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# **CARNIVORES AND CONFLICT: A COMMUNITY APPROACH TO CARNIVORE COMPENSATION**

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## **REPORT 2**

### **PROPOSED AMENDMENTS TO ALBERTA WILDLIFE PREDATOR COMPENSATION PROGRAM**

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Prepared for:

**Waterton Biosphere Reserve Association  
Carnivore Working Group**

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## Executive Summary

For several years community groups have been discussing issues pertaining to carnivore-human conflict in and around the municipalities of Ranchland, Willow Creek, Pincher Creek, and Cardston, in southwestern Alberta. The following report discusses a series of recommendations developed by the Waterton Biosphere Reserve Association Carnivore Working Group (CWG) for changes to the provincial predator compensation program in the region. The members of the CWG believe that these changes would lead to improved local attitudes towards carnivores, improved relationships between ranchers and Fish and Wildlife Officers, and more sustainable co-existence between ranchers and carnivore populations.

Within their own community the CWG and landowners have worked independently, and in conjunction with the Department of Alberta Environment and Sustainable Resource Development (AESRD), to deliver programs, and provide assistance where needed, to landowners to reduce the risk and impacts of carnivore-human conflict in the area. Such programs demonstrate the ability, willingness, and dedication of landowners to find better solutions and mitigation strategies to deal with carnivore conflict. The following report is an extension of this work. These recommendations are designed to address concerns expressed by community members, promote an increased level of tolerance for carnivore activity, and work towards improving the effectiveness, efficiency, and fairness of the Alberta Wildlife Predator Compensation Program.

While alternative program designs were considered (*i.e.* insurance programs and/or performance payments), the CWG agreed that the current Alberta Wildlife Predator Compensation Program is a strong foundation to build on and improve upon. Each program design has its own strengths and weaknesses, but the *ex-post* program currently in place provides a base that is seen by the CWG as being more easily understood and transparent to both users and funders than other alternatives that are available. The CWG aims to combine proposed amendments to the compensation program with a program to educate landowners concerning husbandry practices, and to continue to provide funds and support for measures that reduce and prevent conflict.

The CWG has prepared five broad recommendations for the Government of Alberta to consider as components of a pilot program in southwestern Alberta. The foremost recommendation is the application of a multiplier to the amount of compensation paid on confirmed livestock losses. Other recommendations include: additional compensation for probable kills, breeding livestock, guard animals, and purebred livestock; a review of the criteria employed for identifying probable kills; the development and delivery of a verification course for livestock producers; and an annual evaluation of any pilot and/or compensation program. These recommendations are intended to ensure that livestock producers receive fair

compensation for killed or missing animals. The delivery of a verification course and annual program evaluation will develop capacity among community members to better assess and understand their losses, build better rapport with the program managers and Fish and Wildlife Officers, and increase community involvement in the future development of compensation policy in southwestern Alberta.

## **Introduction**

Human tolerance of large carnivores is shaped by the direct and indirect effects that carnivores have on human populations. The costs and burdens of carnivore conservation are often borne disproportionately by rural populations living directly with carnivores (Nyhus et al., 2003). Compensation programs attempt to balance these costs by reimbursing private landowners for losses or damages incurred from carnivore activity. However, there are many facets to the costs borne by livestock producers, and when a compensation program does not sufficiently support producers, the program will not be effective until it grows to meet their needs.

The goal of this report is to make recommendations to improve the Alberta Wildlife Predator Compensation Program. The Carnivore Working Group of the Waterton Biosphere Reserve Association has prepared the following document to propose a pilot compensation program to the Alberta Department of Environment and Sustainable Resource Development (AESRD). The aims of the compensation measures presented in this report are to improve the effectiveness, efficiency, and fairness of the compensation program, increase tolerance of livestock producers towards carnivores, and improve producer satisfaction with the Alberta Wildlife Predator Compensation Program. This report has been developed by working with community members to determine in what ways the current program could be better adapted to satisfy their needs. Providing sufficient support for livestock producers enables them to better tolerate the activity of carnivores.

The report begins by summarizing the current Alberta Wildlife Predator Compensation Program, findings of a landowner survey in the Waterton Biosphere Reserve from 2009-2010, and a subsequent literature review and workshop report by the Miistakis Institute that, together with the survey, revealed the perceptions of ranchers, and other residents, in southwestern Alberta. The following report then outlines the amendments to the current program that community representatives have determined to be desirable and viable within their communities. Although the Alberta Government has not made a commitment to revise the Alberta Wildlife Predator Compensation Program, this report explores ways to improve the compensation program in southwestern Alberta, so that it will be more effective and better serve local communities. The goal of these recommendations, supported by the affected municipalities of Ranchland, Willow Creek, Pincher Creek, and Cardston, is to encourage the province to make changes to the existing program and/or endorse a pilot program in southwestern Alberta to test alternatives. If a pilot program is initiated, changes implemented in the pilot region should be monitored and evaluated so that successful practices can be transferred to other municipalities of Alberta and act as a potential model for provincial compensation.

## **Waterton Biosphere Reserve Association: Carnivore Working Group**

The Waterton Biosphere Reserve Association (WBRA) is a non-profit organization focused on linking biodiversity conservation to sustainable human use of resources in the region of the Waterton Biosphere Reserve. Established in the early 1980s, the association has worked closely with local people for over 30 years to integrate conservation values with traditional livelihoods.

### **WBRA objectives:**

- To encourage a sustainable, community-based regional economy, with high quality biodiversity, landscape and social values.
- To promote public awareness of resource management concerns facing residents of the Waterton Biosphere Reserve area.
- To participate with area residents in developing projects to address local concerns.
- To encourage cooperative resource management practices between private landowners and governments by providing a forum for the exchange of information.

### **Carnivore Working Group**

The Carnivore Working Group (CWG) is a community-based, landowner driven working group associated with the Waterton Biosphere Reserve Association. The CWG oversees project initiatives concerning carnivore-human conflict within the municipalities of Ranchland, Willow Creek, Pincher Creek, and Cardston. The CWG was directly involved in the discussion and design process of the compensation features outlined in the following report, and was a key player in the formulation of a proposed pilot for an alternative compensation program.

*Note: The CWG Terms of Reference can be found in Appendix II.*

## **Carnivore Compensation**

In an effort to reduce the deaths of carnivores, the negative impacts of carnivore activity, and the negative perceptions associated with lethal control, managers and conservationists have begun using compensation schemes (Decker et al., 2006; Haber, 1996). Compensation programs are a means of reimbursing private landowners for damages and losses caused by carnivores, while at the same time promoting the conservation of these animals. The goals of such programs typically include: equalizing the burden of conservation costs between rural and urban populations; promoting good husbandry practices; reducing poaching; improving attitudes and perceptions towards carnivores; and increasing human tolerance of carnivore activity (Nyhus et al., 2003). However, compensation programs have had varying success as they struggle to address system corruption, costly payments, lack of compensation and community support, reduced husbandry levels, and, in the long-term, potential loss of natural wildlife habitat (Agarwala et al., 2010; Bulte and Rondeau, 2005; Nyhus et al., 2003).

