, suggests Marr decades later, "force many landowners to refuse hunters access"—probably not to friends, business associates and longer-term hunting acquaintances but increasingly to strangers from larger urban centres. Among those who have refused access are many of the large ranches on the Milk River Ridge (the site of another proposed HFH pilot) that have been mostly closed to hunting for some time except for a small pest control elk hunt targeted at cow elk in order to keep the herd at its present minuscule size of between 100 and 200 animals. Clearly, landowner altruism has its limits.

Moreover, even where landowner altruism continues, it no more prevents the eventual sale of land than does the negative interest in pest control. As land turns over, often in fragmented form, the new owners, frequently not farmers or ranchers, may not sustain the altruistic tradition of allowing hunter access. The costs and inconveniences associated with public hunting, which often try the patience of even traditional landowners, tend to loom larger in the minds of new owners, causing a proliferation of "no hunting" signs. Again, Marr's letter makes the point:

[T]he sell off of prime ranchland and wildlife habitat along the eastern slopes of Alberta ... has been going on for years, but has greatly increased after BSE collapsed the cattle market. The purchasers of this land are not ranchers, they are baby boomers retiring and eager to invest and develop. These ranches and the habitat they protect are disappearing forever, which causes shrinking hunting opportunities every year. Do not be surprised when hunters go back to their favourite ranch where they get access every year, that someone else will answer the door. This person will have no idea what they want, and may have no intention of ever allowing hunting.

Certainly, many hunters are familiar with the decline of access to which Marr refers. In focus groups conducted in 2001, difficulties of access were by far the leading reason for hunters quitting the field (Hunting for Tomorrow 2001). A decade later, when asked in a 2011 survey what takes away from their hunting enjoyment, Alberta hunters again most often identified hunting access problems (Chapman et al. 2011). The hunter who, in response to Marr's letter, indicated that he does not hunt in Marr's area because of limited access (MacGarva 2008) confirms this perception anecdotally. From this perspective, the altruistic granting of hunting access—at least to the general-population hunter, if not to friends and associates—appears to be declining.

To summarize, the quite different ways in which the public-private interface is managed in the case of mineral exploration and hunting access seem ecologically perverse. By significantly engaging the private landowner's interest in mineral exploration while relying predominantly on his or her altruism to provide hunting access, we promote drilling and diminish the value of wildlife and wildlife habitat. At the same time, we forego much of the land stabilizing potential of wildlife-based enterprise. One way to optimize the overall balance is to enable landowners to see wildlife as a positive opportunity rather than a negative liability. In Blaine Marr's words, while "the pie that makes up wildlife and hunting programs today benefits many people such as outfitters, sporting goods dealers, taxidermists, meat processors, rifle dealers and many more," there is currently "no slice in the pie for the landowner ... [who] bears the largest cost and liability involved in hunting." Instead, argued Marr, we should "try to make the pie bigger for everyone and create long term goals to insure wildlife and hunting opportunities remain. If existing and future landowners can see a benefit for sustaining wildlife and providing hunter access, then we all win." That was precisely the conclusion reached by the provincial Land and Wildlife Stewardship Working Group (LWSWG), which recommended Hunting for Habitat as a pilot program option in October 2007.

Balancing public and private interest

Concluding that it was necessary fully to engage the landowner's positive interest in wildlife turned out to be just the beginning of the Working Group's labours. While the LWSWG became convinced that it was well worth testing the ecological potential of *some* commercial hunting opportunities for landowners, it was equally convinced that *full* commercial privatization of hunting would be even more perverse than the current prohibition of any landowner commercialization. Early in its deliberations, the LWSWG adopted two guiding principles:

- 1. Wildlife is a public trust resource to be managed in the public interest.
- 2. Landowners should not bear the full cost of production and use of wildlife without compensation.⁸

