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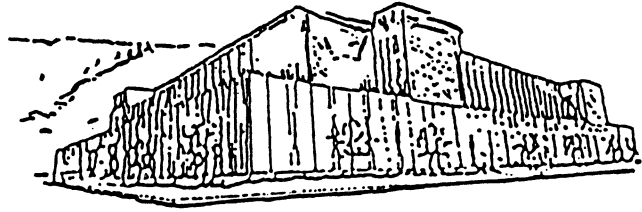
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**Game Farming in Montana:
A Historical and Comparative Policy Analysis**

by

Laura Van Riper

B.A. Emory University, 1996

presented in partial fulfillment of the requirements

for the degree of

Master of Science

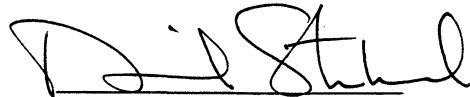
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Game Farming in Montana: A Historical and Comparative Policy Analysis (211 pp.)

Director: Steve Siebert *S. Siebert*

This thesis approaches the topic of wildlife policy as the struggle between interest groups that hold varying perceptions and interpretations of a specific issue. These perceptions are based on the ecological, economic and socio-cultural conditions that operate both within and outside a specific location. Additionally, public perceptions are dynamic in that they are re-negotiated in response to changing wildlife management systems.

The purpose of this study was to examine the political struggle surrounding the elk industry within the Rocky Mountain region. More specifically, a historical and comparative analysis was conducted in an effort to both understand the public's (Rocky Mountain region) views of the elk industry and highlight the various interest groups and their influence on Montana game farm policy. A review of both the historical management of Rocky Mountain bison and the current public interpretations of the Yellowstone bison issue provides a referent for an analysis of the elk industry

Although elk farming represents a viable short-term economic diversification strategy for the private rancher, it can be argued that the majority of the costs are borne by the public. Within the Rocky Mountain region, many people have developed a strong relationship between themselves and wild elk. Consequently, they are opposed to the images associated with farmed elk populations. However, elk farming in Montana is strongly supported by the livestock interests and supporters of private property rights, which have had a tremendous influence on past decisions regarding elk farm policy.

When compared to the historical development of bison management, elk appear to be headed down a similar path. Ranched bison populations in the Rocky Mountain region are managed solely as livestock, and the trend is to manage wild bison populations under the split jurisdiction of wildlife and livestock agencies. Similarly, with regard to elk farm policy, the trend is to legalize elk farming and place control of the industry with agricultural officials. Given the dynamic nature of public perception, the re-negotiation that will occur as management systems change to reflect policy may affect the future management of wild elk populations in the Rocky Mountain region.

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ACKNOWLEDGEMENTS

I would like to extend my sincere thanks to all of the people who aided in the completion of this project. First, my parents for their constant encouragement and faith in my abilities. Hayley Hessel and Bob Ream for their continued support throughout the development of this project. Jill Belsky and Steve Siebert for 'jumping on board' and saving the ship. Dave Jackson and Mike Patterson for their valuable guidance during uncertain times. Anthony for his patience, understanding and editorial assistance throughout the development of this project. And finally, my grandmother who always taught me to 'follow my dreams.'

CHAPTER 1

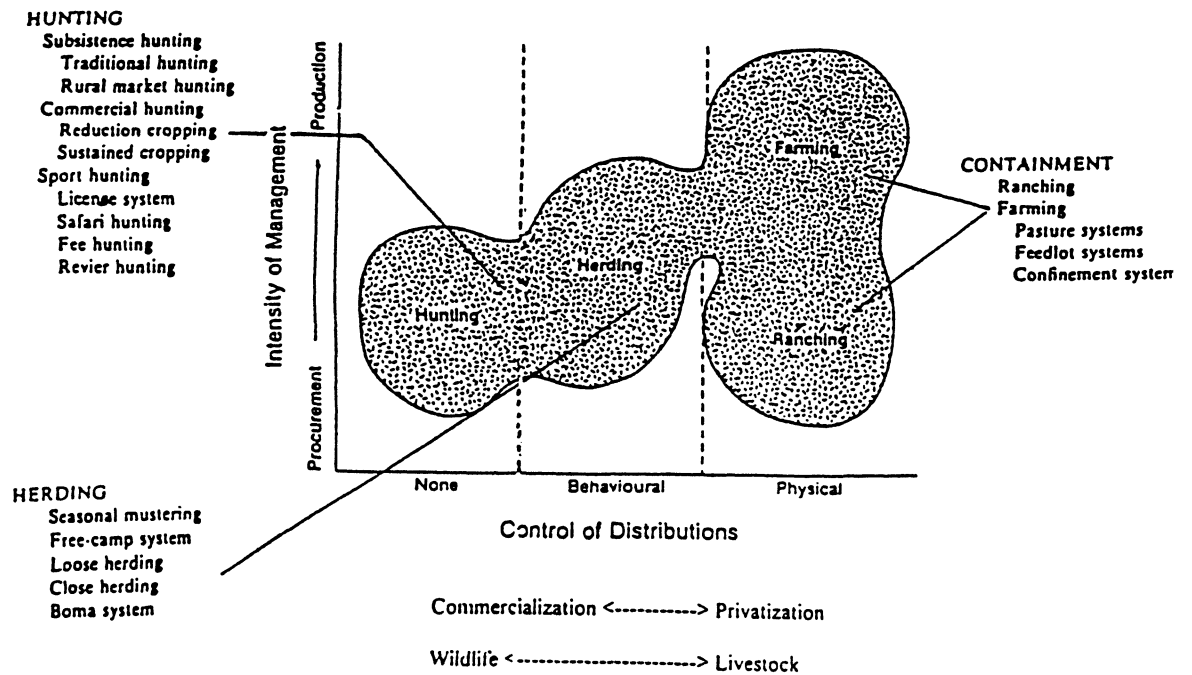
INTRODUCTION

Due to decreasing economic stability within traditional agricultural economies, the livestock industry within the Northern Rocky Mountain region has diversified to include elk farming as an alternative livestock enterprise. Montana is currently home to 83 mixed-species game farms and a velvet processing plant.¹ (Montana Department of Fish, Wildlife and Parks 1998). Elk farming represents a relatively new and controversial enterprise within the United States. Those interested in rural development view such wildlife production systems as a means to access a broader range of markets while insuring the maintenance of culturally consistent livelihoods for traditional agricultural producers (Hudson 1989a, Hudson and Dezhkin 1989). However, others argue that future prospects for game farms within the United States are limited due to the presence of a strong animal welfare lobby, inconsistent and restrictive regulations, and an inadequately developed infrastructure (Yorks 1989). In addition, the creation of wildlife markets may weaken North America's successful conservation strategy (Geist 1988). Finally, other arguments against the development of game farms include: negative environmental impacts, such as habitat fragmentation due to increased fencing, risk of hybridization and subsequent genetic deterioration of wild stocks, and the increased potential disease transmission.

¹ Velvet processing refers to the value-added process of drying antler velvet, which is then sold as a herbal medicine.

The practice of wildlife production has been in existence for centuries (Varro, 116-27 BC as cited in Hudson 1996). The term 'wildlife production systems' refers to a spectrum of management practices including the intensive management of relatively small fenced acreages to the extensive management of wild game populations on unfenced private lands (White 1986). According to Hudson (1989b), wildlife production systems can be classified into four main types (hunting, herding, ranching and farming) based on the control of animal distributions and the intensity of management [figure 1].

Figure 1: Ordination of Wildlife Production Systems (Hudson 1989b)



Game ranching and farming are considered containment systems, which means that physical barriers control animal distributions (Hudson 1989b). The term ranching is used to denote systems in which animals are fenced but managed as wild populations, while game farming refers to systems that employ intensive husbandry on fenced properties (i.e., the enclosure of deer in pastures, paddocks or pens) (Hudson 1989b). It is also important to note that there is a difference between the terms 'commercialization' and 'privatization' According to Rasker and Freese (1995), 'commercialization' refers to management systems in which monetary gain is derived from the use of wildlife or trade in wildlife products (i.e., fee hunting). 'Privatization', on the other hand, implies that wildlife is privately owned, with ownership being transferred from that state to a private entity (Rasker and Freese 1995). Thus, game farms represent privatized containment systems that are intensively managed.

The *World Conservation Strategy* (IUCN/UNEP/WWF 1980 as cited in Hudson 1989a) and the Brundtland Commission Report, *Our Common Future*, (World Commission on Environment and Development 1987 as cited in Meffe and Carroll 1994) support wildlife production as part of their global initiatives for sustainable development. In 1980, the *World Conservation Strategy* noted that the social and economic potential of ranching wild herbivores for subsistence and commercial use should be given priority attention (Hudson 1989a). Similarly, Kahn (1993) argues that since public support for wildlife programs is key to their success, wildlife managers should understand public

perceptions within their geographical area before they decide whether to allow (or ban) game farms. Few studies exist that meet this call.

The purpose of this study is to examine the dynamics of the development of elk farm policy and management within the Rocky Mountain region. The first objective was to conduct a historical analysis of the dynamics of the struggle over wild elk and bison policy and management decisions in the Rocky Mountain region. The second was to review the current ecological, economic, and socio-cultural conditions surrounding elk farming within the Rocky Mountain region (local, regional and international). The third was to conduct historical analysis of the political struggle surrounding the development of Montana's elk farm policy. The final objective was to compare contemporary Montana policy to the broad policy framework surrounding the regional elk farming industry

CHAPTER 2

CONCEPTUAL FRAMEWORK

A systems model represents one way to frame public policy. According to Dye (1972) the systems model seeks to address the following questions:

- 1- what are the significant dimensions of the environment that generate demands?
- 2- what are the significant characteristics of the political system that enable it to transform demands into public policy and to preserve itself over time?
- 3- how does public policy affect, through feedback, the environment and character of the political system?

Within this model, inputs represent forces that are generated within the environment, which is any condition or circumstance that is external to the political system but affects the political system (Dye 1972). Inputs into the political system can be in the form of demands, when individuals or groups act to affect public policy; or support, when individuals or groups conform to policy decisions (Dye 1972). The political system represents a group of interrelated structures and processes that function authoritatively to develop public policy (Dye 1972). This system works to transform conflicting demands into public policy (Dye 1972). Public policy is represented within the model as an output (Dye 1972). As indicated by the feedback loop within the model, public policy decisions affect the environment, as well as future demands and the character of the political system (Dye 1972).

According to Dana and Fairfax (1980), resource policy within the United States is a dynamic process, which is both a major influence on and expression of the social, economic, and political structure of society. As a society evolves, the concept of resources also develops, reflecting the needs and wants of the public. "Conservation comprises a conscious, individual or public, to a certain perceived condition-usually one of *scarcity*-of a particular component of the natural environment which is known as a *resource*" (Ciriacy-Wantrup 1952:28 as cited in Dana and Fairfax 1980:2, Duane 1997). Thus, in order to understand resource policy, one must realize that the social perceptions, or constructions, of scarcity vary within different contexts of space and time.

According to Blaikie (1995:203), "Landscapes and environments are perceived and interpreted from many different and contested points of view which reflect the particular experience, culture and values of the viewer". Thus, the concept of political ecology seeks to address the surrounding physical, economic, political and socio-cultural conditions within which a particular environmental issue has arisen and exists (Bryant 1992, Blaikie 1995). In addition, the level of analysis can be further divided into a place-based concern and a non-place based concern. A place-based concern addresses both the physical, as well as the socio-cultural, economic and political conditions within a specific location (Blaikie 1985).² On the other hand, a non-place-based concern addresses the

² According to Blaikie (1985), the social factors that operate with regard to soil erosion within place-based concerns are expressed through the following: land-use patterns, the spatial patterns of agricultural technology including the diffusion of innovations, price-distance relationships of inputs and outputs, spatial patterns of size of landholdings and other more complex 'eco-class' relationships (i.e., spatial displacement and marginalization of weaker groups).

ecological, socio-cultural, economic and political conditions that operate beyond where symptoms of ecological process are shown (Blaikie 1985).³ In order to incorporate both place-based and non-place based concerns with regard to a particular phenomenon, a 'bottom-up' analytical approach should be used (Blaikie 1985). A 'bottom-up' approach is based on the concept of 'nested scales of analysis' In other words, "[t]he individual within a household, a household itself, the village or local community, the local bureaucracy, the bureaucracy, government and nature of the state, and finally international relations all represent contexts within which actions affecting...conservation [or wildlife management] take place" (Blaikie 1985:88).

The concept of social construction also seeks to understand an individual's, or cultural group's, relationship with and understanding of nature, wildlife and the environment. Greider and Garkovitch (1994:1) evoke this framework in their discussion of 'landscapes', which are defined as the symbolic environment created by a human act of conferring meaning on nature and the environment. In other words, the dynamic interactions between individuals and natural phenomena result in the continual transformation of the physical environment into 'landscapes' (Greider and Garkovitch 1994). Consequently, these landscapes carry multiple symbolic meanings that reflect the values, or cultural filter/lens, through which people define themselves [life theme, personal construction] and the relationships between themselves and the physical environment [life projects] (Greider and Garkovitch 1994). "Landscapes are the reflection of these cultural

³ The social factors operating within non-place based concerns are the political-economic structures within which land-use decisions are made (Blaikie 1985).

identities, which is about *us*, rather than the natural environment. When attempting to identify and understand the potential human consequences of changes in the natural environment, it is imperative that these consequences are understood from the many cultural definitions that create landscapes" (Greider and Garkovitch 1994:2). In a discussion of elk farming within the Rocky Mountain region one would incorporate the following: how various cultural groups define the relationship between themselves and elk, how this relationship will be affected by the farming of elk, and whether various cultural groups define these new relationships as proper or improper. In other words, are individuals able to change their personal constructions and negotiate new symbols and meanings as this relationship changes?

According to the interactionist approach toward understanding society and the environment recognizes that there is not one objective reality but many subjective ones (Blaikie 1995). Different groups have different definitions, or landscapes, of the physical environment, manifest in different attitudes regarding both the physical changes within an environment and the human consequences of this change (Greider and Garkovitch 1994). Certain externally introduced changes may be voluntarily incorporated into the lives of people because they do not contradict their self-definitions or their relationships between themselves and the environment [landscape] (Greider and Garkovitch 1994). However, this is not always the case; rather, some externally introduced changes are not voluntarily accepted because they represent a extreme contradiction to an individual's or a culture's construction of nature (or an elk).

Three axiomatic truths regarding the nature of power lie at the foundation of modern political science: "namely, that power ordinarily presupposes a group of human beings who can share objectives, interests, values, in other words, a community; second, therefore power presupposes objectives, interests, values, ends, which these human beings can share, fight over, or exchange; third, that all power situations contain both consent (shared objectives) and constraints (contested objectives)" (Friedrich *as cited in* Dye 1972:32). In other words, the major determinant of the response [public policy output] to a particular environmental phenomena is the degree of political power of the classes or groups involved (Blaikie 1985). According to Blaikie (1995:207), "there is a political economic arena in which various people pursue their 'projects' with very unequal access to power in which to pack their own particular knowledge claim and to enroll others into their own project." Access to power within a political system is dependent upon the following factors: (1) the ability to define what constitutes information, (2) the control of socially constructed information, and (3) the symbolic mobilization of support (Greider and Garkovitch 1994).

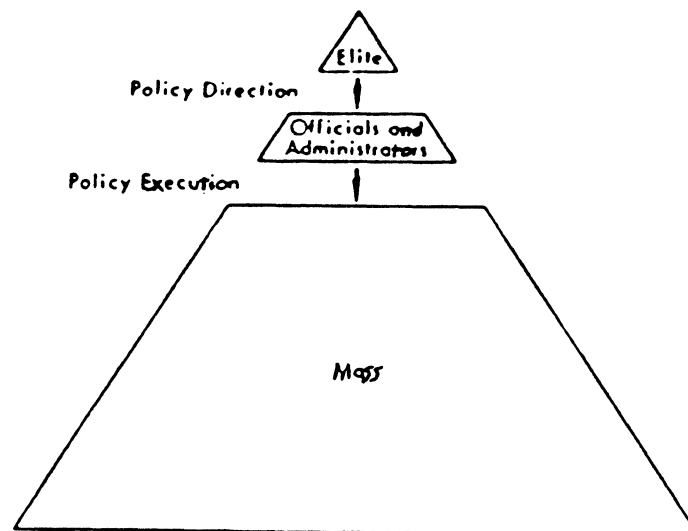
According to the elite model, public policy is determined by the values of the elite, which are drawn disproportionately from the upper socioeconomic strata of society (Dye 1972). **[figure 2]** In other words, society is divided into the few who have access to power and the many who do not (Dye 1972). "Elite theory suggests that 'the people' are apathetic and ill-informed about public policy, that elites actually shape mass opinion on policy questions more than masses shape elite opinion" (Dye 1972:20). Consequently, rather than arising from mass demand, policies flow downward from the elite to the

masses (Dye 1972). According to Blaikie (1985:89), "[p]olitical action is required to tackle the more systemic and widespread symptoms of environmental deterioration.

Very often those without enough political power to influence the course of events resulting from [environmental changes]. . . , are those who are politically subordinated in other related ways." Thus, when performing any concrete policy analysis with regard to elk farming, Blaikie (1985) feels that there are four questions to be asked :

- 1- what precise groups and classes are affected by elk farming?
- 2- what power does each of them have in the state apparatus and outside it?
- 3- in what ideological terms do these classes or groups perceive elk farming?
- 4- are the costs or benefits associated with elk farming perceived to be important enough for them to unite on this so that their combined power leads to a coherent response? [*Are these groups able to unite coherently?*]

Figure 2: The Elite Model (Dye 1972)



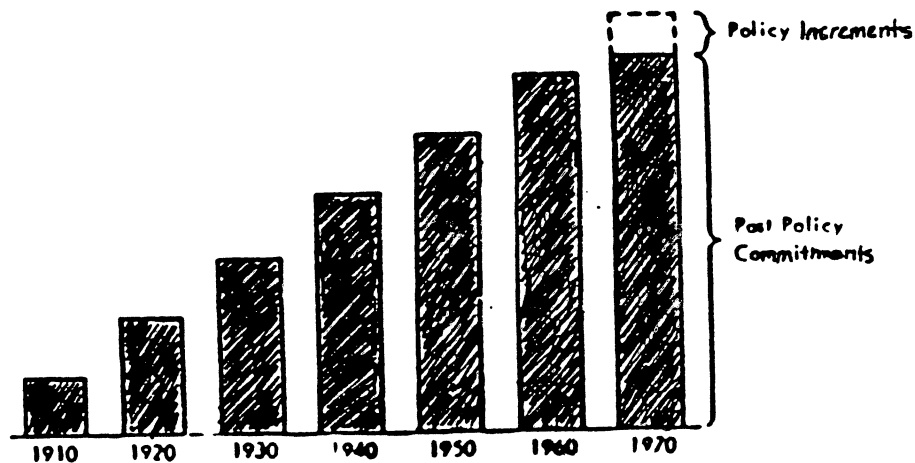
The concept of Institutionalism is closely tied to elitism because it refers to a governing elite. The important contribution of this model is the delineation of the relationship between public policy and governmental institutions (Dye 1972). Blaikie (1985) reminds us to consider the political effects of the nature and interrelationship between the state, government and administration (or bureaucracy) on the institutionalism/elite model. According to Blaikie (1985), the *state* represents the final repository of agreement of the people to be ruled, the *government* speaks and acts in the name of the state, the *administration/bureaucracy* represents the instrument for governing, and the *sub-government* represents a channel of communication between the central government and local people. Finally, it is important to note that national political-economic processes are linked to international affairs, which are mediated through the state systems of different countries (Blaikie 1985).

"Strictly speaking, a policy does not become a *public* policy until it is adopted, implemented, and enforced by some governmental institution" (Dye 1972:32-33). Governmental institutions give public policy three distinctive characteristics: (1) they lend *legitimacy* to policies [government policies involve legal obligations], (2) they incorporate *universality* into policies [governmental policies extend to all people in a society], and (3) they monopolize *coercion* within society [governmental policies are enforced through threats of imprisonment or death] (Dye 1972). Additionally, governmental institutions often represent patterns of behavior that tend to persist over time (Dye 1972). In turn, institutions may be structured in such a way that gives advantages to certain interests in

society and withholds advantages from other interests, which results in certain individuals and groups enjoying greater access to government power (Dye 1972). "[W]e recognize that the bureaucracy itself is political in the course of exercising its executive powers, particularly in the realm of policy-making at the upper levels and in implementation at the lower levels (Blaikie 1985:84)

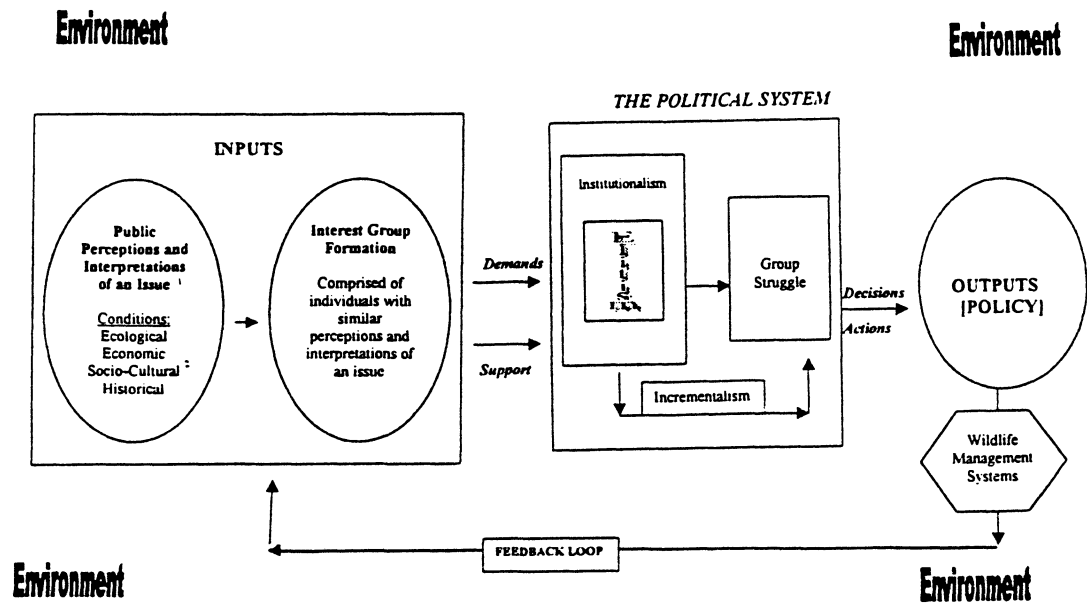
An underlying premise of the institutionalism/elitism model is that primary interest of the governing elite lies in preserving the system (Dye 1972). In turn, most public policy changes are incremental rather than revolutionary (Dye 1972). "Incrementalism is conservative in that existing programs, policies, and expenditures are considered as a base, and attention is concentrated on new programs and policies and on increases, decreases or modifications of the current program" (Dye 1972:30). In other words, the incremental policy model [figure 3] views public policy as a continuation of past government activity with only slight modifications (Dye 1972).

Figure 3: The Incremental Model (Dye 1972)



Based on a review of the above theories and models, it becomes increasingly evident that wildlife policy, specifically game policy, is directly affected by the public's perception and interpretation of certain issues (Dana & Fairfax 1980, Bryant 1992, Greider and Garkovitch 1994, Blaikie 1995). **[figure 4]** In other words, the perceptions surrounding a wildlife species not only gives meaning to the species as a social symbol, but also influences the development of policy regarding its management. These perceptions are based on the ecological, economic, and socio-cultural conditions existing both within and outside a specific location (Blaikie 1985). Various interest groups, which are comprised of individuals that share common perceptions or interpretations of wildlife issues are then formed. Within the political system, the relative political and economic power of the various communities guides the development of both public policy decisions and subsequent wildlife management systems (Dye 1972, Blaikie 1995). Finally, the above literature suggests that public perceptions and interpretations are dynamic, and change in response to policy outputs (Dye 1972, Greider and Garkovitch 1994). Thus, there is a dynamic interplay between the wildlife management systems as defined by public policy decisions, and the future inputs into the political system. This interplay is represented by the feedback loop in figure 4, which indicates that changes in wildlife management systems result in ecological, economic and socio-cultural changes. These changes are then incorporated into an individual's or a community's construction of wildlife as a result of their renegotiations of symbols and meanings.

Figure 4: A Systems-Based Policy Model (*modified from Dye 1972*)



- 1 The conditions affecting public perceptions and interpretations should be analyzed at various scales (i.e., local, regional, national and international). (Blaikie 1995).
- 2 The term 'socio-cultural conditions' refers specifically to social constructions of nature. These constructions are influenced by various aspects of our culture, including: the media, gender roles, geographic location, and existing tenure arrangements with regard to land and wildlife.

CHAPTER 3

METHODOLOGY

This study is a qualitative analysis of both primary and secondary data. The latter included: legislative history, legislative intent, committee reports, agency management directives, research articles, interest group publications, and newspaper articles/news briefs. According to Maxwell (1996), there are five particular research purposes for which qualitative studies are particularly suited, which include:

- (1) to facilitate understanding of the context within which game farm policy has evolved at the various levels (community, state and regional)
- (2) to identify the meaning (reasons for the development of different contexts, and associations between the contexts and the creation of various wildlife management systems) behind the development of wildlife policy
- (3) to identify unanticipated phenomena and influences surrounding the development of game farm policy
- (4) to examine the process through which policy developments occur
- (5) to develop preliminary associations which explain why different policies have developed.

My analysis was ongoing and inductive in an attempt to identify emergent themes, patterns and questions. Within this analysis, configurations of causes and attributes were

compared to identify preliminary causal relationships between public perceptions and wildlife management systems, in an effort to explain diversity within public policy decisions. Finally, findings were validated through: (1) the use of the triangulation method for data collection--using data obtained from various sources, (2) checks for alternative explanations, (3) discussion of findings with teachers, students and colleagues, and (4) comparison of findings with existing theory (Maxwell 1996, Yin 1994). Although I did attempt to validate my findings by checking my explanations against others' interpretations, these findings represent my interpretation of the data. According to the interactionist framework, there is not one objective reality regarding environmental issues; rather, there are many subjective ones. Consequently, this thesis presents one subjective interpretation of the wildlife policy within the Rocky Mountain region, specifically elk farming.

As the literature in the previous section suggests, the following conditions need to be considered in a study of elk farming: political, ecological, economic, socio-cultural. In order to understand political conflict, both the historical and contemporary dynamics of a struggle must be addressed (Bryant 1992). Similarly, since the conditions that exist at the local, regional and international level affect a viewer's perception of elk, a comparison may provide themes that are important to understanding the dynamics of the elk farming controversy at different scales (Bryant 1992). This study presents a historical and comparative analysis of Rocky mountain wildlife policy, with a focus on the interactions between the public contexts surrounding wildlife and the development of wildlife

management systems. The analysis was conducted as an exploratory case study (Yin 1994) with the intention of identifying patterns of associations that lead to the development of different policy decisions regarding both wild elk and bison management, and the management of farmed elk within the Rocky Mountain region.

First, a historical review that focused on the above factors of bison and elk management systems was conducted. The goal of this initial review was to provide insight into how the development of different wildlife management systems affects the way different publics view wildlife species, and vice versa. The associations identified within this analysis provided the basic frameworks for the interpretation of the public perceptions and interpretations of elk farming within the Rocky Mountain region. This interpretation formed the second phase of research, which was designed to assess the current ecological, economic and socio-cultural conditions associated with elk farming. An in-depth analysis of the development of game farm policy was then conducted focusing on Montana as a case study. This stage of the project was designed to facilitate an exploration of the struggle that occurs within the political system to be represented in public policy decisions. I have chosen to focus primarily on the historical review of game farm legislation for the 15 year period between the 48th Legislative Assembly, 1983, and the 55th Legislative assembly, 1997. I initiated an in-depth review⁴ in 1983 because game farm statutes were

⁴ "In-depth review " refers to the following: (1) a review of the laws approved during each session; (2) a review of House and Senate bills that were introduced during each session; and (3) a review of committee hearings and testimonies presented for each of the introduced bills, in order to provide an analysis of (a) legislative intent and (b) why certain bills were approved or killed.

substantially revised during this legislative session.⁵ In addition, legislative records prior to the 1970s were donated to the library; in turn, it is 'spotty' as to how complete they are (Reference Librarian, pers. com. 1998a).⁶ Elaborate committee minutes (including committee hearings and testimonies) have been kept since only the late 1970s. According to the reference librarian at the State Law Library, committee minutes did not exist prior to the 1950s. Current Montana policy decisions and subsequent elk management systems were then compared to the broad framework of elk farm policy within the region (Colorado, Idaho, Wyoming, Canada), with the goal of identifying regional trends. Finally, the socio-political implications of various elk management systems, as revealed through policy outputs, were then addressed within the framework of the current context surrounding Rocky Mountain bison populations.

⁵ According to Doug Sternberg, a paralegal from the Legislative Council (Helena) who provided legislative council for the drafts of numerous introduced game farm bills, the policy framework that currently governs game farming in Montana was developed in 1983 (Sternberg pers. com. 1998).

⁶ The State Law Library (Helena) only has the complete text of House and Senate bills introduced since 1975 (Reference Librarian, pers. com. 1998b) Although the Mansfield library has copies of the text of introduced House and Senate bills dating back to 1943, elaborate committee minutes are required in order to conduct a complete historical review of game farm legislation. In addition, Senate and House bills introduced during 1943-1973 are not indexed; in turn, it is very difficult to access this information. After a cost-benefit assessment of the amount of effort required to assess such a small amount of information, I have decided to initiate the intense historical review in 1977.

PART I
A HISTORICAL ANALYSIS OF WILDLIFE POLICY WITHIN NORTH AMERICA'S
ROCKY MOUNTAIN REGION

Since the 1800s, the fate of American wildlife has been determined by a series of political issues played out within a general public context of greater or lesser sympathy for wildlife. This context consists of members of society defining and redefining their resource concerns and values, which reflect both cultural notions as well as material wants. According to Tober (1981. xvii-xviii and xii),

“Although the general regulatory structure [regarding wildlife policy] derived from English experience, its particular content depended heavily on cultural heritage, on the distribution of political power, on the disposition of the courts, and on the configuration of wildlife populations. . . . [T]he specific articulation of wildlife policy issues depends critically on the unique features of wildlife and on the manner in which these features have, in the past, constrained the policy process.”

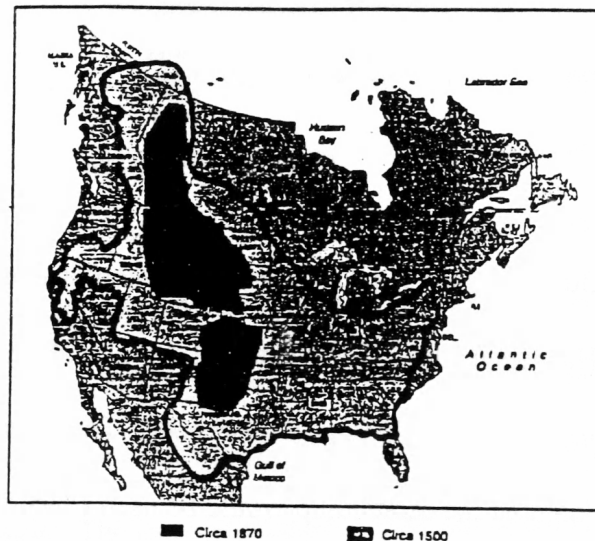
In an effort to address these issues, the following section (Chapters 4-7) traces the development of bison and elk policy within the United States in the context of how politics affects management decisions and knowledge claims. This historical and comparative review of Rocky Mountain wildlife policy provides a framework for the subsequent analysis of contemporary Rocky Mountain game farm policy.

CHAPTER 4

POLICY FRAMEWORK. A PERIOD OF UNBRIDLED RESOURCE USE

Wildlife populations, such as bison and elk, were once abundant throughout North America. Estimations of the great bison herds, which roamed prior to the arrival of the Europeans, vary from 60 million to 150 million **[figure 5]** (Rorabacher 1970). Historically, the Plains Indians viewed elk and bison as principle resources - “... every scrap of the [bison] carcass was used for practicality, and the buffalo spirit for religion” **[figure 6]** (Jennings & Hebbing 1983:331). In turn, most Native American tribes employed complex wildlife management systems in order to ensure the availability of these resources.

Figure 5: Map of Historic Bison Herds (National Bison Association 1998)



**Figure 6: Traditional Native American Uses for Bison
(National Bison Association 1998)**

"THE BUFFALO WERE...Meat, Drink, Shoes, Houses, Fire Vessels...and Their Master's Whole Substance...AND YET - There was more, Much More, To The Relation Between Indian and Buffalo Than All These Material Considerations" (National Bison Association 1997).

RAWHIDE...	BORNS...	BLADDER...	HAIR...	STOMACH CONTENTS...
Containers	Arrow Points	Pouches	Headdresses	Medicines
Shields	Cups	Medicine	Pad Fillers	Paints
Buckets	Fire Carrier	Bags	Pillows	
Moccasin Soles	Powderhorn		Ropes	STOMACH LINER...
Drums	Spoons	TENDONS...	Ornaments	Water Containers
Splints	Ladles	Sinews	Hair Pieces	Cooking Vessels
Mortars	Headresses	Sewing	Halters	
Cinches	Signals	Bowstrings	Bracelets	PAUNCH LINER...
Ropes	Toys		Medicine Balls	Wrappings (Meats)
Sheaths	Medication	MUSCLES...	Moccasin Lining	Buckets
Saddles		Glue	Doll Stuffing	Collapsible Cups
Blankets	BUCKSKIN...	Preparation		Basins
Stirrups	Cradles	Bows	BONES...	Canteens
Bull Boats	Moccasin Tops	Thread	Fleshing Tools	
Masks	Winter Robes	Arrow-Heads	Pipes	SCROTUM...
"Partleche"	Bedding	Knives	Knives	Rattles
Ornaments	Shirts	Arrowheads	Showels	Containers
Lariats	Belts	Splints	Splints	
Straps	Leggings	Sleds	Saddle Trees	GALL...
Caps	Dresses	War Clubs	War Clubs	Yellow Paints
Quirts	Bags	Scrapers	Scrapers	
Snowshoes	Quivers	Quirts	Quirts	BIND LEG SKIN...
Shrouds	Tipi Covers	Awls	Awls	Pre-shaped Moccasin
	Tipi Liners	Paintbrushes	Paintbrushes	
BEARD...	Bridles	Game Dice	Game Dice	HOOFS, FEET & DEWCLAWS...
Ornamentations	Backrests	Tableware	Tableware	Glue
	Tapestries	Toys	Toys	Rattles
SKULL...	Sweat lodge Covers	Jewelry	Jewelry	Spoons
Sun Dance	Dolls			
Medicine	Mittens	MEAT...	MEAT...	
Prayers	TEETH...	Immediate Use	Sausages	
Other Rituals	Ornamentation	Sausages	Cached Meat	
		Jerky	Jerky	
BRAIN...	TONGUE...	LIVER...	LIVER...	
Hide	Choice Meat	Tanning Agents	Tanning Agents	
Preparation	Comb (Rough Side)			
Food				

Buffalo jumps were a harvesting method frequently employed by the Indian hunters. Hunters would herd the animals over a cliff by initiating a large enough commotion to cause the buffalo to stampede. These jumps would supply as many as 100 bison per kill, and the same jump would be used every two to three months (GTA Journal 1982 *as cited in* Jennings & Hebbing 1983). In addition to the scheduled jumps, early buffalo hunters would make mass kills during the early winter, allow the animals to freeze,

and then remove parts as needed (Friscon pers. com. *as cited in* Jennings & Hebbing 1983). Indians were also able to kill large numbers of elk. According to Chase (1986), Crow women would often wear dresses adorned with 700 elk teeth. Since only two teeth (the ivories) were taken from one animal, 350 elk were killed in order to make one dress (Chase 1986). Finally, Indians employed fire as a management technique. They would set fires to concentrate game, making it easier to kill (Chase 1986). In addition, Indians managed wildlife habitat by transforming forest areas into grasslands (i.e. burning reverses natural seral succession) to support greater bison and elk populations (Chase 1986).