Compensation programs differ greatly. There are ex post schemes that reimburse livestock producers for livestock killed or injured by carnivores, performance payments that reward producers for specific conservation actions, and insurance based schemes. Even programs of a similar type may vary in their specific guidelines or requirements. There is no general Canadian, American, or worldwide agreement on the protocols for compensation programs, or guidelines to how or if compensation should be paid in specific situations. Due to the wide variety of compensation programs instituted in North America, and elsewhere around the world, there are numerous programs to assess and use as inspiration for designing and implementing improvements to local compensation programs.

## **Alberta Wildlife Predator Compensation Program**

The Alberta Wildlife Predator Compensation Program has been providing economic compensation to ranchers throughout Alberta since the 1970s (AESRD, 2011; Gunson, 1992; Lee, 2011). It is an ex post compensation scheme where livestock producers are reimbursed the value of lost or injured livestock after the damage has occurred, and currently offers compensation for cattle, sheep, bison, swine and goats injured or killed by grizzly bears, black bears, wolves, cougars, and eagles (See Appendix IV).

Incidents are reported to and must be verified by provincial Fish and Wildlife Officers in order for claimants to be reimbursed full market value. However, if the officer suspects that a carnivore may be responsible, but is unable to confirm, it is labeled a “probable kill” and claimants do not receive compensation unless a confirmed kill is reported within 10km either 90 days before or after the incident in question.

Compensation is based on the average commercial value (Canfax in the case of beef, and auction yard averages for sheep and goats) for the type and class of animal on the day it was killed. Confirmed predator kills receive 100% of the market value, probable kills receive 50% if verified as described above, and veterinary costs and medication associated with the incident or loss are covered up to the value of the animal. Currently, the program does not compensate livestock producers for indirect costs associated with predation incidents, missing livestock, or situations where carcasses are found with evidence of carnivore feeding but officers were unable to report as confirmed or probable due to insufficient evidence. Additionally, the program at this time does not require specific husbandry practices in order for livestock producers to receive compensation.

The Alberta Conservation Association acts as the fiscal agent for the Alberta Wildlife Predator Compensation Program, which is currently financed by sales of hunting and fishing licenses. The program operates under the Alberta Environment and Sustainable Resource Development (AESRD) Department of the Government of Alberta, and is administered by a committee comprised of representatives from Alberta Sustainable Resource Development, Alberta Beef Producers, Western Stock Growers Association, Alberta Department of Agriculture, and Alberta Veterinary Medical Association.

## Landowner Survey and Miistakis Literature/Workshop Review

In 2009, the Waterton Biosphere Reserve Association and the Chinook Area Land Users Association, with the assistance of the Miistakis Institute, conducted a survey in southwestern Alberta that examined the attitudes and perceptions of residents towards carnivores in their region, and towards the Alberta Wildlife Predator Compensation Program. The survey targeted residents within 20km of Waterton Lakes National Park. The southwestern corner of Alberta, which includes the zone in which the survey was conducted, is of particular interest because it accounts for 37% of all compensation claims paid for by the Alberta Wildlife Predator Compensation Program between 2000 and 2010 (Lee, 2011; Morehouse and Boyce, 2011). Neither the landowner survey nor the subsequent Miistakis Report was commissioned or requested by Alberta Environment and Sustainable Resource Development, however these community driven projects, and the information they collected, were meant to identify concerns and recommendations for the Wildlife Predator Compensation Program from the perspective of the landowners.

The 2011 Miistakis Report prepared by Tracy Lee briefly outlines and compares carnivore compensation programs in British Columbia, Saskatchewan, and Alberta, and discusses the three main approaches to carnivore compensation (*i.e.* ex post, performance payments, and insurance based schemes), as well as challenges and criticisms of ex-post and “compensation in advance” schemes. The report also summarizes the survey’s final results, and identifies five key issues on which respondents most wanted to see improvement (Lee, 2011).

### Key Issues Identified by Respondents:

1. Residents desired compensation for types of claims not currently supported
  - a. All types of livestock
  - b. Probable kills
  - c. Coyote kills
  - d. Stress on livestock
  - e. Time involved
  - f. Damage to structures
  - g. Damage caused by herbivores
2. Changes to the compensation process
  - a. Reducing burden of proof
  - b. Simplified user-friendly process
  - c. Reduce program costs
  - d. Prompt delivery of compensation payments to landowners
  - e. Prompt response
  - f. Increased flexibility of Fish and Wildlife Officers during the investigation of depredation incidents, and increased flexibility to award compensation when predators are the likely cause of death.
3. Changes to payment level

- a. Pay fair market value
- b. Increase payment amount
- c. Increase payout for purebred livestock
4. Improved relationships between community members and verification officers
  - a. Perception that Fish and Wildlife officers do not trust landowners ability to identify a depredation event
  - b. Landowners lack of faith in Fish and Wildlife Officers to accurately identify a depredation event
  - c. More consultation between landowners and Fish and Wildlife Officers
  - d. Increased rancher involvement when dealing with carnivores
5. Willingness to experiment with alternative approaches to compensation
  - a. Design reward program for producers who increase good husbandry and stewardship practices
  - b. Introduce hunting season
  - c. Create insurance program
  - d. Institute mechanisms to prevent system abuse

(Lee, 2011)

*Note: More comprehensive findings of the landowner survey can be found in the "Final Survey Report: Carnivores and Communities in the Waterton Biosphere Reserve" published in 2011 by the Miistakis Institute and prepared by Michael S. Quinn, Ph.D. and Shelley M. Alexander, Ph.D. Furthermore, it is important to remember that not all survey participants necessarily agreed on every strength, weakness, and recommendation.*

The survey findings indicated broad dissatisfaction of landowners with the Wildlife Predator Compensation Program. Three key issues that landowners strongly agreed upon were that the burden of proof is too high, compensation payments are too low, and that relationship and trust issues exists between Fish and Wildlife Officers and landowners.