The commercial incentives of HFH were clearly directed to the second principle, but the LWSWG saw the first principle as standing against full private commercialization that would allow landowners to provide hunting access to paying customers only. Where such full commercialization or privatization exists—as it does in Texas and many parts of Europe—free public access to wildlife becomes limited to public lands. Only those who can afford to pay can hunt on private lands, as is the case on the King Ranch. Moreover, depending on state/provincial policies, these private lands are often fenced to contain game populations, in a manner akin to game farming. The LWSWG emphatically saw such an outcome as violating the public trust principle. It was opposed to fencing in big game and to game farming. The LWSWG saw a much better balance of public and private interest in those U.S. states (Leal and Grewell 1999), including Utah, that allow landowners, co-operating across ranges of freely moving game, some commercial hunting opportunities on the condition that comparable access to the improved habitat and hunting potential is made available for free to the resident public hunter. Thus Utah's CWMUs, in order to realize the valuable 25 per cent to 30 per cent revenue stream that comes from hunting, must provide equally valuable opportunities to public hunters. True, public hunters only get a slice of the pie, but that slice is much better than the public hunters' previous complete exclusion from many of the participating ranches. While the King Ranch in Texas and the CWMUs in Utah might both be good for wildlife, they are not equally good for the public hunter's access to the publicly owned wildlife resource. Based on the first of its quiding principles—the public trust principle—the Alberta LWSWG much preferred the situation on Utah CWMUs to that on the King Ranch.

The LWSWG did not like everything it saw in Utah, however. On a strictly numerical basis, Utah divides the available tags evenly between public and private hunters, but the division is very unequal when the sex of the animal is considered. The Utah landowner receives 90 per cent of the highly valuable male (i.e., trophy) tags to sell on the market, leaving only 10 per cent for the public hunter. With respect to the less valuable antlerless (mostly female) tags, the ratio is reversed, with public hunters getting 90 per cent and the landowner 10 per cent. In the Alberta proposal, only 10 per cent to 15 per cent of available tags for both sexes were to be allocated to the enrolled landowners or landowner associations at the outset, rising over time to only 25 per cent, leaving most tags for the public hunter, with a requirement that the HFH units provide comparable opportunities to private and public hunters. As Ted Morton, then Alberta's minister of Sustainable Resource Development, put it, the objective of HFH was to increase free public-hunter access to larger populations of such game species as elk, with the "vast majority" of tags going "to public hunters through the normal draw process." Moreover, "public hunters would have guaranteed access to participating ranches—many of which have been posted 'No Hunting, No Trespassing' for decades." It seemed to Morton that this was "a darn good trade-off for resident hunters" (Morton 2008).



Morton's statement captured and endorsed the essence of the policy framework that the LWSWG recommended to the Alberta government. And it was only a framework; a great many details remained to be worked out. For example, how precisely would comparable access for public hunters be defined and implemented? How would HFH landowner co-operatives be established and managed? Which species would be included in an HFH program? Local working groups in pilot areas were to address these and many other questions in a second stage of policy development. Like the provincial working group that had recommended the basic conceptual framework, the local planning groups would be composed of all the relevant stakeholders, including landowners, hunting and fishing groups, outfitters, etc.⁹ As Morton put it:

Stakeholder groups have been engaged in the process and will continue to be throughout the five-year trial period. A provincial-level stakeholder group has recommended a general policy framework and proposed pilot areas. Much work, including detailed management agreements, remains to be done in pilot areas by local planning groups that include hunters.

In the spring of 2008, this second stage of policy development was politically derailed and the HFH proposal shelved.

...the objective of HFH was to increase free public-hunter access to larger populations of such game species as elk...

Political fallout

Concerted opposition during the 2008 provincial election campaign by Alberta's organized hunting and fishing community derailed HFH. The critics saw in the proposal a privatization of wildlife that necessarily "favours the elite and signifies the end of democratic hunting in Alberta." What the LWSWG understood as harnessing private enterprise to the enhancement of a public resource, the critics saw as a step in the direction of the complete privatization of that resource. The Alberta Fish & Game Association (2008), for example, "vehemently" opposed the project's "privatization of Alberta's wild resources." The Willow Valley Trophy Club (2008) attacked "a sea change in philosophy whereby wildlife becomes a privately held commodity that can be sold in the free market."

As part of their opposition to free market privatization, the critics underlined the hunting opportunities that might be lost to free public hunting at the outset of the HFH program. There was something to this criticism. The LWSWG acknowledged that the incentive to generate increased game populations might initially have to come through a landowner allocation of tags taken from the existing pool (based on existing game populations), including tags already allocated to individual landowners in compensation for wildlife damage. Clearly, this would have represented a loss of tags for public hunters in the short term. The LWSWG estimated an initial 15 per cent reduction in public tags, which it saw as relatively small and as an investment that would grow public hunting opportunities over time, both through a growing tag pool and through public access to previously closed lands. The critics, in contrast, generally treated the initial loss of public tags as substantial, describing it in terms such as "stunning" or "alarming" (Lethbridge Gun Show 2008) and paid little or no attention to the growth potential.