These and other complex management systems had been employed by Indians since the Ice Ages, thus highlighting the flawed perceptions of the early European explorers and settlers who described North America as a 'vast wilderness'. This perception changed, however, as the settlers expanded westward. "The Western movement expressed and developed national ideals concerning freedom, equity and the right of every individual to pursue material prosperity with whatever natural wealth the land could be made to yield" (Dana & Fairfax 1980:3). In order to understand the power relationships between the various 'communities of interest' (political interest groups) during this time, it is necessary to explore the contexts within which the terms 'freedom' and 'equity' are framed. First, the notions of 'freedom' and 'unbridled resource use in the pursuit of material prosperity are framed within the context of 'public domain', or land managed in common. The existing property rights established among the various Indian tribes, inhabiting this area, were not legitimated within the new nation's perception of

these lands. Second, the Western mind-set, as described by the above quotation, framed the term 'equity' within a context that referred only to equity among white settlers.

In 1620, the Plymouth colony was established in North America. From the colonialist perspective, this new land was a cornucopia of natural diversity and wealth, and thus represented economic opportunity. Dana and Fairfax (1980) noted that Britain's oppressive conservation policies forced upon the struggling colonialists probably contributed to the revolt.⁷ Following the American Revolution, the United States acquired approximately 1,804 million acres of land through cessions, purchases and treaties. In turn, the first century of social, political and economic history in the United States was shaped by decisions regarding the use and disposal of the public domain (Dana and Fairfax 1980).

The disposition era, the time period characterized by the transfer of public land to settlers (i.e. Homestead Act of 1862), was a period of waste and destruction. Policies were directed at conserving resources in response to specific needs and shortages. Land and other natural resources were not considered valuable because they were available in such abundance. Therefore, no policies were in place to regulate their use or facilitate their conservation. Rather, the emerging policies were designed to raise money and facilitate the orderly development of the country, particularly the West, by settlers (Dana and Fairfax 1980). These policy decisions were shaped by an array of factors, including:

⁷ For instance, in 1626 Plymouth colony forbade the sale or transport of any timber out of the colony (Dana and Fairfax 1980). Similarly, the Broad Arrow Policy of 1691 reserved for the Crown all trees that could be used as masts for ships within the King's

physical resource availability, society's perception of the environment, the material demands of a developing nation, the primitive state of technology, and the period's prevailing economic and institutional systems (Dana & Fairfax 1980).

Although the new settlers perceived the new nation to be a cornucopia of natural wealth and diversity, this was not the reality. This is exemplified in the historical accounts of the over-exploitation of North American wildlife populations. For instance, within the period between 1800 and 1890, free-roaming buffalo in North America were reduced from 60 million to 20 wild buffalo (Rorabacher 1970). This has been described within the literature as a "holocaust", and "the greatest national tragedy" This 'tragedy' unfolded slowly throughout the nineteenth century, accelerating after the civil war. Based on a critical investigation of American history and attitudes (Rorabacher 1970), there were three primary reasons for the initial destruction of bison populations.

The first reason is the development of American civilization (Rorabacher 1970). Upon settlement, farmers and ranchers were intent on reproducing the agriculture of Northern Europe, which is based on grains, sheep and cattle. However, since their small herds of domestic livestock were too valuable to be slaughtered, these settlers relied on subsistence hunting. Once the settlers became agriculturally successful, wild bison became a nuisance. In turn, frontiersmen often killed large numbers of bothersome and often destructive buffalo without reservation (Rorabacher 1970). Secondly, large numbers of

navy and merchant marine (Dana and Fairfax 1980).

buffalo on the Great Plains tended to encourage exploitation (Rorabacher 1970). Many frontiersmen headed West in search of economic opportunity; therefore, as long as there were economic markets for buffalo products (particularly meat), they were killed. In addition, the large numbers of bison inhabiting the Plains states seemed to limit any self-imposed restrictions on the number of bison killed by any individual (Rorabacher 1970). Finally, the physical character and nature of the buffalo contributed to their decline (Rorabacher 1970). Bison are slow-moving animals with poor eyesight. In addition, buffalo often formed herds numbering in the millions. Professional hunters usually fired directly into the herd and often killed one hundred or more bison at a time (Rorabacher 1970). Finally, the American government operated within a policy framework that encouraged the exploitation and subsequent destruction of the buffalo to facilitate the goal of Indian subjugation. Columbus Delano, the Secretary of the Interior under President Grant, contended that the Plains Indians could be easily subjugated by the federal government if bison, their basic food source, was completely removed from the Great Plains (Rorabacher 1970).

After the civil war, the bison slaughter in the western United States became increasingly intense and complicated (Rorabacher 1970). Market hunting became increasingly popular among western settlers. According to Rorabacher (1970), this was primarily a result of two technological advancements: the completion of a network of railroads connecting the eastern and western U.S., and the discovery of a tanning process for converting bison hides into commercially valuable leather. The most obvious and

direct result of the railroad construction was the killing of bison to feed railroad workmen and clear paths for rails to be laid (Rorabacher 1970). Once the Union Pacific railroad was completed, the number of people willing and anxious to travel west greatly increased. In addition, many railroad workers were left stranded on the plains when their work was done. As a result of the proximity of large bison herds, many of the disillusioned adventurers joined the increasing number of professional hunters in killing bison to provide for their livelihood (Rorabacher 1970). Since the newly established railroads provided a stronger link between the East and West, trade was greatly facilitated and new markets were established to sell western products (Rorabacher 1970). A second market niche that was captured by the railroads was the sale of special excursions, during which passengers were given the opportunity to shoot from the windows of a standing train into the midst of a nearby bison herd (Rorabacher 1970). No part of the slaughtered animals was used. Finally, with the discovery of the tanning process, the hide constituted nine-tenths of the buffalo's total value; the meat, hair, horns, etc., constituted the remaining one-tenth (Rorabacher 1970). Hides increased in value from virtually nothing to between \$1.00 and \$3.00 each (Rorabacher 1970). So eager were professional hunters in acquiring hides that they were wasteful in their killing and use of buffalo. Ninety-nine percent of all the available meat from the slaughtered buffalo was wasted (Rorabacher 1970). According to Jennings and Hebring (1983:332), documented reports of the commercial hide hunting decades state, " .you could walk for miles on the carcasses [buffalo] without ever touching the ground." Homesteaders also sold bison bones to fertilizer plants in the East

during the difficult first agricultural season. "Newspapers tell of bone-piles many feet high, many feet wide and a half a mile long beside the [railroad] tracks" (Jennings & Hebring 1983:332).

In the early 1870s, sizeable elk populations still existed; however, "[these] populations attracted the attention of hide hunters who were in the process of finishing off the buffalo at the time" (Picton and Picton 1975). According to Chase (1986 15), "[i]n 1870, game animals seemed to be disappearing overnight. . . .[E]ven elk was soon to be numbered among things of the past." Although elk were once abundant throughout North America, their numbers were substantially reduced by the late 1800s (Chase 1986). Thousands of elk were hunted in the 1880s and 1890s for their teeth (ivories) (Chase 1986). The ivories were then sold to make watch fobs for members of the Benevolent and Protective Order of Elks (B.P.O.E.), for as much as \$100 each (Chase 1986, Bartlett 1985). "[T]he remainder of the [elk] carcass was left to the elements" (Bartlett 1985:317). Elk were also hunted for their hides, which were sold for \$2.50 to \$3.00 each (Bartlett 1985).

Another factor that contributed to the decline of wildlife populations was the hunting pressures placed on these animals by the Native Americans. With the arrival of European settlers in the West, the Indians were introduced to a new economic system (Rorabacher 1970). Soon, many joined in killing wildlife for profit, a previously unheard of reason. "Once Indians acquired horses and guns, they began to enormously influence animal populations" (Chase 1986:102). It is important to note, however, that the overall

impact on wildlife populations from Indian killings were probably much less detrimental to their survival than the white man's blatant carelessness and misuse of wildlife (i.e. sport-hunting escapades from railroad cars). Initially, both the white and Indian hunters were able to pursue these activities without disturbing each other. However, as wildlife resources grew scarce Indian-white tensions rose, with the Indians struggling to protect their traditional hunting grounds (Rorabacher 1970).

According to Rorabacher (1970), an Indian hunter killed the last buffalo in the region (i.e. Western United States). Many Indian troubles were sparked by the destruction of the bison, and were further exasperated by the fact that Indians had aided in the destruction of one of their primary resources in return for various European, 'civilized' supplies (Rorabacher 1970). Indian-white tensions continued to rise as it became increasingly obvious that there was no longer a place for the Indians in the 'new nation'. "Indians found it difficult to understand why an Indian should be hanged for shooting a settler's cow to feed his starving family while the settler could shoot hundreds of the Indian's 'cattle' for fun" (Jennings and Hebbring 1983:332).

Finally, the growth of the cattle industry and the expansion of the railroads introduced various diseases into the Western region (Picton and Picton 1975). Overexploitation of wildlife populations by hunters is frequently cited as the primary reason for their decline; however, ". . . it is equally possible that new diseases were introduced into the wildlife population, spread like wildfire and contributed to the decline" (Picton and Picton 1975:8). In reality, the decimation of the once abundant herds of

North America was probably a result of a combination of factors: hunting pressure, habitat encroachment, and disease transmission.

In conclusion, this period of unbridled resource use, in an effort to obtain material prosperity and subjugate Indians, was framed within the context of the 'public domain', or land managed as open access. Within this property rights regime, each white settler was considered equal and, thus, had the freedom to exploit the land and resources however he saw fit. (I use 'he' because females were not considered equal within European context.) According to the theory known as the 'tragedy of the commons', which applies to open access land, "[f]reedom in a commons [open access] brings ruin to us all" (Hardin 1988:354). Thus, it follows that a wild species that has market value is subject to over-harvesting when the property rights to it cannot be legitimately asserted and enforced (Meffe and Carroll 1994). Not only did the settlers and the American government ignore the Indian systems of customary property rights, which changed land and wildlife from common resources to open resources, but the government's system of land disposal and the Western mind-set also predisposed these lands and resources to exploitation.

CHAPTER 5

POLICY FRAMEWORK. RESOURCE PROTECTION

Natural resources had to become valuable before the nation could be convinced of the need to conserve them. In order for this to happen, they had to be recognized as scarce. In other words, “[b]efore that could occur, settlers and developers had to subdue and even destroy much of the continent’s natural bounty” (Dana and Fairfax 1980:33). Dana and Fairfax (1980) found that for the first half of the nineteenth century, resource policy was primarily government-defined and government-led. Various ‘communities of interest’ arrayed themselves around the accepted leadership of government agencies and supported their programs. The development and direction of resource policy in the late 1900s, however, has been defined by the demands of interest groups. Growing public concern regarding the protection of our nation’s resources marked the years between 1870 and the early 1890s. A national movement, fueled by the emergence of a new set of land values, developed in the late 1800s to preserve a portion of our national resources by withholding land from use altogether (Dana and Fairfax 1980). In 1872, Congress enacted legislation to reserve two million acres of land in Montana, Wyoming and Idaho for ‘park’ purposes. “The reservation of Yellowstone could be viewed as the major departure point from the disposition orientation of public land policy” (Dana and Fairfax 1980:44).

In January of 1889, Dr. William Hornaday, then chief taxidermist of the Smithsonian Institute, reported 534 bison in the United States (Jennings and Hebbing 1983). Only 285 of the total 534 bison were wild, with 200 of the wild buffalo estimated to be in Yellowstone Park (Jennings and Hebbing 1983). Similarly, within 50 years after settlement, Rocky Mountain elk populations were nearly extirpated (Bunnell and Hancock 1985). "The elk herds which had inhabited the rough and timbered country along the rivers, when the white men arrived, were eliminated during the 1800s. By the 1900s the elk populations were reduced to their areas of strongest habitat, the mountains" (Picton and Picton 1975:11). However, it is important to note that the population bottleneck experienced by North American elk populations was not as extreme as it was for the bison.

As bison and elk numbers decreased throughout the Plains, Yellowstone provided a much-needed refuge for the remaining animals. However, in terms of habitat quality, it could not compare with the lower, surrounding valleys" (Chittenden 1895 *as cited in* Chase 1986). "A large plateau straddling the continental divide, seemed too high, cold and uninviting to keep most game animals" (Chase 1986:14). According to Rush (1932), numerous government explorations were sent into Yellowstone National Park and their accounts describe minimal numbers of available wildlife. In 1873, Theo B. Comstock, a noted geologist who was also interested in wildlife, advocated the desirability of Yellowstone as a wild animal reserve; however, he stated that animals would need to be introduced and preserved (Rush 1932). Initially, wildlife was most abundant at lower

elevations, probably because the mountains did not contain a superabundance of widely distributed food sources (Rush 1932). However, as hunters and settlers moved west of the Missouri, the majority of the big game remaining between the Mississippi Valley and the Pacific Coast retreated into the mountains (Nelson 1917 *as cited in* Rush 1932:12). By 1878, game animals became more abundant within Yellowstone (Rush 1932). "As the period 1870-1878 coincides with the last great killing on the plains, it seems quite likely that the surviving animals retreated more and more into the mountains, especially in the summer, to escape slaughter" (Rush 1932:16).

Although the reservation of Yellowstone was a great step forward in terms of resource policy, it was not a government commitment to resource management. The notion of a 'national park system' was not even mentioned in Congress (Dana & Fairfax 1980). Furthermore, the legislation that existed usually imposed small fines, with mostly ineffective civil means of enforcement (Rorabacher 1970). Since the government did not enforce their property rights, Yellowstone National Park was seen as a de-facto open access resource. "It is notable that governments did little - and did it a little too late - to protect the buffalo" (Jennings & Hebbing 1983:334). The Congressional majority was not swayed by the pleas for the protection of the buffalo for three reasons: lack of factual information regarding the slaughter, general lack of interest and concern for the buffalo, and general fear that the preservation of buffalo would result in the perpetuation of tensions between Indians and whites (Rorabacher 1970). In turn, Yellowstone became a 'poachers paradise' for both bison and elk hunters.

According to Captain William Ludlow of the U.S. military, the whole-sale destruction of game within the borders of Yellowstone National Park was underway in the mid 1870s (Bartlett 1985). As many as 4,000 elk had been killed by skin hunters during a single winter, with as many as 200 elk slain in a single herd (Bartlett 1985). "Between fifteen hundred and two thousand elk had been slain during the winter of 1874-75 within a radius of fifteen miles of Mammoth Hot Springs. . .and the carcasses were left in the snow to feed the wolves or decay in the spring" (Bartlett 1985:34). It was also reported that local hunters would chase deer and elk out of the park with dogs and slaughter the graceful animals at their leisure (Bartlett 1985). According to Bartlett (1985:317),

"Poaching increased in the late 1880s and 1890s. Near extinction of the buffalo raised the selling price of a mounted buffalo head to \$500. The growing membership in the Benevolent and Protective Order of Elks cost many a Yellowstone (as well as Teton) elk its life. . ."

During the winter of 1893-1894, poachers killed 116 of the remaining 136 wild buffalo in Yellowstone Park (Rorabacher 1970). Thus, only 20 buffalo remained within the borders of Yellowstone by 1894. Although elk were also heavily poached, Yellowstone offered enough of a safe-haven for these animals that the herds were able to prosper. According to the 1891 report from the Yellowstone Park Superintendent, "The elk [had] increased enormously and most conservative estimates place their number at 25,000. . . . Their continuance in the Park is assured, and their overflow into adjoining territory will furnish abundant sport for the hunter" (Rush 1932:17).

In 1878, Congress appropriated \$10,000 in monetary aid to protect, preserve and improve Yellowstone National Park, with the first federal law to protect wildlife on

federal lands implemented in May 1894 (Rorabacher 1970, Bartlett 1985). Grover Cleveland enacted legislation that made it illegal to kill any animal, except in life threatening situations, within the confines of Yellowstone National Park (Rorabacher 1970, Bartlett 1985). Conviction was punishable by a \$1,000 fine, imprisonment, or both (Rorabacher 1970, Bartlett 1985). Unlike the previously unsuccessful system of civil enforcement, these laws were enforced by the United States military. "Yellowstone, after 1894, was quite secure" (Bartlett 1985:321).

Charles Jones, a confirmed conservationist and owner of a private buffalo herd, influenced Congress to appropriate funds for the acquisition of additional buffalo (Rorabacher 1970). In 1901, Congress appropriated \$15,000 for the Yellowstone bison (Chase 1986). The additional bison were purchased from already existing privately owned bison herds. Buffalo were now valuable in the eyes of Congress, since they represented an investment. As a result, the government became more committed to their conservation.

Theodore Roosevelt, an avid hunter and conservationist, also played a major role in the institution of federal wildlife protection programs during his Presidency. "After 40 years of westward expansion accompanied by a growing awareness of resource waste and depletion, the new nation embarked on a series of bold new initiatives in resource management" (Dana & Fairfax 1980:69). One of the major wildlife events of the Roosevelt era was the passage of the Lacey Act of 1900, which prohibited interstate trade in wild animals and birds that were taken or held in violation of the state laws from which,

or to which, they were shipped (Dana & Fairfax 1980). The Lacey Act laid the foundation for active federal involvement in wildlife conservation.

Traditionally, state governments have been responsible for wildlife. This legal tradition originated in England, and was adopted by the states after the American Revolution. States were granted authority similar to that of a king, and thus held game in trust for their citizens. Although the states have primary authority over wildlife, the Constitution also provides the federal government with an authoritative role in wildlife management. This Constitutional grant of authority has its basis in three principle sources: the power to make treaties with foreign countries, the power to regulate interstate commerce, and the power to control wildlife on public lands when such control is exerted in the paramount interest of the U.S. citizens [property clause] (Dana & Fairfax 1980).

A second major event during this era was the initiation of a national system of game reserves, which were supplied with nucleus herds of bison from private ranches. The establishment of the Yellowstone reservation as a land management policy, and the future success of the Yellowstone buffalo herd, set a precedent for the creation of additional wildlife refuges. In the early 1900s, the American Bison Society (ABS) was formed to urge Congress to take action. By working directly with the federal government to re-establish the U.S. buffalo population, the ABS worked to fulfill its mission of permanent preservation and increase of the American bison. Teddy Roosevelt persuaded Congress to establish the Moiese Wildlife Refuge in Montana in 1908 (Jennings & Hebbing 1983). Also, in an effort to preserve the low number of wild pureblooded bison in the U.S., the

Senate put forth a Senate Bill 6159 (Rorabacher 1970) in 1908 that called for the establishment of a national bison range on the Flathead Reservation. The original herd of 34 buffalo was purchased from owners of private herds (Rorabacher 1970).

Had it not been for the private ranchers, who ultimately restocked the herds in the United States and Canada, the buffalo probably would not have survived (Jennings & Hebring 1983). The majority of the buffalo herds in the United States today originated from privately-owned herds that were established between 1860 and 1910 (Rorabacher 1970). Initially these herds were established by capturing a portion of the remaining free-roaming bison. Preservation and the symbolic nature of the bison were the primary motivators for herd ownership, since the market for bison and bison products had dramatically declined with the establishment of formal conservation policies (Rorabacher 1970). In the early 1900s, however, a market for live bison developed as a response to the conservationists' encouragement for additional privately owned bison herds (Rorabacher 1970). As a result, an increased number of people were, and continue to be, motivated to raise bison explicitly for economic gain.

Although Yellowstone provided a much-needed refuge for both bison and elk, the successful management of each species rested on different premises. As previously mentioned, bison numbers within Yellowstone National Park dropped to 20 animals after the final harvest in the winter of 1893-1894. Since these numbers were so low, the Yellowstone bison population needed to be restocked in order to re-establish a viable population. Historically, game ranching has been touted as the savior of wild bison

because bison populations were re-stocked by private ranchers. Dwindling elk populations, on the other hand, were managed much differently “The lesson of the buffalo haunted many people and the number of game protectionists [preservationists] was on the increase” (Picton and Picton 1975:14). Since elk numbers never reached as critical a point as the bison, wild populations were able to recover from the bottleneck. Unlike the bison, which relied on ranched animals to supplement existing populations, early North American elk populations were able to retain their status as ‘wildlife’ The implications associated with this important distinction will be addressed in the following chapters (Chapters 6 and 7).

CHAPTER 6

POLICY FRAMEWORK: THE CURRENT PUBLIC CONTEXT

It is important to note that within the 'environmental' movement, preservationists and conservationists adhere to many different frameworks and policy agendas. This difference was not detectable during the late 1800s because both preservationists and conservationists functioned under the assumption that, "...the essential first ingredient of proper wild lands policy was the retention of wild land by the government" (Dana & Fairfax 1980:45). However, conflicts arose after the 'common ground' was won. The preservationist ideology emphasized federal land reservations as a means to preserve areas of natural beauty from use. The conservation movement, on the other hand, emphasized the efficient management and 'wise use' of natural resources within reserved areas.

"The period between 1898, when Pinchot took charge of the Division of Forestry and 1910, when he was dismissed from his position as the head of the Forest Service, is considered to be the 'Golden Era' of American conservation history" (Dana & Fairfax 1980:69). Although Teddy Roosevelt functioned as a preservationist with regards to wildlife policy, the major focus of the time was on the 'wise use' of our natural resources for the benefit of both present and future generations. According to Roosevelt and Pinchot, economic, social, aesthetic and moral considerations would determine 'wise use' (Dana & Fairfax 1980). The conservation ideology is exemplified by the Forest Service

slogan, adopted by Pinchot, “the greatest good, for the greatest number, for the longest time” (Dana & Fairfax 1980:72).

Though the preservationist movement is usually associated with John Muir, its roots are in the transcendentalist movement (i.e. Thoreau and Emerson). The preservationist ideals are reflected in the National Parks movement and subsequent creation of the National Parks Service in 1916. The purpose of the Park Service was, “[t]o conserve the scenery and natural and historic objects and the wildlife therein and to provide enjoyment of same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (Frederick Law Olmstead *as cited in* Dana & Fairfax 1980:109). Another interesting contrast between the Park Service and the Forest Service, as land management agencies, is that the Park Service asserted broad authorities to regulate wildlife within the National Parks early in its history.

Early policies regarding bison and elk management focused on preservation, rather than conservation. For instance, refuges were set aside and stocked with nucleus bison and elk herds. “The magnitude of the bison’s survival as a symbol seems almost to exceed its survival in actuality” (Pettinga 1985:1). The last remaining wild bison herd is in Yellowstone National Park, with the rest confined to some degree. The following section will provide an analysis of the current controversy surrounding Yellowstone’s migratory bison and elk herds. This analysis will be used to assess wildlife policy, and subsequent management systems, in an effort to determine the current ‘public context’ surrounding the American bison, elk, and other wildlife.

Yellowstone National Park

Each park is established through separate legislation; however, the National Park Service has remained the guardian of all the parks. Although Yellowstone, America's first national park, is viewed as a symbol of modern society's commitment to the preservation of our 'wilderness', the Park Service is obligated to both preserve its lands and provide for public enjoyment. This dual mission and the resulting policy mandates have been a source of confusion and criticism for many years. Currently, the Park Service manages Yellowstone wildlife and habitat under a policy of 'natural regulation'. The following section will explore the Park Service's policy of 'natural regulation' in Yellowstone, and the controversies surrounding this type of management. The impact Park Service management decisions on surrounding communities and neighboring landowners within the Greater Yellowstone Ecosystem (Montana, Idaho and Wyoming) will also be examined. Additionally, a comparison of state and federal policies governing the management of wildlife that roam beyond the park's boundaries shall be studied.

During the first fifty years, the National Park Service pursued a policy of intense management for both wildlife and recreation. According to Chase (1986), the fledgling agency wanted to attract tourists by displaying elk and other big game as their showpiece. Since the park area was not originally stocked with game, park officials did everything within their powers to increase the number of elk and bison in the park. For instance, a buffalo ranch was constructed inside the park where buffalo were bred, fed and branded -

elk were also fed and park officials chased straying elk back into the park (Chase 1986). In addition, the Park Service adopted policies and programs to exterminate all predators.

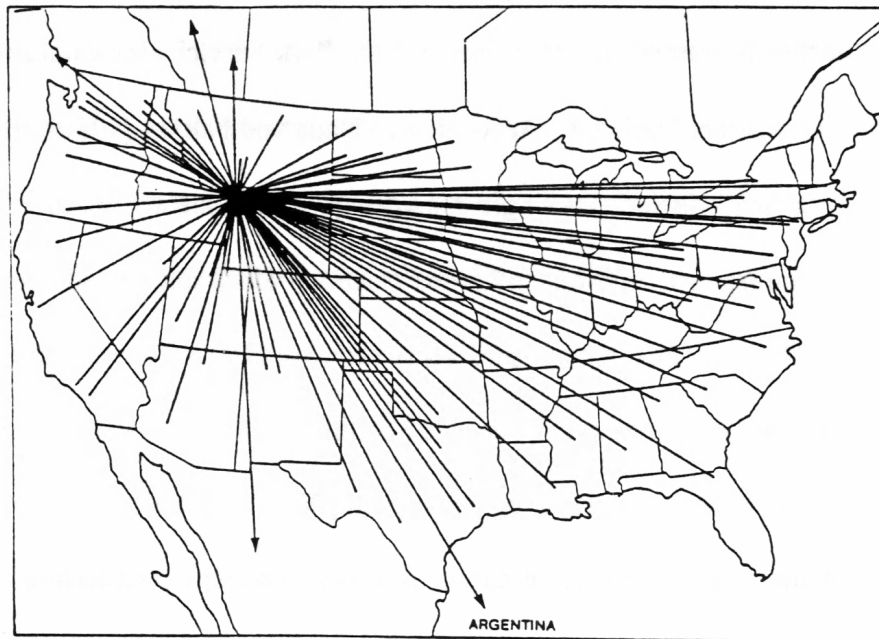
As a result of such intense management, the number of elk in Yellowstone increased dramatically. According to the 1909 Yellowstone Park Superintendent's report, "[a] conservative estimate would place the number of elk in the park between 30,000 and 40,000" (Rush 1932:20). Given the rise in wildlife populations, many animals were forced to migrate from the park in search of food by 1911 (Rush 1932). These winter migrations often caused considerable damage to haystacks, fields and fences on the ranches near the park (Rush 1932). "The increased [elk] populations . . . brought an open conflict between individuals pursuing their separate ideals of wilderness, America and the cattle industry" (Picton and Picton 1975:19).

Although all of these efforts were in place to increase the number of big game, elk, in particular, had reached a high point from which it soon began to decline. Environmental groups were outraged by the policy of predator extermination, and in 1934 demanded that an investigation be conducted. Based on a study completed by Rush (1932), elk numbers were too high and, in turn, elk were overgrazing the range; bison numbers, then at 1,000, were also concluded to be large enough. Thus, ". . . it was management policy, not predation, that was killing animals and eliminating wildlife species in Yellowstone" (Chase 1986). In turn, park managers realized that they would have to fill the void created by the departure of Indians and predators (Chase 1986). During the

period between 1934 and 1968, Yellowstone's management policy focused on the maintenance of smaller herds.

Reduction and control of the Yellowstone elk herd was accomplished by three methods: sport hunting outside park boundaries; live-trapping of elk and the subsequent shipment of these animals to any state that applied for them [figure 7]; and culling elk

Figure 7: Destinations of Live Elk Shipments from Yellowstone National Park from 1892-1967 (Thomas and Toweill 1982)



herds within park boundaries (Bartlett 1985). "Over a period of 27 years (1934-1961) the National Park Service killed 8,825 animals by shooting, dispensed with 5,765 by live-trapping, while hunters harvested an estimated 40,745 from the northern herd which had grazed beyond park boundaries" (Bartlett 1985:385). Although intensive actions were

taken by the National Park Service to control the burgeoning elk population, 10,000 elk constituted the Northern Yellowstone elk herd in 1961-1962 (Bartlett 1985). In turn, “[t]he Park Service took strong measures, killing 4,283 of the beasts, which were then processed and distributed as food to Indian communities, while 850 more were eliminated by hunting outside the park, or by live-trapping or normal winter kills” (Bartlett 1985:385).

Although wildlife management policy was tied to recreation in the sense that park officials wanted to attract tourists, the Park Service also employed additional recreation management policies. According to Dana and Fairfax (1980), the Park Service was primarily viewed as a single-use agency. Consequently, its survival was tied to public and congressional attitudes toward recreation. Since this period was dominated by ‘conservationist’ theory, park recreation policies and programs were based on the conservation theory of ‘wise use’ modified to fit the special circumstances of the parks (Lowry 1997). During the post-World War II era, millions of affluent and mobile Americans looked to recreation as a way to occupy their leisure time. In 1956, the park Service responded with the implementation of Mission ‘66, a ten-year rehabilitation and development program (Wirth 1980:237 *as cited in* Lowry 1997).

The 1960s were characterized by a rise in environmental consciousness at a national level and a resurgence of post war debates involving conservationists versus preservationists, which culminated in preservationist theory gaining the moral high-ground. The environmentalists became the main constituency of the Park Service and,

thus, had a profound impact on policy development. "To the surprise of the park managers, the old policy had become a victim of a revolution in the ways in which Americans viewed nature. . . a fundamental shift in what was believed to be the purpose of the parks" (Chase 1986.41-42).

The Wilderness Act of 1964 reminded Park Officials that their business is partially preservation, and if they wanted to save 'their land' from transfer to wilderness, they needed to reduce their emphasis on mass recreation and look toward protecting the resources (Dana & Fairfax 1980). Additionally, many prominent environmental authors and scholars taught that since humanity had caused most of nature's problems, perhaps the best thing to do was to do nothing at all. As a result, the public became much less tolerant of the Park Service's policy of 'direct reduction' (Chase 1986).

Hunters were also upset with the current policy of 'direct reduction', because they wanted to have the opportunity to hunt excess wildlife (Chase 1986). By 1967, the elk herd was multiplying rapidly, and the Park Service announced that it would eliminate 600 elk by direct reduction (Bartlett 1985). This infuriated local sportsmen, who had not been consulted in advance by the Park Service (Bartlett 1985). It is difficult to identify why local sportsmen, who harvest over 100,000 game animals per year, were so angered by the Park Service's decision to eliminate a mere 600 elk. However, Bartlett (1985.385-386) offers the following explanation:

"It had something to do with the people, and something to do with hunting. And it involved a regional resentment against some individuals in the Service. . . And in those parts, hunting elk is almost a rite of passage into manhood. . . [T]here are a lot of concerned citizens in the nation who resent arbitrary decisions by a federal

agency Park officials proceeded with 'Operation Elk Kill', [In turn,] [t]he Service received the hunters' wrath."

Given the emotionally charged nature of the controversy surrounding the Park Service's policy, one could say that the National Park Service was caught between a political rock and a biological hard place (Chase 1986).

In 1968, Yellowstone park officials adopted a policy of 'natural regulation'. This management policy rested on a commitment to the preservation of an entire ecosystem, not just an individual species, and the use of natural processes to regulate wildlife populations (Chase 1986). As previously stated, there are many controversies surrounding this policy of 'natural regulation'. The first set of criticisms focus on the language used in the development of this policy. The second set focuses on whether 'natural regulation' is a scientifically or politically based policy. Finally, the last debate revolves around the impacts of this policy on neighboring communities and landowners within the 'Greater Yellowstone Ecosystem'.

In order to expand upon the first set of criticisms surrounding the policy of 'natural regulation', the following section will focus on the questions:

- 1- what is wilderness?
- 2- does wilderness exist?
- 3- what is natural?
- 4- what is meant by natural regulation?

Wilderness is defined by the environmental movement as, "the last remaining place where civilization, that all too human disease, has not fully infected the earth" (Cronon 1996).

However, this is not an accurate depiction. There is not a place in this country that can be

labeled as 'untrammelled by man', since Indians have been living on and managing land in the United States since the Ice Ages. Regardless of the fact that such a place does not exist, wilderness has been defined into existence and man has been written out of 'original America'. According to Cronon (1996), the removal of the Indians to create an 'untrammelled wilderness' is a reminder of the fact that wilderness is nothing more than a social construct. Chase (1986:46) states that, "[t]he language of the Wilderness Act . . . made it possible to believe that there was still wilderness to save . . . and to believe that the way to manage it was to leave it alone."

This leads to another question: What is natural? If the Indians have managed the land and wildlife for centuries, how can park officials argue that their policy of 'natural regulation' is indeed natural? As a result of this new focus within the environmental movement, scientific theory was replaced with romanticism. Therefore, Yellowstone's policy of 'natural regulation' was not scientific policy; rather, it was an attempt to make a scientific virtue out of a political necessity (Chase 1986). A marketing report from the 1970s noted that the word 'natural' was the most popular word in America; thus, "natural regulation was a triumph of packaging. . . . [i]t was a policy containing nothing artificial" (Chase 1986:70).

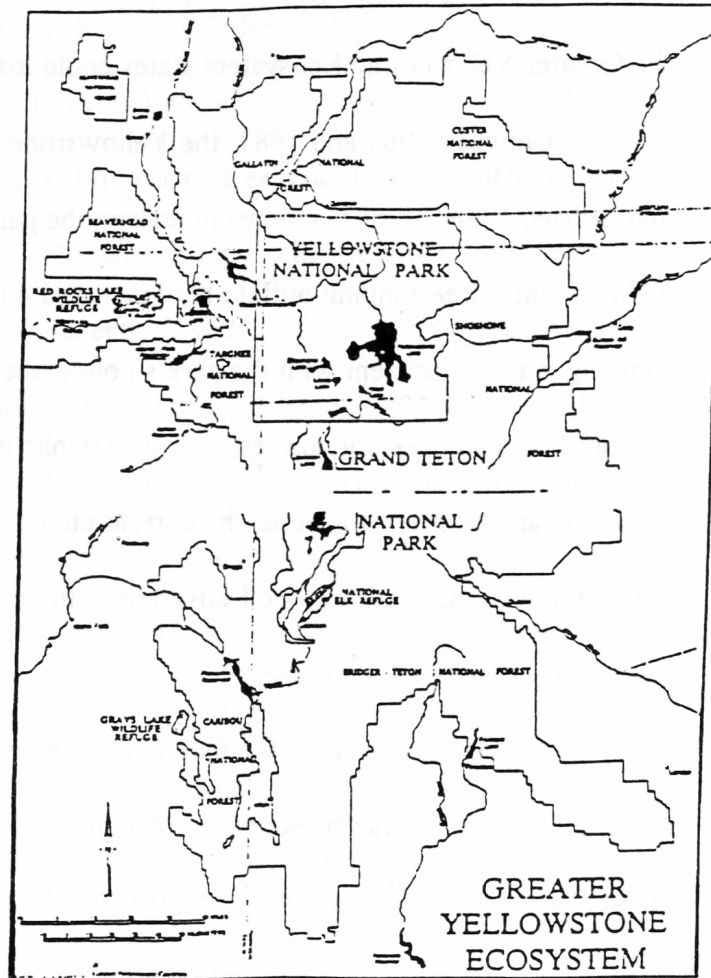
This brings us to the next question: How is an ecosystem defined? 'Natural regulation' is the commitment to the preservation of an entire ecosystem. However, according to the First World Conference on National Parks held in 1962 (*as cited in* Chase 1986:42), "few of the world's parks are large enough to be in fact self-regulatory

ecological units." In 1983, James Flynn - the director of Montana Fish Wildlife and Parks - stated, "our most paramount objection to the natural regulation philosophy is that the basis from which it was initiated is totally lacking in sound ecological documentation" (Chase 1986:85). "Already in its 112 year history, a historian can detect the influence of the pulsation of national attitudes, the swinging of the pendulum, as it is sometimes called, upon park destiny . "(Bartlett 1985:394).

Greater Yellowstone Ecosystem

Today, the Yellowstone ecosystem is described as the 'Greater Yellowstone Ecosystem' [figure 8] because neither the wildlife, nor the natural features are confined to the National Park boundaries (Patten 1991). The ultimate controversy surrounding 'natural regulation' rests on the question: How can a 'total environment' be preserved when those wildlife species that wander past park boundaries are managed according to an entirely different set of management policies? The current bison/brucellosis controversy highlights how Yellowstone's policy of 'natural regulation' impacts the surrounding communities and neighboring landowners within the 'Greater Yellowstone Ecosystem', as well as how the state and federal policies operating within this 'ecosystem' impact Yellowstone's policy of 'natural regulation'.

Figure 8: Map of the Greater Yellowstone Ecosystem
(Keiter and Boyce 1991)



Yellowstone's policy of 'natural regulation' and subsequent management

practices worried the local ranchers, as well as the livestock industry, at both the state and federal level. This is due to the fact that bison carry brucellosis, a disease that causes cattle to abort. It was feared that increased wildlife numbers in the park would also increase forage competition, thus causing the bison to wander beyond park boundaries in search of

food, and possibly infecting a state's population of domestic livestock. More specifically, the Greater Yellowstone Ecosystem states could lose their brucellosis free status.