Additional results from the survey:

- 76% of survey respondents reported that they were not satisfied with the current compensation program.
- 77% of survey respondents reported that they did not think that the current program was fair.
- 88% of survey respondents supported the notion that landowners should be fully compensated for livestock losses due to livestock depredation by carnivores.
- 80% wanted to provide information/assistance to AESRD Fish and Wildlife Officers.
- 77% of respondents did not trust AESRD Fish and Wildlife Officers to make good decisions without their input.
- There was a definite polarity in the respondents' tolerance to losing livestock to carnivores

- 45% agreed that losing livestock to depredation is part of ranching in the region, while 48% disagreed.
- 66% felt that the current rate of livestock depredation events occurring on the landscape was unacceptable.
- Of the survey respondents that answered an open-ended question regarding how they would change the current program, 90% made recommendations for improvements.

The Miistakis Report by Lee also included a section pertaining to the Large Carnivore Communication Committee (LCCC) Workshop that took place in which the results of the survey were presented and a discussion took place regarding possible improvements to the existing livestock compensation program. The report concludes with recommendations derived from both the LCCC workshop and the survey for the purpose of improving carnivore compensation in southwestern Alberta from the landowner's perspective. The LCCC was the precursor to the CWG, and operated from fall 2010 to the fall of 2011.

## **Strengths and Weaknesses of the Current Program and Recommendations for Improvement:**

The following strengths, weakness, and recommendations for the Alberta Wildlife Predator Compensation Program were derived from the landowner survey, the LCCC workshop, and multiple discussions held during past CWG meetings.

### *Strengths:*

- The ranchers want to build off of the current program indicating that a strong foundation exists.
- Current government contributions to managing and mitigating carnivore activity
  - Relocation of bears, aversion of bears, etc.
- Use of Canfax averages (beef industry) in establishing livestock values is a positive feature of the current program, especially in the case of commercial animals under one year of age.
- Current program takes the highest D1/D2 of the week before, during, and after the kill, and multiplies it by 1.75 to compensate for cows or bred heifers to more accurately reflect the value of a breeding animal.
- Giving producers the option (for animals under 1 yr) of taking payment on value at time of death or on value in October when calves are often sold.
- Officers are relatively prompt in responding to and investigating livestock predation incidents.
- Payment for the treatment of injured livestock.
- Probable claims receive at least some payment (50% of market value).

### *Weaknesses:*

- Burden of proof too high.
  - Landowners are frustrated when livestock are heavily consumed by carnivores by the time Fish and Wildlife Officers are able to attend the scene. In such circumstances, it is difficult for Officers to assess the scene and confirm whether the animal was in fact killed by a carnivore or instead died from other causes and was subsequently scavenged by carnivores. This may result in the carcass being classified as a probable kill, and reduce the livestock owner's chances of being reimbursed. Furthermore, the remains of some animals are never located. These animals are classified as missing, and livestock owners receive no compensation at all for these losses. For each confirmed event there are likely more not discovered or not reported (Bangs and Fritts, 1998; Morehouse and Boyce, 2011; Nyhus et al., 2005).
- No compensation for missing/unconfirmed animals.
- Payment for compensation is too low.
  - No additional compensation for purebred animals.

- Feeder yearlings cannot be valued at Canfax average in the fall when they would likely have been marketed, but are only valued at time of death.
- Compensation does not address the indirect losses, or non-consumptive effects, that are a result of ranchers sharing the landscape with carnivores. Indirect costs may include the costs of repairing broken fences when livestock are chased by carnivores, costs to damaged buildings/structures, costs of silage and grain losses, and most importantly the value of a landowner's time (e.g. working with Fish and Wildlife Officers, doing repairs, cleaning up damaged property or silage/grain spills, rounding up frightened and dispersed livestock, etc.). This type and level of conflict has been increasing (See Appendix III). Non-consumptive effects on livestock include weight loss, injuries caused by predator harassment, and reduced reproduction, all of which are hard to quantify but have been associated with livestock living in carnivore ranges (Laporte et al., 2010).
- No compensation for time spent taking animals to and from the vet or administering drugs and treatment. Compensation for direct veterinary costs is helpful, but these costs are often far less than the costs the producer incurs caring for the injured animal, which may or may not recover sufficiently to be productive.
- Trust issues between Fish and Wildlife Officers and livestock producers exist. These detract from the ability of Fish and Wildlife Officers to act as educators. Better communication about the compensation program, and community projects seeking to reduce carnivore conflict (e.g. husbandry practices), would address trust issues.
- Livestock predation in certain seasons can take a lot of time for Fish and Wildlife Officers and increase administration costs.
- Current program lacks incentives for livestock producers to reduce the risk of carnivore depredation and fails to reward landowners for investing in equipment/preventative measures.
- Compensation is currently being financed solely through the sales of hunting and fishing licenses. No other demographic groups are being targeted and no provincial governmental departments are contributing to compensation funds.

*Recommendations:*

- Changes to the types of damages for which the program compensates and the value (e.g. missing livestock)
- Changes to the compensation process such as reducing the burden of proof, a simplified process, reduced program costs, and/or prompt payments
- Continue to improve relationships between livestock producers and Fish and Wildlife Officers
- Increase incentives to reduce risk
- Consider full compensation for probable kills
- Increase the minimum amount compensated per animal

- Compensate for economic losses associated with non-consumptive effects on livestock
- Possible alternative approaches to compensation
  - Rewarding livestock producers who have employed/invested in risk reduction strategies or show good husbandry practices
- Suggested alternative means of financing compensation
  - Other demographic groups should be targeted for funding in addition to hunters. The provincial government should consider other sources of funding within their operating budgets.
    - Tourism, Alberta Parks, AESRD, Department of Agriculture and Rural Development, General Revenue
  - An auction for hunting licenses for problem grizzly bears/Re-instating a grizzly bear hunt
  - Instating an insurance program
- Recommended that AESRD continue to build on successful collaborations (such as support for assistance schemes).

## **Common Goals, Objectives and Core Elements of Compensation Programs**

While establishing goals for a compensation program can be challenging, it is a critical step in deciding the type and operation that will work best for any developing compensation program. Compensation programs vary worldwide, and provide numerous sources of inspiration and education when designing and implementing new compensation programs, or program changes.

To this end the WBRA and the CWG issued a report that summarized 38 carnivore compensation programs (Morrison, 2012). This report included information regarding the type of compensation, brief summary of a program's administration and funding organization, eligible livestock species and carnivore/damage-causing species, eligibility requirements for livestock producers, level and category of compensation, as well as additional information regarding specific program design. The information of this report was collected from evaluations conducted by government organizations, private organizations, and/or academic/scientific review. With this information the CWG reviewed and selected features of compensation programs used in other regions to extract features they believe would improve the existing compensation program in Alberta, fairly compensate producers for their costs associated with large carnivores (e.g. death loss), and maintain large carnivores on the landscape.