One group did acknowledge the "carrot ... of better access to desirable hunting areas" but asked, "Is it reasonable to think that a resident with an over-the-counter draw tag will get the same unfettered access as a wealthy international hunter who has paid thousands of dollars?" (Willow Valley Trophy Club 2008). This is a legitimate and important question. One might respond that some access to previously closed "desirable hunting areas" is better than no access, even if paying customers get better access. However, this was not the intent of the HFH proposal, which emphasized the importance of comparable access for public hunters. How would comparable access be secured? Through detailed, publicly monitored management plans developed by local stakeholder working groups that prominently included public hunters. This was to have been part of the second stage of pilot program development and implementation. The critics had no faith in the outcome. They were convinced that only "the wealthy [would] be able to access more quality opportunities [while] the resident sportsmen of modest means will be left the scraps" (Willow Valley Trophy Club 2008). Whereas the LWSWG saw in HFH an opportunity for the wealthy to subsidize increased opportunity for those of "modest means," the critics saw a program that was "all about big money ... squeezing out the little guy" (Ibid.), enabling "a select few to benefit at the expense of the majority" (Pheasants Forever Canada 2008).

Insofar as HFH could actually reduce hunting participation, as the critics maintained, it would also diminish the diversification potential of the hunting economy. True, money would be spent by a few wealthy paying customers, but for the critics this money would come at the expense of more broadly based, and thus more robust, economic participation. As noted by Valerius Geist, a respected ecologist, eloquent defender of hunting (Geist 2007) and prominent critic of HFH:

An examination of wildlife economics reveals that economic activity increases with number of participants, not with amount spent by participants. It's participation rate that counts. And that translates into substantial wealth and job creation, the economics flowing out of the needs of individuals who hunt, fish and view (Geist 2008).

Geist's commentary on HFH did not mention the long-term decline in the hunting participation rate, and hence in the hunting economy. However, it is clear from the tenor and logic of his argument that he thinks HFH would steepen the decline by further restricting access and participation to the wealthy few.



Perhaps the most prominent event in the criticism of HFH occurred at the convention of the Alberta Fish & Game Association held in the midst of the provincial election. Minister Morton attended that convention and delivered a speech strongly defending HFH. Nevertheless, delegates to the convention voted unanimously to reject the HFH concept. This, along with an extensive media and letter writing campaign, attracted the attention of then premier Stelmach, who promised that his caucus would "revisit" the proposal if his government was re-elected (Stelmach 2008). Soon after the election, Morton shelved the HFH component of OSA (Brooymans 2008).

What the LWSWG understood as harnessing private enterprise to the enhancement of a public resource, the critics saw as a step in the direction of the complete privatization of that resource.

A quarrel among hunters

Some diversification of ranch revenue is necessary if the ecological capacity of the cattle ranching areas in southern Alberta is to be sustained (Butler 2002). A potential source of diversification—one that might also maintain and enhance game habitat—is the hunting economy. The HFH proposal was designed to grow this economy and to enable ranchers to participate in it directly. The proposal was killed not by enemies of the hunting economy but by its friends who feared that directly remunerating ranchers for their contribution would diminish, rather than grow, that economy. In this final section of the paper, we briefly reflect on this quarrel among hunters. (Again, we note that as contributors to the HFH proposal we are on one side of the quarrel.)

The critics and proponents of HFH agree on the economic benefits to the rural economy that flow from the money that hunters spend there. The difference between them concerns the slice of this economic pie that should go to the landowner who helps to produce the resource that sustains the pie. The critics want to maintain the situation described by Blaine Marr, in which everyone but the landowner gets a slice of the hunting-economy pie. In their view, once the landowner gets a slice, the pie will inevitably shrink to the size of that slice, with only the wealthy getting a bite. Proponents of HFH, in contrast, think that the private producers of the wildlife resource would produce more of it if they received a share of the resulting economic benefits and that well-designed management agreements would increase public-hunter access to the expanding resource.

For such critics as Valerius Geist, the very idea that landowners might actually produce more wildlife in response to market incentives is silly:

Landowners 'producing' wildlife? I beg your pardon. Wildlife survives incidentally to existing operations, in coulees and badlands inaccessible to agricultural machinery, in wetlands not yet drained and opportunistically on crops. Paid hunting will not change any of that! (Geist 2008).