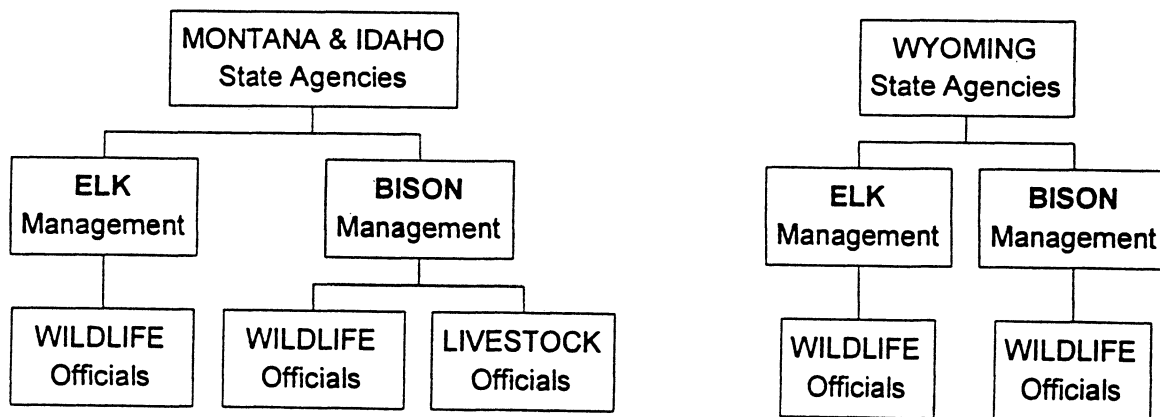
Between 1967 and 1981, the Yellowstone bison herd grew from 400 to 2,000 and, subsequently, some bison began leaving the park (Chase 1986). In 1996, Yellowstone's free-ranging buffalo herd included 4,000 animals (Satchell 1996). Since trapping was inconsistent with the park's policy, the state was responsible for wildlife that ventured beyond park boundaries. Because public policy represents an equilibrium between various interest groups, the current public perception of bison and other wildlife within the 'Greater Yellowstone Ecosystem' can be determined through an examination of federal and state wildlife policies.

As previously stated, the federal government manages wildlife on national parks and wildlife refuges, and the states are responsible for managing wildlife on state and private lands. However, in 1962, Congress ruled that the U.S. Department of Agriculture (USDA) had authority over all 'members of the animal kingdom' with contagious diseases (Keiter 1997). The USDA's Animal and Plant Health Inspection Service (APHIS) is currently responsible for regulating brucellosis among domestic livestock. Therefore, APHIS is an important political player within the Greater Yellowstone Ecosystem. APHIS divides various states into categories, ranging from disease-free to quarantine, based on disease prevalence in domestic cattle. Interstate shipment and vaccination costs and regulations are less for states with brucellosis-free status. Presently, APHIS is in the

final stages of a \$3.5 billion aggressive national campaign to rid the country of brucellosis among domestic livestock (Knox 1997, Keiter 1997).

Currently, the 'Greater Yellowstone Ecosystem' states (Montana, Idaho and Wyoming) are classified as brucellosis free, and livestock interests have expressed concern about losing this status. Not surprisingly, state livestock officials endorse APHIS' eradication policy. Until recently (1962) state wildlife officials within Greater Yellowstone had authority over animals outside park boundaries (Keiter & Froelicher 1993 *as cited in* Keiter 1997). However, due to APHIS, this no longer is the case. Although Wyoming still manages bison as wildlife (Wyo. Statute. Ann. § 23-1-901(c) *as cited in* Keiter 1997), Montana and Idaho have split jurisdiction between wildlife and livestock officials, giving livestock officials sole jurisdiction over diseased bison (Mont. Code Ann. § 87-1-216(a), Idaho Code § 25-618 *as cited in* Keiter 1997) [figure 9].

Figure 9: State Wildlife Authorities in the Greater Yellowstone Ecosystem



Since bison are managed as wildlife in Wyoming, public hunts are used to control migrating bison (Wyo. Statute. Ann. § 23-1-901(c) *as cited in* Keiter 1997). Livestock officials in both Montana and Idaho, on the other hand, are statutorily authorized to remove or destroy diseased bison (Mont. Code Ann. § 87-1-216(a), Idaho Code § 25-618 *as cited in* Keiter 1997).

It is interesting to note that current policy regarding brucellosis among bison, like Yellowstone's policy of 'natural regulation', resulted from the political balancing of interest groups, rather than from objective scientific evidence. There has never been a single documented case of bison transmitting brucellosis to cattle in a natural setting (Peacock 1997). However, a controlled experiment, conducted at Texas A&M University in 1990, has shown that bison can transmit brucellosis to cattle if the two animals are corralled together for several weeks (Davis et al. 1991 *as cited in* Keiter 1997). Many wildlife biologists feel that this represents a highly unlikely occurrence, especially on lands outside Yellowstone's western boundary, because cattle do not graze these areas until June, when no bison would be present (Peacock 1997).

Although the Texas A&M experiment bases its conclusions on a highly unnatural and manipulated setting, APHIS cites this case as evidence for its aggressive brucellosis eradication policy and subsequent programs. In Montana and Wyoming, federal courts have ruled that wild bison can transmit brucellosis to livestock (Keiter and Froelicher 1993 *as cited in* Keiter 1997). Montana's chief veterinarian, Clarence Siroky, feels that although the chances of transmission are remote (he likens the risk to that of getting

struck by lightning), it would have such economically disastrous consequences for the state's cattle producers that any risk is unacceptable (Peacock 1997). This further highlights the highly political nature of APHIS' brucellosis strategy

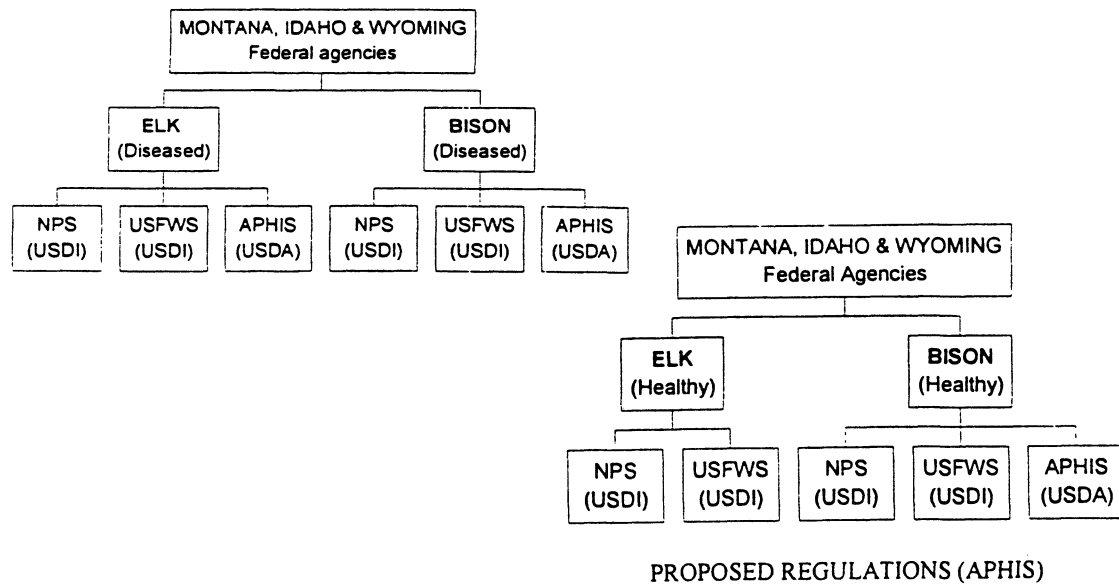
Regardless of whether the current brucellosis eradication strategy is scientifically based, it is the current policy, and it is the reason for the slaughter of Yellowstone bison both inside and outside the park. The current *Interim Bison Management Plan* has been developed as a settlement to a lawsuit filed by the state of Montana. The lawsuit was filed against the National Park Service and APHIS, charging that the Yellowstone bison herd was being mismanaged, and that the threat of brucellosis transmission to livestock was being ignored (Wilkinson 1997). The interim plan states that bison that stray beyond the northern boundary of the park are to be either shot, or captured, tested and slaughtered (Keiter 1997).

Throughout the development of the bison/brucellosis controversy, the Park Service has remained committed to its policy of 'natural regulation'. However, in light of the current interim plan, NPS is required to go against its preservationist obligations and participate in the slaughter of these bison. This interim plan, costing \$370,000, is in place until a long-term bison management plan and environmental impact statement can be developed. The long term plan is being developed by the Park Service, the US Forest Service, and Montana Departments of Livestock and Fish, Wildlife and Parks and has been in the works for many years; the EIS was out for public comment when Montana filed the lawsuit in 1995 (Jensen 1997).

The Yellowstone bison herd is further threatened by APHIS' proposed regulations to gain jurisdictional control over all of the bison (Keiter 1997). As previously stated, APHIS, under the Secretary of Agriculture, has federally granted authority over all diseased wildlife. Since both Montana and Idaho have transferred a share of authority from wildlife officials to state livestock officials, the channels of power in regard to the management of wild bison have shifted in the livestock industry's favor, thereby leaving the door open for APHIS' new regulations. These proposed regulations would require NPS to implement an immediate test and slaughter program for all Yellowstone bison (Senate Bill 745 1996 *as cited in* Keiter 1997).

Even though many more elk test positive for brucellosis than bison, relatively little attention has been given to the issue of brucellosis in elk populations (Keiter 1997). This highlights the inconsistencies within the regional brucellosis policy. For instance, although the Secretary of Agriculture has federally-granted authority over *all* diseased animals [figure 10], within the Greater Yellowstone states, wildlife officials have sole jurisdiction over elk. In other words, elk populations continue to be managed as wildlife, while Yellowstone bison are managed as livestock to an extent. In addition, the brucellosis regulations proposed by APHIS do not apply to elk (Keiter 1997). Finally, under Wyoming compensation law, ranchers with cattle herds that have been infected with brucellosis from elk, not bison, can maintain a claim against the state (Wyo. Statue. Ann. § 23-1-901, Parker Land and Cattle Co. v Wyo. Game and Fish Comm. 1993 *as cited in* Keiter 1997).

Figure 10: Federal Wildlife Authorities in the Greater Yellowstone Ecosystem



It is generally understood that a brucellosis eradication policy that focuses solely on bison is doomed to fail (Thorne et al. 1991a, and Dobson and Meagher 1996 *both cited in* Keiter 1997). Why, then, has such little attention been given to the issue of brucellosis among the regional elk population? The answer could lie in the fact that “[e]lk have a constituency - hunters, outfitters, the tourist industry, and the Rocky Mountain Elk Foundation” (Peacock 1997). Elk reacted more favorably to human induced habitat changes than did bison. In turn, elk were able to retain their ‘wildlife’ status and remain an integral part of the culture within the Rocky Mountain Region. According to Satchell (1996), elk hunting in Montana and Wyoming brings in more than \$100 million dollars a year. Wild bison, on the other hand, do not have a comparably strong constituency.

CHAPTER 7

DISCUSSION

A historical analysis of bison and elk policy within the Rocky Mountain region provides a framework for interpreting the public perceptions surrounding bison and elk, and the interplay between these interpretations and public policy outputs. As a result of incremental changes in public policy in the early 1900s, the North American bison population was on the verge of extinction. Public policy changes were incremental due to the forces of institutionalism and elitism operating within the political system. First, the government was not quick to change its policy of Indian subjugation, which called for a drastic reduction in bison numbers. Second, according to Dana and Fairfax (1980), before a resource can become valuable, or warrant protection, it must be seen as scarce. Within the newly settled America, resources were not seen as scarce; rather, the country was in desperate need of westward expansion and economic development. Thus, the disposition era continued until many resources were nearly depleted.

The bison were not saved from extinction as a result of changes in public policy; rather, private ranchers saved them. Initially, they were kept under preservationist intentions; however, bison ranching soon became an important economic activity. Eventually, public policy shifted and areas were set aside for the protection of natural

all of these populations are confined to a degree. Currently, most of the North American bison population is privately owned and ranched/farmed. Yellowstone National Park's bison population is the one of the few remaining free-ranging population in North America.

The current conflict involving Yellowstone's free-ranging bison population and the potential threat of brucellosis transmission provides a means with which to assess the interplay between the public's perception of bison and public policy decisions (outputs). At the federal level, APHIS (USDA) has complete authority over diseased wildlife, and is currently in the middle of a multi-million dollar campaign to eradicate brucellosis from livestock. In turn, APHIS has become a major player with regard to the bison situation with the Greater Yellowstone ecosystem, and has taken an active role in the management of Yellowstone's diseased bison population. Similarly, at the state level, in both Montana and Idaho the Department of Livestock and the State Fish and Wildlife Service have split jurisdiction over all (diseased and non-diseased) bison within the Greater Yellowstone ecosystem. Additionally, livestock officials in these states are statutorily authorized to remove or destroy diseased bison.

The current situation, involving the Yellowstone bison and brucellosis transmission, also applies to elk. In fact, more elk test positive for brucellosis than bison. Under federal law, APHIS has control over all diseased wildlife; however, they have yet to exert control over diseased elk populations. Additionally, Montana and Idaho manage Yellowstone's

migrating elk populations as wildlife (managed solely under state fish and wildlife service).

Why the difference? Unlike bison populations, many individuals and communities within the Rocky Mountain region have strong symbols and meanings attached to wild elk.

Additionally, these groups often exert higher levels of influence within the political system (more power).

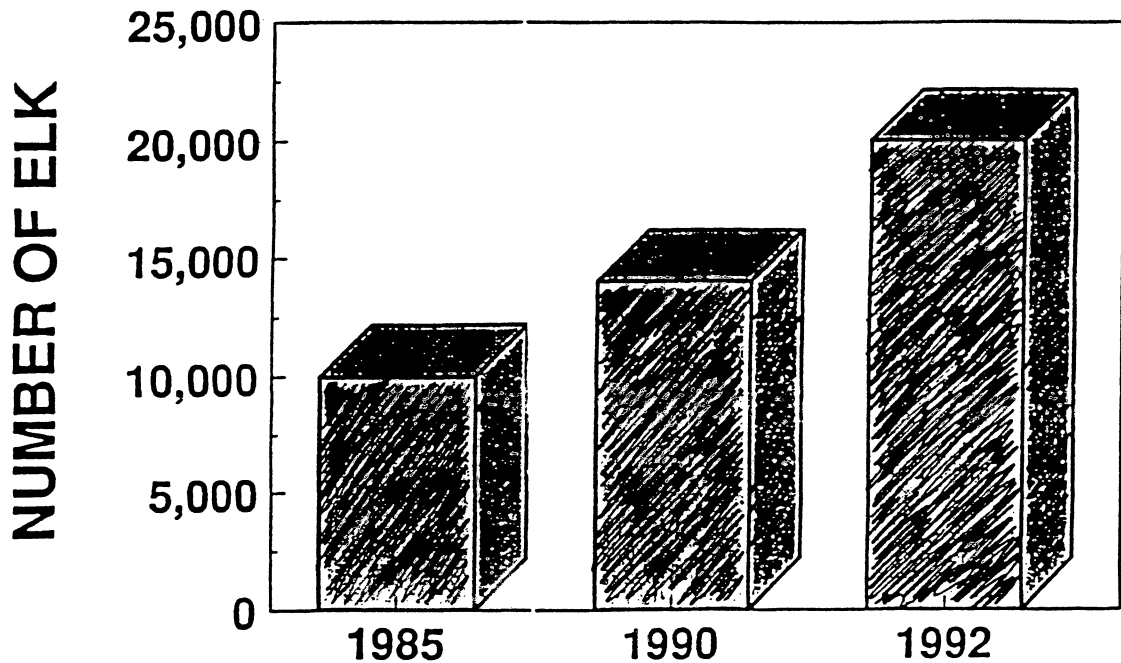
Public policy represents the point of equilibrium reached during a struggle between competing interest groups, with policy shifting in favor of those interest groups that yield relatively higher levels of influence (Dye 1972). As stated in an article in Audubon magazine, "...the underlying power struggle [with regard to the current brucellosis/bison issue] has been between the agricultural and wildlife agencies; at issue was who determines the appropriate use of our public lands and who decides the fate of our nations wildlife" (Wilkinson 1997:41). Thus, an analysis of bison policy within the Greater Yellowstone ecosystem demonstrates that the organizations demanding bison protection (mainly grassroots organizations) and those who support the eradication program (livestock interests) do not have equal access to power within the current political system.

An analysis of elk policy within the Greater Yellowstone ecosystem also demonstrates this fact, since many powerful communities of place and interest support the protection of elk (i.e., Rocky Mountain Elk Foundation, Hunter Organizations, NRA, Outfitters, etc.).

PART II
AN OVERVIEW OF THE PUBLIC CONTEXT SURROUNDING ELK FARMING

Although elk are valued as a wildlife species, many farmers and ranchers are also beginning to recognize their value as an agricultural product. As a result, farmed elk populations have been growing rapidly [figure 11].

Figure 11: Growth of the Farmed Elk Population in the USA Between 1985-1992 (Renecker 1993a)



Commercial elk production systems have been embraced by some as a way to stabilize failing agricultural economies. Those interested in rural development view commercial wildlife production systems as a means to access a broader range of markets, while insuring the maintenance of rural, agriculturally-based livelihoods for traditional agricultural producers (Hudson 1989a, Hudson and Dezhkin 1989). "Alternative livestock offers a significant opportunity to diversify the agricultural economic base of a state and

on a broader scale reduce reliance on imports (Rich 1993). However, some doubt whether elk farming in the United States is indeed a viable industry. Elk farming constitutes an economically viable, short-term diversification strategy for traditional agricultural producers within the United States; however, the future success of this industry will likely be affected by public opinion regarding the impacts associated with elk farming. In addition, those skeptical of game farming argue that future prospects for the elk industry within the United States are limited due to the presence of a strong animal welfare lobby, inconsistent and restrictive regulations, and an inadequately developed infrastructure (Yorks 1989).

As a result of increasingly tight margins in many sectors of the U.S. agricultural industry, commercial elk production systems have emerged as an alternative to traditional livestock enterprises. Currently, farmed elk serve a variety of domestic and international markets, namely breeding stock, velvet antler, venison and private hunting /tourism. Although successful in other countries, the elk industry is a relatively new and controversial industry within the Rocky Mountain region. In order to assess the long-term viability of elk farming within the Rocky Mountain Region, the public context surrounding elk farming in this region must be understood. In turn, a review of the economic, socio-cultural and ecological factors is presented in the following chapters (Chapters 8-11).

CHAPTER 8

ECONOMIC FACTORS

Private Benefits

The Saskatchewan Department of Agriculture and Food (1996) estimates the global domestic 'deer' population to be in excess of 5 million animals, with the largest producers being New Zealand, China and Russia. During the last 20 years, elk farming has become the most rapidly developing commercial production system within the industry (Hudson 1996). Although game farming in North America has been in existence for many years, a comparison with the commercial game industries in the above mentioned countries reveals that North American industries are considered rather primitive (Yorks 1989). North American systems cater primarily to breeding stock, velvet and hunting/tourism markets; whereas, countries with more developed production systems, such as those in New Zealand, focus primarily on farming elk for venison and velvet markets.

Breeding Stock

Breeding stock is currently one of the most profitable markets for commercial elk. According to the March 1997 Minnesota auction results, the average price paid for a

bred elk cow was \$669. This can be compared to a Western Colorado average of \$165 per breeding age beef cow (North American Elk Breeders Association 1997b). Eleven thousand dollars (\$11,000) was the average price paid for a mature bull (North American Elk Breeders Association 1997b). One bull usually breeds 17-20 cows (North American Elk Breeders Association 1997b). Since the American tradition of public ownership of wildlife requires that meat and other by-products sold originate outside the local area (Yorks 1989), the sale of venison and velvet bulls is vital to the continuation of the elk farming. The market for hunted bulls is also growing, as hunting/tourist markets continue to expand. In addition, there is a high demand for hunt and velvet bulls with superior genetics (Saskatchewan Agriculture and Food 1996).

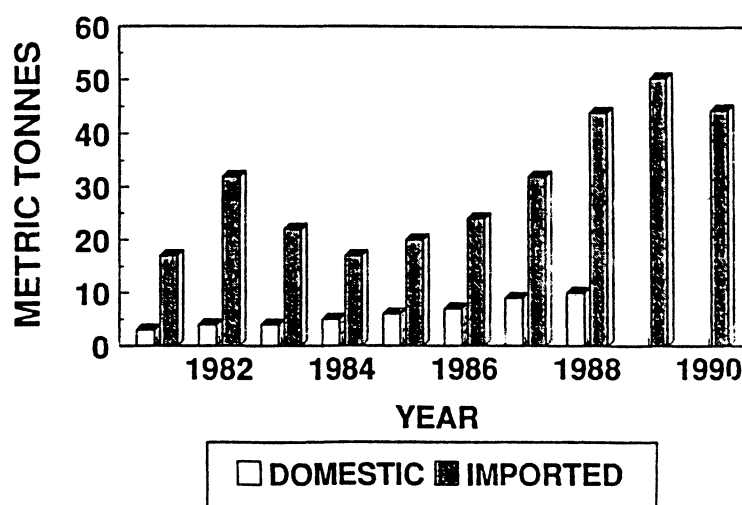
“The world population of farmed deer passed the million mark about 1990 and, . . . could approach eight million by the turn of the century. . .” (Hudson 1996:2). Given this projection, breeding stock markets are predicted to remain strong. In addition, the development of new techniques in genetic manipulation will also contribute to the strength of these markets. However, at some point bred elk populations will reach a level where the demand for breeding stock will begin to stabilize. The stabilization of breeding stock markets can occur for the following reasons: (1) government policy shifts can affect the U.S. elk industry, (2) changing market demands can affect the industry, and (3) operating game farmers will eventually obtain all of the stock that they require and the bottom will fall out of the breeding stock market within the U.S.

Velvet

According to users of traditional eastern medicine, velvet antlers generate a number of medicinal benefits, such as: the generation of hemoglobin, blood pressure control, increased lung efficiency, improved muscle tone and glandular functions, sharpened wits, stomach ulcer relief, reduced arthritis inflammation and the easement of old age debilities (Stoney Ridge 1997). Consequently, the international trade in velvet antler is currently a lucrative market for elk farmers. According to the North American Elk Breeders Association (1997a), velvet profits are typically enough to pay for feeding an entire herd year round.

Korea is currently the largest velvet importer, with imports accounting for approximately 85 percent of the international market, a value of more than U.S. \$1.5 billion (Saskatchewan Agriculture and Food 1996, Hudson 1996) [figure 12].

Figure 12: Official Korean Statistics of Domestic and Imported Velvet from 1981-1990 (Renecker 1993a)



New Zealand is currently the main velvet supplier, with exports reaching 450 fresh tones, followed by the People's Republic of China (400 tones), the Soviet Union (60 tones), the United States (20 tones), and Canada (17 tones) (Hudson 1996). The price for velvet has been extremely volatile over the last 15 years, with prices ranging from \$55 per fresh (green) pound in 1993 to \$85 per fresh pound in 1996 (Saskatchewan Agriculture and Food 1996) [figure 13]. In general, bulls increase velvet yields annually, with an average two-year old producing approximately six pounds of velvet and mature bulls (7 to 8 years old) producing up to 40 pounds of velvet (North American Elk Breeders Association 1997a). According to Rich (1993:2), "[a] four year old North American elk will yield about \$800 to \$1200 each year and continue production through a life expectancy of more than 15 years."

Figure 13: Official Korean Floor Prices for Dry Velvet Antler from 1989-1993 (Renecker 1993a)

Velvet antler typed	Korean Floor price (\$US/kg dry weight)		
	1989	1990	1993
Russia (maral deer)	630	630	
China (maral deer)	500-630	500-630	480
New Zealand (red deer)	555	375	350
United States/Canada			
Elk	580	530	430
Reindeer		430	350 ¹

¹ Actually sold for US\$ 200/kg dry weight.

Although velvet prices are known to fluctuate, a producer can control his/her profits to a certain extent. For example, antler velvet has traditionally been sold fresh, or in a 'green' form; however, value adding processing plants (to dry the velvet) are being developed in various elk farming communities (Saskatchewan Agriculture and Food 1996). Processing represents an opportunity to add value to the raw product, for example, dried antler can bring a premium that is 20 to 30 percent higher than green velvet (Stoney Ridge 1996). The exporter also benefits from reduced shipping cost, and a lower risk of spoilage (Stoney Ridge 1996). In addition, elk velvet is sold either through individual transactions between buyers and producers, or through marketing pools. (North American Elk Breeders Association 1997a). The development of marketing pools often result in higher prices for the velvet producer (Saskatchewan Agriculture and Food 1996).

With regard to the velvet market, the demand for velvet will continue to increase as Asian communities become more affluent, and the domestic market grows with more people turning to holistic medicine (North American Elk Breeders Association 1997a, Saskatchewan Agriculture and Food 1996). However, Hudson (1996) asserts that, in actuality, success of this market is uncertain.⁸ He first notes that "[i]n addition to [the] growing international supply, Korea, the major importer, seems to be well on [its] way to self-sufficiency in velvet production" (Hudson 1996). Furthermore, many holistic medicines are coming under increased scrutiny from the U.S. Food and Drug

⁸ This uncertainty is especially relevant at present due to the current Asian

Administration (Hudson 1996). Animal welfare groups are also loudly protesting the 'inhumane treatment' of velvet bulls. To some extent, they have had a significant effect on this market. For example, as a result of these protests, velveting is not permitted in Europe (Hudson 1996). Finally, many are opposed to the trade in wildlife products for medicinal purposes. According to Joe Gutkoski, Vice President of the Montana Wildlife Federation, "[i]t encourages the consumption of superstitious medicines and expands the insatiable demand for these foolish nostrums in the oriental market. . . . The end product is the extinction of wildlife" (Gutkoski 1994:14).

Venison

Due to a surge of interest in a variety of culinary meats, as well as in the avoidance of fats, cholesterol, steroids and antibiotics associated with traditional domestic livestock, venison markets are also expanding. For example, in 1990, 133 New York City restaurants sold game meat (Time 1990 *as cited in* Lanka et al. 1990). "Game meat prices in markets and restaurants tend to be 50%-100% higher than for comparable domestic cuts" (Yorks 1989:278). According to the Colorado Elk and Game Breeders Association, wholesale prices for elk meat currently range from \$4 per pound for burgers to \$15 per pound for steaks (North American Elk Breeders Association 1997b). "A 15 month old market male for venison will yield \$700-900" (Rich 1993:2).

economic crisis.

Russia is currently the largest exporter of total venison, while New Zealand is the largest exporter of farmed venison (Saskatchewan Agriculture and Food 1996). In 1993, New Zealand earned NZ \$126 million through the exportation of 13,000 tones (Hudson 1996). Until recently, the main venison import market has been Europe. However, interest is currently turning toward a potentially large, although complex, market in the United States (Hudson 1996). Market demand for farmed venison is also growing within Pacific Rim countries (Hudson 1996).

In 1990, the total amount of venison produced in the United States was 110 tons, of which 25 tons was farm raised (Judy 1992 *as cited in* Hudson 1996). Although the overall size of the North American commercial game industry remains relatively small compared to traditional livestock industries, the capture of even a small portion of this market by venison will create a large new market for elk products (Saskatchewan Agriculture and Food 1996). Currently, 85 percent of the commercial venison available in the U S. is imported. However, some believe that shifts from velvet and breeding stock will rapidly increase domestic venison supplies (Hudson 1996, Rich 1993). In other words, if/when the markets for velvet and breeding stock decline, producers will most likely shift toward venison production as a long-term market for farmed elk.

Given the predicted decline of breeding stock and velvet markets, many commercial elk farmers in the United States are relying on increased venison markets as a means to relieve future economic pressures (Saskatchewan Agriculture and Food 1996). However, venison is presently produced at relatively low levels in the United States. Two

of the main reasons for this low level of growth are: currently inconsistent state regulations regarding the establishment of commercial elk production systems and highly restrictive regulatory standards governing the trade of game meat (Yorks 1989). For instance, game farming is currently legal in Montana and Colorado, but not in Wyoming (Yorks 1989). Additionally, all meat for human consumption must receive ante-mortem veterinary inspection, as well as satisfy stringent treatment and storage requirements (Luxmoore 1989). Further hampering practical game ranching is the fact that conflicting patterns exist among federal, state and local regulations regarding the transport, slaughter and meat sales from game animals (Yorks 1989). Although it can be argued that the current restrictions on the trade in game meat will preclude the United States from ever gaining a foothold in the international venison market, it can also be argued that regulations will become more consistent and less prohibitive in response to a growing market.

A second criticism of the United States as a player in the international venison market is that it lacks a well-developed infrastructure. This absence of a developed market infrastructure for game meat places a burden on the American elk ranchers trying to meet market standards. However, as the domestic supply of venison increases an adequate infrastructure may develop in order to facilitate this growing market. For instance, New Zealand has developed deer slaughtering facilities in order to comply with strict U S. regulations on transport, slaughter and meat sales (Luxmoore 1989). The

USDA has already approved field slaughter procedures for wild ungulates, and it is very likely that game processing facilities will also develop in the United States (Yorks 1989).

Hunting/Tourism

Given the currently high levels of interest in sport hunting, there has been an increasing interest in charging fees to hunt game on private land (York 1989). Wyoming's Fish and Game Department figures highlight the fact that wild game hunters typically achieve a 50 percent success rate (Anonymous 1985b *as cited in* York 1989). This relatively low success rate, given the high level of emotional and financial investment required by hunters, indicates a direct inducement to interest hunters in private hunts, where there is less competition and a better chance of 'bagging' a trophy bull (York 1989). Currently in Montana, wealthy hunters who desire a guaranteed hunt will pay ranchers \$5,000 to \$12,000 to shoot a trophy elk, or shooter bull, depending on the size (Majors 1994, Rider 1996). Furthermore, ranchers can further increase their profits by providing such auxiliary services as guides, food and lodging.

The development of the hunting/tourism market within the United States provides another means for elk ranchers to combat declines in other market sectors. According to Luxmoore (1989), wildlife based tourism (hunting/game viewing) may be of greater economic significance than the trade in wildlife products. A 1985 survey concluded that \$1 billion was spent annually on sport hunting within the United States

(Hudson 1996). Additionally, a 1990 survey conducted by the Montana Department of Fish, Wildlife and Parks and the U.S. Forest Service determined that wildlife viewing contributes more than \$44 million annually to Montana's economy (Montana Department of Fish, Wildlife and Parks 1992).

Currently, more than 74,000 out-of-state hunters come to Montana each year (Anonymous 1996). Montana's hunting season, which is longer than most nationally, is a main reason that numerous out-of-state hunters are drawn to the State (Anonymous 1996). According to Karen Zackheim, Montana's Fish, Wildlife and Parks game farm coordinator, since shooting on game farms is protected under private property laws, game farm operators can have shoots of any animals, in any quantity, at any time of the year (Rider 1996). This information is very promising for game farm operators who cater primarily to out-of-state hunters. However, ". . . although the price per animal is high the number of participants is relatively low" (Lanka et al. 1990:69).

Public Costs

Current Value of Rocky Mountain Wildlife

As elk farming gains popularity, there is concern regarding the public costs associated with the devaluation wildlife contributions to Rocky Mountain economies. A study conducted by the Montana Wildlife Federation's Grassroots Outreach Project in

1997 revealed that wildlife contributes \$1.7 billion annually to the country's economy (Sharpe 1997). A comparison of the economic gain attributable to wildlife in relation to other major resource based industries ranks wildlife fourth (Sharpe 1997). During hunting season, wild elk bring in millions of dollars that circulate through Montana and form a major part of the state's fall economy (Anonymous 1994a). "The direct impact on the Montana economy provided by sportsmen alone is nearly 560 million dollars--dollars that protect wildlife, habitat, and support over 11,500 jobs. . . . Another \$550 million has been reported by the Montana Fish, Wildlife and Parks coming from wildlife viewing" (Sharpe 1997: 6).

According to an article in *Montana Wildlife* (Anonymous 1994a:15), ". . . game farms [and associated wildlife/environmental threats] have the potential to change Montana's wild game populations forever as we know them, and in fact could decimate them." Game farm threats include: increased poaching and wildlife theft, the loss of significant portions of native herds when traditional migration routes are disrupted by high fences and exotics out-compete native populations, and the loss of public enjoyment of wildlife and traditional ways of living (Lanka et al. 1990). For instance, "[h]unting private land at such a high cost is characteristic of European society where only the wealthy can afford to hunt" (Satchell 1990 *as cited in* Lanka et al. 1990:62). An economist would argue that this is an example of economic efficiency because the person who values the resource the most is using the resource (Hesseln pers. com. 1998). However, others would argue that wildlife policy that is based upon economic efficiency is in direct

opposition to North America's current system of wildlife management within which wildlife is held in trust for public benefit.

Game Farm Maintenance and Regulation

Another public cost associated with the game farm industry is the expenditure of large sums of public to subsidize the industry. Within the Rocky Mountain region, the regulation of game farms rests on the shoulders of state wildlife agencies [figure 14].

Figure 14: Who Regulates Game Farming in North America? (Lanka 1993)

JURISDICTION	Wildlife Agency	Agriculture Agency	Combination
Alberta			X
British Columbia		X	
Arizona	X		
Colorado			X
Idaho			X
Montana			X
New Mexico	X		
Oregon	X		
Utah	X		
Washington			X
Wyoming	X		

The concern stems from the fact that a substantial portion of this agency money is acquired through the self-imposed taxation of North American sportsmen and women.

For instance, the Pittman-Robertson Act of 1937 provides funding, standards and encouragement for state wildlife programs (Dana and Fairfax 1980). "Under this act, receipts from the federal tax on firearms, shells and cartridges were allocated to the states on the basis of their size, and the number of licensed hunters. The funds were made available for research and for the purchase and development of game refuges and public hunting grounds" (Dana and Fairfax 1980:149). Given the increasing popularity of game farms, local wildlife organizations have begun to campaign against the divergence of wildlife allocated funds to the regulation of game farms.

Wildlife agencies are forced to expend funds in order to oversee the day-to-day regulation of state game farms, including: reviewing permit applications, record keeping, and increased enforcement workloads to handle both routine facility inspections and increased incidences of poaching (Lanka et al. 1990). According to Herb Johnson (1994:3), "[g]ame farm administration and supervision, excluding the cost of enforcement, costs the Montana Department of Fish, Wildlife and Parks at least \$150,000 per year . . . Yet, game farms generate only about \$5,300 in license fees each year." "Hunters who are not required to purchase state hunting licenses when hunting private game ranches do not contribute economically to state wildlife conservation programs" (Lanka et al 1990:63).

In addition to these costs, state wildlife agencies also incur major costs when native wildlife populations are affected as a result of game farm animals. All Rocky Mountain states set fencing requirements and require disease testing in order to prevent epidemic outbreaks within native wildlife populations. However, game farm animals

sometimes escape, resulting in substantial expenditures of public money. For instance, the total cost incurred by the Montana Department of Fish, Wildlife and Parks during the 1994 tuberculosis (TB) eradication operation, which took place in southeast Montana, was estimated to be in excess of \$24,000 (Anonymous 1994b). "If restitution costs [for the slaughtered wildlife] were added to the price tag, the full amount of money lost by the public would probably top \$100,000" (Anonymous 1994b:15). Alberta, where 2600 captive elk were exterminated as a result of a TB outbreak, provides another example of this issue (Majors 1994). As a result, the Canadian government spent approximately \$15 million in compensation (Majors 1994). Finally, "[b]etween 1988 and 1992, the Colorado Division of Wildlife has spent in excess of \$150,000 to control and eliminate feral game farm animals" (Johnson 1994:3).

A second example of the divergence of wildlife funds to game farm regulation involves the issuance of new permits and expansions. When a private landowner is granted permission to fence his property (or additional property, in the case of an expansion), the Montana Department of Fish, Wildlife and Parks is legally obligated to remove wildlife from the impending pasture. For instance, when Len Wallace of Darby, Montana was granted an extension for his elk farm, the Montana Department of Fish, Wildlife and Parks "...employed helicopters and massive hazing to remove approximately 350 mule deer from the enclosure, ... the Department estimated that \$26,000 in sportsmen dollars went to getting the expansion online" (Jewett 1997:11). As a result of the Wallace incident, Montana sportsmen protested. Wallace responded, "[w]e've been

feeding those deer for years . why doesn't the Wildlife Federation reimburse ranchers who are feeding these critters" (Jewett 1997: 11). This response highlights the social polarization evident within this issue.