The core elements of any compensation program should be collectively determined and agreed upon by program managers and program users, and should be tied to the specific goals of the program.

Common goals of carnivore compensation programs world-wide include:

- Distributing the burden of conservation costs more fairly between rural and urban populations
- Providing restitution to those who have suffered damages from carnivore-human conflict
- Promoting good husbandry practices
- Reducing poaching
- Improving attitudes and perceptions towards carnivores
- Increasing human tolerance of carnivore activity
- Reducing deaths of carnivore and livestock species

(Nyhus et al., 2005; Nyhus et al., 2003)

Common challenges of compensation programs include:

- System corruption
- Difficulty in proving/verifying claims
- Costly payments
- Lack of compensation
- Lack of community support

- Reduced husbandry levels
  - Compensation may result in less pressure for ranchers to protect their livestock or take preventative measures against predators when they are guaranteed compensation for lost livestock.
- In the long-term, potential loss of natural wildlife habitat
  - Compensation for lost livestock may result in increased financial stability for ranchers, and result in an increased conversion of natural habitat to ranching/farming lands as the ranching industry becomes more financially secure (not a challenge pertinent to our subject area). (Agarwala et al., 2010; Bulte and Rondeau, 2005; Nyhus et al., 2003)

These lists of broad goals and challenges have been synthesized from academic reviews and evaluations of a variety of compensation programs in different settings. The specific goals for any particular compensation program should be developed by the participants to suit the unique features of the setting in which the program will be instituted.

#### *Prioritized Program Goals for Southwestern Alberta*

From the broader goals outlined above the CWG has selected specific program goals that they believe should be prioritized within their region:

- Distributing the burden of conservation costs more fairly between rural and urban populations
- Providing fair and comprehensive compensation to those who have suffered damages from carnivore activity
- Increasing education (e.g. promoting good husbandry practices, increasing research into conflict levels)
- Increasing public safety
- Increasing landowner tolerance of carnivore activity
- Reducing deaths of livestock
- Reduce motivation for ranchers and farmers to implement unauthorized lethal carnivore control measures

Furthermore, research on existing compensation programs has identified the following factors as core elements of successful compensation schemes:

- Quick, accurate verification of damage.
  - Improving the verification/investigation process requires training, adequate tools, and a mechanism for establishing trust between program users and administrators/enforcers to ensure a fair and honest process.
- Prompt and fair payment.
  - Timely payments can reduce frustration directed at carnivores and/or conservation authorities.
  - The process needs to be transparent, to protect against abuse, to

account for unverifiable losses (*i.e.*, when it is difficult to determine how livestock were killed or how many), and to be capable of evaluating differences in the market value of various livestock species.

- Sufficient and sustainable funds.
  - An inadequately funded scheme may cause problems (e.g. frustration among program users).
  - Wildlife damage will likely vary considerably from year to year, and it is necessary for wildlife managers to plan for contingencies, for long-term sustainability, and/or for an exit strategy.
  - Solid baseline information (e.g., records demonstrating the full impact of carnivore depredation incidents on the livestock industry) is necessary to accurately predict future levels of compensation claims.
- Site specificity.
  - Some general guidelines are available to assist wildlife managers in designing and implementing effective compensation schemes, however, it is important to be sensitive to site, species, and culture-specific issues.
  - Shared program ownership between local users and institutions running the compensation schemes may reduce the potential for future conflict and abuse.
- Clear rules and guidelines.
  - Successful programs tend to have strong institutional support and clear guidelines.
  - Linked to sound management practices.
  - Efforts should not be ad hoc.
- Measures of success.
  - Is the compensation scheme achieving its intended outcomes? For example, is there increased tolerance of carnivore populations, are fewer livestock or carnivores being killed, is the information collected able to forecast future carnivore population and future claim levels?
  - Defining measures of success enables a program to be evaluated, and provides an opportunity for making improvements

(Nyhus et al., 2003)

## Community Driven Projects To Mitigate Carnivore Activity

The implementation of mitigation/prevention projects reduces the level and intensity of conflict incidents, and subsequently has the capacity to reduce the number of claims submitted to the compensation program. Below is a list of past and current prevention projects undertaken by the WBRA, the Nature Conservancy of Canada, the Drywood Yarrow Conservation Partnership, and the Southwestern Alberta Conservation Partnership. Additionally, some projects have been funded in whole, or in part, by AESRD/Bearsmart.

The following projects display steps that community organizations/groups and individual landowners have taken to actively reduce the risk, and impact of conflict with carnivores in their area. These projects demonstrate the ability, willingness, and dedication of landowners as they work to find better solutions and mitigation strategies to deal with carnivore conflict.

It is important to take note that landowners themselves have initiated many of these projects. While the WBRA does financially assist some projects (*i.e.* fencing and upgrading grain bins), landowners are expected to partially match donated funds. This may be through monetary or in-kind contributions (e.g. labour). Additionally, some landowners have carried out mitigation projects with no additional funding.

### *Approximate Summary of Ranch/Farm Projects*

- 1 grain bin upgraded from old wooden floor to new hopper bottom bin
- 7 grain bin doors upgraded to bear proof doors
- 2 old wooden bins removed
- 3 bins replaced with steel bottom bin
- 2 grain bins upgraded with cement floor
- 2 bee yards with electric fences
- 21 grain bins protected by an electric fence
- Electric fencing of a pair of wooden feed bins
- Electric fencing of silage bags
- Electric fence around calving yard
- Electric fence around hay bales/grain bins to exclude bears/wolves/deer/elk
- Deadstock pick-up
  - Since 2010, deadstock programs in the municipalities have removed approximately 800 carcasses from the landscape

### *Additional Projects with WBRA*

- Pole Haven Real Time Animal Movement project using active RFID tags
- Helped fund a seasonal Fish and Wildlife Officer in M.D. of Ranchland
- Non-invasive Grizzly Bear Monitoring Project (DNA)
- Conflict review and analysis of carnivore activity in southwestern Alberta

*A brief one-page introduction to the report on this study of carnivore conflicts and activity can be found in Appendix III. For the full report with detailed findings, please contact the Waterton Biosphere Reserve Association or Andrea Morehouse, Grizzly Bear Monitoring Project Coordinator.*

- A review of international carnivore compensation programs

#### *Available Preventative Measures to Reduce Conflict with Carnivores*

There are a variety of proactive measures available to livestock producers to reduce conflicts between carnivores and livestock. However, the implementation and maintenance of such measures can be costly to producers. While there are provincial and community driven programs that help to subsidize some of these costs, many livestock producers take it upon themselves to invest in measures that may reduce future risk of conflicts with carnivores and subsequent economic costs.