Paid hunting will not enhance wildlife production because landowners will not "set aside acres and acres of land for wildlife production ... on the vaque promises of the market place." This is not to say that monetary incentives cannot do the job. Geist reports that in the United States, public payments to landowners for habitat preservation and enhancement do indeed work. Presumably, they succeed, while paid hunting is doomed to fail, because they are more certain than the "vague promises of the market place." It might seem strange to claim that farmers and ranchers, who spend their lives responding to market signals and incentives, will suddenly stop doing so when those incentives concern wildlife enhancement. It is in any case mistaken. Participants in the Utah CWMU program certainly made changes to their ranching operations to accommodate wildlife for the hunting enterprise: 60 per cent managed forage resources with wildlife in mind; 48 per cent provided water development; 26.7 per cent reported decreasing livestock numbers; 26.7 per cent reduced total grazing days; 32 per cent adjusted grazing dates; and 36 per cent altered livestock grazing locations to accommodate wildlife production (Haynes McCoy 2003). Whether the lower number of trophy tags available to Alberta landowners under the HFH proposal would have similarly affected agricultural practices is, of course, unknown, because no pilot projects were conducted. The point is simply that the "promises of the market place" cannot be dismissed out of hand.

Similar examples counter Geist's skepticism about the "low tolerance" for some wildlife that HFH was designed to counter. Geist reports that in his long experience in Alberta, "Most landowners loved to have wildlife around, considered it part of the land. They were protective of it." True enough, he admits, "a few did not care for it, [but] the paid hunting approach will hardly convert such." Utah's CWMUs stand as a rebuttal to these claims. Even if the ranches making up the CWMUs were among the bad apples who previously "did not care for" elk, they were certainly converted by market incentives. In Alberta, elk are managed for very low abundance (100 to 200 animals) on Alberta's Milk River Ridge and far below production capacity in the Waterton Front and elsewhere in the White Area because of landowner intolerance. Even in this context of management for population control, ranchers such as Blaine Marr yearn for more population reduction, sometimes pursuing it by turning the task over to



Aboriginal hunters and excluding the rest of the hunting community. Geist is mistaken when he denies the phenomenon of "low tolerance" for wildlife among ranchers.

In fact, by Geist's own account, the "love" landowners generally have for wildlife does not extend to preserving or creating the habitat on which that wildlife depends. Remember that the same majority of landowners who "love to have wildlife around" nevertheless allow it to survive only "incidentally to existing operations, in coulees and badlands inaccessible to agricultural machinery, in wetlands not yet drained and opportunistically on crops." Clearly, the economic interests of private landowners generally trump their altruism toward wildlife. Perhaps they are "protective" of the wildlife populations that can survive "incidentally" to their main operations, but they are not, on this account, particularly well disposed to *enhancing* wildlife habitat and populations. Nor, in Geist's experience, are governmental agricultural agencies "inclined to look favorably on converting agricultural land to anything else."

If private landowners and agricultural agencies will not create and preserve wildlife habitat, how can it be done? For Geist, the preferred way is through the land-purchase and conservation-easement approaches of "Ducks Unlimited, Pheasants Forever, the Rocky Mountain Elk Foundation etc." As already indicted, however, this admittedly valuable approach is unlikely by itself to counterbalance the various development pressures on southwestern Alberta's cattle country. Perhaps ALUS-style taxpayer-funded payments to ranchers will help, if taxpayers focused on such pressing matters as health care and education will agree to the expenditure. No doubt, biodiversity offsets and TDCs can also play a role. Certainly, HFH would never have been able to stabilize the ecological capacity of the cattle ranching areas of southern Alberta by itself, so perhaps the rest of the policy toolkit can do the job without it. Since friends of the hunting economy killed HFH, it is reasonable to ask whether that economy will fare as well and make as significant a contribution to rural stabilization without HFH as with it. A comparative research agenda involving Alberta and jurisdictions such as Utah comes into focus.

...the same majority of landowners who "love to have wildlife around" nevertheless allow it to survive only "incidentally to existing operations, in coulees and badlands inaccessible to agricultural machinery, in wetlands not yet drained and opportunistically on crops."

