Policy Issues and Options Affecting the Feasibility of the Game Farm Industry in Saskatchewan

Dion Curry

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Executive Summary

The development of game farming in recent years, as farmers have looked for ways to diversify, has raised important issues. The industry appears not to have been studied sufficiently prior to implementation to determine whether it had the potential to be economically and environmentally viable. The economic benefits associated with game farming in its early days have diminished, leaving an industry with questionable economic and environmental outcomes.

Game Farm Policy Issues

Environmental issues: Game farms can have a detrimental effect on wildlife. Habitat is lost to pastures that wildlife cannot access due to fences intended to restrain game-farmed species. There is also a legitimate fear that poaching will increase in the presence of a lucrative game farm industry. There is an incentive to increase herd size, and thus earnings, by removing animals from the wild. Finally, disease can be spread through wild animal intrusion or escape of game farm animals.

Economic issues: Although game farms proved to be economically lucrative in the 1990s, the main markets, elk velvet antler and breeding stock, have diminished greatly in value and size. New markets such as the meat market have not developed sufficiently to support the industry. In addition, the game farm industry threatens the game hunting and game watching industries in the province, both valuable markets.

Disease: The introduction and spread of chronic wasting disease in the province has crippled the game farm industry. Previously lucrative markets have closed and many animals have had to be destroyed.

Accountability issues: The game farmers, the government, and, to a certain extent, wildlife groups, must all be accountable and responsible for the costs and benefits associated with the game farm industry.

Animal cruelty: Because of the sometimes inhumane methods used to remove elk velvet antler for sale, this major part of the industry is often looked at as unnecessarily cruel.

Inter-jurisdictional conflicts: Both the federal and provincial governments have jurisdiction over certain aspects of the industry, which can lead to conflicts between federal and provincial goals and ideals.

Policy Options

A first option involves leaving the regulatory regime that the industry faces unaltered and allowing the market to determine whether or not the industry will survive. This option is undoubtedly the cheapest in terms of immediate cash costs but has the potential to incur extremely large environmental costs if chronic wasting disease cannot be curtailed.

A second policy option for the government is to develop regulations to alleviate, as much as possible, problems in the six areas listed above. This option would involve tighter environmental controls, a comprehensive effort to eliminate and prevent the reoccurrence of chronic wasting disease in the province, toughened fencing requirements, and constant monitoring of game farms and the industry in general. This option will prove expensive. It could be implemented either by forcing the industry to bear the costs and letting the market determine who survives or by subsidizing the industry. In either case, tighter regulation will prove costly to the provincial government and/or the game farmers. Unfortunately this option may not guarantee that the industry will recover.

A third option involves the complete dismantling of the industry. This option would include a ban on the development of new game farms and an effort to eliminate existing farms. Although costly to the government and game farmers in the short term, this option should prove less expensive than continuing to support this economically and environmentally questionable industry.

1. Introduction

In recent years, the practice of game farming has raised important issues for the Saskatchewan agricultural sector and the environmental lobby. Because of low world crop prices, poor weather conditions, and the move toward larger farming operations, small farms have had to diversify their operations in order to remain economically viable. Some chose to expand their operations to include game farming. High breeding-stock prices, favourable market conditions, and the absence of immediate environmental concerns saw many farmers who invested in game farms make money in the growing industry. The 1990s witnessed a boom in the demand for game products. Game meat was becoming a popular, if niche, replacement for traditional types of meat, and apparently ever-increasing demand for elk velvet antler, which is used in holistic medicine and as an aphrodisiac in Asian countries, created the appearance of growing prosperity for the industry.

In its haste to establish an industry that would prove economically profitable to the province and one into which farmers could diversify, the Saskatchewan government implemented regulations and policies that often did not adequately address important issues associated with game farms. In addition, the government appears to have failed to study comprehensively the economic and environmental feasibility of developing this as a long-term industry in the province.[1] Since the initial introduction of specific game farm regulations in 1989, several efforts have been made, most notably in 1990 and 1999, to improve and refine the rules of conduct for game farming. However, several issues still have not been adequately addressed, and new issues, most markedly the introduction and subsequent spread of chronic wasting disease (CWD) in elk and some species of deer, have arisen.

This paper will attempt to answer some of the questions raised in the past several years about the viability of game farming, how government, farmers, and others should deal with the issues of disease and drought, and whether there is, or should be, a future for game farming in Saskatchewan. Six areas will be identified in which improvements to current legislation can be made. These six areas are all important if game farming is to be dealt with in a manner that will have the least impact on other areas of life in the province. The issues the government must

[1] A review of Hansard reveals no study documents tabled in the provincial legislature.

consider in amending the current regulations have to do with environmental and economic considerations, disease, parcelling of accountability, animal cruelty, and cross-jurisdictional conflict. In discussing these areas of importance, this paper will focus mainly on the farming of deer and elk, as those are the most common species of game farm animal in Saskatchewan. However, the recommendation made here apply to all game animals, and lessons learned from elk and deer farming can be used in gauging the viability of farming other types of game.

The government has at least three options for dealing with game farming.

First the government can consider doing nothing. This option has the disadvantage of potentially huge environmental costs at some time in the future.

Second, the government can undertake a massive overhaul of existing game farm policy and hope that the changes will positively affect this faltering industry. Much work would be required to establish policy that would be in the best interests of the parties involved. Some problem aspects of the industry, such as disease and availability of feed, can be examined and regulated, but even the best regulation cannot prevent problems from occurring in these areas. Such a policy overhaul could be either wholly funded by the game farmers themselves or subsidised by the provincial government.

Finally, the government can choose to dismantle the industry completely and not allow the creation of new game farms. Although this option may prove costly to game farmers and the government, the problems faced by the industry in the past few years suggest this option is the most viable of the three.

Two questions arise from an examination of game farm legislation in Saskatchewan. First, is the general policy good or bad? In other words, should game farms be allowed in Saskatchewan or not? In answering this question, one must consider all aspects of the effects of game farming – its impacts on the environment, on the economy, on public safety, and on any other areas of concern. Second, has the stated goal of the policy been achieved? The goal of the government in implementing game farm policy was to create an economically viable industry into which farmers could diversify. While this was the intended result, the success of this policy must be critically evaluated.

2. Definitions

The guidelines outlined in the *Domestic Game Farm Animal Regulations*[2] determine which animals are considered game animals, set down rules as to how and where game farms can and cannot operate, and establish licensing, identification, inspection, and transportation requirements associated with game farming. Currently, the definition of "domestic game farm animal" includes the following:

antelope (*antilocapra americana*), caribou, and reindeer (*rangifer tarandus*);

elk (*cervus elaphus nelsoni*, *cervus elaphus roosevelti*, *cervus elaphus manitobensis*, *cervus elaphus nannodes*, and any crosses between these sub-species);

moose (*alces alces*);

mule deer (*odocoileus hemionus*);

white-tailed deer (*odocoileus virginianus*); and

any interspecies hybrids of mule deer with white-tailed deer.

The above-mentioned animals are all indigenous to Saskatchewan. Also included in the definition of a "domestic game farm animal" are the following species not indigenous to this province:

fallow deer (*dama dama*);

bighorn sheep (*ovis Canadensis*);

American thinhorn sheep (*ovis dalli*);

mouflon sheep (*ovis ammon*);

musk deer (*moschus spp.*); and

mountain goats (*oreamnos americanus*).