Viable preventative measures:

- Employing guard animals
- Hazing with non-lethal munitions
- Predator resistant or electric fencing
- Frequent checks/survey of livestock
- Bear proof garbage bins at home sites
- Carcass removal/carcass bins
- Range riders
- Light and noise scare devices
- Moving sick/injured livestock
- Night penning/Use of Lamb sheds
- Public access for hunting
- Fladry

The CWG believes that husbandry practices are important. However, it is difficult to apply the same husbandry practices across ranches on both private and public lands. The CWG recognizes that husbandry requirements may be necessary for acquiring funding from outside sources, warranting the additional benefit of increased compensation, and decreasing the risk of conflict and thereby improving public safety. To this end, the CWG recommends prioritizing education amongst ranchers regarding best management practices for their area, and continued support with assistance schemes to reduce costs. In this way, livestock producers will be able to implement accepted best management practices for their specific area.

No matter the delivery, intensity, or combination of proactive measures or husbandry practices, such deterrents are not usually considered a permanent and/or complete solution. By combining proactive measures with a fair and effective compensation program it is possible to reduce conflicts and limit the loss of livestock, while compensating producers for unavoidable losses, thereby increasing landowner tolerance of carnivores and improving public safety.

Additionally, the work of Fish and Wildlife Officers on these issues should not be overlooked. Their important contributions include:

- Carnivore hazing
- Aversion training of carnivores
- Relocation and/or removal of problem carnivores
- Education of ranchers regarding carnivore behaviour and mitigation strategies
- Investigative services when addressing carnivore depredation events

These measures are a key component towards reducing the negative impacts of carnivores on the landscape, and the burden that carnivores may have on local livestock producers.

## Proposed Amendments to Current Program

While the impact of carnivore predation on the entire livestock industry of Alberta is accepted to be relatively small, the impact on the individual landowner can be devastating and frustrating. The objective of the following amendments is to try to design a program that better reflects the true economic costs associated with livestock loss, and ranchers sharing the landscape with carnivores. The amendments below address the main issues raised in the landowner survey that the CWG has identified as important, and currently practical in developing a program that reduces the risk of human wildlife conflict. Furthermore, these amendments are meant to increase the tolerance of landowners towards carnivores.

The CWG proposes that initially the following five amendments/recommendations be applied as a pilot program spanning the four municipalities of Ranchland, Willow Creek, Pincher Creek, and Cardston. The intention is that this pilot program will be reviewed annually, for the duration of its term, to determine if it is meeting the needs of the rural communities and the livestock producers. The CWG proposes that this project run for a duration of 5 years in order to first effectively implement the program's changes, subsequently refine program operations should obstacles arise, and enable adequate time to evaluate the program's effectiveness.

### *(1) Implementation of a Multiplier:*

A multiplier is a factor by which the compensation a livestock producer receives can be increased to reflect other losses they may be incurring. In most situations a multiplier is used to reflect missing livestock or livestock losses that were not found and inspected.

The detection rate is often defined as the number of livestock killed by predators, found by a producer, verified by the governing body, and classified correctly as killed by a predator. The detection rate is generally lower than the levels of livestock that actually go missing from a rancher's herd due to carnivore activity (Sommers et al., 2010). The detection rate of missing livestock is affected by a number of factors such as terrain, weather, vegetation type, grazing practices, livestock monitoring/husbandry practices, as well as the type and density of both predators and livestock.

Determining the ratio of estimated total losses to confirmed/detected kills continues to be difficult. These ratios likely vary considerably according to the characteristics described above. Loss ratios as high as 8:1 and 6.3:1, down to as low as 2:1 for cattle have been reported in past studies dependent on how forested or rugged the terrain (Oakleaf et al., 2003).

The CWG proposes applying a multiplier to designated confirmed kills under the Alberta Wildlife Predator Compensation Program guidelines. This multiplier would

be the same between private/rented and public lands, and determined from local data voluntarily submitted by livestock producers.

The multiplier would be applied to every confirmed kill, and could be applied multiple times per ranch if there is more than one confirmed kill in an incident or more than once incident. The multiplier will not be applied to probable kills. Compensation through the multiplier must not exceed the number of livestock a rancher owns, but may exceed the number of cattle known to be missing. Lastly, to limit expenditures, the multiplier will not be applied to bulls. While cattle are the prevalent livestock, and the animal most commonly depredated, other types of free-ranging livestock currently supported by the program (e.g. sheep, goats, bison) should be included in the application of a multiplier; recognizing that these conditions may not apply to swine.

#### *Application of Multipliers in Other Jurisdictions*

Idaho applies a multiplier on a case-by-case basis, dependent on available funds. In cases where there is insufficient evidence to determine the cause of livestock losses, above those expected from other causes, a multiplier is applied. Multipliers are applied to instances where livestock kills are not verified as either confirmed or probable, but that livestock are missing and carnivores were observed in the area.

Washington uses a two-tiered plan for their compensation strategy. Livestock producers are compensated twice the value of a confirmed kill on grazing allotments of 100 acres or more. The agency determined that on larger allotments it is more difficult to survey the entire acreage, and therefore harder to find and report carcasses. For each confirmed kill the rancher receives the market value for two animals, or twice the value, and a probable kill receives half the current market value for two animals. This additional compensation does not apply if there are no additional animals missing beyond the confirmed or probable kill. On grazing allotments not meeting the above criteria (less than 100 acres), livestock producers only receive the full market value for each animal confirmed and half the value if documented as a probable kill. The assumption is that on small acreages, livestock producers should be able to more closely supervise their stock and find carcasses more readily.

Compared to previous examples, the state of Wyoming has the most comprehensive application of a multiplier. While the program compensates for confirmed livestock kills, it also compensates for missing losses. Legislation currently states: “established through rule making methods, factors and formulas to be used for determining the amount to compensate any landowner, lessee or agent for livestock damaged as a result of, missing as a result of, or killed by trophy game animals”. To qualify under this rule, the livestock producer must have at least one verified claim with evidence of a predator attack. Compensation is 7 times the market value of the livestock for wolf depredations, and 4.2 times the market value for grizzly depredations. The multipliers only apply within the designated Endangered Species

Area (*i.e.* land adjacent to Yellowstone Park), and are designed to accommodate for higher than average predations taking place that cannot be verified in this region. The multiplier only applies for calves and sheep, and can be applied multiple times, for multiple confirmed claims, only up to the total number of missing livestock. Claims for missing livestock must include a total known death loss, including missing animals and the known loss of sheep or calves to causes other than carnivores.