Conclusion

Given that 75 per cent of the White Area in Alberta is privately owned and experiences mounting pressures to transform productive wildlife habitat to other land uses, it is important for the government of Alberta to engage constructively with landowners to seek solutions that balance public and private interests in wildlife and the recreational use of private land. We concur with the optimism of Rasker et al. (1992) that innovative solutions to wildlife management and public access problems on private land can be found between the extremes of public ownership and fully privatized, profit-motivated market incentives. The proposed HFH program sought to achieve such a balance between private and public values by enfranchising landowners to realize some revenue from wildlife while not relinquishing public interest in wildlife as a public-public trust resource.

We end with Aldo Leopold's take on the issue. Leopold is the reputed father of modern North American wildlife management. Above, we quoted his view that conservation requires "rewarding the private landowner who conserves the public interest." Here we note that in 1930, when he was Chair of the American Game Policy Committee, Leopold outlined ...

... three ways to induce landowners to manage for wildlife: 1) buy them out and become the landowner, 2) compensate them directly or indirectly for producing a wildlife crop and for the privilege of harvesting it; or 3) cede them title to wildlife so they will own it and can buy and sell it just as they own, buy and sell poultry (Benson 2001, 364; Benson et al. 1999, 11).

Then as now, the first option can be achieved only at great expense and is therefore limited in practice. The third option—full privatization—is a system of privilege that remains anathema to the North American principle of wildlife as a public trust resource; Leopold rejected it. The middle option—compensation for landowners—is the crucial one, and Leopold emphasized it. There are, of course, many forms of compensation, including public payments. It is revealing that Leopold saw hunting-access fees as an appropriate form of compensation and "recommended that the private landowner should be encouraged to pursue potential profits from [such] fees since this would ultimately benefit wildlife by promoting wildlife habit management on private land" (Henderson and Dunn 2007, 3, citing Leopold 1930; see also Messmer et al. 1998). Given the reality that publicly owned wildlife inhabits and depends on privately owned land, Leopold clearly saw the need for harnessing private interest to the public good. Prohibiting any private economic stake in wildlife was as mistaken as turning wildlife completely into a private commodity. Leopold's search for a middle ground is as relevant to the policy debate today as it was 80 plus years ago. If access fees are an impermissible route to that middle ground in Alberta, as the demise of HFH suggests, perhaps more politically acceptable routes can be found.

We concur ... innovative solutions to wildlife management and public access problems on private land can be found between the extremes of public ownership and fully privatized, profit-motivated market incentives.

References

1000 Friends of Oregon (undated). Too Many Homes on the Range: The Impact of Rural Sprawl on Ranching and Habitat. http://www.friends.org/sites/friends.org/files/reports/too_many_homes.pdf.

Alberta Fish & Game Association. 2008. Open Spaces Pilot Rejected by Fish & Game Membership. February 26. http://poli.ucalgary.ca/wildlifestewardship/system/files/AFGA_Rejects_Open_Spaces.pdf.

Anderson, T. and L.E. Huggins. 2006. Cows, Canoes, and Condos: Blending the Old West with the New. Property and Environment Research Center, Bozeman, Montana. http://www.perc.org/pdf/ps36.pdf.

Bateman, J.T. 1987. Alberta Fish and Wildlife Division: The Use Respect Program. Department of Forestry, Lands and Wildlife. Edmonton, Alberta.

Beale, B. and C. Fay. 2006. Open Spaces and People Places: Transfer of Development Credits. Canada West Foundation, *Yard Work* no. 4. http://cwf.ca/pdf-docs/publications/December2006-Yard-Work-Open-Spaces-and-People-Places-Transfer-of-Development-Credits.pdf.

Benson, D., R. Shelton and D.W. Steinbach. 1999. *Wildlife Stewardship and Recreation on Private Lands.* College Station: Texas A & M University Press.

Benson, D. 2001. Wildlife and Recreation Management on Private Lands in the United States. *Wildlife Society Bulletin* 29: 359-371. http://www.mendeley.com/research/wildlife-and-recreation-management-on-private-lands-in-the-united-states.

Brooymans, H. 2004. "Coal Front: Is Coalbed Methane Alberta's Next Energy Boon, or Another Environmental Boondoggle?" *Alberta Views*, July/August. http://www.albertaviews.ab.ca/issues/2004/julaug04/julaug04coal.pdf.

Brooymans, H. 2008. "Paid Hunting Program Withdrawn by Government." Edmonton Journal, March 19.

Brunson, M. and L. Huntsinger. 2008. "Ranching as a Conservation Strategy: Can Old Ranchers Save the New West?" *Rangeland Ecology and Management* 61: 137-147. http://www.bioone.org/doi/abs/10.2111/07-063.1.