Of these animals, elk are the most common type of game farm animal, followed by white-tailed deer. In the *Domestic Game Farm Animal Regulations* (1999), there exists no clause that allows for the inclusion of any further animals under the Game Farm Regulations. Four main criteria are used to determine whether an animal is considered a game animal. First, the government looks at whether the species in question can interbreed with native wildlife. Second, the government considers whether there exist any disease risks that could pose a threat to native

[2] Revised Regulations of Saskatchewan (R.R.S.) 2001, c. A. – 20.2 O.C. 106/01.

wildlife or domestic animals. Third, they examine whether there exists a commercial potential for the animal (if not, then it would belong under the Captive Wildlife Regulations). Finally, the government looks at whether the animal is considered wildlife elsewhere.[3]

3. Background Information

Policy regarding game farming was first introduced in Saskatchewan in 1989 with the *Game Farming and Game Products Merchandising Regulations, 1989*.[4] These regulations outline the basic structure and rules dealing with game farming in the province, and were updated and became the *Domestic Game Farm Animal Regulations* in 1999. These regulations are augmented by certain clauses and sections in the *Wildlife Act*,[5] the federal *Health of Animals Act*,[6] the provincial *Diseases of Domestic Game Farm Animals Regulations*,[7] and the *Captive Wildlife Regulations*.[8]

3.1 Current Saskatchewan Game Farm Policy

In addition to identifying which animals are considered game animals, the regulations also set out the licensing requirements for game animals in Saskatchewan. The regulations call for each game farm to be licensed by the government, a process which requires the farmer to submit forms, including a form for enrolment into the provincial CWD surveillance program at a cost of 200 dollars. The game farm licence is good for five years, but is easily renewed. The licence will be suspended if the farmer fails to comply with the *Domestic Game Farm Animal Regulations*, the *Disease of Domestic Game Farm Animals Regulations*, or certain sections of the *Wildlife Act*. However, the farmer may keep his or her animals during the period of suspension. In addition to licensing the farm, the operator must ensure that all animals are tagged and maintain a

[3] Bison, while originally native to this province, are considered domestic livestock because they are no longer native here. Wild boar are also considered domestic livestock because of their close relation to swine (Sherri Dobbs, Provincial Livestock Development Specialist, Saskatchewan Agriculture, Food, and Rural Revitalization; personal correspondence, 5 September 2002).
[4] R.R.S. 1998, c. A. - 20.2, O.C. 76/98. Repealed 19 May 1999 by Sask. Reg. 10/99.
[5] R.R.S. 1998, c. W. – 13.12.
[6] R.R.C. 1990, c. 21.
[7] Sask. Reg. 1/99.
[8] R.R.S. 1999, c. W. – 13.1, O.C. 53/99.

detailed record of each animal, including place of birth, age, species, sex, and, if applicable, the date of death and removal from the farm.

The *Domestic Game Farm Animal Regulations* also attempt to lessen the impact of game farms on wildlife in various ways. First, the regulations require mule deer, white-tailed deer, and any hybrid of these two animals to be enclosed within fencing at least 2.44 metres high. For every other type of game farm animal, fences must be at least 2.1 metres high. Second, stocking procedures are outlined in the document. Farmers may not stock new enclosures without the written consent of an inspector, and a game farm operator must make "every reasonable effort" to ensure that all big game wild animals of the same species are removed from the enclosure prior to stocking. Finally, game farm operators may not release any domestic animals into the wild, must make every reasonable effort to return escaped animals to the farm and must report any escape to a provincial inspector. If a wild game animal gains entrance into a farm, farmers must report the intrusion and must deal with the animal pursuant to *The Wildlife Act*.

The *Game Farming on Agricultural Crown Lands Policy*, which came into effect on 7 July 1999, states that "operating a game farm is permitted on certain Crown agricultural lands." Three cases are outlined in this policy as to when game farming will be allowed on Crown lands. A game farm Crown land lease will be issued if:

1. at least 75 percent of each parcel to be leased is cultivated or seeded to tame forage; or
2. the land to be leased is wholly contained within deeded land owned by the lease applicant; or
3. Saskatchewan Agriculture, Food, and Rural Revitalization and Saskatchewan Environment agree that a lease should be issued.

However, in an effort to preserve wild animal habitat, a lease will not be issued under any circumstances if the Crown land in question is subject to *The Wildlife Habitat Protection Act*.[9] It should be noted that the extensive capital costs inherent in the fencing requirements provide a disincentive to operate a game farm on any land where one's tenancy is less secure than fee simple.

[9] The information on regulations was taken from the Government of Saskatchewan document the *Domestic Game Farm Animal Regulations (1999)*, supra, note 2.

Many policy options involved with game farming have been rendered unacceptable and out-of-date due to the spread of chronic wasting disease in the province. Until more is known about the nature of CWD, the greatest effort in game farm policy must be placed on isolation, prevention, and eradication of this disease in Saskatchewan. Without effective control of chronic wasting disease, game farming, already facing troubling times, will cease to be a sustainable economic and environmental proposition for the province.

The dire situation in which the game farm industry finds itself has been exacerbated by the massive drop in prices for breeding stock and elk velvet antler, two of the biggest markets thus far for the game farm industry. With the closing of the biggest market for elk velvet antler, Korea, to North American imports due to the existence on the continent of CWD, the price for this product has plummeted.[10] Few new game farms have begun operation recently, and most existing game farms are well established. This has limited the necessity for the purchase of breeding stock, which has rendered this once lucrative market financially nonviable. It is trite economics to observe that as expected profits in an industry go to zero, investment in that industry will also go to zero and the death of the industry must surely follow.

The severe drought and resulting hay shortages of the past two years in Saskatchewan have compounded the problems caused by low prices and the prevalence of CWD. Farmers are no longer making enough money from their animals to justify feed costs. This has caused some producers to resort to threats of killing or turning loose their animals to avoid paying for feed.[11] Unconfirmed reports say that some farmers are wishing for infection of CWD among the herds, or even considering infecting the herds themselves, to collect on the government compensation for destroyed herds. Given how little is known of the disease the latter seems improbable; however, farmers with healthy herds are not in an enviable position. They are unable to move their animals due to the CWD outbreak, yet cannot collect on government assistance given to farmers with diseased herds. This lack of ability to move animals is even more problematic in Saskatchewan than in other locations, as, due to the need to conform to government regulations, no federally inspected slaughtering plants that

[10] Michael Wood, "Koreans End Elk Imports", *Calgary Sun,* 10 August 2001; found at http://www.organicconsumers.org/madcow/korea81001.cfm.
[11] Darren Bernhardt, "Elk Breeders on Horns of Dilemma", *Saskatoon StarPhoenix,* 1 Aug 2002: A4.

can deal with elk exist.[12] Therefore, it is difficult for the province's farmers even to get rid of their animals if they want to, as they cannot move them to Alberta or Manitoba to be slaughtered at a federally approved plant.

4. Game Farming Policy Issues

Six major issues must be considered in order to measure the effectiveness and feasibility of current Saskatchewan policy regarding game farms. While all of these issues are important, some prove to be more important or comprehensive than others. For example, environmental and economic considerations include more sub-issues and problems than does an issue such as animal cruelty. While every issue should be thoroughly examined, the economic and environmental impacts of game farms are the most important factors to consider in dealing with game farm regulation. The demise of the industry is inevitable in the event that it proves to be unsustainable from an environmental or economic point of view. In order of importance, based on the subjectively determined number of significant sub-issues covered under each and their relative political, social, economic, and environmental impacts, the six game farm policy issues are:

1. environmental impact,
2. economic viability,
3. disease,
4. accountability,
5. animal cruelty, and
6. cross-jurisdictional conflict.