CHAPTER 9

ECOLOGICAL FACTORS

Positive Externalities

Traditional western agriculture, including cattle ranching and intensive farming, can be an environmentally damaging activity. Range condition is an estimate of how close a particular rangeland is to its productive potential for forage vegetation (Miller 1992). According to Miller (1992:401), “. . .by 1988 about 68% of the country's [U.S.] public rangeland was in unsatisfactory condition (poor or fair), 29% was in good condition, and only 3% was in excellent condition.” According to Rich (1993:1), “[h]ad man the opportunity to choose a different set of species to domesticate today things might look very different. There are about 3500 mammals and it was not necessary to choose only four: cattle, sheep, pigs and goats.” The primary reason why these four animal species were chosen is that deer resisted genetic changes designed to increase body fat (Rich 1993). During the early years of the agricultural revolution, fat provided food, tallow for candles, and oil for lamps (Rich 1993). Currently, there are substitutions for this energy; in turn, there is a movement toward the domestication of native wildlife.

The Benefits of Ranching Native Wildlife

One positive environmental externality of the elk industry is that it allows for the practice of a less intensive form of agriculture. Given the current environmental conditions, many feel that there is “ a need to achieve an agriculture that is in harmony with nature” (Rich 1993:2). In order to achieve such an agricultural system, “man will need to domesticate many of the inviting species native to a given region and utilize them within that natural environment” (Rich 1993:6). Since native wildlife populations have co-evolved with their environment, they are better adapted to their environment than traditional livestock species.

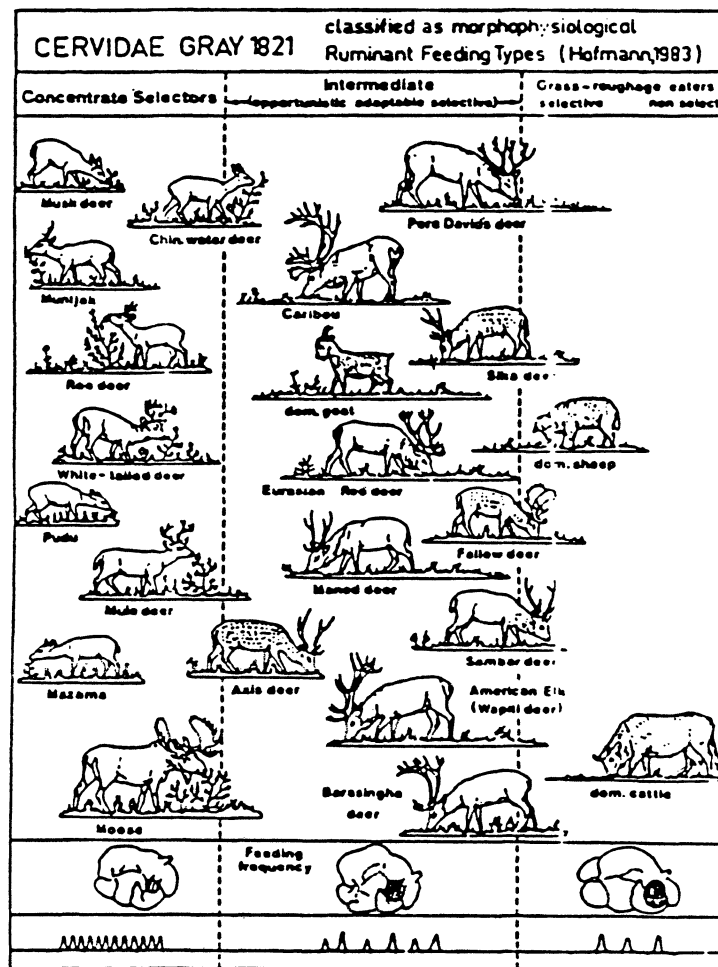
Within the Rocky Mountain region, cattle can make environmentally sound and efficient use of the land for only seven months out of the year (Rich 1993). During the winter months, cattle are often housed and fed because they compact wet pastures (Rich 1993). This compaction damages the land, drainage and water tables (Rich 1993). Elk, on the other hand, can utilize pastures for the full year (Rich 1993). Since elk are better adapted to this regional ecosystem, cause less damage to winter pastures and their feed requirements decrease in the winter (Rich 1993).

The Employment of Grazing Succession

Increased grazing efficiency is another positive environmental externality attributable to a combination of cattle and elk farming . “Common-use grazing [making

use of grazing succession] is the practice of stocking two or more large herbivores, domestic or wild, on the same pasture or range area. . . . [C]ommon-use grazing generally results in more efficient use of the forage resources, because different herbivores have different habit and forage preferences" (Rich 1993:4) [figure 15] East Africa, which has a

Figure 15: Grazing and Ruminant Patterns of Selected Species of Deer, Domestic Sheep and Cattle (Rich 1993)



great diversity of large wild herbivores, also boasts the highest territorial grazing efficiency (Nelson 1984 *as cited in* Rich 1993:4). Additionally, studies have shown that periodic cattle grazing helps to remove accumulated old growth, thus improving the nutritional value of forage on elk winter ranges (Anderson and Scherzinger 1975, Jourdonnais 1985 *as cited in* Frisina and Morin 1991). Although the United States pioneered the concept of multi-use grazing, these techniques are utilized mostly in Africa, Australia, New Zealand, China and Russia (Rich 1993). According to Rich (1993:2), “[i]nstead of being a leader in balancing the demands for sensitivity to our environment, we are watching the rest of the world forge ahead.”

Negative Externalities

Although elk farming can be classified as a less intensive form of agriculture, there are many environmental problems associated with this industry. The negative environmental externalities include: game farm escape, and the subsequent threats of disease transmission, hybridization and competition; wildlife habitat fragmentation; and wildlife theft and poaching. Currently, a debate is raging regarding the likelihood of such problems. Members of the North American Elk Breeders Association believe that, “[w]ildlife agencies use animal health, habitat competition and hybridization as political tools” (Rich 1993:8). However, Joe Gutkoski, Vice-President of the Montana Wildlife

Federation (1994:14), argues that “it [elk farming] commercializes and privatizes a publicly owned resource and invites poaching and illegal killing and capture of native wildlife. . . . The sheer scale of the game farming business, the poor husbandry, the illegal traffic in game animals, the poor enforcement of regulations and the powerful political lobbies supporting it, will make law breaking and disease spread inevitable.”

Game Farm Escapes

Although it can be argued that compliance with fencing regulations is a sufficient means to avoid the problems associated with game farm escapes, the experience of many states and provinces has been that animal escape is inevitable (Lanka et al. 1990).

According to information gathered by the Wyoming Game Farm Review Committee, the means of animal escape were varied (Lanka et al. 1990). The most reported reasons for escape were: poor fence maintenance and fence building; weather events such as floods, wind, drifting snow, and falling trees; vandalism, jumping over or crawling under the fence, people turning animals loose, and animals destroying a fence (Lanka et al. 1990).

According to an article published by the Montana Wildlife Federation, Montana's Department of Livestock Veterinarian, Clarence Siroky, has stated that, “[w]ith 3400 acres, you can't keep a fence up all the time” (Anonymous 1994b:15). “In essence, Siroky's statement is an admission that game farm animals will escape and co-mingle with wild herds” (Anonymous 1994b:15). Once a farmed animal escapes, the associated

problems become regional wildlife threats. The following quote from an article in *Montana Wildlife* illustrates the far-reaching effects of game farm escapes: "There are persistent reports that exotic species have escaped from a farm in southeast Montana, and are roaming in the wild Pryor Mountains; some say that exotics have moved across the Montana border into Wyoming--a cruel twist to that state's aggressive, pro-active efforts to eradicate such a possibility" (Anonymous 1994a:16).

The realities of disease transmission

"Of major concern when considering the introduction of animals (native or exotic) is the possibility that diseases and/or parasites may be transported to the new area with those animals" (Smith 1982 *as cited in* Lanka et al. 1990:13). According to a review of game farm literature, "[t]he introduction of animals into new areas has resulted in the importation of disease into these new locations" (Lanka et al. 1990:13). Dr Karl Johnson, the man who named the Ebola virus and chronicled its effects, believes there is "no question" about whether Game farm diseases threaten Montana's wildlife populations (Jewett 1996a:13). In Johnson's opinion, "[w]e're in for it. . . . I think we're starting to do the same kinds of things that got chickens, cows and ourselves into trouble. We're gathering very many in smaller places" (Jewett 1996a:13).

Contrary to Johnson, the Montana Department of Livestock's veterinarian, Clarence Siroky, does not believe that there is a problem. According to Siroky, "There

are a lot of things that go into making a disease work besides the fact that its out there” (Jewett 1996a:13). However, members of the Wyoming Game Farm Review Committee feel that game farms impose an unduly high risk (Lanka et al. 1990). “Epidemics may occur where new animals are introduced to an area, where new infectious agents are introduced, where environmental conditions change, or where animal populations undergo some stress” (Lanka et al 1990:13). Additionally, certain diseases may become more prominent than they normally might be in the wild because confined settings foster the transmission of disease (Lanka et al. 1990). “The relative ease of rapid transportation of these animals also facilitates dispersal of disease” (Lanka et al., 1990:21). Finally, “[c]ontact between farmed animals and wild ones through the fence will spread disease. Rodents scurrying in and out of game farms will [also] spread disease” (Gutkoski 1994:1).

Red Deer/Elk have been documented as being a host species to the following diseases: Meningeal Worm, Liver Fluke, Cartoid Artery Worm, Tuberculosis, Johne’s Disease, Leptospirosis, Brucellosis, Malignant Catarrhal Fever, Blue Tongue, Epizotic Hemorrhagic Disease, Rabies, Chronic Wasting Disease/Bovine Spongi Form Encephalopathy, and IBR (Lanka et al. 1990). Additionally, “[n]ew diseases or diseases previously not known to occur in wildlife continue to be discovered. . . .It is very easy for new diseases to be introduced into the state unintentionally” (Dr. Elizabeth S. Williams pers. com. *as cited in* Lanka et al. 1990:22).

Most states have regulations in place to monitor the interstate movement of elk in order to control disease. However, not all of the current testing technology is reliable.

According to Lanka et al., “[p]rocedures for testing livestock do not always provide definitive diagnosis for native wildlife and exotic species” (Lanka et al. 1990:18).

“Infected animals may not show symptoms or give positive results on diagnostic tests. In some cases, it takes a long time for a pathogen to develop before symptoms appear” (Lanka et al. 1990:25).

Additionally, not all states test for each specific disease. For instance, testing in Montana is designed to protect domestic animals from brucellosis⁹ and tuberculosis (Lanka et al. 1990). However, current tests are not 100 percent reliable, since they are designed for whole herd testing (Majors 1994:2). With regard to traditional livestock herds, the USDA is currently in the midst of a tuberculosis and brucellosis eradication program. “Introduction of these diseases into livestock via the importation of non-domestic ruminants . . . would be a tremendous setback and expense for these programs” (Dr Elizabeth S. Williams pers. com. *as cited in* Lanka et al. 1990:22). According to Dave Majors, Montana Wildlife Federation President, “Montana’s ranching community has shown great concern about the possible transmission of Brucellosis from Bison wandering from Yellowstone National Park; they should be just as concerned about the threat from game farm animals” (Majors 1994:2).

⁹ I will not discuss Brucellosis transmission in this section, since I have thoroughly reviewed it in Chapter 6.

Finally, Montana does not test all shipments of non-domesticated animals; nor does it test for wildlife diseases not commonly associated with livestock (Lanka et al. 1990). For instance, Montana does not test for meningeal worm, bluetongue or anaplasmosis (Lanka et al. 1990). Until recently, elk farmers would sell diseased wildlife to Canadian game ranchers as healthy animals using Montana as the state of origin (Lanka et al. 1990). As a result of problems with disease, Canada has recently closed its borders to interstate shipments of animals.

Tuberculosis

Tuberculosis (TB) is a serious disease of wild animals caused by a slow-growing bacteria, *Mycobacterium bovis* (Lanka et al 1990). This disease is mainly present in farmed elk populations and is spread by “.mutually grooming open sores and by dropping contagious saliva, feces and urine in crowded, penned areas” (Anonymous 1994a:15). Although most states test imported elk for TB, the testing procedures for non-domesticated animals are not generally reliable (Lanka et al. 1990). Moreover, the bacteria is resistant to environmental conditions (Lanka et al. 1990). For instance, some species of the bacteria may remain in soil and litter for four years or longer (Lanka et al. 1990).

Many game farms in New Zealand and elsewhere have experienced problems with TB (Lanka et al. 1990). The Government of Alberta recently killed about 2600 captive elk in response to a TB outbreak, and spent \$15 million in compensation (Majors

1994). The infected elk were traced back to a game farm north of Yellowstone National Park (Majors 1994). This finding concerned many wildlife officials in Montana.

According to Mitchell Essey, senior staff veterinarian for the USDA's Animal and Plant Inspection Service (APHIS), "[n]o one knows how we'd control it [TB] if it got into herds like those in Yellowstone National Park. The potential ramifications are almost inconceivable" (Anonymous 1994a:15). A second incident of TB transmission occurred in Hardin, Montana. In December of 1993, a free ranging mule deer was diagnosed with TB (Anonymous 1994c:4). According to officials, the infected deer had contracted the TB from the Elk Valley Game Farm, which had been quarantined because of TB infected elk (Anonymous 1994c:4).

Since game animals frequently escape from captivity, the transmission of TB to native elk, domestic livestock, and humans poses a serious threat associated with elk farming (Lanka et al 1990, Anonymous 1994a). According to Keith Annue, Montana Department of Fish, Wildlife and Parks, TB exists in many wildlife species (Anonymous 1994c). "In San Francisco they found it [TB] in ground squirrels. In England it has been found in badgers. In New Zealand it was found in brush-tailed opossums" (Anonymous 1994c:4). Dr. Siroky, Montana's Department of Livestock Veterinarian, feels that although game fences cannot be maintained without escapes, TB is not generally as contagious as the common cold transmission requires a dense population of animals (Anonymous 1994c).

However, many game farm oppositionists are not willing to take the chance. According to an article in *Montana Wildlife*, “[i]f TB gets loose in wild herds, disease transmission may be unstoppable--an uncontrollable wave of death moving across the state” (Anonymous 1994a:15). Since animals infected with TB must be destroyed, in order to prevent further transmission, a TB outbreak in native populations could result in the loss of a large amount of wild elk. According to the Wyoming Game Farm Review Committee,

“ . . .it would be a tragedy and a tremendous waste of resources to attempt to eliminate or greatly reduce those herds. Public outcry over severe herd reduction would be tremendous. . . . [Finally,] [s]uch control would have to be paid from public funds, and there could be a tremendous loss of public recreational opportunities by such a reduction ” (Lanka et al. 1990:38).

TB also poses a threat to domestic livestock and humans. Montana’s Tuberculosis free status, which it has held since 1977, “is a major underpinning of the industry’s and state’s economic viability; if lost, the cost to the livestock industry of the state of Montana will be in millions of dollars” (Anonymous 1994a:15). Montana would lose its TB free status if only one cow was infected. Additionally, TB transmission to humans presents an equally concerning threat. Although Siroky believes that, “ the chances of a hunter catching TB from infected game animals is more difficult than winning the Powerball lottery”; Montana Wildlife Federation president, Dave Majors, feels that “Siroky’s comments are irresponsible and contradicted by a number of experts” (Anonymous 1994b:15). According to Majors, “[t]he fact of the matter is, no hunter should be put at risk of catching TB no matter what the odds” (Anonymous 1994b:15).

Malignant Catarrhal Fever

“Malignant Catarrhal Fever has become one of the most significant diseases in the deer farming industry” (Reid and Buxton 1984, Reid et al. 1985, Beatson 1985a, Van Reenen and Innes 1985, Oliver et al. 1985, McAllum et al. 1982, Wilson et al. 1983 *all cited in* Lanka et al. 1990:32). Malignant Catarrhal Fever (MCF) is a fatal viral disease that affects both domestic and wild ruminants, including cattle (Lanka et al. 1990). The disease is commonly found in two forms, wildebeest MCF and sheep MCF (Lanka et al. 1990). The virus that causes the sheep MCF, which is the type most often found in cervids, has not yet been identified (Lanka et al. 1990).

Although the mode of transmission is not well understood, close association among animals fosters the disease (Plowright 1981 *as cited in* Lanka et al. 1990). However, since the causative virus has not been identified, sheep MCF is extremely difficult to diagnose (Lanka et al. 1990). In turn, there is no suitable means for screening imported animals for MCF (Lanka et al. 1990). In addition, “[t]here does not appear to be any practical way to control the disease once it is introduced” (van Reenen and Innes 1985 *as cited in* Lanka et al. 1990:34). According to the Wyoming Game Farm Review Committee, “[p]roblems with this disease . . . justify banning the importation of non-domestic ungulates into Wyoming” (Lanka et al. 1990:34).

Chronic Wasting Disease/Mad Cow Disease

Another disease associated with game farming is Chronic Wasting Disease. Once infected, animals waste away as the disease destroys the animal's coordination, leaving it unable to stand (Carrel 1998). "The disease is one member of a family of rare and mysterious brain illnesses called TSE that kill by eating microscopic holes in the brains of their victims" (Carrel 1998:1). There is currently no way to test for Chronic Wasting Disease in wildlife; rather, its occurrence must be demonstrated post-mortem (Lanka et al. 1990). Although captive herds seem to facilitate the spread of the disease (Thorne pers. com. *as cited in* Carrel 1998), "little is known about how Chronic Wasting Disease is spread among deer and elk, let alone whether other species can be infected" (Carrel 1998:2).

Chronic Wasting Disease is similar to bovine spongiform encephalopathy (BSE), or Mad Cow Disease (Lanka et al. 1990, Jewett 1996b:6), another form of the TSE illness (Carrel 1998). Mad Cow Disease recently resulted in the decimation of British domestic cattle herds and a greatly depressed beef industry (Jewett 1996b, Carrel 1998). "The disease caused near panic in Britain since being linked by a government report there to 10 fatal cases of brain disease in humans" (Jewett 1996b:6). Given the fact that Mad Cow disease was transmitted to humans, many people are concerned about whether Chronic Wasting Disease can be transmitted to humans. John Pape, an epidemiologist with the Colorado Department of Health, states that although the evidence suggests that

Chronic Wasting Disease is not transmittable to humans, nobody really knows (Carrel 1998).

Recently, Chronic Wasting Disease has been identified in deer and elk in three Western states: Colorado, Wyoming and South Dakota (Carrel 1998). “ [T]he disease infects 5 percent of the deer and approximately 1 percent of the elk in northeastern Colorado and southeastern Wyoming” (Carrel 1998:1). Although Chronic Wasting Disease was first detected in Colorado game farms 31 years ago, the current rate of infection seems to be excessively high (Carrel 1998).

In January of 1996, Chronic Wasting Disease was discovered on a game farm in Saskatchewan, which had imported the infected elk from South Dakota (Jewett 1996b). “This incident highlights ongoing problems associated with game farms and the transportation of potentially infected animals across state and international boundaries in a relaxed regulatory context” (Jewett 1996b:6). Although there are currently no reports of Chronic Wasting Disease in Montana, “[t]he potential is out there that this disease could find its way here” (Aune pers. com. *as cited in* Jewett 1996a:13). According to Montana’s Department of Fish, Wildlife and Parks, Chronic Wasting Disease could have enormous impacts on Montana’s elk herds (Aune pers. com. *as cited in* Jewett 1996a). “ What we have to do is evaluate just how important is our elk resource to this state ” (Aune pers. com. *as cited in* Jewett 1996a:13).

Meningeal Worm

The Meningeal Worm is a parasite found in the meningeal covering of the brain of white-tailed deer, that causes fatal neurological disease in deer and other native ruminants (Lanka et al. 1990, Richards 1995). The life cycle of the parasite is as follows: meningeal worm larvae are shed through the feces of their hosts, the larvae then develop into their infective stage within a variety of snail and slug hosts, infected snails and slugs are then inadvertently eaten by vertebrate hosts, the meningeal worm then travels to the cranium where they mature (Lanka et al. 1990). Currently, the only way to detect meningeal worm is in post-mortem tests (Samuel 1987 *as cited in* Lanka et al. 1990). Attempts to detect the worm in feces have proven inadequate (Lankester and Haute *as cited in* Lanka et al. 1990). In addition, there are no practical means to control this disease, since intermediate hosts are widespread and there are no drugs available that kill adult worms (Samuel and Gray 1988 *as cited in* Lanka et al. 1990).

Since several intermediate species inhabit the Rocky Mountain Region and there are no definite tests for detecting meningeal worm, many are concerned about the potential risks associated with this disease (Chamberlain and Jones 1929, Henderson 1924, 1936, Samuel 1987 *as cited in* Lanka et al. 1990). Alberta has currently banned the importation of wild ungulates in fear that meningeal worm would be brought into the province (Stevenson 1988 *as cited in* Lanka et al. 1990). Additionally, "Montana currently discourages the importation of white-tailed deer from eastern states for fear of importing meningeal worm" (R.H. Bird pers. com. 1990 *as cited in* Lanka et al. 1990:26).

Although Montana has regulations in place to prevent the transmission of meningeal worm, these regulations are insufficient because Montana does not test imported animals for Meningeal Worm (Dr. Owen James pers. com. 1990 *as cited in* Lanka et al. 1990). This presents a major problem because eastern white-tailed deer are often brought to intermediate sale areas in states such as South Dakota (R.H. Bird pers. com. 1990 *as cited in* Lanka et al. 1990). In turn, it is strongly suspected that Meningeal Worm is present in some game farms holding imported white tailed deer (R.H. Bird pers. com. 1990 *as cited in* Lanka et al. 1990).

Johne's Disease

Johne's Disease is caused by a slow-growing, highly resistant bacteria, *M. paratuberculosis*, and it is "probably as important to the livestock industry as is tuberculosis" (Thorne et al. 1982 *as cited in* Lanka et al. 1990:39). The disease is spread through infected feces, inadvertently consumed by ruminants (Thoen and Johnson 1981 *as cited in* Lanka et al. 1990). The organism may persist in the environment for several months (Thoen and Johnson 1981, Thorne et al. 1982, Chiodini and Van Kruiningen 1983 *as cited in* Lanka et al. 1990). Once contracted, this disease causes enteritis in domestic livestock and wild ruminants (Thoen and Johnson 1981, Thorne et al. 1982 *as cited in* Lanka et al. 1990).

“Like tuberculosis, Johne’s Disease is very difficult to confirm, and is virtually impossible to eradicate or control” (Thoen and Johnson 1981 *as cited in* Lanka et al. 1990:39). Although Johne’s Disease is mostly transmitted in captive settings, it does appear that wild populations are capable of dispersing and maintaining these bacteria for years (Lanka et al. 1990). It is therefore possible that free-ranging ruminants may serve as a reservoir for the disease (Lanka et al. 1990). “Once established, it is virtually impossible to eliminate this disease because of the persistence of the organism and the potential for contamination of large areas (Thoen and Johnson 1981 *as cited in* Lanka et al. 1990:41).

The effects of hybridization and competition

Although game farmers must adhere to fencing regulations, some states and provinces have banned the importation of all exotic species because of game farm escapes **[figures 16, 17 and 18]**. If farmed exotics are able to interact with native populations, hybridization, and subsequent genetic deterioration of wild stocks, and habitat competition pose causes for concern **[figures 19 and 20]**. Consequently, “[s]cientists and resource managers have long recommended that no exotics be introduced until adequate study is made of the potential impacts (Craighead and Darsmann 1966, Bohl 1968, Bump 1968, Zeedyk 1980, Rangel-Woodyard and Simpson 1980. Dickinson and Simpson 1980, Barrett 1980, White 1986 *as cited in* Lanka et al. 1990:46). Members of the Wyoming

game farm review committee highlight the fact that few evaluations have been completed regarding the impacts of exotic species on habitats and native wildlife populations.

Figure 16: Fencing Stipulations and Incidents of Escape (Lanka et al. 1990)

STATE	FENCING STIPULATIONS	ESCAPES FROM ENCLOSURES	METHODS OF ESCAPE	HUNTED WHEN ESCAPED
Arizona	No specific requirements	Unknown	Unknown	Unknown
California	Yes	Yes	Poor fence maintenance Fence height inadequate	No
Colorado	Yes	Yes	Poor fence maintenance Flood destroyed fences Vandalism	Yes
Montana	Yes	Yes	Poor fence maintenance Weather event Vandalism	No
Nebraska	No	Unknown	Unknown	Unknown
Nevada	No	Yes	Poor fence maintenance Poor fence management	Unknown
New Mexico	Yes	Yes	Flood; tree across fence	No
North Dakota	No	Yes	Vandalism Swimming Turned loose Crawled over fence	No
Oregon	Yes	Yes	Inadequate fencing	Unknown
South Dakota	No	No	Unknown	Unknown
Texas	No	Yes	Poor fence maintenance Poor fence building Weather events Jumped over fence	Yes and No
Washington	No	Unknown	Unknown	Unknown
Alberta	Yes	Yes	Destroyed fence Jumped over fence Weather event-wind	No
Brit. Columbia	Yes	Yes	Weather events Problems with gates Animals went through fence	No
Manitoba	No Regs	Yes	Unknown	No
Saskatchewan	Yes	Yes	Crawled under fence Elk destroyed fence	No

Figure 17: The Regulation of Exotic Species in Western States and Provinces
(Lanka et al. 1990)

STATE	PRIVATE OWNERSHIP OF NATIVE WILDLIFE LEGAL	PRIVATE OWNERSHIP OF EXOTICS LEGAL	LEGAL DESIGNATION	REGULATING AGENCY
Arizona	Yes	Yes	Wildlife	State Wildlife Agency
California	No	Yes	Wildlife	State Wildlife Agency
Colorado	Yes	Yes	Captive Wildlife	State Wildlife Agency
Montana	Yes	Yes	Livestock and Wildlife	State Livestock Board and Wildlife Agency
Nebraska	Yes	Yes	Livestock	No Regulations
Nevada	Yes	Yes	Exotic Wildlife	State Wildlife Agency
New Mexico	Yes	Yes	Wildlife-Game Animals	State Wildlife Agency
North Dakota	Yes	Yes	Wildlife	State Livestock Board and Wildlife Agency
Oregon	Yes	Yes	Non-indigenous species	State Agricultural species Dept.
South Dakota	Yes	Yes	Livestock	State Livestock Board
Texas	Yes	Yes	Livestock	State Livestock and Animal Health Board
Utah	No	No	Zoological Animals	State Wildlife Agency State Dept. of Agriculture State Dept. of Health
Washington	Yes	Yes	Not Classified	Neither
Alberta	Yes	No	Exotic	Fish & Wildlife Div.
Brit. Columbia	Yes	Yes-Bovids No - Cervids	Bovids-Not wildlife Cervids-wildlife	Wildlife Agency
Manitoba	Yes	Yes	Not Classified	No Regulations
Saskatchewan	Yes	Yes	Livestock-Game	Dept. Food and Ag

Figure 18: Genetic Testing Requirements for Elk and Red Deer in Western North America (Lanka 1993)

JURISDICTION	Pre-Import Tests	Import Red Deer or Hybrids	Test Animals In-State
Alberta	YES	NO	YES
British Columbia	NO	NO	NO
Arizona	NO	NO	NO
Colorado	YES	NO	YES
Idaho	YES	NO	NO
Montana	YES	NO	NO
New Mexico	NO	NO	NO
Oregon	YES	NO	YES
Utah	NO	NO	NO
Washington	YES	NO	NO
Wyoming	YES	NO	NO

Figure 19: Branches of the Family Cervidae that can Hybridize (Renecker 1993b)

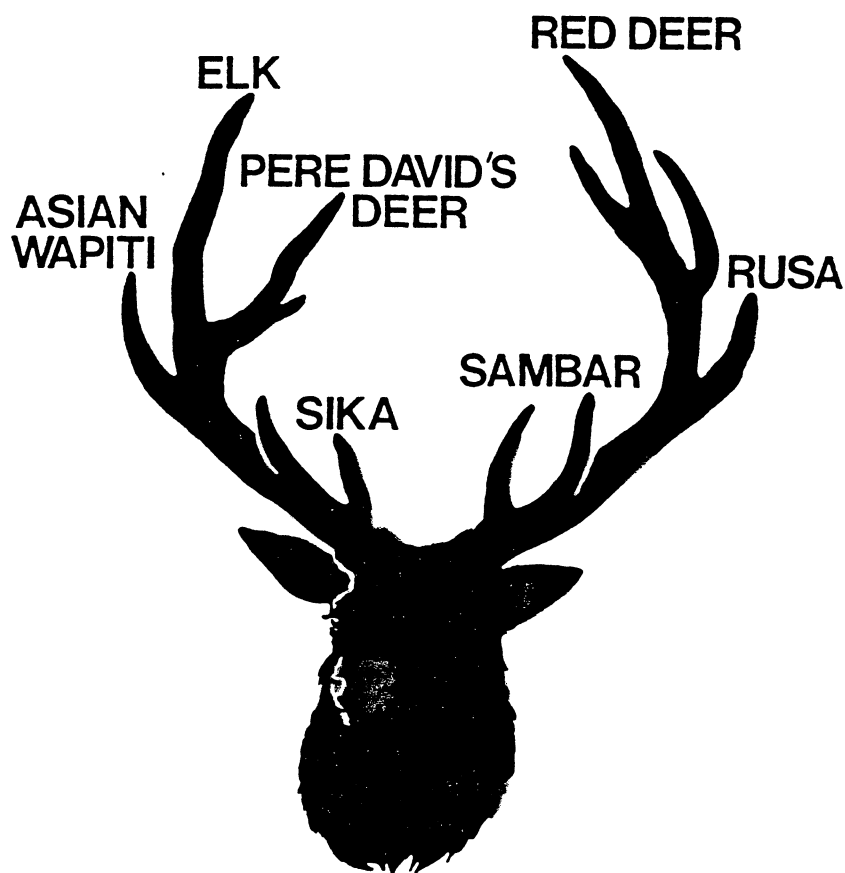


Figure 20: Management Costs and Control of Exotics (Lanka et al. 1990)

STATE	WHO PAYS COST OF RECAPTURE	COST OF RECAPTURE	IS RECAPTURE LIKELY	ESCAPED EXOTICS CONTROLLED BY STATE	IS CONTROL SUCCESSFUL	METHOD OF CONTROL	COSTS OF CONTROL	OWNER COOPTED
Arizona	Not addressed	Unknown	No	Yes	Yes	Hunting	Unknown	Unknown
California	Owner	Unknown	Yes	Yes	Unknown	Dart gun & drugs; hunting	Unknown	Yes
Colorado	Owner (court case pending)	Helicopter time manpower	Highly unlikely	Yes	No	Hunting	Unknown	Yes
Montana	Owner	Unknown	Generally not	Yes	Not on record	Hunting	Unknown	Yes
Nebraska	Unknown	Unknown	Depends of location and terrain	Yes	Yes	Public hunting	Break Even	Yes
Nevada	No policy	Unknown	Very slim	Yes	No	Hunting	Unknown	Unknown
New Mexico	Owner (not set in law)	Unknown	Not likely	Yes	No	Hunting	Man days; \$2,500 per animal to hunt scouted from helicopter	Unknown
North Dakota	No policy	\$8,059.80	Usually not	Not addressed	N/A	N/A	Unknown	Varies
Oregon	No law/regs	N/A	No	Yes	No	Public hunting, some recaptures	No cost	No
South Dakota	Owner	Unknown	Depends on situation	Yes	N/A	Hunting	Unknown	Unknown
Texas	Owner	Unknown	Unlikely	No	N/A	Dart gun Net gun	None	Yes
Utah	Owner	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washington	Nothing in regulations	N/A	No experience	No policy	No policy	No policy	Manpower & equipment	Unknown
Alberta	Owner	Unknown	Likely	Yes	N/A	N/A	N/A	N/A
Brit. Columbia	Owner	Unknown	Depends on species	Yes	No	Public hunting	Unknown	Yes
Manitoba	Owner	Unknown	No exp.	None	No exp.	No exp.	No exp.	No exp.
Saskatchewan	Wildlife agency	Unknown	Unknown	No	Only wild horses	Unknown	Unknown	Unknown

European red deer is the counterpart to North American elk. According to Dave Majors of the Montana Wildlife Federation (1994:3), “[s]everal game farm operators intentionally cross-breed red deer and elk to produce an animal with ‘hybrid vigor’, which are cheaper, gentler, and more adaptable to diet than pure elk.” However, captive

populations of animals often become inbred over subsequent generations (Benirschke 1985, Schreiber and Matern 1989 *as cited in* Lanka et al., 1990). In turn, those animals are more likely to carry deleterious genes, which may influence the success of the hybridized populations established in the wild (Benirschke 1985, Schreiber and Matern 1989, Stowe and Schribner 1989 *as cited in* Lanka et al., 1990). Although the technology to detect the presence of red deer genes exists, the test is "most reliable in first generation offspring of a cross. . . .The test becomes increasingly less reliable with each succeeding crossbred generation" (Majors 1994:3).

With regard to farmed exotic species, many wildlife managers are concerned about the possible genetic deterioration of native populations. According to a computer model developed at the Wildlife Division of the Colorado Fish and Game, if 10 red deer were introduced into a herd of 500 wild elk, 95 percent of these elk would be genetically altered (Anonymous 1994a). "Biologists readily acknowledge that such crossbreeding could forever alter wild elk populations. . . .[T]he herd would be mongrels, they wouldn't be elk anymore" (Anonymous 1994a:16). According to Challies (1985 *as cited in* Lanka et al. 1990), red deer and elk crosses have resulted in the reduction of a proportion of New Zealand's elk population . Within Montana, genetic tests of Avon area elk conducted during the fall of 1993 revealed two elk cross breeds, and a likely hybrid (Anonymous 1994a). Additionally, exotic European red deer escaped from a game farm in 1994 and crossbred with Montana's pure elk herd (Anonymous 1994a). Fortunately, this situation was controlled. However, Rich Clough, the Region 2 supervisor of the

Montana Department of Fish, Wildlife and Parks, believes that there may come a time when cross-breeding spreads beyond anyone's control (Anonymous 1994a).

With regard to habitat competition, introduced exotic species often utilize the same habitat niches as native populations. In turn, "[i]ntroduced exotic animals may compete with native wildlife and livestock for forage, water and other habitat components" (White 1986 *as cited in* Lanka et al., 1990:45). Secondly, exotic species are generally adaptable to different habitat conditions (Mann and Putman 1989a, 1989b; Mungall 1978, Smith 1977 *as cited in* Lanka et al., 1990). According to Hoffman, "[r]uminants can adapt to changes in diet by changes in their stomach morphology" (Hoffman 1985 *as cited in* Lanka et al., 1990:49). As a result, exotic species that utilize the same habitat as native wildlife populations also increase competition. Finally, in addition to dietary competition, exotics, which have higher reproductive capacity than native wildlife, will exert habitat pressure (Lanka et al., 1990). According to Short and Harrington, red deer and elk hybrids calve earlier and may be more resistant to disease (Short 1985, Harrington 1985 *as cited in* Lanka et al., 1990). Herb Johnson (1994:3), a Montana Wildlife Federation board member, believes that "[e]xotic species in feral situations often out-compete native animals for forage and breeding rights". Members of the Wyoming game farm review committee liken the introduction of exotics to the opening of Pandora's box (Lanka et al. 1990).

According to the Montana Wildlife Federation's Vice President, Joe Gutkoski (1994:14), "[e]scape of game farm animals is inevitable. They will establish feral

populations in the wild that will require large amounts of money to control them." As previously stated, a good portion of the costs are borne by state wildlife agencies. Finally, our current native wildlife has co-evolved with the terrain, vegetation, water and climate over a period of several thousand years (Lanka et al., 1990, Gutkoski 1994). The introduction of exotic ungulates has the potential to disrupt the balance that supports our native wildlife (Lanka et al., 1990, Gutkoski 1994).

Wildlife Habitat Fragmentation

Approximately 80 percent of U.S. wildlife (excluding Alaska) depend upon unprotected, private, agricultural land for their survival (Henderson and O'Herren 1992). In 1985, nearly one-third of the nation's 679,000 commercial family-run farms with annual sales of \$50,000 to \$500,000 had significant financial problems (USDA 1985 *as cited in* Guynn & Steinbach 1987). Given such economic hardships, many commercial family-run farms are being forced to look to real estate markets in an effort to fray indebtedness. In Montana alone, the area in suburban tracts increased from 36,501 acres in 1963 to 289,876 acres in 1973, a 790 percent increase (Henderson and O'Herren 1992). By 1980, 48 percent of prime farmland and 33 percent of farmland of statewide importance has been subdivided into 20 acre lots (Missoula County Subdivision Inventory Report 1980 *as cited in* Mailboroda 1993). According to Oliver (1996), in 1996 less than half of private non-corporate acreage in Missoula County was in parcels greater than 80 acres.