The multiplier values for Wyoming were determined through a combination of unpublished data from Departmental studies and considerable historical loss data from a local grazing organization. These sources indicated a range of detected to non-detected losses due to grizzly bears and wolves. Program managers chose a value that was reasonable within that data range, taking into account the socio-political situation, and recognizing that multiple variables affect loss rates including livestock behavior. A whole suite of considerations were necessary, but the ultimate goal was to determine a value that livestock producers felt fairly represented their losses, and a compensation rate that they could live with.

#### *Benefits of Application*

The additional compensation livestock producers receive when a multiplier is in effect covers financial losses that might not otherwise be covered. Not only does the multiplier provide compensation for the value of lost animals where cause cannot be confirmed, but it may also cover other financial hardships associated with carnivores (commonly referred to as indirect effects), some of which are not easily documented.

Landowners in southwestern Alberta currently feel that direct and indirect losses are greater than what is being compensated for. A multiplier is seen as being a fair, transparent, and easily administered way of addressing this issue. For the most part, the multiplier will primarily help cover previously uncompensated direct losses, and only secondarily cover the indirect losses below.

The multiplier would help compensate for unconfirmed direct losses. As additional justification for this compensation, it is important to note the indirect losses associated with carnivore activity that are currently not supported by the Alberta Wildlife Compensation Program. The items listed below are a sample of these indirect costs:

- Indirect Costs
  - Costs of repairing broken fences, costs to damaged buildings/structures, costs of silage and grain losses.
  - Value of a landowner's time (e.g. working with Fish and Wildlife Officers, doing repairs, cleaning up damaged property or silage/grain spills, rounding up frightened and dispersed livestock, etc.).
  - Increased vigilance is required when carnivores are recorded in the area

- Changes required for livestock management practices when carnivore incidents occur
- Non-consumptive effects
  - Weight loss, injuries caused by predator harassment, and reduced reproduction.
- Time spent monitoring/caring for injured animals over prolonged treatments, and loss of production/use of the animal.

Applying a multiplier to the Alberta Wildlife Predator Compensation Program would help compensate livestock producers for direct losses associated with unconfirmed/missing cattle and calves, as well as those issues listed above. It is for this reason that the CWG proposes that the compensation value of the multiplier be allowed to exceed the number of missing cattle. While the multiplier does not completely cover the costs of sharing the landscape with carnivores, it does help reduce the burden. Another benefit to the application of a multiplier is that this compensation strategy will automatically adjust to changing market conditions. Additionally, the application of a multiplier reduces the burden of proof demanded of livestock producers by the current compensation program. The strict burden of proof is one contributing factor to the negative relationship between livestock producers and Fish and Wildlife Officers, and producers' poor acceptance of the program itself. While there may occasionally be instances of over-compensation and under-compensation, the major goal here is to provide fair compensation.

#### *Detected vs. Non-detected Ratio for Southwestern Alberta*

The proposed multiplier for the pilot program is (2.5). This value represents the average ratio of missing livestock to confirmed carnivore kills, and is a rough approximation derived from community data received to date. As data continues to be volunteered by livestock owners, this value may be adjusted. Table 1 displays the estimated increase in confirmed claim values and total program costs due to the implementation of this multiplier. However, these values are province wide, and for the proposed project area, these costs would be further reduced.

#### *(2) Additional Compensation:*

##### *Increased Compensation for Probable Kills*

The CWG proposes that probable kills be compensated at full price; increased from 50% compensation of fair market value to 100%. To reiterate, the proposed multiplier above will not be applied to probable kills. Detecting animal carcasses is difficult enough, but when a carcass is found and able to be investigated by Fish and Wildlife Officers, being compensated less, or nothing at all, is disheartening and considered unfair. If there is a reasonable possibility that a predator was involved in the incident, the CWG desires that producers be fully compensated for these losses to alleviate the burden of proof which many ranchers view as unfair. If enough evidence indicates that the livestock died as a result of non-carnivore causes (e.g. sickness or weather) then it is not labeled as a probable kill and not compensated in any way.

Both Oregon and Wisconsin compensate 100% of market value for probable kills, so there is a precedent for this practice in other compensation programs. In addition, Washington's program has a two-tiered payment system wherein on ranches over 100 acres, for each animal documented as a probable wolf kill, owners receive half the current market value for two animals. For this program, the higher payments account for undetected carcasses that are harder to find on larger sites.

The CWG was able to acquire data on the amount of compensation provided province wide through the Alberta Wildlife Predator Compensation Program, as well as the number of compensation claims designated confirmed, probable, or denied. From these data it was possible to roughly estimate the average amount compensated per confirmed claim and probable claim in the province (Refer to Table 1).

Table 1 shows the estimated increase in compensation that would have been paid out if probable kills were compensated at 100% market value. These values are province wide, and would be further reduced in the proposed project area.

Compensating Probable claims at 100% market value is one means of compensating landowners for livestock losses that are not currently being covered, such as instances where livestock have been found dead, but the investigator was unable to confirm carnivores were responsible. While this recommendation would increase program costs, that increase is still less than the costs landowners must absorb when they experience losses that are not compensated in denied claims (Refer to Table 1). For a relatively small increase in compensation paid out, there would likely be a very substantial increase in landowners' satisfaction with the program.

Table 1: Comparison of current program costs province wide (2007-2012) with proposed changes.

<b>Year</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
<b>Current Program</b>					
Total Compensation Paid Out	\$98,268.85	\$130,764.37	\$140,547.24	\$199,298.32	\$264,266.24
Total Claims Received	200	265	199	257	254
Confirmed Claims	162	186	157	192	192
Probable Claims	22	27	17	23	34
Denied Claims	16	52	25	42	28
Average Confirmed Claim Value	\$568.03	\$655.46	\$849.23	\$979.35	\$1,264.43
Average Probable Claim Value (Paid at 50%)	\$284.01	\$327.73	\$424.61	\$489.68	\$632.22
Approximate Value of All Denied Claims	\$9,088.49	\$34,083.95	\$21,230.70	\$41,132.82	\$35,404.09
<b>Probable Kills Recommendation</b>					
Total Compensation if Probable Claims were Paid at 100%	\$104,517.16	\$139,613.09	\$147,765.68	\$210,560.88	\$285,761.58
Resulting Increase	\$6,248.31	\$8,848.72	\$7,218.44	\$11,262.56	\$21,495.34
<b>Multiplier Recommendation</b>					
Average Confirmed Claim Value if 2.5x Multiplier were Added	\$1,420.08	\$1,638.65	\$2,123.08	\$2,448.38	\$3,161.08
Total Compensation if 2.5x Multiplier were Added	\$236,300.14	\$313,637.71	\$340,540.91	\$481,351.12	\$628,422.08
Resulting Increase	\$138,031.29	\$182,873.34	\$199,993.67	\$282,052.80	\$364,155.84
<b>Combined Probable Kill and Multiplier Recommendations</b>					
Total Compensation for both Recommendations	\$242,548.45	\$322,486.43	\$347,759.35	\$492,613.68	\$649,917.42
Resulting Increase	\$144,279.60	\$191,722.06	\$207,212.11	\$293,315.36	\$385,651.18