4.1 Environmental Implications of Game Farming

Although the economic benefits some producers have realised from game farming have been substantial, these positives are balanced by negative environmental effects wrought by game farms. Four main environmental issues associated with game farms should be examined. First, the development of game farms and the resulting enclosure of lands limit the amount of land available to wildlife. Second, if adequate pasture management is not practised, game farms have

[12] Barber, Dobbs, and Seidle. *Elk Production: Economic and Production Information for Saskatchewan*

an adverse effect on the environment, especially in terms of soil and water quality. Third, the threat of game farm animals escaping into the wild, or vice versa, causes concern about the spread of disease and the interbreeding of species. Finally, some environmental concern is raised over the possibility of game farm operators poaching wild animals in order to stock their farms.

4.1.1 Reduction of Wild Habitat

Whenever land is fenced, a certain amount of wildlife habitat is lost. Although this is often unavoidable, and commercial ventures should not be stopped entirely due to this encroachment on wild space, certain measures can be enacted in order to minimize the impact on Saskatchewan's vital and important natural resources. Currently, there exist few regulations regarding where game farms can be located. Most importantly, new regulations should prevent game farms from being established in areas heavily used by wildlife. Such a restriction would limit the impact game farms have on wildlife, and may also reduce the likelihood of wild animal intrusion, as wildlife would be less likely to be in the area in large numbers.

4.1.2 Pasture Management

Pasture management is an environmental concern that relates not only to game farms, but to livestock farms in general. Farmers sometimes do not practise adequate grazing management, which can lead to degradation in land quality. This issue is further complicated with game farms due to the extensive and expensive fencing requirements for deer and elk farming. However, the government does not currently monitor or regulate grazing procedures on livestock farms; since game farms are treated similarly in this regard, pasture management does not and should not involve much government regulation. Although there will still be cases of poor management, the market does a good job of regulating pasture management – the farmer who follows poor grazing practices tends to suffer financially and in terms of productivity.

4.1.3 Animal Escape and Intrusion

Producers, 2000: 34.

The problem of animal escape and intrusion has become an increasingly important issue due to the outbreak of disease, especially CWD. It is difficult to estimate the number of escapes or intrusions related to game farms in Saskatchewan. Many intrusions may go unreported, as the expectations the government has of a farmer who reports an intrusion, along with the required procedures, discourage many farmers from bothering to report the animal's presence. Reporting requirements could be enforced by imposing forfeiture of the game farm licence upon the discovery of an unreported intruding animal or an unreported escape, provided of course that there is any value in the licence. Game farming is after all a privilege, not a right. The existing ear tagging requirements should make it easy to establish the presence of intruding animals. Animal escapes would be more likely to be reported, as licensing requirements would mean that cases of missing animals would be questioned by the government. However, even if an escape or intrusion is reported, many escaped animals are never recovered, and intruding animals may not be returned to the wild.

Current government requirements call for farmers to track their animals closely through tagging and licensing. As long as the records and licences of animals on game farms are closely monitored by the government, the risk of animal escape or intrusion will remain as low as possible. However, it should be noted that no matter how strict the regulations are regarding fencing, there will always be cases of escape. Escapes prove to be complicated to control and game farm animals may be difficult and costly to recover.[13] Even if every necessary step is taken by the farmer to recover the animal, efforts may prove to be futile. It may be possible to create interest in the larger community by offering a bounty on the return of escaped game farm animals, alive or dead. Such a bounty program could be funded through bonds placed by game farm operators.

4.1.4 The Poaching of Wild Animals for Game Farms

Although the practice of poaching wild animals for game farm use is a serious and dangerous problem, it is also an issue that has been addressed in Saskatchewan legislation. Adequate measures have been put in place to prevent the stocking of game farms with wildlife.

[13] Bob Lanka and Rich Guenzel. "Game Behind Wire", in *Wyoming Wildlife,* July 1991: 11.

The most effective of these preventive measures is the labelling requirements for game farm animals. However, the labelling requirements are not sufficient on their own. In order to ensure that labelling remains an effective measure for preventing the poaching of wild animals, the regulation must be followed up by persistent monitoring to ensure that the requirements are being followed. There are indications from the government that adequate monitoring is taking place, but the risk of wild animals being poached for game farms will exist as long as game farms do. Again, as game farming is a privilege not a right, a minimum penalty of forfeiture of the game farm licence and the game-farmed animals for a farmer convicted of poaching should, provided the licence and animals have any value, be an incentive sufficient to eliminate the poaching of wild animals for game farming.

4.2 Economic Costs and Benefits of Game Farming

Until the present, the market for elk and deer has appeared to be healthy, as prices for breeding elk reached profitable levels. Many producers have benefited greatly from the sale of breeding stock. However, this level of economic prosperity is not sustainable. With breeding stock, a certain saturation point is reached, after which the supply outstrips the demand.[14] Once the saturation point has been reached, elk and deer prices drop significantly and producers must look to other avenues to market their animals, or products thereof. Besides the breeding-stock market, two other major markets exist for game products. The first, a market primarily for elk, is the sale of velvet antler for use as a homeopathic supplement. Second, elk and deer can be sold for meat.

4.2.1 Elk Velvet Antler

Prior to 1998, the velvet antler market was a lucrative proposition for elk producers. Asian countries, whose citizens believe that elk velvet antler is an effective homeopathic cure or treatment for conditions ranging from arthritis to impotence, were willing to pay large sums of money for supplements containing the velvet antler. This created a viable and strong market for the antler tissue from game animals. While this proved to be lucrative for a period of time, the

collapse of the Asian economy in the late 1990s and the discovery of CWD have resulted in major downturns in both sales of and prices for antlers. Korea, the biggest importer of Canadian elk velvet, has since banned the importation of elk velvet from this country. Homeopathic remedies in North America, while enjoying a certain niche market, have yet to make a major impact on the industry, which has not yet recovered from the Korean bans.[15] Rumours persist of a substantial Korean black market in North American velvet. Even if the rumours are true, economic theory would suggest that prices here, where it is legal to sell the velvet, will be lower than they were at the market peak, as the smuggler needs an incentive to risk prosecution. It is possible that the Korean ban could be lifted as early as 2003, but the market for velvet has proved to be too erratic to support the growth and development of the elk industry, a point which was raised as a concern in Robert Lanka's report on game farming done for the Wyoming government.