Loss of habitat, which often results in both an overall decrease in the amount of habitat and discontinuity in the distribution of the remaining habitat, is probably the most important cause of species extinction in recent times (Akçakaya et al. 1997). One of the arguments for game farms is the fact that it allows for economic diversification within traditional agricultural systems and, therefore, enables landowners to avoid having to sell their property to developers. However, one must recognize that an eight-foot game-proof fence, which keeps animals from critical habitat, is as damaging to some migrating wildlife populations as a subdivision (Kahn 1993). "In some ways they [habitat loss from game-proof fences] may be more severe because such habitats are totally lost to native ungulate use" (Kahn 1993:500). For instance, "[a]n impassable wove wire fence kept antelope from reaching traditional winter range . . . during the winter of 1983-1984. Winter mortality in this herd was estimated between 3000-5300 antelope" (Moody 1983 *as cited in* Lanka et al. 1990:80). Additionally, habitat fragmentation can increase the susceptibility of certain wildlife populations to hunting pressure (Akçakaya et al. 1997).

Wildlife Poaching and Theft

As previously mentioned, one of the public costs associated with game farms is the loss of public wildlife as a result of increased poaching and theft. Valerius Geist, a leader of the game farm opposition movement, believes that placing a monetary value on

dead wildlife and wildlife parts will jeopardize wildlife conservation (Geist 1988). "Any time you have private enterprise involved in commercialization of wildlife you create the infrastructure for laundering poached wildlife and a legalized setting for moving wildlife" (Terry Grosz pers. com. *as cited in* Lanka et al. 1990:72-73). Increased poaching of wildlife whose parts are sold commercially has been evidenced in a number of wildlife species. Additionally, "[t]he demand for velvet antlers resulted in poachers entering national elk refuges, parks, and forests to kill elk in early summer for the antlers only" (Clawson no date *as cited in* Lanka et al. 1990:73).

In response to Geist's arguments, economists would argue that the creation of legalized markets for privately owned wildlife products may actually decrease wildlife poaching. According to economic theory, people respond to incentives. "Consumer demand for a wild species commodity affects both the price received for the product and the quantity and quality of the product harvested" (Freese 1998:48). Based on a simple supply and demand curve, prices increase when the demand for a particular product is greater than the supply. Thus, in the absence of legalized markets, high prices resulting from an unmet demand will increase the incentive to poach. Through the establishment of legalized markets, the supply of a particular wildlife product is able to meet - or exceed - the demand. In turn, prices fall and the incentive to poach is diminished.

In addition to price-based incentives, various property right regimes also effect the incentive structure surrounding the trade in wildlife products. According to Freese (1998), the private ownership of natural resource creates incentives for people to act for

the common good. Steven Landsburg (1993) argues that the situation regarding the over-harvest of elephant ivory was simply the result of the fact that no one owned the elephants. "The demand for beef is far greater than the demand for ivory, but cattle are not threatened with extinction. The key to the difference is that the cattle are owned" (Landsburg 1993:81). Recent experience in Africa, particularly in Zimbabwe and South Africa, has demonstrated that property rights can be an effective means of preserving resources (Freese 1998, Richardson 1994). "Giving local people an economic interest in the survival of elephants (as opposed to an interest simply in harvesting illegal ivory) might better, and more cheaply, preserve herds than outright prohibitions on killing" (Richardson 1994:4).

Although the creation of legalized markets for privately owned wildlife products may decrease the incentive for poaching, it may also result in an increased amount of wildlife theft from native populations. For instance, in May 1994, Kenneth Killorn, the proprietor of the Big Bull Elk game farm near White Sulphur Springs, Montana, was cited for falsification of government documents and theft of wild game (Jewett 1996a). According to an article in *Montana Wildlife*, "[h]e [Killorn] had doctored required paperwork to create a phantom herd of elk, and then stole wild elk to get his game farm numbers up to the size he was reporting" (Jewett 1996a:13). Another case of wildlife theft was settled in 1997, when "[o]ne of the most notorious game farms in Montana was . . . ordered by the courts to shut down its operation" (Anonymous 1997:6). Welch Brogan has operated his game farm in Corwin Springs, Montana since 1946, and has often been

called the grandfather of the state game farm industry (Anonymous 1997). Recently, the Montana Supreme Court revoked Brogan's game farm license because the Montana Department of Fish, Wildlife and Parks had discovered that he stole wild elk and placed them within his game farm enclosure (Anonymous 1997). According to an article in *Montana Wildlife*, "[h]is [Brogan's] outright thievery of publicly owned wild animals makes him a dubious model for an industry with a sad track record" (Anonymous 1997:6). Given that this type of wildlife theft is already a concern, it seems logical that in the absence of an increase in enforcement the amount of theft will increase as the numbers of operating elk farms increase.

CHAPTER 10

SOCIO-CULTURAL FACTORS

Hunting Ethics and Traditional Public Hunting

As previously mentioned, game farm owners often market guaranteed trophy hunting opportunities. Although such activities often result in a substantial income for game farm owners, many hunters feel that this type of hunting is unethical and sets the stage for increased public opposition to the tradition of hunting. "In 1989, approximately 16 million hunters or 7 percent of Americans bought hunting licenses to take part in what is now considered a right of citizenship in this country" (Satchell 1990 *as cited in* Lanka et al. 1990: 61). According to a 1980 survey of hunters: 43 percent hunted primarily for meat, 37 percent hunted for sport and recreation, 11 percent hunted to be close to nature, and 9 percent hunted to be with family and friends (Kellert 1980 *as cited in* Lanka et al. 1990). This study also revealed that: 85 percent of the American public approves of hunting for meat, while 62 percent disapprove of hunting game mammals for recreation and sport and 80 percent disapprove of trophy hunting (Kellert 1980 *as cited in* Lanka et al. 1990). According to the members of Wyoming's game farm review committee, "[g]iven the declining interest in, and growing opposition to hunting, hunting practices

which are detrimental to the image of hunters, and the future use of harvest as a management tool should be discouraged” (Lanka et al. 1990:64).

With regard to hunting ethics, many hunters find the act of hunting within a closed area “extremely repulsive” (Majors 1994:2). The Boone and Crockett club, founded in 1887, requires that hunters sign a fair chase statement in order to qualify a trophy (Lanka et al. 1990). The statement is as follows: “To make use of the following methods shall be deemed as unfair chase and unsportsmanlike, and any trophy obtained by use of such means is disqualified from entry: hunting game confined by artificial barriers, including escape-proof fencing; or hunting game transplanted solely for the purpose of commercial shooting” (Lanka et al. 1990:63). Private fee hunting within enclosed game farms does not allow for a fair chase; rather, “...this is about as sporting as driving into a livestock feed lot and shooting a steer” (Majors 1994:2). According to Hal Herring (1997:4), a writer for *High Country News*, “[t]his is trophy hunting 1990s style: safe, fast and expensive.”

An article within *Montana Wildlife* describes one Montana Elk rancher’s hunting operation as, “...a matter of taking the client out to a pasture in his pickup and allowing the client to shoot whichever bull he chooses” (Majors 1994:2). Earl Butler, a one-time foreman at the Big Velvet Ranch in Darby, Montana, left the ranch because, “[he] is a hunter, and what they do up there is not a hunt” (Herring 1997:4).

“Butler tells of guiding one ranch client who refused to leave the cab of a ranch pickup until the elk he wanted to shoot was driven on the road at close range. Another client shot a bull elk in the lungs, but didn’t kill it. For reasons Butler has never understood, the man refused to kill the animal with

a follow up shot. The elk staggered down a hillside to the ranch fence beside a public road, where it stood before passers-by, blood spraying from its nostrils with every breath for 20 minutes before collapsing" (Herring 1997:4).

Len Wallace, the proprietor of the Big Velvet Ranch, argues that private fee hunting is no different from hunting anywhere else, since all animals are confined to some degree by highways, cities and rivers (Herring 1997). However, many hunters and hunting organizations do not agree with Wallace's logic. In their opinion, game farm trophy hunting operations are not only repulsive, but they also pose a threat to North America's tradition of public hunting (Gutkoski 1994). "In addition, this type of activity provides the anti-hunter with material to use in their campaign to eliminate our opportunity to hunt" (Majors 1994:2). Greg Tolleston, a writer for the *Missoulian*, states that "we should not hesitate to condemn this type of activity and distance ourselves from it" (Majors 1994:2).

According to a *Montana Wildlife* article, "[t]he spin-offs from problems related to the [elk] industry have the potential to change the culture of Montana wildlife and hunting as it has been for decades" (Anonymous 1994b:15). Many hunters and hunting organizations are not only concerned with the negative images associated with trophy hunts on game farms, they are also concerned with disease. For instance, our country's public wildlife asset can easily be turned into a human health hazard by an outbreak of tuberculosis (Gutkoski 1994). "Think of the scenario of the public hunter, not purchasing a[n] elk or hunting permit because he is fearful of catching tuberculosis" (Gutkoski 1994:1). In 1989, hunters spent \$517 million on self-imposed taxes (Satchell 1990 *as cited in* Lanka et al. 1990), which are then used to finance wildlife research and

management as well as habitat acquisition and improvement (Lanka et al. 1990). In turn, game farms not only pose a threat to the tradition of public hunting in North America, they also compromise the future of wildlife conservation and management.

Animal Welfare Issues

A second cultural factor influencing the public context surrounding game farming is that the velvet process, which is currently the primary economic market for farmed U.S. elk, is considered inhumane by many animal welfare activists. "The hideous deantlering of male animals in the velvet panders to our most basic instincts" (Gutkoski 1994 14). Similarly, Valerius Geist questions why bestial cruelty to game farmed elk is endorsed in order to fatten the profits of warehouses in Seoul, Hong Kong, Bangkok, and Tokyo (Williams 1998). In response to the claims made by animal welfare activists, many elk farmers argue that velveting is no more inhumane than any of the other things people do to livestock, since the bulls are thoroughly anesthetized (Williams 1998). However, animal welfare activists state that the means employed to anesthetize these animals are ethically questionable.

In order to prepare a bull for the deantlering process, he is led down a narrow chute where hydraulic vices tighten around the bull's head and body (Herring 1997). Since Asian buyers complain that drugs contaminate the velvet, electricity is used to immobilize the animal (Herring 1997). Electrodes are attached to the bull's lip and anus,

and a current is directed through his body (Herring 1997). A tourniquet is then tied where the antler meets the skull, and the antlers are amputated with a handsaw (Herring 1997).

Social Construction of Wild Elk

According to Lanka et. al. (1990), many Rocky Mountain residents claim that their perception of the value of wildlife and the wild places that support them is often very personal. “Wildlife is a way of life . . . It permeates our thinking, coloring the way we handle jobs, homes, and families” (Lanka et al. 1990:84). With regard to elk, many Rocky Mountain residents have a strong social construction of elk as a symbol of “wildness, freedom and intellect” (Anonymous 1994a:15). In turn, they are opposed to the images associated with farmed elk populations. “Networks of fenced pastures, filled with penned wildlife, that were free-roaming only a generation ago, diminishes their nobility ” (Gutkoski 1994:14). According to an article in *Montana Wildlife*,

“[t]he animal is prized, revered, and respected because of its strength, adaptability, but mostly because of its intellect. Montana’s herds are pure and wild; wildlife enthusiasts view then animal in almost mythical terms. See an elk, and excitement quickly gives way to silence, as the mere act of watching this magnificent animal stirs one’s personal bridge to nature in ways unique to outdoor experience. That’s why for many the penning of elk for commercial purposes violates the sanctity of the animal’s being.” (Anonymous 1994a:15)

Given this highly emotional portrayal of wild elk herds, it is inevitable that communities of place -and interest that identify with elk will oppose public policy outputs that result in the denigration of this animal’s integrity.

CHAPTER 11

DISCUSSION

Based on a review of product information and market trends, the short-term prospect for the elk industry seems very promising. Elk farming appears to constitute a viable option, at least in the short-term, for ranchers and rural communities seeking to diversify their economic base. Since breeding stock and velvet markets are currently providing very high profit margins, the short-term prospects for the elk industry seem very promising (Hudson & Burton 1993). Although both breeding stock and velvet markets will eventually stabilize, hunting/tourism and venison currently represent untapped U. S. markets with a strong potential to yield high future profits. However, the true test of economic viability will come when the numerous government subsidies that are currently provided to the elk industry are removed. In addition, the future success of this industry will likely be affected by public opinion regarding the ecological, economic, and socio-cultural impacts associated with elk farming. Thus, when assessing the long-term viability of the elk industry, the aforementioned impacts must be carefully evaluated.

Although game farming provides a less intensive and more efficient means of agriculture, it is evident that game farms pose a threat to native wildlife populations. First, given the ineffectiveness of the testing technology available for disease control and the close association between farmed and wild elk populations, many believe that game

farms present an unduly high risk of disease development and transmission. When infected farmed animals escape, they become a threat to the health of native wildlife populations, as well as domestic livestock and humans. "Unfortunately, there are no sure means to control or eradicate these diseases once they occur in an area. Many disease cannot be effectively treated once the disease enters free-ranging wildlife" (Thorne et al. 1982 *as cited in* Lanka et al., 1990:25). According to the members of the Wyoming Game Farm Review Committee, "[t]he only way to protect wildlife is to be sure these diseases aren't brought into the state. Given the inefficiency of control, this is an unacceptable risk (Samuel 1987 *as cited in* Lanka et al., 1990:25) to the state's wildlife resources and livestock herds" (Lanka et al, 1990: 24-25).

Wildlife supporters are also concerned with increased habitat fragmentation. Even though economic diversification may spare large tracts of land from subdivision, game farms contribute also to habitat fragmentation. First, game farms are required to employ game proof fences. In turn, unlike traditional cattle ranches, game farms create a barrier between native wildlife populations and critical habitat. Second, the success of game farms is affected by market fluctuations. Therefore, the tract of land is only spared as long as the elk products are economically favorable.

Finally, there is a concern regarding possible increases in levels of poaching/theft as a result of game farms and the creation/reinforcement of wildlife markets. Valerius Geist (1988:16 and 21), a leading opponent to the game farm industry feels that, "[c]urrent efforts to legalize retail trade in wildlife . . . will destroy the basic policies by

which North America's system of wildlife conservation operates.. The lack of legal markets in game is probably responsible in North America for a fairly effective, cheap and civil system of wildlife protection." On the other hand, economists argue that the creation of legalized markets for privately owned wildlife products will actually reduce the pressure placed on wild stocks through the removal of incentives for poachers. However, the reduction in wildlife poaching may be mediated by an increase in the numbers of live elk that are stolen from native wildlife populations.

Although elk farming represents a viable short-term economic diversification strategy for the private rancher, it can be argued that the majority of costs associated with this industry are borne by the public. First, elk play a pivotal role in the culture and economy of many Rocky Mountain communities. In turn, there is a strong opposition to the game farm movement within the Rocky Mountain Region. Given the currently high value of Rocky Mountain wildlife, many people are opposed to game farming. The millions of dollars that wildlife contributes to Montana's economy clearly indicates the importance of maintaining free-ranging, native populations of wildlife not just for hunting, but for the millions of people who visit Montana to view its wildlife. Additionally, "[s]port hunting in the United States is a multi-million dollar business. . . With sport hunting of free-ranging wildlife, economic benefits are spread throughout the economy and less concentrated in the hands of a few individuals" (Lanka et al 1990:79-80). According to Geist (1988), the commercialization and privatization of wildlife will reduce the public's interest in wildlife, because it will be concentrated in the hands of a wealthy minority for

their exclusive use. Many wildlife enthusiasts and hunters are also concerned about the threats to native populations and the divergence of wildlife allocated funds. Additionally, most hunters are strictly opposed to private fee hunting, and are concerned about its use by the anti-hunting movement. Finally, members of the animal welfare lobby, which was responsible for the European ban on velvet, are waging a campaign against the U.S. industry

PART III
RESEARCH FINDINGS

As previously stated, historical accounts of game farming extend into antiquity. According to the journals of early Canadian explorers, North American settlers quickly recognized the favorable disposition of moose, and domesticated them for use as draft animals (Moodie and Kay 1976, Syroechlovsky et al. 1989 *as cited in* Renecker 1993a). In 1905, an extension pamphlet originating from the U.S. Biological Survey gave details of wildlife husbandry (Haigh 1993). Although game farming has a long history within North America, of game farms within the Rocky Mountain Region initially developed in response to the near extinction of U.S. wildlife populations in the late 1800s. These game farms were designed to raise wild or semi-domesticated animals for release (Brown et al. 1994). For instance, “[t]he genetic roots of plains bison populations were largely derived from 54 calves that were caught and raised by . . . private individuals” (Renecker 1993a:18). According to Renecker (1993a:19), “[t]his historical event was of great consequence in the conservation of the species and delivers a message about the role of the farmer in wildlife management.”

Currently there are approximately 41,330 individual cervids that are commercially raised in the U.S., with elk farming occurring in 16 states (Renecker 1993a). Five states allow pure (not red deer or hybrid) elk farming, while seven permit game farming under a grandfather clause (Renecker 1993a). Although estimates concerning the actual number of captive elk within the U.S. vary, Renecker (1993a) believes that there were 20,000 captive elk located on 500-700 game farms in 1992. Most elk stock on U.S. game farms originated from surplus animals, which were translocated from Yellowstone

National Park between the period of 1892-1967 (Rich 1993, Renecker 1993a). "For instance, figures from 1966-1967 indicate that a total of 1538 wapiti [elk] went to Indian bands, ranches and private citizens in several states" (Robbins et al. 1982 *as cited in* Haigh 1993:67).

Although there were a few laws and regulations in place prior to 1990, game farming became a legally recognized industry in Montana in 1917, most governments only began to look at the game farming industry since that time (Lanka 1993, Brown et al. 1994). One of the main debates surrounding the regulation of U.S. game farms focuses on which government agencies should handle the regulations.

"Part of the debate over jurisdiction over wild resources is simply a question of turf. Wildlife agencies are protective of their territory and there is a long-standing history of antagonism between departments of agriculture and wildlife, nowhere more than in North America. Hence the schism that occurs today on the subject of game ranching. Wildlife agencies perceive the animals as captive wildlife, agriculturists view them as alternative livestock." (Haigh 1993:67).

Within the Rocky Mountain Region (both the U.S. and Canada), game farm regulatory authorities vary. Wildlife agencies govern game farming in Wyoming, while agricultural officials have sole jurisdiction over game farms in British Columbia; there is combined jurisdiction in Alberta (mostly agriculture), Colorado, Idaho and Montana (Lanka 1993).

In addition to disparity between the states and provinces regarding the regulatory authorities governing game farms, there are also concerns regarding the facility design, importation and exportation regulations, and record keeping (Croonquist 1993). A survey of 15 western states and four Canadian provinces found six recurrent concerns

surrounding game farming: (1) escape, (2) transmission of disease, (3) hybridization, (4) social and habitat competition, (5) costs of control and enforcement, and (6) potential impacts on public hunting (Lanka et al. 1990). According to Lanka (1993), the current trend in Rocky Mountain game farm regulation is to tighten management restrictions. However, Lanka notes that “. . . the protection of the West's irreplaceable wildlife resources is only as secure as the regulations of the weakest state” (Lanka 1993: 45). The implications associated with the game farm industry are both regional and international; thus, highlighting the importance of a comprehensive assessment of game farm regulations. Such an assessment will not only provide insight into successful management systems, but will also help identify areas of potential conflict, which may have a tremendous impact on the future success of game farming as a regional and international activity

CHAPTER 12

HISTORICAL ANALYSIS OF MONTANA GAME FARM POLICY [ELK]

Game farming became a legally recognized industry in 1917, by the 15th Legislative Assembly of Montana (Brown et al 1994). Although attempts were made to design regulations to govern this industry, they were vague and general in nature (Brown et al. 1994). Session Law, Chapter 173, Section 84, 1917, made it lawful for any person to engage in stocking, capturing, raising and owning any of the wild animals or birds of the State of Montana in a privately owned or leased, and entirely enclosed, game preserve. In order to operate such a business, the prospective game owner was required to pay a \$25 license fee to the State Fish and Game Commission, the governing agency. Once a preserve was established, a game owner was allowed to sell privately owned game; however, a \$5 fee was required for each sale of wild animals.¹ Section 85 of the 1917 Session Law also established penalties for misdemeanors and felonies under this Act.

During the 16th Legislative Assembly in 1919, existing game farm laws were amended to strengthen monitoring practices and increase the accountability of game farmers (Brown et al. 1994). Session Law, Chapter 200, Section 1, 1919, deemed it lawful for any person(s), company, or association, upon payment of a \$5 annual license

¹ The fee for the sale of wild birds was \$1.00.

fee, to engage in propagating, owning and controlling wild game birds and game animals of the State of Montana. In addition, a prospective game farm owner was required to file an application with the State Fish and Game Commission stating the location of the farm and the game species proposed to be raised. Under the 1919 Session Law, capture permits limiting the number of game birds or quadrupeds obtained for founding stock were also established. Another amendment to the 1917 Session Law stated that game breeders could sell, transfer or dispose of privately owned game without restriction. However, in order to prevent the short-term over-exploitation of wildlife commons under the guise of game farming, a game owner could not sell any quadruped of the product of such game farm for a period of three (3) years (Brown et al. 1994). Finally, an annual report of such game business was required.

During the 1921 and 1923 Legislative Assemblies, game farm statutes were not amended. Session Law, Chapter 173, Section 84, 1917, as amended by Session Law, Chapter 200, Section 1, 1919, was included in the 1921 version of the Revised Codes of Montana (RCM) (RCM 276-3777). Similarly, Session Law, Chapter 173, Section 85, 1917, which was not amended during the 1919 Assembly, was included in the 1921 RCM (RCM 276-3778).

Game farm legislation was revisited during the 19th Legislative Assembly in 1925, and was amended in several ways. The first amendment under Session Law, Chapter 192, Section 31, 1925 made it lawful to also propagate, own and control fur-bearing animals. Although fur farm operators were held to the same regulations as game farmers, certain

fur-bearing animals, which were captured as foundation stock, were subject to the same tax as their pellets. A second amendment under the 1925 Session Law required that a game or fur farm applicant show that the proposed location was fenced. This change was initiated in an effort to prevent the intermingling of wild and privately owned animals. Thirdly, the three year waiting period that was required prior to the sale of captive animals was revoked. However, a game or fur farm operator was required to report each sale to the State Game Warden, in addition to the submission of an annual business report. Finally, Session Law, Chapter 192, Section 31, 1925 established penalties for trespassing within a permitted, enclosed game or fur farm.

Between the period of 1925-1933, three Legislative Assembly sessions were conducted; however, game and fur farm legislation was not substantially amended. During the 23rd Legislative Assembly, 1933, the 1925 Session Law was amended in one area. Session Law, Chapter 73, Section 1, 1933 revoked the \$5 annual license fee. Game and fur farm regulation was not further amended during the 1935 Legislative Assembly, and is incorporated in the 1935 RCM (RCM 308-3777 and 3778).

The 1935 RCM was not further amended until the 30th Legislative Assembly in 1947. Session Law, Chapter 120, Section 1, 1947 was drafted in an attempt to rectify problems associated with previously vague regulations, and the lack of a specific mandate stating the enforcement responsibilities of the State Fish and Game Commission (Brown et al. 1994). First, any person(s), firm, company or corporation was required to procure a State game or fur farm permit before engaging in the business of operating such a farm.

Additionally, Session law, Chapter 120, Section 1, 1947 noted that only responsible parties who fenced their farms with State Fish and Game Warden approved fencing material would be issued operating permits. The 1947 Session Law also opened game and fur farms to complete inspection by the State, and stated that game and fur farm permits would be renewed if an annual report was filed by January 31 documenting the number and species of animals on hand prior to January 1, on January 1, and the number and species of animals pelted, bought or sold during the year. Finally, Session Law, Chapter 120, Section 1, 1947 classified trespass violations as misdemeanors.

Following the 1947 RCM, game farm legislation remained unchanged until 20 years later, during the 40th Legislative Assembly, 1967. The 1967 Session Law, and the subsequent RCM (RCM 26-1201--originally RCM 3777)¹¹, excluded migratory game birds from private ownership, propagation, or control. In addition, Session Law, Chapter 43, Section 1, 1967 required that the skins, pelts or products of beaver and marten were tagged. These tags cost five (5) cents each, and were purchased from the State Fish and Game Commission.

The 1947 RCM was further amended in 1969 and 1971. Session Law, Chapter 130, Section 1, 1969 defined roadside menageries and zoos, and required that they were controlled and regulated by the State Fish and Game Commission. This section also outlined the regulations that governed such operations. Session Law, Chapter 78, Section

¹¹ The RCM, which was published during this time period, is classified as the 1947 RCM. However, the 1947 RCM was published in volumes over a period of time; in turn, the 1967 amendments are included in the final version of the 1947 RCM.

I also amended the 1947 RCM in 1971. This section excluded buffalo from other game animals, which were governed under the 1947 RCM (RCM 26-1201--originally RCM 3777). Section 26-1201 of the 1947 RCM was also amended in 1977. However, these amendments functioned to clarify existing definitions within the legislation; substantive changes were not made during the 45th Legislative Assembly. These amendments were incorporated into the 1947 RCM as the 1977 supplement (RCM 26-1201). During the 46th Legislative Assembly in 1979, the State Fish and Game director was renamed as the State Fish, Wildlife and Parks director. This change was also incorporated into the 1979 RCM (RCM 87-4-403).

A great deal of controversy began to surround game farming in the early 1970s as public opinion regarding this industry became increasingly polarized (House Fish and Game Committee Minutes, Exhibit 4, 1983). The most controversial issues were: (1) game farm escapes and the subsequent transmission of disease transmission to native wildlife populations, domestic livestock, and humans, (2) the fragmentation of native wildlife habitat as a result of game farm fences, and (3) the moral and ethical issues surrounding the ownership of wild animals (Brown et al. 1994). This controversy culminated in a lawsuit between the Department of Fish and Game and the Big Horn Game Ranch in 1977 (House Fish and Game Committee Minutes, Exhibit 4, 1983).

As a result of increasing problems with the game farm industry, a very controversial bill was introduced during the 47th Legislative Assembly. According to Ed Smith, a member and chairman of the Senate Fish and Game Committee in 1981, "[t]his

ended up in a free-for-all between the Fish, Wildlife and Parks and the game farm operators. After hours and even days of deliberation, our committee could see there was no way of resolving their differences. What we did was table the bill and directed the Fish, Wildlife and Parks Department, the game farm operators, and the Department of Livestock to get together, work out the differences, and come back to the 1983 session with a bill" (Senate Fish and Game Committee Minutes, Exhibit 7, 1991 1). Thus, the charge of the game farm task force was to develop legislation that clarified game farm regulations and assigned agency jurisdiction (House Fish and Game Committee Minutes, Exhibit 4, 1983).

Based on the recommendations provided by the Game Farm Task Force, Senate Bill 448 was formed and introduced into the 48th Legislative Assembly by Senators Lane, Towe, E. Smith, Boylan, Christien, Fuller, Galt and Mazurek. Senate Bill 448 repealed existing game farm law (M.C.A. 87-4-401 through 87-4-405) and established a new framework for game farm regulation within Montana.¹² Under SB 448, the following animals could be privately owned: caribou, bear¹³, mountain lion, white-tailed deer, mule deer, elk, moose, antelope, mountain sheep or mountain goat or any other cloven-hoofed ungulate as classified by the Department of Fish and Game¹⁴. In order to obtain a game

¹² Senate Bill 448 also addressed game bird and fur farms.

¹³ This was amended to read 'black bear' in 1985 (SB 371).

¹⁴ Senate Bill 448, section 3, states that the Department of Fish and Game has primary jurisdiction over game farms; however, game farm licensees must also comply with Department of Livestock regulation, which address disease concerns (Senate Fish and Game Committee Minutes 1983).

farm license, a potential operator was required to submit an application providing a legal description of the land¹⁵, the species of animals to be raised, the source of the foundation stock¹⁶, a description of fencing plans, and information demonstrating that the applicant is responsible (SB 448 1983). Upon receipt of an application, a representative from the Fish and Game Department was to inspect the premise and, if acceptable, issue a non-transferable license for an initial fee of \$100¹⁷ (SB 448 1983).

Once a game farm license was granted, an operator was required to attempt the removal all wild animals from the premise at his/her expense (SB 448 1983). If the operator was unable to remove all of the wild animals, a Fish and Game representative attempted to either trap the animals or scheduled a public hunt on the premise (SB 448 1983).¹⁸ If these attempts were also unsuccessful, any remaining animals became property of the game farm operator (SB 448 1983). Once an animal was considered private property, "[t]he licensee [could] acquire, breed, grow, keep, pursue, capture, kill, use, sell or dispose of the game farm animals and their progeny in any quantity, at any time of the year, and in any manner, as long as he [she] [complied with the requirements. " (SB 448

¹⁵ According to SB 448, the premises must be owned or leased by the operator.

¹⁶ Under SB 448, the capture of public wildlife for use on a game farm is prohibited; therefore, foundation stock must be purchased from other game farms.

¹⁷ The annual renewal fee was \$25 (SB 448 1983). These fees were to be placed in a fund reserved for the costs associated with game farm regulation (SB 448 1983).

¹⁸ The administrative costs associated with the public hunt are borne by the operator (SB 448 1983).

1983·6).¹⁹ Although hunting was allowed on game farms, the licensee was required obtain a game farm shooting permit and a tag (\$15/tag) from the Department of Fish and Game; however, game farm hunts were not required to comply with the normal Fish and Game license (SB 448 1983). With regard to game farm escapes, a licensee was to notify the Fish and Game Department immediately and make every reasonable effort to recapture the animal (SB 448 1983). "If the escaped animal cannot be recaptured within a reasonable time, it becomes property of the state" (SB 448 1983·9).

Since the game farm task force created SB 448, the bill was widely supported within the Senate Fish and Game Committee Hearing (Senate Fish and Game Committee Minutes 1983). The only concerns that were raised dealt with specific language within the bill, but not the overall intent of SB 448. Thus, SB 448 unanimously passed the Senate with the stipulations that amendments would be drafted. The amended version of SB 448 passed the House Fish and Game Committee with 13 'yes' votes and was incorporated into the 1983 M.C.A. (87-4-406 through 87-4-423).

In 1991, Montana's game farm industry was rapidly expanding. In turn, House Bill 556 (HB 556) was introduced into the 52nd Legislative Assembly (1991). Missoula Representative Bob Ream, who sponsored HB 556, classified game farming as an industry in need of control. He felt that neither the Department of Fish, Wildlife and Parks nor the Department of Livestock had a good handle on this industry. According to Ream, HB

¹⁹ However, records must be kept for the transportation of live animals or the disposal of dead animals (SB 448 1983). These figures must be included in an annual report, and the actual records must be maintained for three years (SB 448 1983).

556 was developed in order to help stop illegal trade in wildlife, the transmission of disease, and the problems associated with the introduction of exotic species. In order to accomplish these goals, HB 556 revised existing game farm statutes (1989 MCA 87-4-401 through 423) in the following manner: (1) restricted the importation of certain species of game farm animals; (2) revised the law regarding game farms and game farm animals, including the identification, transportation, and inspection of game farm animals and reports required of game farm licensees; (3) increased penalties for violations; and (4) required individual importation permits and health certificates for game farm purposes.

In total, 12 visitors²⁰ provided testimony in support of HB 556 during the 1991 House Fish and Game Committee Hearing, while 1 visitor²¹ provided testimony stating that he was opposed to HB 556. In addition, thirty-three visitors²² attended the committee

²⁰Those visitors who provided testimony in support of HB 556 were: one (1) representative from the Department of Livestock, one (1) representative from the Department of Fish, Wildlife and Parks, three (3) game farmers, one (1) representative from the Montana Elk Breeders Association, one (1) representative from the Montana Audubon Legislative Fund, one (1) representative from the Montana Wildlife Federation, one (1) representative from the Montana Chapter of North American Elk, one (1) National Geographic author/researcher, and two (2) unknown.

²¹ Garth Isbell, a game farm operator

²² The 33 visitors present represented the following interests: 12 game farm owners, one (1) member of the executive board of directors of the North American Elk Breeder Association, one (1) representative from Montana Elk Breeders Association, one (2) representatives from the Montana Chapter of North American Elk Growers, one (1) representative from a cattle company, one (1) representative from the Montana Wildlife Federation, one (1) representative from the Sun River game park, one (1) representative from the Montana Retail Association, one (1) representative from Montana Fish, Wildlife and Parks, one (1) representative from the Department of Livestock, one (1) representative from the Montana Audubon Legislative Fund, one (1) representative from the media, and nine (9) who did not identify their affiliation.

hearing on HB 556.²³ Of these 33 visitors, 23 supported HB 556, three (3) were undecided, six (6) were unaccounted for, and one (1) was opposed to HB 556 because he felt that it paralleled existing laws.

Pat Graham, Department of Fish, Wildlife and Parks, was one of the people who presented testimony to the House Fish and Game Committee supporting HB 556. According to Graham, 1991 game farm statutes could not adequately handle the growing interest in game farming (traditional and exotic species) in Montana and other western states and provinces. Graham outlined the primary concerns with the game farm industry as follows: (1) interbreeding between exotic animals and native wildlife, which could have irreversible effects on Montana's native wildlife; (2) competition between exotics and native species for limited wildlife habitat; (3) disease transmission between game farm animals and native wildlife and livestock; and (4) the illegal capture, transportation, breeding and sale of highly valued wildlife, such as elk.²⁴ In his opinion, "[t]he provisions of HB 556 provided significant improvements to safeguard Montana's native wildlife" (House Fish and Game Committee Minutes, Exhibit 11, 1991). Individual identification, as required under HB 556, would not only help if game farm animals mixed with native

²³ All of the visitors did not provide testimony, most signed a checklist stating whether they supported or opposed HB 556.

²⁴ According to Pat Graham (FW&P), there are cases on record regarding the illegal capture of wild elk dating back to the 1970s (House Fish and Game Committee Minutes, 1993).

wildlife, but would also help prevent the illegal capture of elk.²⁵ In addition, HB 556 required a quarantine period for diseased game farm animals, in order to alleviate the threat of disease transmission. Finally, HB 556 clarified that criminal and civil statutes may be assessed in addition to, or instead of, revoking a license. The 1989 MCA provided only for the revocation of a license for failure to operate a game farm according to law, which had proven to be a problem in the prosecution of some violations (House Fish and Game Committee Minutes 1991).

Constance J. Poter, who researched the illegal trade in wildlife in America for National Geographic also presented testimony in support of HB 556. According to Poter, ".it's become clear that the elk farm industry is by far the most lucrative of businesses that exploit wildlife parts, and that a significant reason for the tremendous profit margin is the illegal capture and transport of wild elk" (House Fish and Game Committee Minutes, Exhibit 15, 1991). Montana has become the center of illegal activity, supplying elk to other states and Canada. For instance, in January 1991, an Alberta rancher was caught smuggling illegally captured elk from Montana²⁶ In addition, "Sonny" Welch Brogan, a Montana game farm operator²⁷ whose ranch is situated within an elk migration route, has

²⁵ Graham cited the fact that people killed native elk and attached game farm tags; thus highlighting the importance of individual identification (visual identification or lip tattoos).

²⁶ Several of these elk escaped into the wild, and at least two of the remaining elk were found to have tuberculosis.

²⁷ Brogan is known as the father of the game farm industry, and is a major player in the elk industry. For instance, Brogan shipped two 747 plane loads of elk to Korea in the early 1980s, and supplied newly developing Canadian game farmers with foundation stock

often been found holding more elk than his records cover. "A common practice is to exaggerate the actual number of elk a ranch has, so that when wild elk are trapped, they will be covered by papers. And no wonder. When a legal, domestic elk costs \$7,000 a head, the temptation to acquire free elk is hard to ignore, especially when penalties are minimal." (House Fish and Game Committee, Exhibit 15, 1991). As of 1991, Brogan had not been charged with wildlife theft because the law requires that the rancher be caught in the act of capture. Once contacted by Game Wardens, Brogan would return the illegal elk back to the wild; this has caused additional problems because Brogan's privately owned elk have been infected with tuberculosis since 1989.²⁸

Poten also mentioned other concerns associated with game farming, such as interbreeding between exotics and native wildlife populations and disease transmission.