*Note: Individual claims vary in the number of livestock per claim, as well as livestock species and type. This influences average confirmed claim value, as does market price (which has trended upward for cattle since 2007). Total compensation paid out includes the value of probable claims paid at 50% unless otherwise stated. Additionally, total compensation paid out does not include veterinary bills.*

### *Adjustment factor for breeding livestock and slaughter yearlings*

The current compensation program acknowledges that a bred female is more valuable than a cull animal by applying a 1.75x multiplier to the D1/D2 cow price if the animal in question is a breeding female. The CWG proposes that this multiplier be extended to all breeding stock, including breeding males (of livestock species currently supported by the program). In addition, in the case of cattle, the CWG proposes that cows and heifers, part of the breeding herd, be treated the same. This would be accomplished by selecting one average set weight (1400 lbs. suggested) on which to base the payment. This would make the process for breeding cows and heifers very simple:

$$1400 \text{ lb.} \times \text{D1/D2 price (Week before, of, and after kill)} \times 1.75 = \text{Base Value.}$$

If the animal in question were expected to be in calf, this formula would be applied.

For Bulls, the formula would be:

$$\text{Estimated Weight} \times \text{Cull Bull Price} \times 1.75 = \text{Base Value.}$$

Secondly, give producers the option on slaughter yearlings of receiving compensation value at time of death (*i.e.* Canfax like current program) or Canfax average price for the last week of August and the first week of September at a weight of 950 lbs. This would be fairly consistent with the current price option on calves.

### *Compensation for Guard Animals*

The CWG recommends that guard animals be added to the list of animals eligible for compensation. This would include guard dogs (excluding hunting dogs), and any other animal used for the express purpose of guarding/protecting livestock from carnivore activity. Guard animals may be necessary for responsible husbandry, and an investment that livestock producers may choose to make in order to responsibly care for their herds and reduce the risk of carnivores. Assistance through subsidies or reimbursing the value of guard animals is a common practice for many compensation programs in North America (e.g. Idaho, Montana, Wyoming, and Saskatchewan). The CWG believes that the Alberta compensation program should compensate the current market value of guard animals following an investigation to confirm that it was carnivores that killed the guard animal. While this does not compensate for the emotional attachment to the animal or the time and investment in its training, it does encourage livestock owners to invest in this practice knowing the program will help alleviate some of the lost investment if a guard animal is killed. By encouraging livestock owners to invest in guard animals, this measure could lead to fewer depredation events.

### *Additional Compensation for Purebred Livestock*

Livestock producers have shown interest in receiving increased compensation for purebred livestock. While cattle are the prevalent livestock, and the animal most commonly depredated, other types of free-ranging livestock currently supported by the program (e.g. sheep and goats) should be included in the application of a purebred premium; recognizing that these conditions do not apply to swine and bison. This would follow the practice of compensation programs in both Manitoba and Saskatchewan that provide additional compensation to ranchers for registered purebred animals.

In Manitoba, to claim additional compensation the livestock producer must produce a verified registration document at the time of death of the animal (*i.e.* papers showing the animal is already registered or that the registration process has begun). Manitoba has a maximum compensation value of \$2,000.00, which places a cap on the level of additional value awarded to a livestock producer. However, with young animals there is a definite benefit to a producer for purebred claims, and so long as the value of a mature animal is less than the maximum there are benefits to this practice. In Saskatchewan, producers are compensated one and a half times the commercial value for an average animal if it is a registered purebred. To qualify the producer must produce proof (*i.e.* paper documentation) that the animal is a registered purebred. Both of the programs mentioned above use purebred premiums to compensate for the additional value of a purebred animal. However, even with the addition of these premiums, the value compensated to livestock owners is still lower than the actual commercial value of most purebred livestock. The goal, in these cases, is not to necessarily match the cost of lost purebred livestock, as that could be cost prohibitive to any compensation program, but to acknowledge, and partially compensate, the additional financial losses that landowners incur when carnivores kill purebred livestock.

Implementing a protocol to distinguish purebred livestock, by which Alberta livestock producers present valid registration documents (or show that registration is in progress for calves) for their livestock, would improve the program's ability to more accurately reimburse the costs of carnivore predation. If this recommendation were to be adopted, the CWG suggests a purebred premium similar to that of Saskatchewan, where producers are compensated one and a half times the average value of a similar commercial animal, for the loss of a registered purebred. This premium would apply to verifiable purebred calves and breeding stock.

### *(3) Removal of Criteria from Current Probable Kill Definition:*

Under the current program, in order for a depredation incident to be categorized as a probable kill, there must be a confirmed kill by the same carnivore species within 10km and within either 90 days before or 90 days after the incident in question. Landowners would like to see the removal of these spatial and temporal criteria.

There are many examples of compensation programs that do not have these temporal or spatial requirements in order to be classified as probable kills.

In Manitoba, if death cannot be confirmed as predation, but sufficient evidence exists that predation was the likely cause of death then it is labeled probable. Manitoba's compensation program compensates for similar carnivore species as the current program in Alberta (*i.e.* wolves, black bears, cougars, coyotes, and foxes). In the United States, when carnivore compensation was under the auspices of the Defenders of Wildlife, probable kills were defined according to the USDA Wildlife Services *Criteria for Classification of Reported Depredation Incidents*:

*PROBABLE – Having some evidence to suggest possible predation, but lacking sufficient evidence to clearly confirm predation by a particular species, a kill may be classified as probable depending on a number of other factors such as: (1) Has there been any recently confirmed predation by the suspected depredating species in the same or nearby area? (2) How recently had the livestock owner or his employees observed the livestock? (3) Is there evidence (telemetry monitoring data, sightings, howling, fresh tracks, etc.) to suggest that the suspected depredating species may have been in the area when the depredation occurred? All of these factors, and possibly others, should be considered in the investigator's best professional judgment.*

*(USDA Wildlife Services)*

In addition, the program[s] specified criteria for possible kills:

*POSSIBLE/UNKNOWN – Lacking sufficient evidence to classify an incident as either confirmed or probable predation, the possible/unknown classification is appropriate if it is unclear what the cause of death may have been. The investigator may or may not have much of a carcass remaining for inspection, or the carcass may have deteriorated so as to be of no use. The investigator would want to consider if the area has been frequented by a predator, or if the habitat is one which the predator is likely to use. Possible predation may include cases where counts show that abnormal numbers of livestock are missing or have disappeared above and beyond past experience, and where other known cases of predation have occurred previously in the area.*