4.2.2 Meat

The second market available to game farmers is the sale of animals as meat. It is in this market that producers feel there is the most room for growth. Currently, elk and deer venison are not commonly eaten meats; they are popular mostly among hunters, who hunt their own game. The biggest commercial meat market, the grocery sector, has yet to sell mass quantities of venison. While the meat market probably remains the most financially feasible option for game farmers, building an economically viable market for venison will prove difficult and time-consuming. The nascent stage of the venison market was prolonged by the relative success enjoyed by the breeding and elk velvet antler markets until just a few years ago. Because of the success of these markets, there was little need to develop a strong meat industry,[16] although Dierker and Gray (1998) pointed out the necessity of developing such markets if the industry is to become economically sustainable. That this development failed to occur was the fault of all supporters of the industry, although principally of the government and the game farmers. Neither

[14] Darrel Rowledge, Director, Alliance for Public Wildlife, Calgary; personal communication, 30 July 2002.
[15] Robert Kirkpatrick, President, Saskatchewan Elk Breeders' Association; personal communication, 30 July 2002.

made much meaningful effort to develop federally approved abattoirs or major marketing campaigns.[17]

One factor contributing to the difficulty in Saskatchewan of producing, marketing, and selling meat profitably is the lack of facilities in which elk meat can be processed. The federal requirements governing the conduct of abattoirs that process game meat differ from the requirements governing abattoirs that process domestic animal meat. Saskatchewan does not have a facility that meets the requirements to slaughter elk or deer. Efforts have been made by game farmers to either modify or create a plant that meets the requirements, but, to this time, costs have been prohibitive. Farmers may slaughter their own animals, but economic theory suggests that the resulting losses due to lack of specialisation and scale would render such a proposal unprofitable. If producers wish to have their animals slaughtered professionally, they must ship their animals to Alberta or Manitoba.

Financial aid from the government to establish an abattoir for game-farmed animals would be a logical progression in order to further develop the industry, as the Saskatchewan government has already embraced the industry so strongly. This would aid game farmers in developing their industry, and would also create new value-added opportunities for the provincial government. By aiding and perhaps becoming a partner in elk processing, the government would be able to share in any profits realized by this industry. However, like any other business venture, this industry may also face problems unforeseen by the government and should be thoroughly examined before the government becomes involved. A more politically palatable means to establish a processing facility may be to encourage the creation of a New Generation Co-op along the lines of the North American Bison Co-operative, or a Community Venture Capital Corporation. In any case, if the plant is to be established it would be reasonable to conform to European Union specifications, to allow the industry to compete with the New Zealand red deer industry for the European, particularly German, game-meat market.

Perhaps the biggest difficulty in establishing a viable meat industry is consumer preference. Canadian consumers, per capita, consume more than 97.7 pounds of beef per year. In

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[16] Sherri Dobbs, Provincial Livestock Development Specialist, Saskatchewan Agriculture, Food, and Rural Revitalization; personal communication, 5 August 2002.

comparison, per capita consumption of chicken, the next most common meat, is 62.2 pounds, but the consumption of venison is only .022 pounds per capita.[18] Despite the fact that venison has many health benefits over beef, game producers have a long way to go to convince the public of the relative merits of eating venison. Although there exists a market for small-scale sale of elk and deer meat to private consumers and some restaurants, venison has not become common on any larger scale, such as sales to supermarkets or for foreign export. The difficulties associated with lack of an export market are compounded by the presence of CWD in some Canadian animals and the reluctance of other governments to import possibly tainted meat so soon after the British beef scare.

The venison market will be in direct competition with the beef market, as is the bison market. This is because of the type of meat produced by deer and elk. This competition may be seen unfavourably by cattle producers. Politically, this may prove to be a tough situation. The government, through Saskatchewan Agriculture, Food, and Rural Revitalization, has been supporting the game industry and the development of a game-meat industry, which, if their objectives for a strong venison market are achieved, may put them in ill favour with other livestock producers, particularly if government were to inject money into the industry to help with, for example, establishment of a processing plant. While the venison market is unlikely to displace much, if any, of the beef market, at least until such time as the game industry can lower its marginal cost of production to that of beef, government support of the game farm meat industry will be looked at unfavourably by other livestock producers, who have had to develop their own markets and processing.

4.2.3 Breeding Stock

The economic future for game farming does not appear to be as bright as the previous few years indicated. Once game farmers acquire enough breeding stock, equilibrium is achieved where animals no longer need to be purchased for breeding purposes, and thus must enter the meat market. This will render the price of the animals comparable to beef or bison, their closest

[17] Robert Kirkpatrick, President, Saskatchewan Elk Breeders' Association; personal communication, 30 July 2002, and Clay Serby, personal communication, 10 August 2002.

substitutes in the meat market. This creates a situation where the price of elk or deer falls drastically, due to the over-abundance of the animal. Selling game for breeding purposes no longer is a viable market, and producers are left with one fewer venue in which to create profit. These conditions have resulted in an economically unfavourable climate for game farms in this province at the current time.

4.2.4 Impacts of Game Farming on the Wildlife Industry

Perhaps the most major cost associated with game farming is the possibly detrimental effect of game farms on the wildlife industry. For the purposes of this paper, the wildlife industry consists of wildlife hunting and wildlife viewing. In addition to the environmental benefits of wildlife, the wildlife industry remains a profitable business. Even if one were to ignore the positive natural contributions of wildlife and wildlife habitat, the economic benefits of wildlife are too significant a part of the Saskatchewan economy to ignore or downplay. Tourism revenue from wildlife hunting and viewing alone exceeds $140 million annually in the province. By any calculation, the game farm industry does not match the value of the wildlife industry in the province.[19] The enormity of the economy associated with wildlife and the relatively small, albeit admittedly nascent, value of the game farm industry, dictate that game farming should not take precedence over the environment. This is especially true not only because the early economic growth spurt of the game farm industry appears to be over, but also because of the ethical reasons specified earlier in this paper.

The issues of environmental and economic impact are perhaps the most important considerations involved in game farming policy. Despite the economic benefits potentially associated with game farms, the economy cannot and should not overshadow the importance of environmental concerns. It is in the best interests of not only environmentalists and the public, but also farmers and the agri-business sector, to preserve the environment. The environment provides

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[18] Barber, Dobbs, and Seidle. *Elk Production: Economic and Production Information for Saskatchewan Producers,* 2000: 5.

not only the aesthetic value of flora and fauna, but very real services such as water purification and carbon storage that a modern industrial society ignores at its peril. Wildlife in the natural environment are an important game farm policy consideration.

4.3 Disease

It is in the area of disease that the most drastic changes occurred from 1989 to 1999. In 1989, chronic wasting disease was not found in the province, and thus was not specified in the 1989 regulations. However, in the ten years between legislation, CWD became the most serious and feared disease in game farm animals, prompting the introduction of the *Diseases of Domestic Game Farm Animals Regulations* in 1999, which set out a regulatory framework that attempts to control the introduction of disease in game farms and the spread of disease between game farms and wildlife.

The *Diseases of Domestic Game Farm Animals Regulations 1999* clarified the roles to be played by both the government and the game farmer in controlling, identifying, and treating diseases prevalent in game animals. This document called for mandatory testing of game farm animals, quarantine of diseased farms, and a thorough clean-up procedure for contaminated areas. While all of these regulations help to prevent the spread of CWD, there remain too many unknown factors associated with the disease to assess whether the regulations will be adequate.

Perhaps the most important step undertaken by the regulations is the creation of the Cervid Chronic Wasting Disease Surveillance Program. The purpose of this program is to detect, control, and contribute to the eradication of chronic wasting disease in animals held on domestic game farms.[20] Although the specifications of the program are left vague, the regulations state that an inspector may "inspect, examine and test domestic game farm animals affected with or suspected of being affected with a designated disease."[21] Furthermore, the regulations state that

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[19] Even if 1999 values of animals are used, a period when prices were at or near their highest, the game farm industry is not as valuable as the wildlife industry. For example, if the numbers of elk and deer are multiplied by the maximum breeding price for each animal, game farming is worth over $6 million less than the wildlife industry. Since those numbers were released, the numbers of farmed elk and deer in the province have dropped and the price of animals has plummeted to about one-fifth of the 1999 price (Elk Production and Deer Production guides, 2000, Government of Saskatchewan).