Butler, L. 2002. "Economic Survival of Western Ranching: Searching for Answers." In Knight, R., W. Gilgert and E. Marston, eds., *Ranching West of the 100th Meridian: Culture, Ecology, and Economics.* Washington: Island Press.

Canada West Foundation. 2007. *Yard Work* 5: "Biodiversity Offsets." http://cwf.ca/pdf-docs/publications/ http://cwf.ca/pdf-docs/publications/ December2007-Yard-Work-Land-Stewardship-Initiative-Research-Biodiversity-Offsets.pdf http://cwf.ca/pdf http://cwf.ca/pdf <a href="December2007-Yard-Work-Land-Stewardship-Initiative-Research-Biodiversity-December2007-Yard-Work-Land-Stewardship-Initiative-Research-Biodiversity-December2007-Yard-Work-Land-Stewardship-Initiative-Research-Biodiversity-December2007-Yard-Work-Land-Biodiversity-December2007-Yard-Work-Land-Biodiversity-December2007-Yard-Work-Land-Biodiversity-December2007-Yard-Biodiversity

Chapman, G., D. Coletto, C. Gates and R. Knopff. 2010. A Baseline Survey of Landowner Perceptions of Hunter and Angler Access and Wildlife on Private Land in Wildlife Management Units 108 and 300 in Southern Alberta. Alberta Sustainable Resource Development.

Chapman, G., D. Coletto, C. Gates and R. Knopff. 2011. Alberta Hunting Access Experience Survey. Alberta Sustainable Resource Development.

Eaton, C., A. Ingelson and R. Knopff. 2007. "Property Rights Regimes to Optimize Natural Resource Use–Future CBM Development and Sustainability." *Natural Resources Journal* 47: 469-496.

Geist, V. 2007. "What Shall We Defend?" *Wild Lands Advocate* 15, 6: 19-21. http://albertawilderness.ca/issues/wildlife/archive/200712 ar wla what to defend vgeist.pdf/.

Geist, V. 2008. E-mail commentary of V. Geist on Open Spaces. http://poli.ucalgary.ca/wildlifestewardship/system/files/valgeist.pdf.

Gibbins, R. 2007. "Let's Nurture Our Rural Roots." Calgary Herald, January 19.

Gowdy, J.M. 2000. "Terms and Concepts in Ecological Economics." *Wildlife Society Bulletin* 2000 28: 26-33. http://www.icimod.org/resource.php?id=711.

Haynes McCoy, N., D. Reiter and J. Briem. 2003. Utah's Cooperative Wildlife Management Unit Program: A Survey of Landowners, Operators and Landowner/Operators. CWMU Association and Jack H. Berryman Institute Rangeland Resources Department, Utah State University. 37 pp. http://extension.usu.edu/iort/files/uploads/pdfs/CWMU OPERATOR.pdf.

Hedlin, J. and R. Hedlin. 1971. Game Policy Needs in Alberta. Study Prepared for the Western Stock Growers Association. http://poli.ucalgary.ca/wildlifestewardship/system/files/GamePolicyNeedsinAlberta.pdf.

Henderson, J.E. and M.A. Dunn. 2007. Investigating the Potential of Fee-based Recreation on Private Lands in the Lower Mississippi River Delta. Paper prepared for presentation at the Southern Agricultural Economics Association Annual Meeting, Mobile, Alabama, February 4-7. http://econpapers.repec.org/RePEc:ags:saeasm:34822.



Hunting for Tomorrow Foundation. 2001. Motivational Factors for Hunters and Former Hunters. Praxis Research, May 31. http://www.huntingfortomorrow.com/HFTF Home/ACCOMPLISHMENTS/PraxisFinal%20Report.pdf.

Leal, D. R. and J.B. Grewell. 1999. *Hunting for Habitat: A Practical Guide to State-Landowner Partnerships.* Property and Environment Research Center, Bozeman, Montana. http://www.perc.org/pdf/hfh.pdf.

Leopold, Aldo. 1930. Report to the American Game Conference on an American Game Policy. Transactions of the American Game Conference 17:284-309.

Leopold, Aldo. [1934] 1991. Conservation Economics. In The River of the Mother of God and Other Essays by Aldo Leopold. Madison, WI: University of Wisconsin Press.

Lethbridge Gun Show. 2008. http://poli.ucalgary.ca/wildlifestewardship/system/files/lethbridgegunshow.pdf.