" [T]he profits from an industry that has so many potential impacts on wild herds--owned and supported by the public--don't really look like profits anymore. The odds against game farms make them look like a poor bet when the \$25 million dollar hunting industries of Wyoming, Idaho and Montana are threatened, as they are now by the tuberculosis scare, and the money spent for land to protect elk in the wild becomes money gambled away. . . Montana needs to carefully consider the potential of having to subsidize an industry based on high risk ventures." (House Fish and Game Committee Minutes, Exhibit 15, 1991).

(House Fish and Game Committee Minutes, Exhibit 15, 1991).

²⁸ It is known that Brogan had at least 80 illegally captured wild elk, which intermingled with the diseased herds prior to release (House Fish and Game Committee Minutes 1991).

Finally, Poten provided a comparison between Montana's game farm policy and other Rocky Mountain States highlighting that Wyoming and Washington State have recognized the problems associated with game farms and outlawed them, while Colorado has severely restricted them. With regard to HB 556, Constance labeled it as, “. . . a sound beginning for cutting the losses” (House Fish and Game Committee Minutes, Exhibit 15, 1991).

Within the introduced version of the bill, section seven (7) restricted the following species: (1) all Eurasian red deer unless surgically sterilized, all Eurasian sheep and goats in the subfamily Caprinae unless surgically sterilized, and (3) white-tailed deer from east of the 100th meridian in North America²⁹. However, game farmers, who presented testimonies before the House Committee on Fish and Game, stated that they were opposed to the regulations imposed on the importation of exotic species under the introduced version of HB 556.³⁰ In turn, HB 556 was amended and restrictions were not placed on specific animals. Under amendment A, the governing agencies (MFWP and DOL) were allowed to place restrictions on the importation of certain species. High risk species were to be determined through a scientific investigation of the associated threats to wildlife or livestock.

²⁹ White-tailed deer were to be prohibited in order to prevent the transfer of meningeal worm, which is found in eastern white-tailed deer.

³⁰ These testimonies accounted for two of the total five, which were presented.

A second contentious section within HB 556 dealt with penalties. House Bill 556 section five (5) states that, “. . . a person who violates this part or a rule adopted under this part is subject to a fine of not less than \$5,000 or imprisonment in the state prison for not less than 1 year, or both” (bill text, 1993:5).³¹ However, it was argued that these penalties were excessive; in turn, amendment B was proposed. Amendment B stated that, “. . . a person who violates this part or a rule adopted under this part is subject to a fine of not more than \$500 or imprisonment in the county jail for not more than 1 year, or both” (House Fish and Game Committee Minutes, Exhibit 10B, 1993:1).³²

Finally, amendment C addressed the identification of game farm animals, and altered the original requirement for individual identification under the introduced version of HB 556 (section 2). This amendment required ‘ownership’ identification, rather than ‘individual’ identification. “This amendment gained mixed support with concerns over the efficacy of existing identification technology” (Brown et al. 1994:11). In particular, Representative Bob Ream stated that he, “. . . does not support amendment C until identification technology is improved” (House Fish and Game Committee Minutes, 1991:6).

The final decision of the House Fish and Game Committee was to pass HB 556 as amended. However, during the executive session on HB 556, there was further discussion regarding amendments A (exotic species), B (penalties), and C (animal

³¹ These penalties were in addition to the revocation of a game farm license.

³² These penalties were in addition to the revocation of a game farm license.

Identification). Both amendments A and C were adopted by the committee; amendment B was altered to read, “. . . a licensee who violates this part or a rule adopted under this part is subject to a fine of not more than \$5,000 or imprisonment in the county jail for not more than 1 year, or both” (House Fish and Game Committee Minutes, 1993 10).³³

Once the amended version of HB 556 passed the House, a second hearing was held within the Senate Fish and Game Committee. During this time, many game farmers expressed that they had not been adequately informed about HB 556 prior to its introduction. In turn, a large percentage of the game farming community attended the Senate hearing and strongly voiced their opposition to this controversial bill. Additionally, those game farm representatives who did support HB 556 during the House hearing were upset that the committee passed HB 556 without all of the amendments (Senate Fish and Game Committee, Exhibit 10, 1991). Bob Spoklie³⁴ stated that game farmers agreed to support HB 556 during a meeting held between Ream³⁵ and the House Fish and Game Committee prior to the hearing because it was understood that the amendments would be acknowledged--this was not the case.³⁶ Similarly, Ellen Schubarth, who raised exotic animals, noted that “[u]pgrading game farm violations from a misdemeanor to a felony is

³³ These penalties were in addition to the revocation of a game farm license.

³⁴ Game farm owner and representative for both the North American Elk Breeders Association and the Montana Elk Breeders Association who presented testimony in opposition to HB 556 during the Senate hearing.

³⁵ Bob Ream sponsored HB 556.

³⁶ Amendment B was altered before HB 556 was passed by the House committee.

inequitable justice. Fact: there is no jail time and only minimal fines for the crime of involuntary manslaughter” (Senate Fish and Game Committee Minutes, Exhibit 18, 1991:2). These comments highlight the fact that game farmers feel they are being treated unfairly – targeted – by the Department of Fish, Wildlife and Parks.

As a result of the controversy surrounding HB 556, game farmers and game farm representatives provided testimonies stating that this bill was not well researched and requested that HB 556 be tabled until the next legislative session. Ed Smith, a former legislator who sponsored SB 448 in 1983, stated that,

“ . . . a game farm has the right to operate in Montana the same as I do in my cow/calf operation, as long as they keep their animals enclosed, and they keep wildlife from entering those enclosures. . . . Many of these people that are in this business have found as I have, that you cannot survive just raising grain, so they have gone into raising exotic animals to supplement their farm income” (Senate Fish and Game Committee Minutes, Exhibit 7, 1991:2).

He also stated that he felt HB 556 was poorly written, and suggested that HB 556 be tabled so a committee could organize and draft new legislation for the 1993 session. According to Bob Spoklie, “[t]his will give the game operators an opportunity to work with all agencies involved; the Livestock, Fish and Game, and the Department of Revenue³⁷ time to introduce sound legislation to govern our industry” (Senate Fish and Game Committee, Exhibit 10, 1991:2).

³⁷ The taxation of game farm animals was also a contentious issue during this time.

Overall, 38 visitors³⁸ attended the Senate hearing on HB 556. Of these 38 visitors, five (5) supported HB 556 while 33 were opposed³⁹. In addition, three (3) visitors provided testimony in support of HB 556⁴⁰, while 10 stated that they were opposed⁴¹. Those visitors who provided testimonies in support of HB 556 highlighted exotics (interbreeding and competition), disease transmission, and the illegal capture of wildlife as reasons for increasing the regulation of the game farm industry. On the other hand, those who provided testimonies in opposition to HB 556 noted the private economic benefits of game farming as an economic diversification strategy in areas where traditional agriculture and/or resource extractive industries were in decline. It was also felt that many of the amendments to the existing laws were already covered by other regulatory agencies (Senate Fish and Game Committee, Exhibit 10, 1991).

³⁸ The 38 visitors represented the following interests: 28 game/exotic farmers, one (1) representative from the Department of Fish, Wildlife and Parks, one (1) representative from the Montana Audubon Legislative Fund, one (1) representative from the Department of Livestock, one (1) representative from the Montana Wildlife Federation, one (1) representative from the Montana Farm Bureau, one (1) representative from the Montana Elk Breeders Association, three (3) visitors represented themselves, and one (1) was unknown.

³⁹ It is interesting to note that the visitor from Montana Wildlife Federation opposed HB 556.

⁴⁰ Those visitors who provided testimonies in support of HB 556 include a representative from the following organizations: the Department of Fish, Wildlife and Parks, the Montana Audubon Legislative Fund, and the Montana Farm Bureau.

⁴¹ Those visitors who provided testimonies in opposition of HB 556 include: a former legislator and game farm supporter, seven (7) game farmers (2 raised exotics), a representative from the Montana Elk Breeders Association, and a representative from the Department of Livestock.

In addition to the personal testimonies provided by visitors, outside information was also presented. For instance, Bob Ream provided a letter from Dr Valerius Geist-- who Ream considers to be an expert on the pitfalls of game farming. Within his opening paragraph, Dr Geist stated, "[a]s we now see daily, game ranching is so destructive, and costly to the public purse, the livestock industry, the interests of our native people and to public health, that it is best to return to the proven principles and ban ALL trafficking in dead wildlife" (Senate Fish and Game Committee Minutes, Exhibit 1, 1991:1). He then highlighted points that he felt should be included in game farm legislation: (1) it should be illegal to keep non-native subspecies of native species, improved versions of native wildlife, and exotics; (2) outlaw the transport of designated dangerous wildlife across the state; (3) insure that the taxonomy you use is valid and can be verified, or enforcement becomes a problem; (4) prohibit importation of any game farm stock from areas with known, serious diseases; (5) the law should stipulate that the game rancher be insured to cover potential problems with diseased and escaped animals; (6) exclude certain wildlife items from sale, in particular all trophies, all products from bears, as well as all velvet antlers and products derived therefrom; (7) there should be provisions for controlling the laundering of illegally acquired game; and (8) there should be provisions for making fence maintenance mandatory. Dr. Geist concluded his letter with the following statement,

"To allow game ranching is to strip from wildlife the policies that have protected it for 75 years and allowed a modest recovery. These protective policies are: a prohibition on private ownership of wildlife; outlawing markets in dead wildlife (fur excluded); allocating ALL wildlife for consumption by law, and prohibiting the frivolous killing of game animals. With game ranching we dismantle what three generations before us have built up to successfully protect our wildlife. I wish I

could say something good about this industry!" (Senate Fish and Game Committee Minutes, Exhibit 1, 1991:3).

In response to the letter from Geist, Bob Spoklie introduced a letter from J C Haigh, a professor from the University of Saskatchewan, who discounted Dr Geist's theories. First, Prof. Haigh pointed out that there has never been a reported case of TB in wild wapiti in North America. Additionally, Haigh questioned why cattle infected with TB should be considered any less of a threat to wildlife than farmed wapiti? Haigh also noted that, in certain instances, exotics are not more susceptible to disease than native North American species. "I cannot agree with Dr. Geist that wapiti in North America are likely to be a 'cesspool' of disease if they are managed properly" (Senate Fish and Game Committee Minutes, Exhibit 13, 1991:2).

Information was also provided from a recent Game Ranching Symposium held in Boise, Idaho. During this symposium it was noted that, "...regulations to govern the game farm industry are inadequate to protect the livestock industry, the game ranching industry, and wildlife resources in most jurisdictions in western North America" (Senate Fish and Game Committee Minutes, Exhibit 3, 1991:2). In turn, it was resolved that: (1) wildlife agencies should cooperate with state veterinarians, agriculture agencies, and public health agencies to develop comprehensive regulations to govern captive wild and exotic animals, (2) each state and province should adopt standards for disease testing, and (3) certain species should be banned from importation⁴².

⁴² The species that were identified were the same as those proposed in HB 556,

In an effort to repeal HB 556 section seven (7), which dealt with the restriction of exotics, an article highlighting the benefits of raising elk and exotics in Texas was presented. Within this article it was stated that if Texas game farmers could capture 40 percent of the existing venison market, "we're talking about 7.5 million dollars in direct income to the grower and about 32 million dollars in total economic impact to the state of Texas" (Senate Fish and Game Committee Minutes, Exhibit 9, 1991:3). Additionally, "[t]he Exotic Industry ought to be, by the end of the decade of the 90s, a Billion dollar industry in Texas" (State Fish and Game Committee Minutes, Exhibit 9, 1991:3).

In order to legitimate elk farming, on the whole, articles were introduced which explained the process of de-antlering and the medicinal properties associated with antler velvet. In addition, Brogan⁴³ presented an article discussing tuberculosis in humans. The article, entitled *The TB Panic Is Nothing to Panic Over*, stated that tuberculosis was extremely difficult for humans to contract.

Upon completion of the Senate hearing, HB 556 was discussed and amendments A (exotic species), B (penalties), and C (animal identification) were adopted. Thus, House Bill 556 passed in both the House and the Senate as amended, and became state law in 1991⁴⁴

excluding African antelopes.

⁴³ Owner of Cinnabar Ranch in Montana and a TB infected elk herd, which he shipped to Colorado and Alberta.

⁴⁴HB 556, as amended, was incorporated into the 1991 MCA (MCA 87-4-401 through 424).

Although 1983 game farm legislation (MCA 87-4-408) cited the Montana Department of Fish, Wildlife and Parks as having primary jurisdiction over game farms, it also required compliance with all applicable laws and rules administered by the Department of Livestock. However, “[f]rom 1920-1991 game farming was primarily a Fish, Wildlife and Parks licensing activity until the disease outbreak of 1991 when it rapidly became a legislatively mandated, shared responsibility between the livestock and wildlife agencies” (Ferlicka, 1993:59).⁴⁵ In November 1990, Alberta officials reported that a Montana elk, which had been transported, had died of tuberculosis (Ferlicka, 1993). The original herd of farmed Montana elk were tested, because they were a potential risk to the domestic cattle industry, and the infection was confirmed in these elk (Ferlicka, 1993). In addition, it was determined that the source of the original TB infected Montana elk was Nebraska (Ferlicka, 1993). In January 1987, “Sonny” Welch Brogan⁴⁶ purchased elk from a game farm in Nebraska, which were then transported to both Alberta and Colorado (Thorne, 1993). In May of 1991, TB was also confirmed in the elk that were shipped to Colorado (Thorne, 1993).

This controversial outbreak⁴⁷ led to the extensive testing of all Montana game farm cervid herds (Ferlicka, 1993). Although the majority of the 84 large game farms⁴⁸

⁴⁵ HB 556 section 1(2) inserted language concerning compliance with laws and rules relating to marketing, inspection, transportation, and health.

⁴⁶ See the testimony given to the House Fish and Game Committee by Constance J. Poten, during the 1991 committee hearing on HB 556.

⁴⁷ In addition to the livestock threats posed by Brogan's infected elk herd, the Cinnabar Elk Farm posed serious threats to the health of native elk populations. Brogan

were free of tuberculosis, a small percentage of herds were identified as TB infected (Ferlicka, 1993). These herds were either voluntarily depopulated, or quarantined as infected until repeated tests or new technology determines that no TB is present (Ferlicka, 1993). As a result of these events, the USDA sponsored a series of guidelines regarding the handling of TB infected cervids and TB standards for interstate movement of game farm cervids in commerce (Ferlicka, 1993). Given the geographic expanse of the potential ramifications of disease transmission, the guidelines quickly lead to a national consensus on the issue (Ferlicka, 1993). According to Dr. Don Ferlicka, Montana state veterinarian, “[w]ere it not for the 1991 TB outbreak, we may not have seen the rapid evolution of statutory game farm regulation that we did and we might not have seen the rapid maturity of the game farm industry into an industry deserving of the public trust, as we did” (Ferlicka, 1993:61).

Although Dr. Ferlicka believed that the game farm industry was deserving of public support, there were many activist groups who felt otherwise. In turn, 1992 was a politically important, conflict filled year for the game farm industry (Brown et al. 1994). As previously stated, the 1991 MCA (MCA 87-4-408) granted both the Department of Fish, Wildlife and Parks and the Department of Livestock broad regulatory authority, which was to be further clarified through the adoption of agency administrative rules. As

has a history of mixing wild and privately owned elk populations, and his ranch sits on the migration route of the Northern Yellowstone Elk herd (the largest migratory elk herd in the United States).

⁴⁸ Montana game farms with cervids numbering approximately 1,500 elk and several hundred deer (Ferlicka, 1993).

required under HB 556, the Montana Department of Fish, Wildlife and Parks initiated an effort to update game farm rules and statutes (House Fish and Game Committee Minutes, Exhibit 3, 1993). This effort culminated in the joint adoption of new rules by both MFWP and DOL, which was viewed as “. . .the first step in providing needed protection for Montana wildlife resources and the livestock industry” (House Fish and Game Committee Minutes, Exhibit 3, 1993:2).

In order to garner input from the public sectors involved in this issue, the rule making process included open public hearings; however, game farm industry supporters argued that they had been denied a fair opportunity to participate in the rule making process (Brown et al. 1994). Given the rising tensions between the game farm interests and the Montana Department of Fish, Wildlife and Parks, and the underlying threat of litigation, Governor Stan Stephens appointed a working group on game farms, which represented diverse interests⁴⁹, “. . .to address major game farm issues; to try to come to an agreement on how to address them; and develop legislation to be presented to the 53rd legislature” (House Fish and Game Committee Minutes, Exhibit 3, 1993:2).

The product of the working group's consensus building deliberations was House Bill 338, which was introduced by Representative Bob Ream, during the 53rd Legislative

⁴⁹ Wayne Phillips (Governor's Office), Jack Salmond and Jim Hagenbarth (Board of Livestock), Bill Fraser, who was replaced by Cork Mortensen (as Executive Secretary of the Department of Livestock), Elaine Allestad and Bill Stratton (FWP Commission), Pat Graham (deputy director, FWP), Les Graham and Ward Swanser (Montana Game Breeders Association), Dave Majors (Montana Wildlife Federation) and Bob Ream (State Representative). Personnel from FWP and DOL served as staff to the working group. (House Fish and Game Committee Minutes, Exhibit 4, 1993).

Assembly (House Fish and Game Committee Minutes, Exhibits 1, 3, and 5, 1993). There were 102 game farms⁵⁰ in Montana in 1993, with 24 application per year being processed, and the Department of Fish, Wildlife and Parks were concerned over about 10 percent of the operations (Senate Fish and Game Committee Minutes, HB 338 hearing, 1993 4 and 5). According to Mortensen's testimony⁵¹, HB 338 addressed the concerns of the regulatory agencies involved as well as maintained the viability of the game farm industry (House Fish and Game Committee Minutes, Exhibit 1, 1993). It was believed that this Act provided both agencies the tools necessary to effectively regulate the game farm industry; the game farm industry benefited from the establishment of clearly defined minimum operating standards (House Fish and Game Committee Minutes, Exhibits 3 and 5, 1993).

According to the bill text, as supplemented by the 1993 House Fish and game Committee Minutes regarding the House committee hearing on HB 338 (House Fish and Game Committee Minutes, Exhibits 3 and 5, 1993), HB 338 divided the proposed amendments to existing game farm statutes⁵² into 15 sections. Section one (1) defined specifications for a game farm. Under section one (1), shooting tag licenses were replaced

⁵⁰ The breakdown was as follows: three (3) farms raising pronghorn antelope, three (3) farms raising Barbary sheep, seven (7) farms raising black bear, 55 farms raising elk, 10 farms raising fallow deer, three (3) farms raising mouflon sheep and hybrids, 13 farms raising mountain lion, 13 farms raising mule deer, one (1) farm raising musk oxen, one (1) farm raising Russian boar, six (6) farms raising sika deer, and eight (8) farms raising white-tailed deer.

⁵¹ A member of the governor appointed working group.

⁵² 1991 MCA 87-4-401 through 424

with a DOL issued inspection certificate in order to conform with DOL inspection procedures and avoid the misuse of game farm shooting tags to harvest wild animals. Section two (2) defined penalties and the seizure of illegally possessed animals. Section three (3) updated application procedure for licenses, and provided that the Department of Fish, Wildlife and Parks could determine that the preparation of an EIS was required under the Montana Environmental Protection Act (MEPA). Section four (4) clarified licensing and fencing criteria and requirements. Section five (5) increased the annual game farm license fee to \$200, while section six (6) defined criteria for license transfers. Section seven (7) required that individual game farm animals be marked with both a Department of Livestock approved ear tattoo, indicating ownership, and a Fish, Wildlife and Parks tag, facilitating individual identification. Section eight (8) required adherence to DOL procedures regarding the transportation and sale of game farm animals, and section nine (9) revised requirements governing the sale of game parts, meats and byproducts. In an effort to rectify long standing problems with existing record keeping and recording requirements, section ten (10) required the submission of game farm reports three times per year.⁵³ Under section 11, Fish, Wildlife and Parks was required to *coordinate* the regulation of game farms with the Department of Livestock. Sections 12 and 13 established procedures for the revocation of a game farm license; it was also stated that a game farm operator may be held financially liable for the costs of restoring any damage to native wildlife. Section 14 granted the Department of Fish, Wildlife and Parks the

⁵³ Under 1991 MCA 87-4-417, game farm reports were only required to be filed

authority to deny or condition a game farm license in order to protect public safety (i.e., if the owner intends to harvest animals by shooting). Fish, Wildlife and Parks could also deny or condition a license if the location of the game farm threatens loss or destruction of seasonal habitat; the blockage of migration routes; or poses an unacceptable threat of escape, which could result in habitat damage, competition or genetic pollution.⁵⁴ Finally, section 15 provided a license applicant with an opportunity for a hearing in cases of license revocation, denial of renewal, or denial of a license transfer

In total, nine (9) people provided testimony in support of HB 338.⁵⁵ Of the 16 visitors⁵⁶ who attended the House Fish and Game Committee hearing on HB 338, 15 supported the Act while 1 person was undecided. Although most visitors supported HB 338, a number of people stated that they would have preferred additional, stronger amendments. For instance, Bob Ream, the sponsor of HB 338, stated that he felt that HB 338 was a compromise, and several issues were not dealt with due to lack of time or lack

once per year.

⁵⁴ The Montana Wildlife Federation, whose “ .upmost consideration must be the protection of Montana’s free roaming native wildlife species,” were particularly pleased with the revisions included in section 14 of HB 338.

⁵⁵ No one provided testimony in opposition to HB 338.

⁵⁶ The 16 visitors present represented the following interests: one (1) representative from the Board of Livestock, three (3) representatives from the Montana Department of Fish, Wildlife and Parks, five (5) representatives from the Montana Wildlife Federation, one (1) representative from the Montana Audubon Legislative Fund, one (1) representative from the Montana Bowhunters Association, one (1) representative from the Skyline Sportsman Association, two (2) representatives from the Montana Game Breeders Association, one (1) representative from Anaconda Sportsmen, and one (1) representative from the Ravalli County Fish and Wildlife Association.

of consensus. In addition, Ream noted that his major concern was the level of control placed on importation of exotic and hybrid species into the state of Montana. Ron Bennett (Montana Wildlife Federation) felt that the, “. . . language of HB 338 should be more direct, severe and unquestionable” (House Fish and Game Committee Minutes, Bennett testimony, 1993). Bennett suggested that HB 338 be modified in the following manner: (1) increase game farm fees, (2) tighten gate protection regulations, (3) hold game farm owners responsible for the costs of scientific investigations and the expenses related to escaped animals, (4) require that broken fences be repaired in 24 hours, and (5) classify the penalty for operating a game farm without a license as a felony. Similarly, Joe Gutkoski (Montana Wildlife Federation) recommended that a double fence be constructed around all game farms, in order to prevent escapes (House Fish and Game Committee Minutes, Exhibit 7-Gutkoski testimony, 1993). Janet Ellis, a representative from the Montana Audubon Legislative Fund, requested that game farm fees be increased to a level where this program could pay for itself (House Fish and Game Committee Minutes, Exhibit 6-Ellis testimony, 1993). In addition, Ellis requested amendments to HB 338 for purposes of clarification, in particular, Ellis was concerned with public involvement⁵⁷ Finally, Tony Schoonen (Skyline Sportsmen Association) requested that HB 338 be amended to totally phase out game ranching because of the threat of disease transmission (House Fish and Game Committee Minutes, Exhibit 8-Schoonen testimony, 1993).

⁵⁷ “We would like there to be an opportunity for citizens to be able to participate [in] hearings on any new licenses” (House Fish and Game Committee Minutes, Exhibit 6-Ellis testimony, 1993:unknown).

In addition to the composition of HB 338, the governor appointed working group on game farms also provided testimony regarding game issues requiring future study (House Fish and Game Committee Minutes, Exhibit 4, 1993). These issues include the following: (1) the separation of game farm licenses into categories, and the development of a corresponding fee structure; (2) the separation of a shooting license from a general game farm license, in order to address public safety issues; (3) the disposition of a base number of wildlife remaining in a new game farm enclosure after all efforts to remove them have failed; (4) the regulation of antler buying as a deterrent to trafficking in antlers from illegally taken wildlife; (5) the elimination of client shooting on game farms⁵⁸; (6) imposing importation restrictions on elk from areas where meningeal worm is endemic⁵⁹; (7) the development of reimbursement programs for TB infected game farm animals that were destroyed; and (8) the revision of administrative rules regarding escaped game farm animals and application criteria⁶⁰

Upon completion of the House Fish and Game hearing, HB 338 was discussed and amended. First, the representative from the Department of Livestock suggested amending HB 338 to clarify that the DOL, not MFWP, is responsible for the individual marking of game farm animals. This amendment passed the House. A second set of amendments, sponsored by the representative from the Montana Audubon Legislative

⁵⁸ Consensus was not possible within the group with regard to this issue.

⁵⁹ Consensus was not possible within the group with regard to this issue.

⁶⁰ The group suggested that this criteria needed to be 'fleshed out'

Fund, also passed. These amendments made grammatical changes and clarified definitions. Finally, in order to help fund the MFWP program, Representative Molnar proposed an amendment to increase the license fees and allow for a one-time fee of \$500. After some discussion, it was decided that this amendment would substantially alter HB 338, and "...allow the compromise to fall apart" (House Fish and Game Committee Minutes, Executive Action, 1991:8). Additionally, it was noted that fees doubled under HB 338. The third proposed amendment did not pass.

Once HB 338 passed the House, a second hearing was held within the Senate Fish and Game Committee. In total, eight (8) visitors attended this hearing. Of these eight (8) visitors, seven (7) supported⁶¹ HB 338 while one (1) opposed⁶² this bill. Janet Ellis, the representative from the Montana Audubon Legislative Fund, provided support for HB 338. However, similar to her testimony in the House Fish and Game Committee, she stated that she was concerned with both the low license fees assessed game farmers and the limited amount of public involvement in the application process. Ron Bennett provided testimony stating that he was opposed to HB 338 because, "[t]he laws, as they

⁶¹ Those visitors who supported HB 338 included two (2) representatives from the Department of Fish, Wildlife and Parks, one (1) representative from the Montana Elk Breeders Association, one (1) representative from the Board of Livestock, one (1) representative from the Montana Wildlife Federation, one (1) representative from the Montana Bowhunters Association, and one (1) representative from the Montana Audubon Legislative Fund.

⁶² Ron Bennett, representing himself, Russell County Sportsmen and the Montana Wildlife Federation, opposed HB 338 because he felt a moratorium on game farming was necessary. In addition to Bennett's testimony, Senator Devlin presented a letter written by a game farmer who opposed HB 338 because he felt the required submission of three (3) reports per year was excessive.

are presently written, are wonderful for the game farmers but are not in the best interest of the State of Montana" (Senate Fish and Game Committee Minutes, Exhibit 5, 1991:1). Bennett stated that he was opposed to the following sections of the 1991 MCA. (1) section 87-4-410, which allows a game farmer to own game animals on his property if they cannot be captured or shot and has a detrimental effect on Montana's publicly hunted elk populations; and (2) section 87-4-419, which states that escaped game farm animals that cannot be captured become property of the state and makes the state liable for the damages caused by these animals. He also noted that he felt that the low penalties established within the 1991 MCA were not sufficient to prohibit trafficking in dead wildlife. Finally, Bennett stated that Montana sportsmen and women should not shoulder the costs associated with game farming, when there is no stipulation for game farmers to bear any of the cost. In conclusion, Bennett stated that "HB 338 is basically a license to steal"⁶³. HB 338 is bad for the State of Montana and its sportsmen and women, bad for wildlife conservationists, and bad for ranches of this state. Leaving only the game farmer to benefit" (Senate Fish and Game Committee, Exhibit 5, 1991:3).

In addition to the personal testimonies presented during the Senate hearing, informational material regarding game farming in Montana was also presented. According to the Montana Wildlife Federation, "[e]xisting administrative rules, as well as game farm

⁶³ Bennett supplied newspaper articles regarding a recent court case involving "Sonny" Welch Brogan. Brogan was fined \$1500 (the maximum allowed by law) for three (3) violations of game farm statutes: two (2) counts of failing to maintain his fences properly and one (1) count of illegally capturing more than 80 wild elk for use in his operation. In a separate incident, a judge declared a mistrial in a case against Brogan, who

statutes, were not adequately addressing risk factors associated with the growing game farm industry. The need for revised rules became apparent when: (1) elk/red deer hybrids were imported into Montana by several Montana game farmers; (2) bovine tuberculosis was detected in five game farm herds; and (3) reports of animal escapes from several game farms" (Senate Fish and Game Committee Minutes, Exhibit 1, 1993 unknown). In turn, MFWP spent 15 months prior to this legislative session reexamining game farm issues. These issues were explained within a MFWP pamphlet, entitled *Regulating Game Farms in Montana*, which was presented during the Senate hearing on HB 338. This pamphlet provided information on the following topics: (1) Montana game farm operating standards, (2) game farm questions and answers, (3) a comparison between various attempts by western states to control game farm animals in the wild, (4) the concern over hybrid crosses, (5) exotics prohibited from importation into Montana⁶⁴, (6) the potential spread of disease and parasites, and (7) game farm information sources.

Upon completion of the Senate hearing, Senator Pipinich moved HB 338 be concurred in. This motion carried unanimously, and HB 338 became state law in 1993. During the 53rd Legislature, the Montana Wildlife Federation introduced a second House Bill (HB 412). House Bill 412 was a moratorium bill, which failed to make it out of

was tried on one felony count of tampering with public records or information.

⁶⁴ These animals include: chamois, tahr, Ibex, Barbary sheep, mouflon sheep, oryx and gemsbok, addax, reedbucks, wildebeests, moose, red deer and crosses, axis deer, rusa deer, sambar deer, roe deer, and wild species and hybrids in the family Suidae, all species and hybrids in the family Tayassuidae. The following species were 'restricted' due to the specific health risks they pose: white-tailed deer and caribou.

committee because it didn't get the support of the Montana Department of Fish, Wildlife and Parks⁶⁵, nor of the sitting administration (Anonymous 1994a).

House Bill 412 was developed to limit the number of game farm licenses that could be issued by the Department of Fish, Wildlife and Parks. Under the proposed regulations, the total number of licenses issued by the Department of Fish, Wildlife and Parks was not to exceed the number of current licenses⁶⁶ (HB 412 text, 1993:2 and 3). This limitation would have applied to licenses necessitated by expansion of existing game farm facilities, but not to transferred licenses (HB 412 text, 1993:2 and 3). According to the fiscal note, which accompanied HB 412, "[t]he department would experience a decrease in expenditures of \$111,242 per year and a decrease in revenues of \$2,000 per year" (HB 412 text, fiscal note, 1993:1).⁶⁷

⁶⁵ The Montana Wildlife Federation felt that although biologists and regional MFWP staff have advocated aggressive measures to curtail game farmers, this advocacy has been halted at the upper levels of decision making--where less stringent solutions, in an attempt to achieve a balance between private economies and the public good, are favored (Anonymous 1994a).

⁶⁶ Within the amended version of HB 412 it is stated that the Department of Fish, Wildlife and Parks was not to issue a license to any game farm not in existence on October 1, 1993 (House Fish and Game Committee Minutes, 1993:1).

⁶⁷ According to the fiscal note which accompanied HB 338, "[t]he Department of Fish, Wildlife and Parks will incur a net cost of \$40,403 in FY94 and \$13,339 in FY95."; the net revenue would increase by \$4,950 in FY94 and \$5,550 in FY95 (HB 338 text, fiscal note, 1993:1). Within this fiscal note the net cost incurred by FW&P refers only to personal services and operations, while the fiscal note for HB 412 includes the costs associated with MEPA compliance EAs and application reviews (HB 412 and 338 text, fiscal notes, 1993:1).

In total, 33 visitors attended the House Fish and Game Committee hearing on HB 412. Of the 33 visitors, 17 supported a moratorium on Montana game farms⁶⁸ while 16 opposed HB 412⁶⁹. In addition, seven (7) visitors provided testimony in support of HB 412⁷⁰, and six (6) provided testimony in opposition⁷¹.

Those visitors who provided testimonies in support of a moratorium on the licensing of new game farms highlighted the following issues as reasons for concern. (1) escaped game farm animals and the subsequent threats posed to native wildlife⁷²,

⁶⁸ Those visitors who supported HB 412 included: two (2) representatives from Skyline Sportsmen, two (2) representatives from Last Chance Audubon Society, two (2) representative from the Montana Bowhunters Association, one (1) representative from the Southeastern Sportsmen Association, two (2) representatives from the Montana Wildlife Federation, one (1) representative for Anaconda Sportsmen's Club, one (1) representative from Montana Audubon, one (1) representative from the Friends of Mount Helena, five (5) citizens, and one (1) sportsman. The total number of representatives does not equal 17 because one person represented more than one organization.

⁶⁹ Those visitors who opposed HB 412 included: seven (7) representatives from the Montana Game Breeders Association, five (5) game farmers, one (1) sportsman, and three (3) citizens.

⁷⁰ Those visitors who provided testimonies in support of HB 412 included representatives from the following organizations: Montana Wildlife Federation, Skyline Sportsmen's Club, Last Chance Audubon Society, Friends of Mount Helena, Montana Audubon Council, Anaconda Sportsmen's Club, Montana Bowhunters Association, and Southeastern Sportsmen Association. In addition, one (1) person stated that although he supported HB 412, he felt that game farms should be phased out within the next five (5) years.

⁷¹ Those visitors who provided testimonies in opposition to HB 412 included: one (1) representative from the Montana Game Breeders Association, three (3) game farmers, and two (2) citizens.

⁷² In addition to the threats posed to native wildlife within a particular state, regional threats were also noted. For instance, in 1991 "Sonny" Welch Brogan shipped TB infected elk, which he received from Nebraska, to ranches in Colorado and Alberta.

livestock⁷³ and humans⁷⁴ (disease/parasite transmission, and hybridization/competition); (2) the low fees assessed game farmers; (3) the large costs incurred by the Department of Fish, Wildlife and Parks; (4) the potential impacts of canned trophy hunts on traditional public hunting⁷⁵; and (5) the illegal capture and sale of wildlife⁷⁶. According to Dr Valerius Geist, “[o]ur elk are clearly and presently in danger. If they are to remain unadulterated, if we are to pass them on to those who follow, as was done for us, then we

Similarly, in 1992 farmed red deer infected with *E. cervi* were shipped to Ontario for routine slaughter. “All of the red deer arrived safely in Ontario-whereupon 91 escaped” (House Fish and Game Committee Minutes, Exhibit 21, 1993:6). All of the escaped animals were eventually captured and killed, but “[i]f any infected feces were deposited, they will remain contagious through three Canadian winters” (House Fish and Game Committee Minutes, Exhibit 21, 1993:6).

⁷³ Mr. Paul Johnson and Ms. Claire Evans noted that “[t]here have been incidents where tuberculosis has been transmitted from game farm animals to livestock” (House Fish and Game Committee Minutes, 1993:1, House Fish and Game Committee Minutes, Exhibit 22, 1993:1). Although this has not yet occurred in Montana, New York and Pennsylvania have lost their tuberculosis free status. As a result, New York spent \$637,000 in 1992 and \$500,000 in 1993.

⁷⁴ Although it has been stated that tuberculosis is extremely difficult for humans to contract, “[t]he recent [1991] outbreak [TB] in Alberta quickly spread to farmers, vets, postmortem technicians, meat inspectors and tanning-plant workers, most of whom were put on preventative medication but at least one of whom developed the actual disease” (House Fish and Game Committee Minutes, Exhibit 21, 1993:1).

⁷⁵ “Many hunters believe that canned trophy shoots on game farms will influence the public’s perception of hunting, escalating anti-hunting sentiment and jeopardizing the future of traditional sport hunting” (House Fish and Game Committee Minutes, Exhibit 22, 1993:1).

⁷⁶ According to Dr. Valerius Geist, “[t]o make money from elk you must be able to sell their parts-venison, velvet antlers, penises, tails and other parts-to the highest bidder. And with that you create an ‘infrastructure’ of producers, processors, wholesale dealers and retailers, an ideal situation for laundering illegally killed public elk in the market” (House Fish and Game Committee Minutes, Exhibit 23, 1993:1).

need to make sure that elk have large areas of public land to roam and that they are not threatened with poaching and genetic pollution, diseases and other perils generated by wildlife ranching” (House Fish and Game Committee Minutes, Exhibit 23, 1993 4).

Another sentiment voiced by visitors supportive of HB 412 was the fact that the public benefits associated with free ranging wildlife outweigh the private benefits accrued through game farming. It was noted that a profit of five billion dollars is made on the world market from game farming. On the other hand, 160-270 million North Americans spend \$60 billion annually to participate in wildlife viewing, hunting and fishing, with 50,000 jobs being created per billion dollars expended (House Fish and Game Committee Minutes, Exhibit 22, 1993.1).