[20] Government of Saskatchewan, http://www.gov.sk.ca/newsrel/2001/12/21-950.html.

[21] Supra, note 8, s. 5(a).

participation in the CWD program is mandatory for all domestic game farm operators who keep cervids, and if an operator fails to participate, the minister can suspend that operator's licence.

Finally, the issue of disease remains a difficult problem to address, as inter-jurisdictional conflict further complicates an already confusing issue. Both federal and provincial governments have a stake in disease control, and the two sides can agree on neither the correct action to take nor who is responsible for what aspect of disease control. Currently, the Canadian Food Inspection Agency is responsible for monitoring clean-up procedures and for the control of disease in general. However, provincial transportation requirements and methods of curbing the spread of the disease, such as fencing requirements, are regulated by the provincial government.

4.4 Accountability Issues

In recent months, game farming has come under fire from a concerned public, environmental and wildlife groups, and other groups who feel that game farms do not make sense as an economically or environmentally sound venture. There are three groups that have a stake in the development of sound business practices in game farming. As such, these groups also have varying degrees of responsibility for the successes and failures associated with game farm practices. First, and most obvious, the game farmers themselves are accountable for their actions. This group has an economic stake in the business, and, as with all business ventures, the market will force them to assume a certain amount of potential liability and accountability in exchange for the benefits they reap from their commercial enterprise.

Second, the government will also be held accountable for their actions in this area. Although it is the game farmers who ultimately carry out the positive or negative actions, it is the government who decides what can and cannot be done on game farms; the farmers simply follow policy guidelines. Should these policies prove inadequate to protect the residents of the province and the province's other resources from any risks inherent in game farming, it is government that is answerable to the electorate.

Finally, environmental groups, especially wildlife groups, while not directly accountable, should also share some responsibility for ensuring that game farms are environmentally sound. The mandate of many of these groups is to manage wildlife resources responsibly and preserve

natural habitat,[22] and these goals would include protection from the ill effects of game farms and other livestock operations. Environmental and wildlife groups can act as watchdogs to ensure that the government and game farmers maintain an adequate level of accountability and conduct themselves in an environmentally conscious manner.

4.5 Animal Cruelty

Animal cruelty remains an important issue in dealing with any type of animal. Certain aspects of the game farm industry and the products harvested from game farm animals make the issue of animal cruelty especially important in this industry. Most notably, the harvest of elk velvet antler is seen by many people to be a cruel process. This is the area in which cruelty issues set game farming apart from conventional farming domestic animals. Currently, legislation calls for animals to be treated in a "humane fashion", but does not specify what humane treatment entails.[23]

The harvesting of elk velvet antler is seen as particularly cruel for several reasons. Because of the demands of the major homeopathic market for elk velvet antler, the antler is harvested when the appendage is still living and growing bone matter. In fact, the antler is sensitive enough that the animal will shake off flies that land on the antlers. George Bubenick, an anatomist at the University of Guelph, said in an article in *Western Roundup* that the density of nerve receptors in the antler is almost the same as the human cornea, making it "one of the most sensitive tissues in existence."[24] When removing the antlers, a general anaesthetic is applied, but that does not mean the animal feels no pain. Pain after the procedure and phantom pain may remain for months after the operation. In other cases, farmers will use electric shock to stabilize the animal while removing the antlers.[25] The industry must bear in mind that should some animal rights group choose to make the apparent pain associated with harvesting velvet a *cause célèbre,* the game farm industry will be in trouble. In those cases where protestors have been able to shift consumers' attitudes, those industries die. The harp seal cub harvest is an example.

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[22] Saskatchewan Wildlife Federation, http://www.swf.sk.ca/.
[23] Government of Saskatchewan, *Domestic Game Farm Animal Regulations* (1999): 18.
[24] Hal Herring, "Cure or Curse?" *Western Roundup,* 18 December 18 2000, found at http://www.organicconsumers.org/meat/elkvelvet.cfm.

In most other issues, humane practices in game farming closely resemble humane practices in the farming of domestic animals. In the killing of animals for meat and the general treatment of game animals, similar practices are used as to those used for domestic animals.

4.6 Inter-Jurisdictional Conflicts

The set of issues associated with game farming is difficult to analyse politically due to the many factors involved in policy related to the industry. Aspects such as disease and meat inspection are federal issues, while wildlife protection falls under provincial jurisdiction and, following section 95 of the Canadian Constitution, agriculture is a joint federal-provincial responsibility. The result is a political situation where the different levels of government are unable to agree on which areas each is responsible to monitor.

The issues associated with jurisdiction represent a legal problem. This paper is purely policy oriented, and most legal concerns dealing with jurisdiction will not be examined in this paper. However, from a political standpoint, jurisdictional conflict remains important. If politically contentious issues are inter-jurisdictional in nature, governments will often disagree over what their respective responsibilities are. This has proved to be a problem with game farming, as the federal government has refused to regulate it, deeming it a provincial concern.[26] However, the industry does affect federal areas and should be examined and perhaps regulated, at least in part, by the federal government. The cynic might even be forgiven for wondering if the federal government's failure to regulate reflects concern about attracting potential financial responsibility should it do so.

Jurisdictional conflict is bound to occur in regulation of game farming due to the diverse nature of activities and issues involved with game farms. For instance, jurisdiction over agriculture is joint by section 95 of the Constitution and jurisdiction over the environment is also joint given that higher courts in Canada have ensured that the federal nature of the Constitution is maintained despite residual power resting with the national government. However, inter-

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[25] Darrel Rowledge, Director, Alliance for Public Wildlife, Calgary; personal correspondence, 30 July 2002.

[26] Darrel Rowledge, Director, Alliance for Public Wildlife, Calgary; personal communication, 30 July 2002.

provincial transportation falls exclusively under the federal government's control.[27] In addition, some jurisdictional overlap may occur because of the wide scope of policy involved. Although federal policy primacy usually results, this overlap can create problems if the federal government does not intervene or if it creates policies that overlap with provincial policies and run counter to provincial ideas. The confusing and complex set of jurisdictional boundaries involved in game farming creates an equally confusing and complex governing policy system that can greatly affect the efficiency and effectiveness of game farm policy in this province.

In addition to federal/provincial jurisdictional conflict, inter-provincial conflict can also occur. Due to the federal nature of Canada's political system, each province has its own policies and legislation guiding certain aspects of governance. As well as having to deal with federal policy guidelines for transportation, processing, and trading, the Saskatchewan government must also contend with, and to a certain extent accommodate, and compromise in order to meet, policy guidelines of other provinces.

The third possible jurisdictional conflict involved with game farming is intra-provincial in nature. Game farm animals present a unique problem, as they are domestic animals in most senses, but unlike traditional domestic animals such as cattle and horses, game farm animals have wild counterparts found in Saskatchewan. This leads to jurisdictional conflict between government departments. In particular, Saskatchewan Environment and Saskatchewan Agriculture, Food, and Rural Revitalization both have stakes in game farming, and occasionally their views and powers conflict.

Finally, the Saskatchewan government must take into account the policies and concerns of other countries when establishing effective game farm policy. Because the market for some game products, for example, elk velvet antler, is predominantly foreign, certain policies must be consistent with foreign regulations in order for game farming to be economically viable. For example, if the industry wishes to export meat to the European Union it must meet European slaughter requirements.