MacGarva, J. 2008. "Stalking Too Exclusive for Average Hunter." Pincher Creek Echo. April 18. http://www.pinchercreekecho.com/ArticleDisplay.aspx?e=1961282&archive=true.

Marr, B. 2008. "A Landowners Perspective on Open Spaces." Pincher Creek Echo. April 11.

Messmer, T. A., C.E. Dixon, W. Shields, S.C. Barras and S.A. Schroeder. 1998. "Cooperative Wildlife Management Units: Achieving Hunter, Landowner, and Wildlife Management Agency Objectives." *Wildlife Society Bulletin* 26: 325-332. http://www.mendeley.com/research/cooperative-wildlife-management-units-achieving-hunter-landowner-and-wildlife-management-agency-objectives.

Morton, T. 2008. Letter to Fellow Hunters and Conservationists. http://poli.ucalgary.ca/wildlifestewardship/system/files/u5/Open Spaces-Minister letter-final-Feb 07 08.pdf.

Pheasants Forever Lethbridge Chapter. 2008. Pheasants Forever Lethbridge Chapter's Position on the "Open Spaces" Pilot Project. http://poli.ucalgary.ca/wildlifestewardship/system/files/PFI.pdf.

Rasker, R., M.V. Martin and R.L. Johnson. 1992. "Economics: Theory versus Practice in Wildlife Management." Conservation Biology 6(3): 338–349.

Silvatech Consulting Ltd. 2008. Executive summary, Chief Mountain Study. January 2008. http://www.salts-landtrust.org/cms/docs/D 080201 executive summary.pdf. Full Report: http://www.salts-landtrust.org/cms/docs/D constant of the final pdf.

Stelmach, E. 2008. Letter to Wayne Lowry, Alberta Fish & Game Zone 1 Representative. March 1. http://poli.ucalgary.ca/wildlifestewardship/system/files/stelmach.pdf.

Stirrett, S., R. Rolfe and S. Shewchuk. 2012. *The Invisible Hand's Green Thumb: Market-based Instruments for Environmental Protection in Alberta*. Canada West Foundation. http://cwf.ca/publications-1/the-invisible-hands-green-thumb-market-based-instruments-for-environmental-protection.

Willow Valley Trophy Club. 2008. Paid Hunting in Alberta? http://poli.ucalgary.ca/wildlifestewardship/system/files/WillowValley.pdf.



Endnotes

- 1. Alberta is divided for planning purposes into the White and Green Areas. The White Area, which makes up about 39 per cent of the province, is the settled or populated land in the central, southern, and Peace River regions. Three-quarters of the White Area is privately owned. The Green Area—the relatively unsettled expanses in the rest of Alberta (the north and some of the mountains and foothills)—is almost all publicly owned.
- 2. This is not to say that agriculture is itself ecologically benign. To the contrary, some agricultural practices certainly cause ecological degradation. The question is whether the benefits and potential of existing agricultural open spaces in ecologically sensitive areas outweigh those of increased fragmentation.
- 3. Information about the project is available at http://poli.ucalgary.ca/wildlifestewardship/.
- 4. RAMP pilots were originally scheduled to run for three years, but constrained public finances caused the taxpayer funding on which RAMP depended to be cut after the second year.
- 5. The LWSWG and its terms of reference are described at http://poli.ucalgary.ca/wildlifestewardship/terms-reference.
 The LWSWG included representatives of the following stakeholder organizations: Alberta Beef Producers,
 Alberta Fish & Game Association, Hunting for tomorrow Foundation, Western Stock Growers Association, Alberta Professional Outfitters Society, Alberta Employment Immigration and Industry, Alberta Agriculture and Food, Alberta Conservation Association, Alberta Association of Municipal Districts and Counties, Municipal District of Pincher Creek.
- 6. Legislation to implement this framework, the *Alberta Land Stewardship Act* (ALSA), was enacted in 2009 (*Statutes of Alberta*, 2009 Chapter A-26.8).
- 7. This hunter describes the situation in parts of the relevant Wildlife Management Unit as one of "exclusive hunting only."
- 8. See the LWSWG terms of reference: http://poli.ucalgary.ca/wildlifestewardship/terms-reference, p.2.
- 9. For the stakeholder groups involved in the LWSWG see note 5 above.

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The Shape of Tomorrow's Farming

By Dennis Avery

http://www.fcpp.org/publication.php/3239

November 2007

Your Land Is Not Your Land

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