Those visitors who provided testimonies in opposition to HB 412 raised the following issues: (1) game ranching is a non-polluting, tourism-enhancing, high profit agricultural industry that helps preserve natural habitat by not disturbing over-worked soil; (2) game ranchers are not subsidized to the extent that people who rely on grain-growing alone are subsidized; (3) cattle carry the same diseases as farmed game; (4) hybridization between exotic species and native populations is unlikely⁷⁷; and (5) HB 338, which

⁷⁷ Les Graham noted that “[b]ecause of natural herding instincts and natural mating behavior the possibility of a loose game farm animals mating to a wild one is SLIM” (House Fish and Game Committee Minutes, Exhibit 25, 1993.3). However, in 1994 (obviously unknown at the time of the hearing on HB 412) red deer escaped from a game farm and began cross-breeding with Montana’s pure elk herd (Anonymous 1994a:1). Additionally, red deer and elk crosses have resulted in the reduction of a portion of New Zealand’s elk population (Challies 1985 *as cited in* Lanka et al. 1990).

requires the Department of Livestock to handle health problems, will make game farming a safe industry

With regard to disease transmission, Les Graham, the representative from the Montana Game Breeders Association and the former administrator of the Department of Livestock, noted that “[t]he diseases of concern to native Montana wildlife are already present in Montana domestic free ranging livestock. . . Game farm animals are kept behind EIGHT FOOT FENCES. Domestic cattle carrying the diseases of concern free range with Montana wildlife apparently without problem since we have record numbers of Montana WILDLIFE” (House Fish and Game Committee Minutes, Exhibit 25, 1993:3). In response, the testimonies provided by supporters of HB 412 noted that “[t]uberculosis testing procedures are less reliable for game farm animals than for the domestic livestock species for which they were developed. . . [Additionally,] [t]esting procedures and disease monitoring for nontraditional captive species have not kept pace with emerging disease risks. Detection methods are virtually nonexistent for diseases associated with wildlife species” (House Fish and Game Committee Minutes, Exhibit 22, 1993:1 and 2).

Finally, Jack Schubarth briefly traced the history of game farm regulation in Montana. According to Schubarth, prior to the passage of HB 556 (1991), game farm regulation was not properly handled by the Department of Fish, Wildlife and Parks; in turn, there were many problems with the industry. However, since HB 556 placed game farms under the partial jurisdiction of the Department of Livestock and treated game farming like any other livestock group, the problems have been addressed. Schubarth also

noted that a governor appointed working group, established to address game farm problems, had developed HB 338, which was also introduced during this legislative session. This bill required the Department of Livestock to handle health problems related to the game farm industry, “. . .making this a safe industry” (House Fish and Game Committee Minutes, Exhibit 27, 1993:2). “[House Bill] 412 leads you to believe that the game farm problems have not been addressed. I say they have. . .In Wyoming this type of legislation was found to be unconstitutional. It did not afford equal rights to all citizens. . . Our very existence hangs on this bill, our livelihood, our right to pursue happiness” (House Fish and Game Committee, Exhibit 27, 1993:2).

Upon completion of the House Fish and Game hearing, HB 412 was discussed. Representative Molnar stated that although there were not many things about game farms that he liked, HB 412 went beyond game farming to a man's right to use his land as he sees fit (House Fish and Game Committee Minutes, Executive Action, 1993:10). House Bill 412 failed to pass the House by a margin of 11 to 5, and was tabled.

During the 54th Legislative Assembly, 1995, three game farm bills were introduced. Senator Klampe introduced senate Bill 173, which revised game farm laws and placed a moratorium on the issuance of new game farm licenses. Second, SB 215 sought to transfer the general administration and regulation of game farms from the Department of Fish Wildlife and Parks to the Department of Livestock. Finally, SB 389 was proposed in an effort to clarify the administration and regulation of game farms by the both the

Department of Fish, Wildlife and Parks and the Department of Livestock. Senator Tivet introduced SB 215, and Senator Don Hargrove introduced SB 389

Senate Bill 173 had four main components: (1) generally revise game farm laws, (2) place a moratorium on the issuance of new game farm licenses, (3) phase out existing game farm operations by January 1, 1997, and (4) prohibit the further importation of game farm animals. According to Senator Klampe's opening statement, ". . .game farms have cost Montana a lot of money and spread tuberculosis in wild game" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:1). Senator Klampe also noted that game farms had spread TB to cattle in New York and Virginia (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). "This information was to let the committee know what was happening in the United States and what could happen in Montana" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:2).

Thirty-seven proponents of SB 173 provided testimony at the Senate hearing⁷⁸; whereas, eleven opposing testimonies were presented⁷⁹ (Senate Committee on

⁷⁸ Visitors that supported SB 173 include: Jim Richard (Montana Wildlife Federation), Valerius Geist (Professor of Environmental Studies-University of Calgary), Jim Posewitz (The Hunters Institute), Gayle Joslin (Montana Fish and Wildlife), Billie Elliot (representing herself), Dale Taliaferro (Department of Health and Environmental Science), Alan Blakley (attorney-Professor of Law at the University of Montana), Michael Miller (Colorado Division of Wildlife), Dave Majors (representing himself), Bob Bungi (representing himself), Bob Lovegroove (Ravalli County Fish and Wildlife Association), Jim Bradford (Montana Bow Hunter's Association), Dave Campbell (United Bow Hunter's Association), Janet Ellis (Montana Audubon Legislative Fund), James Kehr (representing himself), Jue Gutkoski (Gallatin Wildlife Association), Mike Vashro (Montanas Opposed to Game Farming), Pat Simmons (representing herself), Dennis Frasier (Skyline Sports), Stan Frasier (representing himself), Herbert Johnson (Montanans Opposed to Game Farming), Stephen Kelley (Ravalli County Fish and Wildlife), Ed Johns (Russell Country

Agriculture, Livestock and Irrigation Hearing 1995). Valerius Geist, a supporter of SB 173, stated that imported red deer had infected Canadian cattle with swine brucellosis (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Similarly, "[a] TB epidemic was believed to be initiated by red deer in New Zealand" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:2). According to Billie Elliot, a joint owner of game farm property, ". . .the fences had been rammed by the animals trying to get out and the native animals trying to get in" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:2). Michael Miller stated that there were 42 documented game farm escapes within Colorado, and approximately 40 herds were infected with TB (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). With regard to property rights issues, which initially surfaced in the 53rd Legislative Assembly, Alan Blakley, esq. stated that ". . . there were no constitutional violations of SB 173. . . [and] no potential search and seizure problems within the bill" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:5). Finally,

Sportsman Association), Doug Pollel (representing himself), Tony Schooner (State Lands Con.), Sam Babich (Montana Auction for Actis), Bill Holdorf (Skyline Sportsmen), Everette Maxwell (representing himself), Bob Cole (Flathead Wildlife), Art Callan (representing himself), Jim McDermid (Medicine River Canoe Club), Bill Callaghan (representing himself), L. F. Thomas (Anaconda Sportsmen), Steve Wilson (representing himself), Marshall Bloom (representing herself), Doris Miner (representing herself), John Gibson (representing himself).

⁷⁹ Visitors that opposed SB 173 include: Bob Spoklie (Montana Game Breeders Association), Bill Nyby (Spoklie Elk Farm), Gerri Backes (Montana Game Breeders Association), Bruce Barta (Montana Game Breeders Association), Dr. John Smith (Veterinarian), Lorna Frank (Montana Farm Bureau), John Bloomquist (Montana Stockgrowers Association), Jack Schuberth (Game Farmer), Dennis Iverson (Montana Game Breeders Association), Senator Larry Tivet, Chancie Ralls (representing himself).

Bob Lovegroove felt that public property rights and disease free wildlife were more important than private property rights (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Eleven opponents of SB 173 also provided testimony at the Senate hearing. According to Bob Spoklie, "there has never been hybrids in the state of Montana and there never will be" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:5).⁸⁰ Additionally, Spoklie stated that it would cost about \$15 million to phase out game farm facilities, and another \$8-10 million for the land and fences (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Dr. John Smith was opposed to SB 173 because he felt that the disease problem in wild animals was worse than in game farms (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Bill Nyby stated that SB 173 limits economic diversification.

"[I]n today's struggling economy. . . new business or enterprise should be encouraged or assisted by the local, state and federal government, not forced out of business or limited growth. With the depressed grain markets and the lower cattle, sheep and hog prices, many farmers and ranchers have diversified into other operations to supplement their income so they can continue their rural way of living, which they dearly love" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:5).

⁸⁰ This conclusion was based on the results of state-wide hybridization tests, which game farmers voluntarily completed (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Spoklie, Montana Fish, Wildlife and Parks did not want this study initiated (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). However, Montana Fish, Wildlife and Parks states that current tests do not identify all hybrids (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

With regard to the private property rights issue, Bill Nyby believed that SB 173 constitutes a taking (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Similarly, Gerri Beckes stated that SB 173 was a "dishonest taking of private property without compensation for the animals and the business. All game farm animals were privately owned . . ." (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:6). Finally, Dennis Iverson also felt that SB 173 was a property rights bill because it told people that they could not use a part of their property rights as established by the U.S. Constitution (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Senate Bill 173 missed the transmittal deadline and was tabled the Senate Committee on Agriculture, Livestock and Irrigation (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Senate Bill 215 had two primary goals: (1) transfer the general administration and regulation from the Department of Fish, Wildlife and Parks to the Department of Livestock, (2) incorporate the Department of Fish, Wildlife and Parks into the regulatory process as a member of a game farm advisory council. In total, 93 visitors attended the Senate hearing on SB 215. Of these 93 visitors, 70 supported SB 215⁸¹ while 23 opposed the bill⁸². According to Dave Whittlesey, Colorado game farms are managed by this

⁸¹ The 70 visitors who supported SB 215 included: (27) game farmers, (32) individuals, (1) North American Elk Breeders, (1) Colorado Elk and Game Breeders, (1) Montana Fence, (1) Montana Veterinary Medical Association, (1) Montana Farm Bureau, (1) Montana Stockgrowers, (1) Montana Game Breeders Association, and (4) unknown.

⁸² The 23 visitors who opposed SB 215 included: (1) Montana Wildlife Federation,

model, and have done quite well (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Many supporters of SB 215 stated that game farming was not consistent with the Department of Fish, Wildlife and Parks's mission to regulate, protect and enhance the state's public wildlife resources, and to manage the hunting opportunities related to Montana's public game animals (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 1E, 1995). Ward Swanser argued that the game farm industry wanted to be regulated by ". . . someone who knows and cares about the industry, such as the Department of Livestock" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:2). He also noted that he did not believe that the approval of a game farm was major state action, under MEPA, unless it was proposed to be located near a national park or wildlife refuge (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Additionally, members of the North American Elk Breeders Association claimed that the Department of Fish, Wildlife and Parks had been actively encouraging the elimination of the game farm industry, which resulted in a 10-20 percent decline in industry growth (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 2, 1995:4). A letter submitted by Kent B. Williams indicated that he was ". . . getting out of the game farm business and elk breeding in particular in part due to the constant state of change within the state and the uncertainty of the future of the industry. . . . Now that the

(1) Madison Gallatin Alliance, (2) Fish, Wildlife and Parks, (1) State Land Coalition, (1) Anaconda Sportmen, (1) Skyline Sportsmen, (1) Montana Audubon, (1) Prickly Pear Sportsmen Association, (1) Montana Bowhunters Association, (1) United Bowhunters of

leadership of the Fish and Game Department has worked the sportsmen and animal rights people into their agenda I feel as though I am operating a legal 'house of prostitution' and it will only be a matter of time before some unfortunate situation happens" (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 1C, 1995:1).

However, both the Department of Fish, Wildlife and Parks and Glenn Marx⁸³ argued that this was not the case. According to the Department of Fish, Wildlife and Parks, "Over the last three years, we have licensed 41 new or expanded game farms. In addition we have issued 278 renewals of licenses. In that period, not once has an application for a game farm permit been denied. We have documented nearly 2200 hours spent on permitting activities during the last two years" (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 4, 1995:2). Additionally, the Department has developed a game farm desk reference to assist potential game farm operators with the permitting process, has hired a game farm coordinator, and has worked jointly with the Department of Livestock to develop administrative rules (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 4, 1995). Similarly, Glenn Marx stated that a brochure distributed by the Montana Game Breeders Association noted that "In 1994 the game breeding industry achieved a 30 percent increase over the previous year, to just under five million dollars. So game breeders are not only surviving, they are

Montana, (11) individuals, and (1) unknown

⁸³ Policy director on the staff of Governor Marc Racicot.

thriving" (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995:1-2).

Glenn Marx also highlighted specific reasons why the Department of Fish, Wildlife and Parks should retain authority in game farm regulation (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995). First, game farm permits must be reviewed in order to determine whether they destroy critical habitat, block wildlife migration routes, or pose an undue threat to wild populations as a result of escape and subsequent habitat destruction and competition (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995). Second, the Department of Fish, Wildlife and Parks is better able to handle the issue of escaped game farm animals, or the ingress of wildlife into game farms (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995). Third, the Department of Livestock is currently struggling to control disease in livestock and will be unable to handle wildlife disease, since it has no prior experience in this matter (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995). Fourth, the Montana Environmental Policy Act often requires environmental impact statements with regard to proposed game farms; however, the Livestock Department does not have enough experience with the EIS process to avoid lawsuits (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995). Finally, the current legislation, which requires split jurisdiction between the Department of Fish, Wildlife and Parks and the Department of Livestock, ". . .

.takes advantage of each department's vast yet specific expertise" (Senate Committee on Agriculture, Livestock and Irrigation Hearing, Exhibit 3, 1995:4).

According to David Cambell, who provided testimony in opposition to SB 215, the game farm advisory board would include five people who are directly connected to the Livestock Board and the game farm industry, which was not acceptable to the people of Montana (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).⁸⁴

"What was really at stake was the selfish rights of 93 game farmers versus the people of Montana's public trust in wildlife. . . if SB 215 was not tabled, they [Montana Congress] would see a fight in the Senate and House floors that had not been seen in awhile. . . game farmers had finally awoke a sleeping, angry giant which was the people of Montana. . . they would start a grassroots campaign against the evils of game farming. . . remember the words 'public initiative'. . . if this bill comes out of the committee, prepare to hear from the people of Montana" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:8).

Jim Richards noted that elk and deer are not livestock, they were wildlife that happened to be raised inside an enclosure (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Thus, since game farm animals and the animals that threaten are wildlife, the Department of Fish, Wildlife and Parks should regulate game farming (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Most of the visitors who were opposed to SB 215 agreed with this logic, stating that the Department of

⁸⁴ This conclusion is based on a representative state-wide survey conducted by the United Bowhunter's of Montana (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). The results of this survey indicated, among other things, that 96 percent of Montanans thought that the Department of Fish, Wildlife and Parks should be involved in overseeing the game farm industry (Senate Committee on Agriculture,

Livestock was in the business to promote the livestock industry not to protect wildlife resources (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Senate Bill 215 was tabled in the Senate Committee of Agriculture, Livestock and Irrigation (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Senate Bill 389 was the final bill introduced during the 1995 Legislative Assembly, and it was basically a revision of SB 215. The primary intentions of SB 389 were to: (1) clarify the administration and regulation of game farms by both the Department of Fish, Wildlife and Parks and the Department of Livestock; (2) revise the current regulatory framework surrounding licensure, fees, importation, inspections and reporting; and (3) create the game farm advisory council. According to Senator Hargrove, SB 389 represented a combination of sections from SB 173 and SB 215 (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Under SB 389, regulatory authority was split between the Department of Fish, Wildlife and Parks and the Department of Livestock (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Since the Department of Fish, Wildlife and Parks' primary concerns surround animals outside game farm fences, they were granted authority to regulate the construction of fences and handle violations (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). On the other hand, the Department of Livestock was concerned with animals inside the game farm fence; therefore, they were granted the authority to regulate

Livestock and Irrigation Hearing 1995).

disease, quarantine, and transportation (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

In total, 18 visitors attended the Senate hearing on SB 389 (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Of these 18 visitors, 11 supported⁸⁵ SB 389 while seven opposed⁸⁶ SB 389 (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). There were a number of issues regarding SB 389 that were addressed during the Senate Hearing.

First, the majority of visitors that provided testimonies noted that the fee structure surrounding game farming should be revised so the operator bears the burden of the licensing and enforcement costs (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Jim Richard also suggested that game farm operators be required to post a bond, or some form of security to cover the costs of disease outbreaks (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Senator Terry Klampe, the province of Alberta incurred \$16 million in costs as a result of the TB outbreak, a price that Montana could not afford (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Under current legislation, these costs were borne by the Department of Fish, Wildlife and Parks; thus, hunters technically

⁸⁵ The 11 visitors that supported SB 389 included: (1) Senator, (2) Montana Department of Fish, Wildlife and Parks, (1) Board of livestock, (1) Montana Audubon Legislative Fund, (5) Montana Game Breeders Association, and (1) individual.

⁸⁶ The seven visitors that opposed SB 389 included: (1) Senator, (1) Montana Wildlife Federation, (1) Montana Bowhunters Association, (1) Prickly Pear Sportsmen Association, (1) Ravalli County Fish and Wildlife Association, and (2) individuals.

subsidized the industry (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Klampe felt that if the committee was confident that SB 389 would prevent such problems, he did not see a problem with amending this section of the bill (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995) Harry Lafriniere, from the Ravalli County Fish and Wildlife Association, noted that the Department of Fish, Wildlife and Parks was unable to cope with game farm violations under the current legislation (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Finally, Karen Zackheim, the game farm coordinator (MFWP), stated that "the revenue for FWP in 1994 was approximately \$3,050 and the expenditure in 1994 was approximately \$109,649" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:16)

With regard to this issue, a motion was made by Senator Pipinich to increase game farm licensing fees to \$1,000 initial and \$500 renewal (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). This motion failed (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). As written SB 389, requires an initial licensing fee of \$200, and an annual renewal fee of \$50 (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). However, after much discussion within the committee, the following motion was carried by an 8 to 1 vote: \$200 initial and \$50 annual renewal fees for operators with between 1-20 animals, \$300 initial and \$100 annual renewal fees for operators with between 21-60 game farm animals, and \$400 initial

and \$200 annual renewal fees for operators with over 60 animals (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

A second contentious issue surrounding SB 389 dealt with the following statement: "the department may remove the base number of animals [wildlife that is present on the private property where a game farm is scheduled to be fenced] from the game farm at the expense of the department" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995:11). In order to address this issue, a motion was introduced by Senator Hargrove to alter SB 389 to give the applicant responsibility for removing wildlife from his property (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). This motion carried with a 6 to 3 vote (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). One Senator voted against this motion because he felt that it should not be the applicant's responsibility to remove *public* wildlife from his/her *private* land, since it is the department's responsibility when hunting issues are involved (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Finally, Senator Devlin moved to amend SB 389 in such a way that all fees collected would be split between the Department of Fish, Wildlife and Parks and the Department of Livestock (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). Senator Nelson felt that this was fair, since the Department of Livestock would have additional expenses due to added responsibilities (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995). This motion carried with a 5 to 4 vote (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Senate Bill 389 unanimously passed the Committee on Agriculture, Livestock and Irrigation as amended (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1995), and was introduced by Senator Tveit into the House Committee on Agriculture, Livestock and Irrigation (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Senator Tveit, the bill was introduced because of "the breakdown of communication between the game farm owners and FWP that dealt with their overall management of game farm operations" (House Committee on Agriculture, Livestock and Irrigation Hearing 1995:8). Senate Bill 389 also proposed the creation of a quasi-judicial board, which would serve as an appeal process for game farm operators (House Committee on Agriculture, Livestock and Irrigation Hearing 1995).⁸⁷

In total, 39 visitors attended the House Hearing on SB 389 (House Committee on Agriculture, Livestock and Irrigation Hearing 1995).⁸⁸ Of the total 39 visitors, 18⁸⁹ provided testimonies supporting SB 389 while four were opposed^{90 91} (House Committee

⁸⁷ The quasi-judicial board incorporated five, governor appointed members (House Committee on Agriculture, Livestock and Irrigation Hearing 1995).

⁸⁸ The 39 visitors represented the following organizations: (9) game farmers, (9) Montana Game Breeders Association, (4) individuals, (1) Montana Audubon Legislative Fund, (1) Montana Farm Bureau, (1) Montana Wildlife Federation, (1) Senator, (1) Montana Bowhunters Association, (6) Department of Livestock, (3) Department of Fish, Wildlife and Parks, (1) Governor's office, and (2) unknown.

⁸⁹ The 18 visitors that supported SB 389 represented the following organizations: (9) game farmers, (5) Montana Game Breeders Association, (1) individual, (1) Montana Audubon Legislative Fund, (1) Montana Fish, Wildlife and Parks, and (1) Montana Farm Bureau.

⁹⁰ The four visitors that opposed SB 389 included: (1) Montana Wildlife Federation, (1) Senator, (1) individual, and (1) Montana Bowhunters Association.

on Agriculture, Livestock and Irrigation Hearing 1995). There were a number of issues regarding SB 389 that were addressed during the House Hearing.

The first controversy surrounding SB 389 was the establishment of a quasi-judicial board (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Len Wallace felt that "it would be better for everyone if they [game farmers] had someone to appeal to, such as a board" (House Committee on Agriculture, Livestock and Irrigation Hearing 1995:8). However, Governor Marc Racicot did not support the board, which housed governor appointed members (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Similarly, the Department of Fish, Wildlife and Parks did not support the creation of a judicial board because there was something similar already in place (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Senator Tveit, in his closing statement, revisited the issue of the judicial board (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). "He said that last fall he was visiting game farms in his district and discovered [that] 20 months earlier, the Department of Fish, Wildlife and Parks had a secret raid on one of the game farms" (House Committee on Agriculture, Livestock and Irrigation Hearing 1995:15). Once again, these comments highlight the fact that game farmers feel victimized.

The second controversy centered on game farm fees (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Janet Ellis, the

⁹¹ A number of visitors did not support SB 389 because they favored a moratorium on game farming in Montana (House Committee on Agriculture, Livestock and Irrigation Hearing 1995).

Department of Fish, Wildlife and Parks was overburdened with the costs associated with game farm enforcement (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Stan Fraiser argued that " .sportsmen license fees had been paying more than 90 percent of the costs to regulate game farms" (House Committee on Agriculture, Livestock and Irrigation Hearing 1995:10).

The remainder of the House Hearing on SB 389 focused on the current status of disease and hybridization with regard to game farms (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). First, Pat Graham (MFWP) explained the situation surrounding the tuberculosis problem in a Big Horn County game farm (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Graham, TB was found in a mule deer near the game farm (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). In turn, 129 big game animals that surrounded the farm were exterminated (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Over 100 of these animals were tested for TB and one tested positive (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). The testing was paid for with sportsmen license fees (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). In addition, the game farm operator agreed to destroy his entire herd; however, when tested after the slaughter, not one animal tested positive for TB (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). The owner paid the cost of destroying the animals (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). According to Bob Spoklie, the

measures taken by the Department of Fish, Wildlife and Parks were excessive (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). However, Graham argued that it is the Department's responsibility to insure the protection of the state's wildlife resources, which requires strict regulations (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). With regard to the escape of red deer in Avon, Karen Zackheim stated that one of the 13 animals tested showed a hemoglobin typical of red deer (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). However, Bob Spoklie also spoke with the veterinarian and was informed that Ms. Zackheim was only told that there is a possibility that a red deer was present (House Committee on Agriculture, Livestock and Irrigation Hearing 1995).

On a side note, a third controversial issue regarding the National Bison Range was aired during the House Hearing on SB 389 (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Representative Rick Jore questioned Senator Terry Klampe how SB 173 (moratorium bill introduced by Klampe earlier in the session) would affect the future of the National Bison Range (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). Klampe responded that ". . . he was not sure of the type of operation that existed at the National Bison Range" (House Committee on Agriculture, Livestock and Irrigation Hearing 1995:14).

Senate Bill 389 was then placed in a subcommittee for further review, and concurred in as amended on March 23, 1995 (House Committee on Agriculture, Livestock and Irrigation Hearing 1995). The amended version of SB 389, as recorded in

the Montana Codes Annotated 87-4-406 through 87-4-432, altered the 1993 Montana Code Annotated (MCA 87-401 through 87-4-431) in a number of areas. First, MCA 87-4-408 delineated agency jurisdiction over game farm administration and regulation. The Department of Fish, Wildlife and Parks was granted primary authority over licensing, record-keeping, fencing, classification of exotic species, and limited removal and inspection situations (MCA 87-4-408). On the other hand, the Department of Livestock was granted authority over inspection, transportation, marketing, importation, quarantine, interior facilities, and health related issues (MCA 87-4-408). Second, MCA 87-4-410(2) stated, "[b]efore the fence surrounding any land to be covered by a game farm may be closed, all game animals must to the extent possible be driven from the land by the applicant, at the applicant's expense and under the supervision of a representative of the department." Third, the fee scale was adjusted to reflect the number of game farm animals, with higher fees charged for greater numbers of animals (MCA 87-4-411). Finally, MCA 87-4-432 was added, creating a governor appointed, quasi-judicial board to handle game farm appeals.

The most recent Legislative Assembly was held in 1997, during which time Senator Crippen introduced SB 73. Senate Bill 73 was "[a]n act to protecting Montana livestock, agricultural interests, and wildlife by modifying the manner in which the fish, wildlife, and parks commission may restrict the importation *AND POSSESSION* of wildlife by allowing the commission to develop a listing, by rule, restricting and regulating wildlife importation *AND POSSESSION*. . ." (Senate Bill 73 1997 1). According to Crippen, SB 73 provides

the Department of Fish, Wildlife and Parks with the authority to establish a review process regarding imported species (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1997). "It is an action bill rather than a reaction bill" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1997:1). Senate Bill 73 intended to amend MCA sections 87-5-701-703, 87-5-712 and 87-5-721, which did not incorporate game farm legislation. (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1997). "At first we [Montana Alternative Livestock Producers] were concerned with how this bill would affect game farms. . . .[I]t was pretty vague. [t]here was some room in there as to whether or not we were affected" (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1997:4 and 5-6). However, proposed amendments and Department assurance made it quite clear that this bill would not affect game farming, since prohibited game farm animals are defined within the current statutes (Senate Committee on Agriculture, Livestock and Irrigation Hearing 1997). Senate Bill 73 passed the Senate Committee on Agriculture, Livestock and Irrigation but was tabled in the House (Senate and House Committees on Agriculture, Livestock and Irrigation Hearings 1997).

Currently, the Montana Department of Fish, Wildlife and Parks is engaged in a \$600,000 environmental impact statement that looks at state wildlife programs, such as access, recreational opportunities, species and habitat management, commercial uses and landowner relations with regard to Montana's wildlife resources (Missoulian State Bureau 1998, Montana Department of Fish, Wildlife and Parks 1998). Although the report was

expected to be completed in 1994, an executive summary was issued in March, 1998 (Missoulian State Bureau 1998, Montana Department of Fish, Wildlife and Parks 1998).

According to Tony Jewett, Montana Wildlife Federation,

"[i]t has to occur right now because the stresses on the historic cultural contributions of fish and game to the state are bigger now than they've ever been in the last century, since wildlife was restored in this state. We are at a threshold time where the public's ability to enjoy wildlife, as it has historically, is in peril" (Billings 1998.4).

Similarly, Jean Johnson, executive director of the Montana Outfitters and Guides Association, believe that this type of study is desperately needed in Montana, since " .outside interests are playing a larger role in managing Montana's resources and an influx of new residents to the state is changing the face of resources" (Billings 1998.4).

The environmental impact statement proposes five alternatives (Montana Department of Fish, Wildlife and Parks 1998). The remainder of this section will focus on each of the proposed alternatives as they relate to game farming in Montana. Alternative I represents the Department's 'no action' alternative, which means that planned programs and service would continue at approximately present levels (Montana Department of Fish, Wildlife and Parks 1998). In other words, the Department of Fish, Wildlife and Parks will continue processing game farm applications and sharing split authority over the administration and regulation of game farms with the Department of Livestock (Montana Department of Fish, Wildlife and Parks 1998). Under Alternative II, the department would play a minimal role in the governing of the state's wildlife resources (Montana Department of Fish, Wildlife and Parks 1998). In turn, the agency would attempt to discontinue its

involvement with game farms (Montana Department of Fish, Wildlife and Parks 1998). Alternative III calls for the protection of Montana's wildlife resources through a systems approach to wildlife management (Montana Department of Fish, Wildlife and Parks 1998). Under this proposed alternative, the department would seek the following legislative authority: (1) prohibit the permitting of new game farms in an attempt to protect ecosystem integrity, (2) charge operators for the cost of inspection and licensing of existing facilities, (3) provide strict enforcement of game farm regulations to counter the wildlife threats posed by escaped game farm animals, and (4) identify the how game farms impact ecosystem integrity and consider these factors in permitting decisions (Montana Department of Fish, Wildlife and Parks 1998). Alternative IV "rests on the assumption that citizens encourage and expect free markets and interagency cooperation to play a major role in allocation of wildlife-related opportunities" (Montana Department of Fish, Wildlife and Parks 1998:8). In turn, the Department of Fish, Wildlife and Parks would award private sector contracts to provide extension services, which would ensure safe facility design (Montana Department of Fish, Wildlife and Parks 1998). Additionally, the department would coordinate enforcement with the Department of Livestock, and the operators would be responsible for licensing and inspection costs (Montana Department of Fish, Wildlife and Parks 1998). Finally, Alternative V would require an increase in the existing level of wildlife-related services provided by the department (Montana Department of Fish, Wildlife and Parks 1998). In order to finance this expansion, the

department would seek legislation to tax game farms at the commercial rate rather than the agricultural rate (Montana Department of Fish, Wildlife and Parks 1998).

CHAPTER 13

COMPARATIVE ANALYSIS OF MONTANA GAME FARM POLICY

Game Farm Policy within Rocky Mountain Provinces

The Canadian game farm industry developed in response to the success of the industry in New Zealand (Saskatchewan Agriculture and Food 1998b) [figures 21 and 22] Provincial laws and regulations govern the development of Canadian game farms (Alberta Agriculture, Food and Rural Development 1998a). Alberta and Saskatchewan represent a substantial proportion of elk production within Canada (Alberta Agriculture, Food and Rural Development 1998a). Elk, deer and moose farms are permitted in Alberta under the Livestock Industry Diversification Act (LIDA)⁹² and the Wildlife Act⁹³. The Wildlife Act, which has been amended to allow game farming, defines and protects the wildlife species within Alberta (Alberta Agriculture, Food and Rural Development

⁹² LIDA is administered by the Animal Industry Division of Alberta Agriculture, Food and Rural Development (Alberta Agriculture, Food and Rural Development 1998b). There are two sets of regulations within LIDA, the Livestock Industry Diversification (Principal) Regulation and the Livestock Industry Diversification (Ministerial) Regulation (Alberta Agriculture, Food and Rural Development 1998b). The principal regulation governs which species of game animals and what products may be farmed and sold, while the ministerial regulation dictates the establishment of procedures to control the industry (Alberta Agriculture, Food and Rural Development 1998b).

⁹³ The Wildlife Act is administered by the Field Services and Wildlife Management Divisions of the Environmental Protection, Natural Resources Service-Enforcement (Alberta Agriculture, Food and Rural Development 1998b).

1998b) Under this Act, big game animals can be privately owned; however, the farms must comply with the regulations set forth in LIDA or the animals revert to wildlife status (Alberta Agriculture, Food and Rural Development 1998b). Additionally, since 1986 it has been illegal to capture free-ranging wildlife for private use (Alberta Agriculture, Food and Rural Development 1998b).

**Figure 21: Farmed Deer in Canada and USA 1996
(Saskatchewan Agriculture and Food 1998c)**

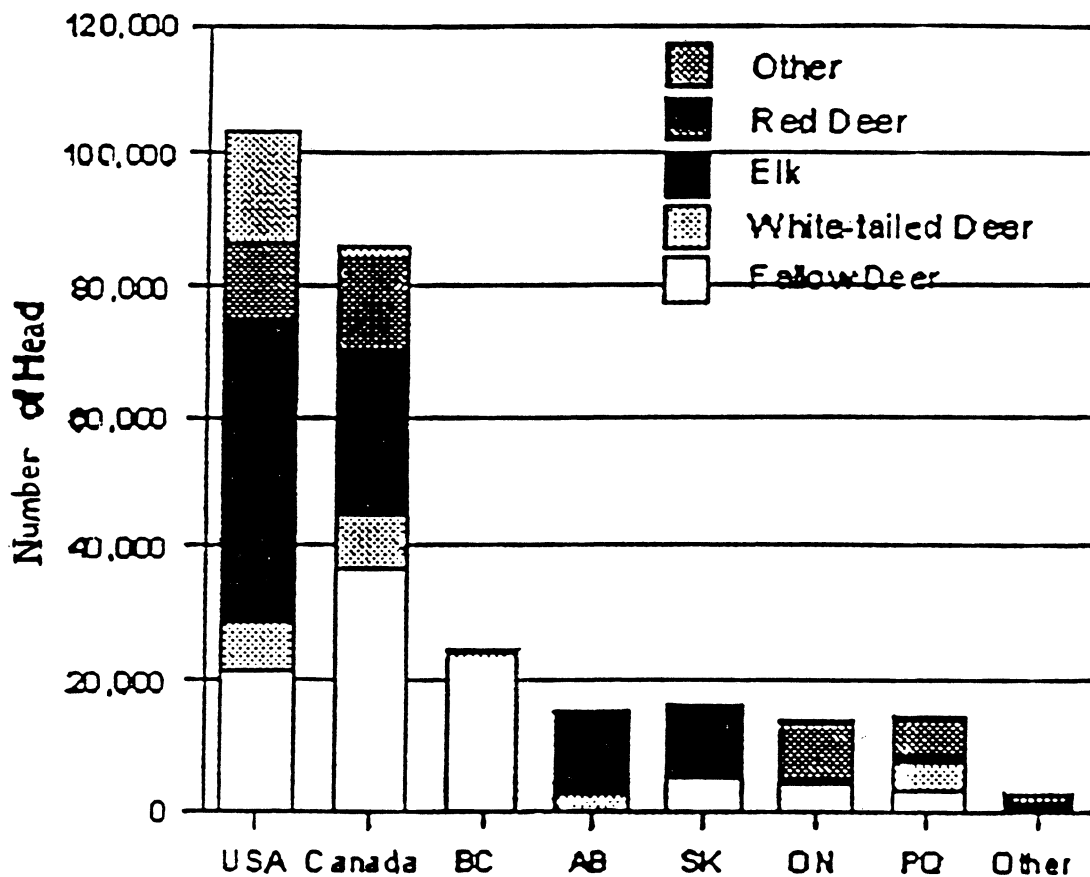


Figure 22: Canadian Elk Herd Estimates (Alberta Agriculture, Food and Rural Development 1998a)

	1993	1994	1995	1996
Alberta	5,918	7,398	9,250	12,000
Saskatchewan	5,500	6,875	8,594	10,000
Ontario	1,500	1,875	2,340	3,000
NWT/Yukon	280	210	130	100
Quebec	190	285	390	500
Atlantic Canada	110	90	75	60
Manitoba	90	160	220	334
Total Canada	13,558	16,893	20,999	25,994

The established procedure for obtaining a non-transferable game farm license requires an annual fee of \$100, a successful inspection⁹⁴ of the proposed game farm, and the completion of required status reports (Alberta Agriculture, Food and Rural Development 1998b). According to Alberta's Deer and Elk Procedures Manual (1998b), adult , newborn , velveted, transported and slaughtered game animals must be registered and accounted for with the Animal Industry Division. Only permitted game farm operators can legally possess entire antlers, and antlers must be identified immediately after they are removed (Alberta Agriculture, Food and Rural Development 1998b). LIDA also

⁹⁴ The purpose of the inspection is to ensure that the land is privately owned and constructed according to regulation (Alberta Agriculture, Food and Rural Development 1998b). For instance, fences must be seven to eight feet high (Alberta Agriculture, Food

incorporates provisions regarding the humane treatment of game farm animals, particularly within velveting operations (Alberta Agriculture, Food and Rural Development 1998b). Additionally, the slaughter of game farm animals must be conducted at a plant that has been approved by the Minister, and reported (Alberta Agriculture, Food and Rural Development 1998b).