Game farming, like other forms of agriculture, involves many different, wide-ranging policy considerations. Several jurisdictions are involved in the development of game products

[27] Government of Canada, http://infosource.gc.ca/Info_1/index-e.html.

because of the several intermediary steps required to take the animal or antler from the farm to the stage of finished, packaged commodity. Sectors such as transportation, health and safety, environment, land use, processing, and economic diversification are all involved in game farming either directly or indirectly.

4.7 Other Policy Issues

4.7.1 Hunt Farming

One major policy issue this paper has not yet examined is the idea of creating private hunt farms. Although this is an important issue and one that proves to be more contentious even than game farming, this paper will not look in depth at this problem. Hunt farming presents separate and unique policy problems from those presented by game farming, and should be treated as such. Although hunt farms could most likely grow from game farm operations, the policies and guidelines governing them would have to be different from those governing game farms. Hunt farming policies and issues are complex enough that they warrant their own independent study. This is the case for at least two reasons. First, the question of whether or not a society should allow animals to be hunted in captivity raises a different set of ethical considerations from the question of whether or not animals should be raised in captivity. Second, in a jurisdiction that has a substantial industry built around hunting the welfare economics question arises of whether or not the compensation principle can be applied. In the received welfare economics literature a policy is said to be welfare enhancing if those who gain from the policy (hunt farm operators) could fully compensate the losers under the policy (the wild hunt industry) for their losses (the fact that those who are consuming hunt farm hunts would otherwise consume wild hunts) and still have something left over. Received economic theory further argues that on welfare grounds a policy that is welfare enhancing is preferable to one that is not, whether or not the compensation is actually paid, and leaves the question of compensation to the political arena.[28]

5. Policy Options

5.1 Policy Options One, Two and Three

The first policy option the government could consider is to do nothing. That is, they could leave things as they are and see what happens. Either the game farms will all fail financially and the industry will die, or else it will not. Unfortunately, to take no action would be to ignore the threat posed by chronic wasting disease and other environmental and economic issues, and thus would be a poor decision.

5.2 Policy Option Two: More Regulations

The government has worked hard to create and amend legislation regarding game farming since the first comprehensive document was produced in 1989. Although efforts have been made to improve upon problem areas, many concerns still exist with the current legislation. Disease policy especially has proved to be problematic, exacerbated by the fact that, while a federal responsibility, disease also affects areas of policy that lie within provincial jurisdiction. Many areas of the disease policy were created before the full extent of the problem was realised. Thus, there exist many areas in which improvements to current policy can be made, though such improvements may entail measures as drastic as a complete overhaul of the regulatory regime or abandonment of the industry.

5.2.1 Chronic Wasting Disease

The threat posed by chronic wasting disease is perhaps the most difficult and worrisome problem relating to game farms at this time. A number of issues make this disease a particularly complicated policy problem. First, there are still many questions unanswered about the nature, spread, and long-term effects of CWD on game animals and humans. In addition, ideas about how to deal with CWD differ greatly. Finally, testing for the disease is far from conclusive and can only be performed on dead animals. Together, these factors create a contentious and confusing policy knot with many different strands to consider.

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[28] The interested reader can consult an intermediate microeconomics textbook (Varian's, for example) for a

The unknowns associated with CWD create a delicate situation for the government. The problems encountered by the British government in dealing with bovine spongiform encephalopathy (BSE) serve as a warning to North American jurisdictions that CWD, which is related to BSE, must be dealt with in a sensitive and timely manner to avoid public fear and backlash. Some may argue that to date, the Saskatchewan government has not taken enough initiative to expedite the treatment and hopeful elimination of the disease in this province. However, in defence of the government, this issue has been a difficult one to gauge adequately and accurately. Many important questions regarding the disease cannot be answered, and arguments both factual and purely emotional in nature from supporters and detractors of game farms have further confused the issue.

Most difficult to deal with is the lack of adequate testing for the presence of chronic wasting disease in game animals. Currently, scientists can only test for the presence of CWD in dead animals. The test, which costs approximately $70, is paid for by the government, but the game farmer must pay shipping costs to transport the head to the laboratory. The province's legislation, revised in 1999, called for mandatory testing of all elk and deer for Chronic Wasting Disease; nevertheless, testing was done on a purely voluntary basis until the beginning of 2002. Even mandatory testing, however, cannot totally rule out the possibility that a herd is infected with CWD, as the tests are not one hundred percent accurate and an animal must be dead in order to be tested. The possibility remains – and the remoteness of the possibility is unclear – that live animals in the herd may be infected.

Finally, every effort possible must be made to control CWD in order to protect wildlife from further exposure to disease. Once a disease is introduced into the wild, control of the disease in free-ranging animals may prove to be impossible. The disease could then spread back into game farm herds that were previously certified CWD free.[29]

Bovine spongiform encephalopathy in cattle, chronic wasting disease in deer and elk, scrapies in sheep, and Creutzfeldt-Jakob disease in humans are all closely related prion-based diseases. Governments must deal carefully with an outbreak of CWD because of its close relationship to these other fatal diseases. Even though there is no proof that CWD can be passed

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more in-depth treatment of the topic.

on to humans, the government must treat the disease as a threat to humans for two reasons. First, because of the extensive damage caused to the British cattle industry and the increase in diagnosed cases of Creutzfeldt-Jakob disease in humans in Britain, the public is rightly cautious about prion-based diseases. While it can be argued that the media has blown the CWD problem out of proportion, this does not discount the public's fears. Second, Canadian law and international law follow the belief that environmental concerns and policies (under which CWD would fall) must be based on the "precautionary principle". This principle states that

> Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.[30]

Therefore, despite the lack of hard proof linking chronic wasting disease in elk and deer and Creutzfeldt-Jakob disease in humans, the government would be wise, because of the public fear and the precautionary principle, to take all practicable actions to protect people from ingesting contaminated elk or elk products and take steps to eliminate the disease in the wild and on game farms.

5.2.2 Fencing Requirements

One of the areas in which improvements can be made is with regard to fencing. Current regulations stipulate only a single perimeter fence at least eight feet high for elk and deer. As there is only one fence, contact between wild animals and game farm animals remains an issue, as nose-to-nose contact, a possible means of infection, can still happen through the bars of the fence.

To decrease the likelihood of both nose-to-nose contact through the fence and escape leading to contact between game farm animals and wild animals, a second perimeter fence should be required between pastures and the wild. Although this requirement would be much stricter than the requirements for fencing of domestic animals, such a fencing requirement should prove

[29] Lanka and Guenzel, 1991: 11.

an effective way of protecting Saskatchewan's wildlife. Since the processes by which chronic wasting disease is spread remain unknown, a single perimeter fence will not suffice to protect wild animals from diseases carried by captive animals, or vice versa.

5.2.3 Game Farming on Crown Lands

At present there are no game farms on Crown land because of concerns over tenure given the extent of the investment necessary to establish a game farm. However, legislation still allows for the establishment of game farms on Crown land under certain conditions. The government should completely eliminate the possibility of establishing game farms on Crown lands, as this is one step that can be taken easily. No present game farms would be affected, so the possibility of farmer backlash to this policy change is low. To implement this policy change now would be a cosmetic change only; however, it would still benefit the government to close the issue of the potential environmental concerns associated with using public land for game farms.

5.2.4 Monitoring Requirements

In recent years, the Saskatchewan government has made efforts to better monitor the operation of game farming in Saskatchewan. Game farm legislation falls under the jurisdiction of Saskatchewan Agriculture, Food, and Rural Revitalization (SAFRR) and Saskatchewan Environment and Resource Management. The views of these departments sometimes clash, and both deal with separate areas of game farm legislation. In addition, only Saskatchewan Environment has the power to enforce policy issues. SAFRR has no powers over the enforcement of its own policies. As the situation currently stands, SAFRR is unable to enforce game farm regulations, and Saskatchewan Environment has not stepped in to fill the monitoring gap. This has resulted in little or no effort being made by the government to ensure that licensing, health, and record-keeping requirements are being followed.

If game farms are to be safely and effectively operated in this province, the government must begin to monitor closely the behaviour of game farm operators. Although the vast majority of farmers probably operate within the guidelines of the law, monitoring must be done to ensure

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[30] *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)* [2001] 2 S.C.R.

that all game farms operate within these parameters. Given the far-reaching effects of disease and environmental degradation, all game farms must follow strict guidelines in order to avoid a reoccurrence of disease or serious environmental or animal treatment problems.

5.2.5 Marketing

To the present time the industry has relied heavily on the breeding-stock and velvet markets. The recent price declines clearly indicate that to maintain a viable industry it will be necessary to expand beyond these markets. This will require, at the very least, the sale of venison. The meat market will require the establishment of slaughter facilities, preferably capable of meeting European Union standards to allow export to the EU. This will, of course, require investment by someone, presumably either the Saskatchewan government or the game farmers themselves, in the slaughter facility. At the very least, it would seem that the government should encourage the industry to pursue this investment.

5.2.6 Feasibility of Proposed Regulations

5.2.6.1 Economic Feasibility

These policy recommendations will prove to be expensive to either or both the government and the game farmers. While paying to prop up a private industry may seem like a poor decision to the government, it remains one of the three ways that the policy initiatives above can be funded. The second is to change the regulations, thus forcing the expenditure onto the game farmers and letting market forces decide whether or not the industry is viable. The third option is, of course, some sort of cost-sharing arrangement between government and the game farmers.

The case for government intervention, either in whole or in part, will rest on some sort of equity argument. That is, the game farmers will argue that, since the government has made it abundantly clear that they are in full support of the industry and have done much to promote it since its initial acceptance, the government must also take responsibility for its actions and the results of these actions on game farms, despite the fact that game farmers, as investors, are

ultimately responsible for the well-being of their industry. The game farmers will also likely argue that this is especially true in areas related to disease and the environment, where lax policies and lack of monitoring have contributed to many of the problems evident today. The farmers can be expected to argue that they cannot be held entirely responsible for actions that, while proving harmful, fell within the bounds of the law.

The counter argument is that game farming is a privilege, not a right. From this flows the reasoning that if one desires to enjoy the privileges contained in a licence one should expect to have to conform to the terms of the licence. The tenor of the regulations surrounding the licence has been the general protection of public health, safety and the environment. Any alteration of these regulations in the face of a clear indication of a failure to adequately provide the protection that they were designed to deliver should not be unexpected by the licence holder. Thus any changes will represent investments that the licence holder should have expected to make, and the failure of the licence holder to make such an investment is an implicit acknowledgement that the licensed activity is a misuse of the licence holder's resources. This market-based argument will, if game farming cannot profitably be conducted in an environmentally safe manner, lead to the demise of the industry and save the taxpayers of Saskatchewan from wasting money on a nonviable industry. Proponents of this argument will undoubtedly further ask just how much support the government has actually extended to the industry.

5.2.6.2 Environmental Feasibility

Environmentally, the policies and recommendations outlined in this paper would move greatly toward conciliating concerns held by wildlife and environmental groups. Although only complete abolishment of game farms would eliminate all environmental concerns, governmental policy and legislation can be improved to better protect the environment.

5.2.6.3 Political Feasibility

Due to the high initial costs associated with these policy recommendations, there exists little doubt that these ideas will prove to be unpopular with game farmers. Although these policies would prove to be beneficial to all parties in the long term because of the increased safety and

marketability associated with stricter regulations, the negative short-term effects could make it difficult for some to appreciate the long-term benefits. For these reasons, implementation of these policy recommendations would require strong political resolve.

While it may seem easiest to adopt a wait-and-see approach with chronic wasting disease, this way of thinking could prove disastrous in many respects. First, inaction could have a detrimental effect on public safety and public opinion. Although CWD has not been proved dangerous or fatal to humans, the absence of such a threat has also not been proved. In the 1980s and early 1990s, with the outbreak of BSE, or mad cow disease, the British government did take a wait-and-see approach, and the result was well-documented and disastrous, politically, economically, and in terms of health. The containment and eradication of CWD in Saskatchewan would be a necessary move to quell public anxiety because of its close relationship to mad cow disease. Although reasonable efforts have been made by the government to stem the spread of CWD in recent years, much more must be done in order to enhance the likelihood of eliminating the disease in the province. One initiative, for example, would be scientific research to develop live-animal tests.

Although, as mentioned above, these policy changes will likely be unpopular with game farmers, environmental groups will likely support stricter regulation. These recommended policy changes stand to reduce the potential for environmental harm caused by game farms and decrease the hazards game farms pose to wildlife.

It would be best for the government to implement any policy changes as quickly as possible. Even with the many problems that have arisen in game farming and the near-crisis proportions of the outbreak of chronic wasting disease, most of the public remains oblivious to or relatively uninformed about the policies and problems related to game farming. These issues have not directly affected the majority of the population yet, and changes to game farm policy will have little effect on the voting preferences of most people. However, the present lack of public concern about game farming may not last long should current policy continue. Already, the media has alerted the public to the existence and spread of CWD in the province, and many people are beginning to question the seeming lack of government action in stemming this disease. In addition, the question of animal cruelty on game farms has not yet become ensconced in the

public consciousness, but people may at some point begin to question the humaneness of removing a living part of an animal. If the government reacts quickly to correct some of the shortfalls of the current regulations, then difficult public relations problems may be avoided. The longer the government stalls in fixing problems with game farming regulations and the longer these crises are allowed to worsen, the greater the likelihood that the media and the public will react negatively to these difficult issues.

5.3 Policy Option Three – Eliminate the Industry

While the policy option of increased regulation would prove to be a reasonably effective solution to many of the problems currently associated with game farming, other problems that cannot be so easily rectified would remain. The short boom associated with game farms in the mid 1990s is unlikely to return, as the breeding-stock market, even if given a boost by farmers in need of new stock after CWD problems are minimized, will not be viable over the long term. Velvet antler markets have proved to be too erratic to rely upon, and the venison market has not been sufficiently developed to provide a decent economic platform upon which to base the industry. Given the environmental concerns raised by game farms, policy option two does not prove to be the best option. Instead, the government should block any development of new game farms and attempt to work along with game farmers to eliminate existing farms.

Both game farmers and wildlife and environmental supporters agree that the government has handled this industry poorly. Because of environmental concern and the concern of foreign and domestic markets over quality, only through increased regulation and monitoring will game farming be an economically and environmentally sound idea. However, game farmers contend, and rightly so, that increased regulation will cripple or even destroy their businesses. At costs of $10,000 per mile, doubled fences, while perhaps necessary, may be economically unfeasible for farmers. Conversely, if the cost is borne by the government, public outcry, not to mention possible international trade disputes, will result from the government in effect subsidizing a potentially nonviable industry. In addition to fencing costs, the government will have to worry about increased costs of monitoring, licensing and testing, as well as other expenses arising from the disease and environmental problems that have come to be associated with game farms.