As a result of the recent TB outbreak in elk, the Animal Health Division requires that an elk receive a *negative health status* and a permit before being transported (Alberta Agriculture, Food and Rural Development 1998b). "This program applies primarily to tuberculosis and brucellosis but could also include other reportable diseases as circumstances require" (Alberta Agriculture, Food and Rural Development 1998b:sec.11). In addition, a 1988 moratorium, which will remain in place until effective screening methods are developed, prevents the importation of any ungulate (Alberta Agriculture, Food and Rural Development 1998b).⁹⁵ Finally, red deer and red-deer hybrids are not permitted within Alberta (Alberta Agriculture, Food and Rural Development 1998b).

In Saskatchewan, there are currently 410 licensed game farms, which support approximately 16,500 elk (Saskatchewan Agriculture and Food 1998a) [**figures 23 and 24**]. The industry was valued at \$85 million in 1996, and the number of licensed game farms continues to increase by more than 30 percent annually (Saskatchewan Agriculture and Food 1998a, Saskatchewan Agriculture and Food 1998c). Elk farming was

and Rural Development 1998b).

⁹⁵ Elk can be imported from the Yukon and neonatal calves can be imported from Saskatchewan (Alberta Agriculture, Food and Rural Development 1998b).

legitimized as an agricultural activity in 1987 under the Game Farming and Game Products Merchandising Regulations (Saskatchewan Agriculture and Food 1998a). These regulations are administered primarily by the Department Agriculture and Food; however, the Department of Environment and Resource Management has the authority to manage disease transmission (import/export permits), or other facets of game farming that may impact the management of wildlife (Saskatchewan Agriculture and Food 1996a).

**Figure 23: Number of Game Farms in Saskatchewan
(Saskatchewan Agriculture and Food 1998c)**

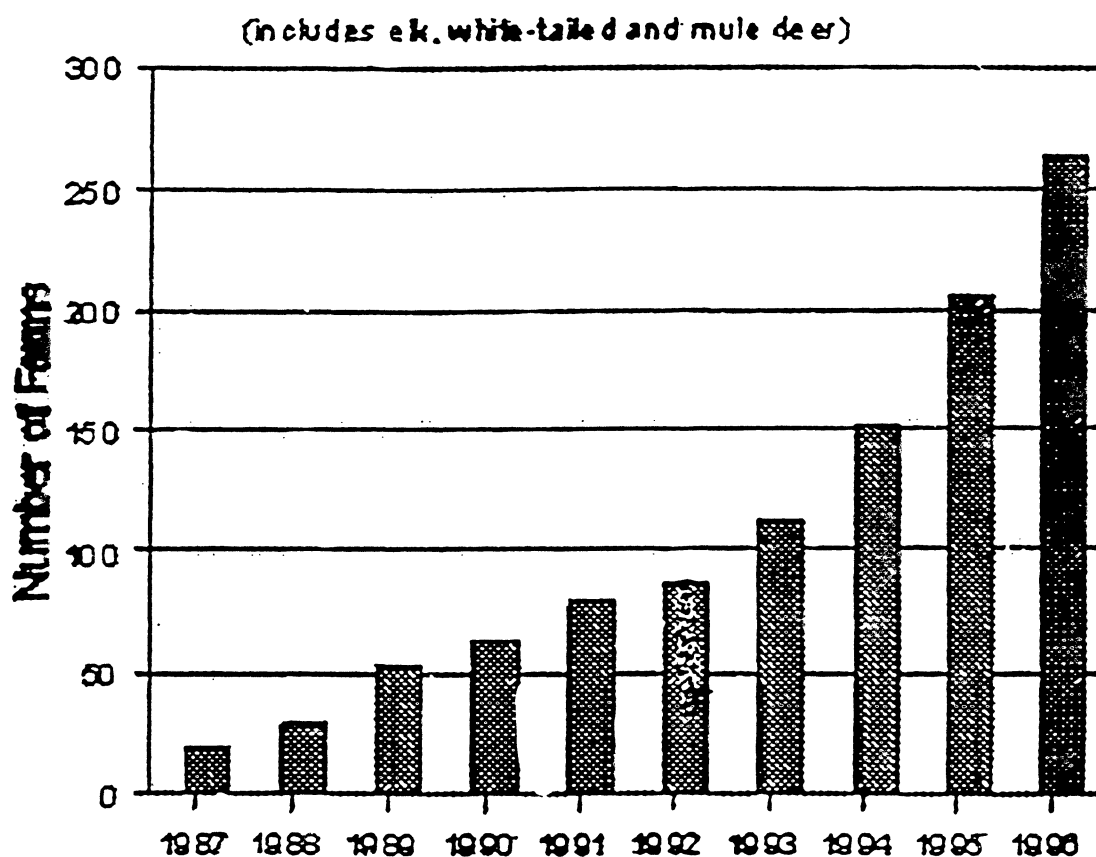
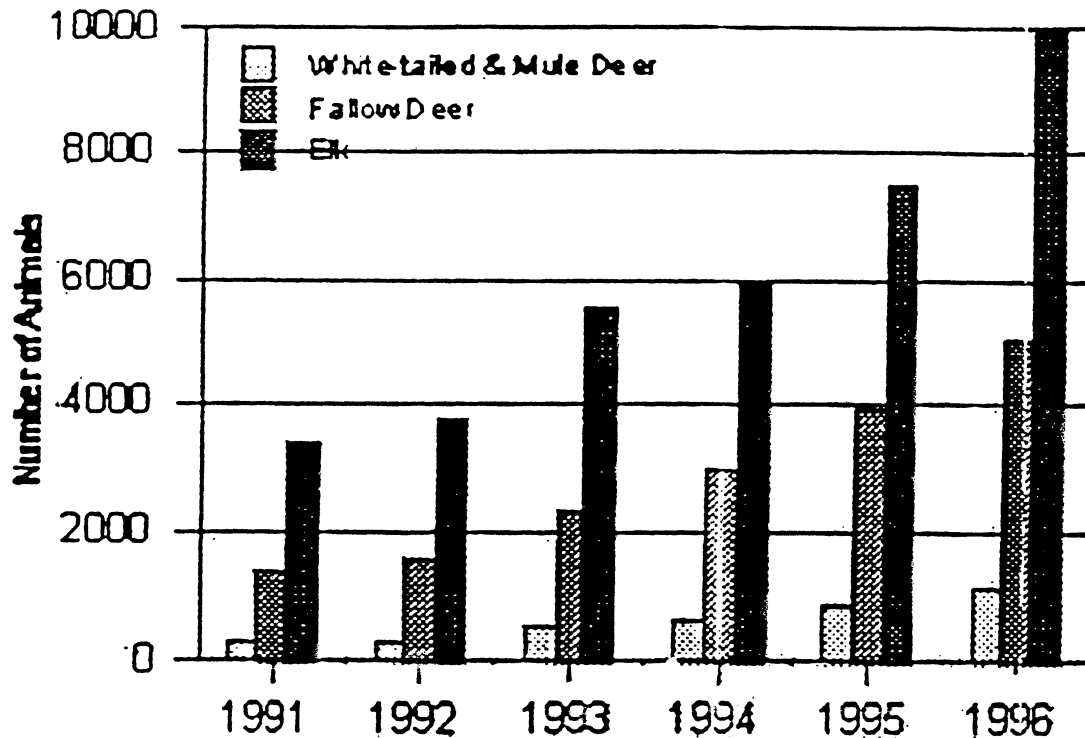


Figure 24: Farmed Deer in Saskatchewan
(Saskatchewan Agriculture and Food 1998c)



Under these regulations, a game farm owner must be licensed, and must pay an annual fee of \$100 (Saskatchewan Agriculture and Food 1998a). A license is not granted until the game farm operator meets the fencing requirements (7 ft), individually and uniquely identifies his/her animals, provides documentation that the farm resides on private land, and agrees to maintain annual reports for all inventory and changes in inventory (Saskatchewan Agriculture and Food 1998a). Additionally, the initial stock must be purchased from a breeder, Crown wildlife cannot be used to stock game farms, and import or export permits are required for live game animals that enter or exit the province (Saskatchewan Agriculture and Food 1998a). The Game Farming and Game Products

Merchandising Regulations also require the humane treatment (housing, handling and transportation) of game farm animals (Saskatchewan Agriculture and Food 1998a). Finally, game farm meat products must be labeled in order to identify the processor (Saskatchewan Agriculture and Food 1998a). This regulation is in place to prevent home slaughter, which often accompanies the payment of access fees, or paid hunting (Saskatchewan Agriculture and Food 1998c).

As a result of a number of controversial issues surrounding the game farm industry, Saskatchewan is currently in the process of revising their game farm regulations (Saskatchewan Agriculture and Food 1998c). Although the Provincial government is committed to the protection of wildlife and wildlife related activities (i.e., hunting, outfitting, eco-tourism, etc.), it is also committed to encouraging the sustainable development of the game farm industry (Saskatchewan Agriculture and Food 1998c).⁹⁶ First, there is concern over increased levels of poaching and the introduction of diseases (Saskatchewan Agriculture and Food 1998c). However, the government does not recognize this as a problem, since only two people have been convicted of poaching wildlife and no known incidents of disease introduction have occurred (Saskatchewan Agriculture and Food 1998c). Second, there is concern over both the escape of game farm animals and the intrusion of wildlife into game farm facilities (Saskatchewan Agriculture and Food 1998c). The Game Farming and Game Products Merchandising Regulations requires a fence that is approximately seven feet high, but this fence height is

⁹⁶ This has been stated as being non-negotiable (Saskatchewan Agriculture and

not adequate for several game farm species (Saskatchewan Agriculture and Food 1998c).

Under current regulations, escaped game farm animals are considered the responsibility of the game farm operator; however, there is considerable concern over wildlife threats posed by escaped game farm animals that are not recaptured immediately (Saskatchewan Agriculture and Food 1998c). Additionally, there is a concern that current policy does not address who is responsible for the removal of wildlife prior to stocking the land with privately owned animals, nor does it address the removal of animals that gain access to the farms or damage fences (Saskatchewan Agriculture and Food 1998c). Third, there is concern over the importation of native and exotic game farm animals with regard to disease and threats of hybridization and competition (Saskatchewan Agriculture and Food 1998c). A fourth concern exists over the fact that game farming is not allowed on Crown lands (Saskatchewan Agriculture and Food 1998c). Many game farmers believe that they should have the same access to Crown lands as other agricultural producers (grazing leases) (Saskatchewan Agriculture and Food 1998c). Wildlife interest groups are opposed to this because it would restrict hunting opportunities and it would negatively impact habitat available for wild species (fencing requirements) (Saskatchewan Agriculture and Food 1998c). Fifth, game farmers who are considering entering the business have been lobbying for permission to capture public wildlife for private and commercial purposes (Saskatchewan Agriculture and Food 1998c). These game farmers argue that selective live capture programs would reduce game damages and vehicle collisions, as well as

Food 1998c).

promote the rapid growth of the industry (Saskatchewan Agriculture and Food 1998c). However, established game farmers argue that this new source of breeding stock will depress prices of existing stock (Saskatchewan Agriculture and Food 1998c). In addition, wildlife interests fear that the private capture of wildlife would undermine the public system of wildlife management (Saskatchewan Agriculture and Food 1998c). Game farmers are also arguing for permission to establish paid hunting on game farms; however, hunters fear that this will not only promote an anti-hunting sentiment but will also encourage other private landowners to begin charging access fees as well (Saskatchewan Agriculture and Food 1998c). Finally, game farmers have proposed to shift game farm administration and enforcement into the hands of one department (Saskatchewan Agriculture and Food), and amend domestic livestock legislation to include game farm animals (Saskatchewan Agriculture and Food 1998c). This proposal is unacceptable to wildlife interests who fear that wildlife protection would be compromised if the Department of Environment and Resource Management were excluded from regulating the industry (Saskatchewan Agriculture and Food 1998c). As previously stated, the Saskatchewan government firmly believes that game farming and wildlife management are compatible and it is attempting to alter the current regulations, based on a stakeholder/public review process to ensure the survival of both (Saskatchewan Agriculture and Food 1998c).

Although game farming is permitted within British Columbia, elk farming is not (The

BC Ministry of Agriculture and Food 1998).⁹⁷ Bison and fallow deer farming was legalized in 1987, and reindeer farming was legalized within British Columbia in 1993 (The BC Ministry of Agriculture and Food 1998).⁹⁸ Jurisdiction over game farms is split between the Ministry of Agriculture, Fisheries and Foods and the Ministry of Environment, Lands and Parks, and game farming is strictly controlled (The BC Ministry of Agriculture and Food 1998). First, specific standards (i.e., fencing requirements, animal identification) must be met in order to receive a game farm license (The BC Ministry of Agriculture and Food 1998). With regard to velvet processing, animals must be handled in a humane manner (The BC Ministry of Agriculture and Food 1998). Finally, hunting of game farm animals is prohibited, and meat processing must occur at a licensed slaughter facility (The BC Ministry of Agriculture and Food 1998).

Game Farm Policy within Rocky Mountain States

On average, Colorado elk farms are relatively small scale-50 acres with less than 50 head (Rich 1993). As of 1993, Colorado was home to 85 elk farms that housed 3,300 animals (Lanka 1993). Privately owned wildlife must be licensed under the Colorado

⁹⁷ Fallow deer, bison and reindeer can be farmed (The BC Ministry of Agriculture and Food 1998).

⁹⁸ Reindeer farming was conditionally approved for a specific region in 1988 (The BC Ministry of Agriculture and Food 1998).

State Board of Stock Inspection as an alternative livestock farm, or under the Division of Wildlife as a wildlife park (North American Elk Breeders Association 1997a). Under Colorado Statute 35-41.5-106, each applicant for an alternative livestock farm must submit the following information to the Board: proof of inspection of the farm by the Board, proof that a site review of the proposed location has been conducted by the Division of Wildlife, individual identification of each alternative livestock animal, and an annual licensing fee of \$300. Additionally, this section (35-41.5-106) states that game farm licenses are non-transferable; the board must inspect alternative livestock prior to any movement, sale or slaughter; and that records must be maintained for three years after the death or sale of an animal. Finally, Colorado Statute 35-41.5-116 states that all fees and civil fines shall be transmitted to an alternative livestock fund, which is used to carry out game farm regulation.

Concerns regarding escaped alternative livestock animals, the introduction of exotics and disease transmission are also addressed. Colorado Statutes 35-41.5-111 and 33-1-106 establish regulations concerning escaped alternative livestock. Under these statutes, an alternative livestock owner has 72 hours to recover escaped wildlife. Escaped animals that have not been recovered after this period must be reported to the Division of Wildlife, who will then recover the animals at the owner's expense.⁹⁹ In order to address the issue of exotics, Colorado Statute 33-1-106 grants permission to the wildlife commission to

⁹⁹ According to Colorado Statute 33-1-106, a maximum cap of \$1,000 per animal [not to exceed an aggregate of \$5,000] is established for legally held alternative livestock species. However, with regard to the escape of prohibited species, neither a maximum cap

prevent the introduction of red deer or other hybrid non-native species.¹⁰⁰ Finally, all animals that are shipped to Colorado must have a certificate of veterinary inspection, indicating that have been tested for brucellosis, TB, bangs, and Johne's Disease.

Commercial wildlife farms are also permitted in Idaho, which had 20 game farms that contained 800 privately owned animals in 1993 (Lanka 1993). Under Idaho Statute 36-7-703, a potential game farmer must submit an application [Division of Animal Industries] to obtain a permit to hold domestic game animals. The initial application fee is \$100, with an annual renewal fee of \$50 and a per head fee of \$5 to cover administration costs. A game farm application must include the following: notice that the potential wildlife farm is privately owned; the potential site does not have a substantial impact on free-ranging wildlife populations; the farm is enclosed [fence requirement of 8 feet]; and an agreement that records will be kept, animals will be individually and uniquely identified, and an annual report will be provided to the Division of Animal Industries. Additionally, Idaho Statute 36-7-708 grants the fish and game commission authority to insure the humane treatment of captive animals. However, the authority to regulate the breeding, raising, producing and marketing of commercial wildlife is vested in the department of agriculture. Finally, although pre-veterinary inspections and testing for all wildlife and

per animal nor incident is mandated.

¹⁰⁰ The Colorado Division of Wildlife has spent over \$150,000 between 1989-1992 in an effort to remove populations of exotic ungulates (Kahn 1993). To date, these efforts have not been successful (Kahn 1993). According to Kahn (1993:498), "breeding populations of exotic ungulates have been established in the wild in at least six sites."

exotics are required, "[o]nce non-prohibited exotic¹⁰¹ wildlife are imported into Idaho they are unregulated" (Lanka 1993 43).

Unlike other Rocky Mountain states, game farms are prohibited in Wyoming.¹⁰² There is currently one Wyoming game farm, containing 300 captive animals, which was grandfathered in 1974 (Lanka 1993). During August of 1989, Mr John T Dorrance III sought permission from the Wyoming Game and Fish Department to operate a game farm/ranch (Lanka 1993). Additionally, House Bill 193 was sponsored by representatives Zumbrennen and Tysdal to amend existing game farm laws [Wyom. Statute 23-1-103 and 23-3-301]. House Bill 193 was designed to authorize and regulate the private ownership and sale of game animals. Interestingly, H.B. 193 also granted jurisdiction to the department of agriculture. Mr. Dorrance's application and H.B. 193 generated significant public interest; in turn, a committee was formed to conduct a review of the potential implications of exotic wildlife and game farms in Wyoming (Lanka et. al. 1990). The final draft of this report legitimated concerns regarding competition, disease transmission, hybridization, and the establishment of free-ranging populations of exotics (Lanka et. al 1990). In turn, Wyoming statutes 23-1-103 and 23-3-301 were not amended.

¹⁰¹ All exotic species that will cross breed with native wildlife are prohibited (i.e., red deer) (Lanka 1993).

¹⁰² According to Wyoming Statutes 23-1-103 and 23-3-301, "[t]here shall be no private ownership of live animals classified in this act as big or trophy animals" (Lanka et al 1990:103). Additionally, the Wyoming Game and Fish Commission has stated that they are not in favor of game farms (Lanka et al. 1990).

CHAPTER 14

DISCUSSION

An analysis of elk farm policy requires a discussion of the struggle between groups, which hold diverse perceptions of elk farming, to represent wildlife policy/management decisions. According to Greider and Garkovitch (1994: 17), "[w]hen society addresses diverse environmental questions, knowledge of the groups with vested interests in that particular physical environment by having incorporated it into their landscapes becomes a factor in understanding subsequent events". In turn, the historical and comparative analysis of Montana game farm policy was conducted in an effort to understand the public perceptions of the elk industry within the Rocky Mountain region, and the relative influence (access to power) of various interest groups within the larger political system.

Based on a review of the historical development of game farm policy in Montana, institutionalism and elitism, which favor incremental policy changes, have been operating. Game farming was legalized in Montana in 1917, and has since become a highly controversial and political issue within Montana. As seen within figure 25, all of the bills that have been passed since 1983 were supported by the majority, based on testimonies provided at the hearings.¹⁰³ For instance, House Bill 556 had 15 supporters and 11

¹⁰³ I have chosen to analyze testimonies rather than visitor comments because those people/organizations that provide testimonies are more involved in the struggle; therefore, they hold well defined opinions.

people in opposition. Similarly, 16 people were in support of House Bill 338 while 1 person was opposed. Finally, 29 people provided testimony in support of Senate Bill 389 and 11 provided opposing testimonies.

However, figures 25 and 26 also represent the fact that the political system is more than a simple group struggle. The majority also supported HB 412, SB 173, and SB 215 but these bills were not passed. Additionally, the largest number of people participated in the SB 215 hearings – followed by HB 556, SB 389, SB 173, HB 412, and HB 338. Senate Bill 215 had the largest numbers of visitors in attendance at the committee hearing, as well as a large number of supporters (73 S : 23 O) but it failed. Why did it fail? Senate Bill 215, which sought to transfer jurisdiction to the Department of Livestock, failed because it represented a radical policy change. Similarly, SB 173 garnered a substantial amount of public support (37 S . 11 O); however, a moratorium on game farming also represents a radical policy change. In turn, the Montana Legislature has responded with incremental policy changes that favor tighter restrictions rather than a complete ban on the industry

According to figure 36, there have been varying levels of community/interest group involvement within the political struggle over game farming between 1893 and 1995. Based on the historical review of game farm policy in Montana, it seems that political involvement is directly related to recent events in Montana. First, there was not much involvement in the committee hearings regarding HB 448, which established a new regulatory framework for game farming, in 1983. This lack of involvement is related to

the fact that HB 448 was a compromise, or consensus bill, which was developed by the Game Farm Task Force (MFWP, DOL and game farmers). As a result of the increase in problems associated with Montana game farms, political interested rocketed during the 1991 Legislative Session. First, earlier in the year a Montana game farmer transported TB infected elk into Alberta and Colorado, which has since resulted in a moratorium on the importation of ungulates into Alberta. Additionally, this same game farmer was accused of smuggling illegally captured elk from Montana. Since this individual's ranch is on the northern border of Yellowstone National Park, there was a huge public outcry regarding the safety of Montana's wildlife. In turn, HB 556 was passed to alleviate the problems associated with poaching, disease transmission and the introduction of exotics.

Public involvement withered in 1993 because HB 338 was once again the product of a working groups consensus, and there were no major game farming incidents in Montana during that time. It is important to note that the first moratorium bill was sponsored during this session as well (HB 412); however, there was a delayed public response to this. This delayed response became apparent in the 1995 session when political involvement skyrocketed. This dramatic increase in public involvement can be attributed to the polarization of the game farm issue within Montana. As stated in the historical analysis of Montana game farm policy, three bills were introduced in the 1995 Legislative Session. The first bill (SB 173) was a second moratorium bill, which can be seen as a radical policy change. On the opposite end of the spectrum, the second bill was an attempt to transfer game farm jurisdiction to the Department of Livestock. Senate Bill 215 was also a radical

policy change. Finally, SB 389 represented an incremental policy change and, therefore, was the one that was accepted by the Montana Legislature. Although, there were no major events occurring in Montana with regard to game farming (i.e., disease outbreaks, etc.), the game farm industry is currently experiencing a major political shift. Game farming in Montana is becoming a highly polarize, highly controversial issue. In turn, political interests are beginning to mobilize, and become more involved in the political struggle to represent within game farm policy decisions.

According to Dye (1972:31), incremental policy changes may occur because there are "heavy investments in existing programs (sunk costs) which preclude any really radical changes. . Hence, not all policy alternatives can be seriously considered, but only those which cause little physical, economic, organizational, and administrative dislocation." A review of an opponents testimony at the Senate Committee on Agriculture, Livestock and Irrigation Hearing on SB 173 (moratorium bill), which noted that it would cost about \$25 million to phase out game farm facilities in Montana, supports the notion that there are currently heavy financial investments in Montana's game farm industry. Unlike the wildlife interests, supporters of the elk industry have been deeply involved in the historical development of game farm policy in Montana. Wildlife interests have become increasingly more involved in the development of game farm policy since 1991, however, the elk industry, which is supported by livestock and private property rights interests, has developed as an institution that is wielding its political power in an effort to preserve the current system through the passage of incremental policy changes.

Figure 25: Interest Group Involvement in the Development of Montana Game Farm Policy

	HB 448 (1983)	HB 556 (1991)		HB 338 (1993)		HB 412 (1993)		SB 173 (1995)		SB 215 (1995)		SB 389 (1995)	
		H	S	H	S	H	S	H	S	H	S	H	S
CONGRESSIONAL COMMITTEE													
<i>Department of Livestock Board of Livestock</i>		1	1	1	1							1	6
<i>North American Elk Breeders Association</i>		1								1			
<i>Game Farmers</i>		13	28			5		2		27			9
<i>Montana Stockgrowers Association</i>								1		1			
<i>Montana Farm Bureau</i>			1					1		1			1
<i>Montana Elk (Game) Breeders Association</i>			1	2	1	7		4		1		5	9
<i>Colorado Elk and Game Breeders</i>										1			
<i>MT Chapter of North American Elk Growers</i>		2											
<i>Montana Fence</i>										1			
<i>Montana Veterinary Medical Association</i>										1			
<i>Cattle Companies</i>		1											
<i>Department of Fish, Wildlife and Parks</i>		1	1	3	2			1		2		2	3
<i>Montana Wildlife Federation</i>		1	1	5	1	2		1		1		1	1
<i>Montana Bowhunters Association</i>				1	1	2		1		1		1	1
<i>Montana Audubon Legislative Fund</i>		1	1	1	1	1		1		1		1	1
<i>Skyline Sportsmen's Club</i>				1		2		2		1			
<i>Anaconda Sportsmen's Club</i>				1		1		1		1			
<i>Ravalli County Fish and Wildlife Association</i>				1				2				1	
<i>Last Chance Audubon Society</i>						2							
<i>Friends of Mount Helena</i>						1							
<i>The Hunter's Institute</i>								1					
<i>Dept. of Health and</i>								1					

<i>Environmental Science</i>															
<i>Colorado Division of Wildlife</i>								1							
<i>United Bowhunter's Association</i>								1		1					
<i>Montanans Opposed to Game Farming</i>								2							
<i>Russel County Sportsman's Association</i>								1							
<i>State Lands Coalition</i>								1		1					
<i>Montana Auction for Actis</i>								1							
<i>Flathead Wildlife Medicine River Canoe Club</i>								1							
<i>Madison Gallatin Alliance</i>										1					
<i>Prickly Pear Sportsmen Association</i>										1			1		
<i>Gallatin Wildlife Association</i>								1							
<i>Montana Retail Association</i>		1													
<i>National Geographic Southeastern Sportsmen Association</i>		1							1						
<i>Sportsmen</i>								2							
<i>Individuals</i>		9	4		1	8		15		48			3	5	
<i>Attorney-Law Professor at the University of Montana</i>								1							
<i>Professor of Environmental Studies [Calgary]</i>								1							
<i>Veterinarian</i>								1							
<i>Senator</i>								1					2	1	
<i>Governor's Office</i>															1
<i>Media</i>			1												
SUB-TOTAL		33	38	16	8	34	0	48	0	93	0	78	39		
TOTAL		71		2		34		48		93		57			

Compromise Bill

**Figure 26: Interest Group Involvement in the Development of
Montana Game Farm Policy**

	<i>HB 448 (1983)</i>	<i>HB 556 (1991)</i>		<i>HB 338 (1993)</i>		<i>HB 412 (1993)</i>		<i>SB 173 (1995)</i>		<i>SB 215 (1995)</i>		<i>SB 389 (1995)</i>		
POSITION		S	O	S	O	S	O	S	O	S	O	S	O	
<i>Department of Livestock Board of Livestock</i>		X	X	X									X	
<i>North American Elk Breeder's Association</i>										X				
<i>Game Farmers</i>		X	X				X		X	X			X	
<i>Montana Stockgrowers Association</i>									X	X				
<i>Montana Farm Bureau</i>		X							X	X			X	
<i>Montana Elk (Game) Breeder's Association</i>		X	X	X			X		X	X			X	
<i>Colorado Elk and Game Breeder's</i>										X				
<i>MT Chapter of North American Elk Growers</i>		X												
<i>Montana Fence</i>										X				
<i>Montana Veterinary Medical Association</i>										X				
<i>Cattle Companies</i>	Compromise Bill													
<i>Department of Fish, Wildlife and Parks</i>		X		X				X			X	X		
<i>Montana Wildlife Federation</i>		X		X		X		X			X		X	
<i>Montana Bowhunters Association</i>				X		X		X			X		X	
<i>Montana Audubon Legislative Fund</i>		X		X		X		X			X	X		
<i>Skyline Sportsmen's Club</i>				X		X		X			X			
<i>Anaconda Sportsmen's Club</i>						X		X			X			
<i>Ravalli County Fish and Wildlife Association</i>								X						X
<i>Last Chance Audubon Society</i>							X							
<i>Friends of Mount Helena</i>							X							
<i>The Hunter's Institute</i>									X					
<i>Dept. of Health and Environmental Science</i>									X					
<i>Colorado Division of Wildlife</i>									X					

<i>United Bowhunter's Association</i>								X			X			
<i>Montanans Opposed to Game Farming</i>								X						
<i>Russel County Sportsman's Association</i>								X						
<i>State Lands Coalition</i>								X			X			
<i>Montana Auction for Actis</i>								X						
<i>Flathead Wildlife</i>								X						
<i>Medicine River Canoe Club</i>								X						
<i>Madison Gallatin Alliance</i>	Compromise Bill										X		X	
<i>Prickly Pear Sportsmen Association</i>											X			
<i>Gallatin Wildlife Association</i>									X					
<i>Montana Retail Association</i>														
<i>National Geographic</i>		X												
<i>Southeastern Sportsmen Association</i>							X							
<i>Sportsmen</i>														
<i>Individuals</i>		X			X	X	X		X	X	X	X	X	X
<i>Attorney-Law Professor at the University of MT</i>									X					
<i>Professor of Envir. Studies [Calgary]</i>									X					
<i>Veterinarian</i>									X					
<i>Senator</i>		X							X			X	X	
<i>Governor's Office</i>														
<i>Media</i>														
SUB-TOTAL		15	11	16	1	7	6	37	11	70	23	29	11	
TOTAL		26	17	13				48		93		40		

Although one trend in Montana game farm policy has been the imposition of tighter restrictions on the industry, a second trend has been an increase in the Department of Livestock's regulatory authority over the industry. Until 1991, primarily the Department of Fish, Wildlife and Parks managed game farming.¹⁰⁴ Similarly, game farm legislation was referred to the Fish and Game Committees prior to 1995, when it was transferred to the Agriculture, Livestock and Irrigation Committees. It is also important to note that in 1947, farmed bison populations were reclassified as domestic livestock and are currently managed under the jurisdiction of the Department of Livestock. Under current Montana game farm policy, the Department of Livestock is responsible for game farm inspections, transportation, marketing, importation, quarantine, interior facilities, and health related issues. Meanwhile, the Department of Fish, Wildlife and Parks has authority over record-keeping, fencing, classification of exotic species, and limited removal and inspection status. Although regulatory authority over game farms is currently split between the two departments, given the current trends, it seems likely that jurisdiction over farmed elk, like bison, will be transferred to the Department of Livestock.¹⁰⁵

With regard to regional policy, elk farming is legal in Saskatchewan, Alberta, Colorado, and Idaho. It is illegal to farm elk in British Columbia and Wyoming [figures

¹⁰⁴ According to the 1983 game farm statutes, Fish, Wildlife and Parks had primary jurisdiction over over farms but was required to comply with existing laws that were established by the Department of Livestock. After the disease outbreak in 1991, however, shared responsibility over game farms became a legislative mandate.

¹⁰⁵ The possible implications of this policy shift will be further developed within the conclusion.

27 and 28]. Within the states and provinces where elk are commercially farmed, the trend seems to be one of shifting game farm regulation into the hands of agricultural/livestock officials. Under Alberta's game farm policy, elk farming is regulated by both the Department of Agriculture, Food and Rural Development and the Environmental Protection and Natural Resources Service, with primary jurisdiction in the hands of agriculture officials. Saskatchewan splits game farm management between the Department of Agriculture and Food and the Department of Environment and Resource Management. The Department of Environment and Resource Management currently has authority over all aspects of game farming that pose a threat to wildlife populations; however, there is a strong lobby to have all regulatory authority transferred to the Department of Agriculture and Food. Within the Rocky Mountain states, Colorado livestock officials are responsible for the management of alternative livestock, such as elk.

¹⁰⁶ Similarly, Idaho's Department of Agriculture holds the authority to regulate the breeding, raising, producing and marketing of privately owned wildlife.

¹⁰⁶ In Colorado, wildlife officials have authority over the regulation of wildlife parks.

Figure 27: Distribution of Farm-Raised Elk in the USA (Renecker 1993a)

JURISDICTION	# Game Farms	# Game Farms With Elk	# of Captive Elk
Alberta	150	140	4,500
British Columbia	125	0	0
Arizona	2	1	90
Colorado	90	85	3,300
Idaho	40	20	800
Montana	106	45	1,500
New Mexico	6	4	665
Oregon	15	10	210
Utah	5	0	0
Washington	31	5	144
Wyoming	1	1	300
TOTALS	571	311	11,509

Figure 28: Game Farm Numbers in Western North America (Lanka 1993)

States where most elk are farmed	State	
	Permission of elk farming by a "grandfather clause"	Permission of only pure elk farming
Idaho	New Mexico	Colorado
Montana	California	South Dakota
Colorado	Oregon	North Dakota
North Dakota	Washington	Montana
South Dakota	Wyoming	Idaho
Kansas	Nevada	
Oklahoma	Utah	
Texas		
Minnesota		
Wisconsin		
Missouri		
Iowa		
Illinois		
Michigan		
New York		

CHAPTER 15

CONCLUSIONS AND IMPLICATIONS

At the turn of the century, various interest groups began to recognize that the relationships between themselves and wild bison were changing as bison populations dwindled. These individuals viewed the destruction of bison populations as improper and, therefore, participated in the group struggle to be represented by public policy outputs. However, the early American government was operating under a two-fold policy that facilitated both Indian subjugation and the orderly development of the west. As a result of the forces of institutionalism and elitism operating within the larger political system at this time, policy changes regarding bison management were incremental rather than revolutionary.

Since the government was so slow to respond to the bison crisis, private ranchers saved bison populations from extinction. Although private bison ranches were initially established in an effort to preserve the bison, urging from conservationists to restock herds in the United States increased the economic value of breeding stock and encouraged the growth of bison ranching as an economic endeavor. Today, bison are no longer on the verge of extinction, and many ranchers continue to farm bison for profit. However, as a result of these early management decisions, members of very powerful political groups (i.e. livestock) have changed their perceptions of free ranging bison.

Additionally, given the physical nature of the bison, there is not much support for the management of bison as a game animal. Although certain grassroots environmental organizations and Native Americans support wild bison within the Rocky Mountain region, these groups are often marginalized within the regional political struggle. In turn, the policy trend has been to manage ranched bison solely as livestock and split the management of wild bison between wildlife and agricultural agencies.

According to economic theory, the privatization of natural resources will provide incentives for their proper management and conservation. The privatization of bison in the early part of this century was vital to its protection, and has proven successful in various conservation programs in Africa (i.e., CAMPFIRE in Zimbabwe). However, interest groups that are opposed to elk farming argue that these types of strategies will jeopardize both North America's tradition of public ownership of wildlife and its successful conservation history. "[C]ommercial ownership of wildlife will erode support and lead to trivialization" (Posewitz 1993 *as cited in* Kahn 1993:500). Thus Kahn (1993:501-502) believes that the "two key issues for wildlife managers, agriculture officials and the captive wildlife industry are when the public will perceive this change [elk as domestic livestock] to occur and what will the outcome be for free-ranging elk populations?"

The positive benefits of elk farming include the fact that it represents a means of economic diversification for struggling agriculturists and is less intensive than traditional forms of agriculture. However, given the capital investments (i.e. game proof fencing) required to establish a game farm, it is questionable whether elk farming is indeed the

'saving grace' for traditional agriculturists. It is also questionable whether elk farming represents a viable diversification strategy. In order to assess the economic viability of this industry, current subsidies must be removed and the industry must be able to stand on its own. Additionally, the negative ecological conditions surrounding elk farming seem to outweigh the positive benefits received from the employment of less intensive agriculture. Thus, it appears that although elk farming may benefit a few private ranchers, the public bears [or will bear] the burden of the current and future costs associated with this industry

An assessment of the trends in regional game farm policy indicates that several other controversial issues may develop in Montana with regard to game farming. First, a currently contentious issue in Saskatchewan is the petition by elk farmers to gain access to permits to graze elk, like other domestic livestock, on Crown lands. A second issue that has recently developed in Saskatchewan is the capture of public wildlife as foundation stock for game farms. Finally, it is important to note the increasing role of private property law in the development of elk farm policy

When compared to the development of bison policy, the potential implications of elk farming as a wildlife management system become clear. There are currently a number of interest groups who feel that their relationships with elk will be dramatically affected by the farming of these species and, thus, see elk farming as improper. However, these groups were slow to unite in response to the development of this industry. As a result, the elk industry has become a legitimate institution within the Rocky Mountain region (excluding Wyoming and British Columbia) with large financial investments already in

place. In turn, most policy changes regarding elk farming within Montana have been incremental.

Although there are ecological concerns that surround the development of the elk industry, the most important concern may be the effects of fundamental changes in public perceptions and values of wildlife” (Kahn 1993:502). As policy shifts allow for the management of elk as domestic livestock, public perceptions of wild elk will be re-negotiated. As seen in the case of the bison this re-negotiation can have dramatic effects on the future management of elk populations in the Rocky Mountain region.

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