Even many game farmers themselves are questioning the viability of the industry. In a recent article in the *StarPhoenix,* farmers threatened to either shoot their animals or turn them loose. These feelings have arisen because of drought, low prices, and difficulties posed by strict government regulation of practices such as fencing and licensing. Some game farmers feel they have no choice but to get rid of their animals, as the per-animal costs to the game farmer are greater than the market price for the animal. When even game farmers begin to question the viability of their operations, the government should take it as an indication that its approach to the industry should be reconsidered.

For the reasons discussed above, the government should cease to lend support to the game farm industry. The decision to support this industry was taken without consultation or review, and the period of economic boom for game farms came to an end with the mass outbreak of chronic wasting disease and the saturation of the breeding-stock market. While there is little that can be done with existing game farms other than to make the regulatory changes outlined above, the government can avoid exacerbating the adverse situations created by game farming by not allowing the creation of new game farms. This should not prove to be a difficult task at this time, as few individuals are anxious to invest in the industry now. A moratorium should be placed on the industry pending a full cost-benefit analysis and economic and environmental feasibility studies.

If the findings of such research support the findings of studies conducted in Wyoming and the Yukon, which both found game farming to be a negative economic and environmental proposition, then steps should be taken by the government toward a complete dismantling of the industry. No new game farms should be allowed to start up, and existing game farms should be offered buy-out packages. Although this may seem like an expensive proposition, it must prove cheaper than having the government attempt to prop up an industry that research has revealed to be nonviable. If efforts are made to remove game farming from Saskatchewan, most of the costs referred to earlier in this paper, for example the costs of establishing a slaughtering plant and meat-packing industry in the province, double fencing of game enclosures, and monitoring of game farms, will be eliminated.

The costs associated with a buy-out would ultimately be borne by the taxpayer. Should the recommended research lead to the anticipated results, a buy-out will be an unfortunate but unavoidable by-product of rectifying poorly designed legislation. In the long term, however, costs would prove to be lower to the taxpayer than if the government were to continue to support the industry. Instead of

being spread out over many years, the additional costs would be limited to a series of lump-sum payments over a short period of time.

This recommendation asks for a significant departure from the current policies of the Saskatchewan government. The government has been a vocal supporter of game farming. However, the problems arising from the outbreak of CWD combined with environmental risks have created a situation the government cannot ignore.

6. Conclusion

The major policy options and suggestions in this paper can be broken down into four main areas. First, one of the most important issues that requires serious consideration is the development and implementation of better environmental policy to govern game farms. Game farms affect the environment, and every effort must be made to ensure that the environment does not take a secondary position to industry development. Second, further avenues must be explored on the economic side of game farming. If game farming is to have a positive economic future in the province, the government and farmers alike must work to develop slaughtering plants and other processing facilities. Third, the boundaries and areas of accountability of all actors in game farming must be examined and firmly established. Game farmers, the government, and wildlife groups all have important roles to play in ensuring the smooth operation of the industry. An efficient industry is not possible unless the actors determine which groups will be responsible for which areas of policy, policing, and operation of game farming. Finally, it is important to develop an effective monitoring program to ensure that regulations are followed and the industry operates efficiently and safely.

The future of game farming has been a contentious issue in the province in the last several months, as disease and environmental conditions reach crisis points. Because of this, ideas for options and policies arise. New considerations that pertain to the future of game farming emerge almost daily. However, the basic problems and the list of viable solutions remain consistent. Through effective and strict regulation, the province may maintain or salvage at least some of the economic benefits associated with game farming and work towards making the industry a more environmentally responsible form of agriculture. Ultimately, however, questions

remain as to whether this industry is worth government support. Only time will tell whether the money and resources devoted by the government to this industry will be sufficient to save it.

With plenty of work and money, following recommendations such as those outlined in this paper, game farming may be able to maintain a presence in the province of Saskatchewan. Due to the saturation of the market for breeding stock, the volatile market for elk velvet antler, and the current lack of public interest in elk and deer venison, game farming will continue to be a problematic industry for the government to support. Environmental concerns and disease issues further limit the practicality of the industry. In most respects, related policies have failed both environmentally and economically, with potentially dire results in both areas.

Regardless of the route the government chooses to take with regard to game farming, comprehensive environmental and economic feasibility studies should be carried out for both the elk and deer industries; sub-areas such as elk velvet antler harvesting, meat production, and breeding, should be examined in depth. There are indications that animal cruelty issues, economic viability, and potential disease threats were not adequately examined prior to the adoption of game farming in Saskatchewan. If the government wishes to continue to support this industry without alienating or worrying the public, the full-scale environmental and economic effects of such an industry must come under intense scrutiny.

If the proper steps had been taken to determine the economic and environmental feasibility of game farming in the province before the government chose to support this industry, many of the problems now arising with game farming might have been avoided. In a 1990 report chaired by Bob Lanka, the Wyoming Game and Fish Department found that, due to issues of escape, the spread of disease, the potential for genetic pollution, and the dangers posed by game farms to wildlife, game farms proved an "unacceptable risk" to Wyoming wildlife. The concerns and potential risks raised in this report have proved all too accurate, as disease on game farms has caused great problems both commercially and environmentally. In addition to posing potential environmental hazards, this industry also has not created the sustainable economic benefit that the province had hoped for. Two economic studies done in this province identified the weakness of the elk velvet market, and pointed out that "the future product of the elk industry will be

venison."[31] However, the meat market for elk has failed to develop. A similar study done on white-tailed deer found that production of breeding stock was the only viable market for these deer in the province.[32] However, the market for breeding stock reaches saturation and cannot be considered an effective long-term economic choice.

Despite the short-term costs to farmers and the general public associated with a complete buyout, this option remains the only completely effective method of dealing with the myriad problems that have arisen in the industry. Any business venture is likely to involve a certain amount of risk; however, the risks and problems associated with game farming are such that the industry does not merit government support. Studies in other jurisdictions support this claim,[33] and all parties involved must now do what is necessary to rectify the problems. Both game farmers and the government assumed a certain level of accountability and risk by getting involved in the industry, and both must be responsible for the economic consequences of removing themselves from this industry. The question that remains is: Who should bear those costs? If the industry truly is not economically viable, the adoption of new, stringent regulations as suggested in option three above, paid for by the farmers, will result in the eventual demise of the industry. If the research this paper recommends is conducted and shows a need for a more rapid curtailment of the industry, a government buyout can effect this. In either event, failure to

[31] Knopf and Wall, *Saskatchewan Elk Farming Feasibility Study.* While this study did find the elk industry to be economically lucrative in some ways, the study was far from conclusive and was completed long after the government implemented game farm policies. The study failed to take into account the lack of a strong venison market or major fluctuations in the price of elk velvet antler.

[32] Knopf and Wall, *White-Tailed Deer Game Farming Feasibility Study.* Again, the researchers failed to take into account major market fluctuations.

amend the current regulatory regime surrounding game farms will mean that the debilitating problems that have crippled the industry in the past several years will continue to impose economic and environmental costs on farmers and the public without either group reaping substantial gain.

[33] Both the Wyoming and Yukon governments undertook studies to determine the viability of the game farm industry. The Yukon study has not been made public, and a copy of the Wyoming study is unavailable at this time. However, the general findings of both studies were revealed by Darrel Rowledge of the Alliance for Public Wildlife, who has reported to the House of Commons, and by Robert Lanka, the chief author of the Wyoming Study.

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