*(USDA Wildlife Services)*

Since the U.S. federal government has created a wolf predation compensation program that provides funds for state governments, Defenders is phasing out its compensation programs in Idaho, Montana, Wyoming, Washington, Oregon, Arizona and New Mexico. It is now up to the discretion of state operated compensation programs to define what constitutes a probable kill. Under the Washington program, to qualify as probable wolf depredation, there must be sufficient evidence that the cause of death was depredation, but not enough to clearly confirm that a wolf was the cause of death. Additionally, an unconfirmed depredation is any depredation where the predator responsible cannot be determined. In the case of Washington, this differentiation between wolf and non-wolf (*i.e.* cougars and bears) is due to the fact that the Washington program provides additional compensation

when wolves have been identified as the depredating carnivore. However, activities by all three carnivores activities are compensated for, just at different levels. An additional definition of a probable depredation from the state compensation program of Wisconsin is when the carcass is missing or the investigation is inconclusive but there is the presence of good evidence.

The goal of this CWG recommendation is to reduce the burden of proof imposed upon landowners. Under the current program landowners must find and preserve any remains left of their livestock for an incident to be investigated. Preserving evidence may directly put livestock owners in harms way, and still, if the evidence is inconclusive, they can only hope that a confirmed kill by a similar carnivore species occurs in the area in order for them to receive half the worth of the lost animal. Landowners would like to see a program where they are “innocent until proven guilty”, instead of “guilty until proven innocent” as the current Alberta Wildlife Predator Compensation Program treats them.

*(4) Delivery of a Verification Course and Significance of Educational Initiatives:*

In 2010-2011 the Wildlife Predation Loss and Prevention Pilot Project in British Columbia designed and implemented a Verification Course. This course was led by Conservation Officers and its objective was to teach livestock producers how to identify kills and verify depredation events. This course was meant to facilitate the transfer of knowledge and skills from Conservation Officers to livestock producers, and thereby enable livestock producers to take the basic steps of a depredation investigation and be better informed about what evidence qualifies for compensation. Following the completion of this course, with all the necessary tools, trained livestock producers then had the ability to help/assist their neighbors. This course and the skills that it offers livestock producers has the capacity to decrease the overall process time from finding a kill to it being compensated.

*Benefits*

- If employed in southwestern Alberta this course has the potential to improve relations between Fish and Wildlife Officers and livestock producers.
- Provide range riders and producers with the necessary skills to assess predation events during a critical time when livestock carcasses are fresh and more easily assessed to determine if the cause of death was due to carnivores.
- Reduce administration costs of the program.

*Immediate Application*

- To certify range riders and producers on public lands to carry out an investigation that would be valid under the program, while Fish and Wildlife Officers maintain their role as the main verification officers.
  - Enable range riders and producers to independently carry out verification investigations, and submit their claim with evidence to

the AESRD at first opportunity.

#### *Future Application*

- To certify livestock owners to conduct their own independent investigation.
  - A graduated training system wherein livestock owners take the course, have their initial cases supervised by the Fish and Wildlife Officers, and, as their experience increases, the requirement for departmental supervision would decrease. Following an agreed upon number of supervised cases (similar to the number of cases a Fish and Wildlife Officer would be supervised on before being qualified for independent investigations), certified livestock producers would conduct their own independent investigations with a random audit to deter abuse. Fish and Wildlife Officers would conduct random audits at a rate to be determined by both AESRD and CWG.
  - One goal of this certification process is to decrease administration costs of the Alberta compensation program and increase accurate confirmation of kills. The intention is to create an investigative system that costs less but that is more timely and effective than what is currently in place.

Following some initial discussions with the past compensation program manager in BC, there are strong indications that the verification course could be delivered in Alberta, and be applicable recognizing that there are some Wildlife Act differences between the provinces that would have to be addressed (*i.e.* actions individuals can or can not take as they move towards mitigation) (D. Carmichael, pers. comm). For this course to be offered in the target districts of this report, Alberta Fish and Wildlife Officers would have to be trained by a qualified CO from British Columbia with experience in delivering this course. Keep in mind that there are several options in which this course could be implemented: having COs from B.C. come and teach the course; have Alberta Fish and Wildlife Officers receive materials and training from B.C. and teach the course themselves; or Alberta Fish and Wildlife Officers teach a course which they develop.

Education is a critical component when addressing carnivore activity. Programs in Canada, the U.S. and worldwide all have or strive to include educational components. These components include devising best management practices, better understanding carnivore activity and behavior through regional research projects, or educating landowners of regional or community organizations, already in place, that support them either with labour, material, or financial support. This recommendation is meant to build off of the current educational campaigns in place in the municipalities of Ranchland, Willow Creek, Pincher Creek, and Cardston, and to build capacity in livestock owners to better enable them to be more involved in the process of carnivore activity and compensation where there is interest.

*(5) Program Evaluation and Flexibility:*

It is essential that a pilot program employing the previous recommendations be assessed annually and be capable of adapting to changing circumstances. A major feature of the pilot program being devised by the CWG is the continuous flexibility of the program to adapt and implement changes over time. An annual evaluation of the program will enable stakeholders to actively assess the effectiveness and acceptability of the options they've devised and determine how, or if, they should be changed. The program's annual evaluation will be organized by WBRA in conjunction with AESRD. Also any additional program funders may be able to provide recommendations for the evaluation process and criteria.

The pilot will likely be evaluated through public surveys and public meetings. This process will enable the continued incorporation of concerns and input from local stakeholders. Both program users and administrators will be encouraged to take part in this process. Those landowners receiving compensation through the pilot program will be given the opportunity to participate in the survey and public meetings of the evaluation process. While the initial year's assessment may be somewhat limited, it will be useful in determining the effectiveness of the initial changes to the Alberta compensation program, and contribute to a map of the pilot's progress over the duration of its employment. Every effort will be made to streamline this process, so as not to complicate the evaluation or burden the participants. In addition to the evaluation process, landowners will have to work on defining how they would measure their tolerance of carnivores on the landscape. Currently, "tolerance" is not well defined. Determining what costs or losses (*i.e.* synonymous to an industry standard) they are willing to accept, and/or risk, is key to measuring the effectiveness and efficiency of any future compensation program. This is a challenging endeavor that landowners must tackle, likely in agreement with Fish and Wildlife Officers, as well as other interested stakeholders.

## Conclusion

The future of carnivore survival is dependent on human activity and human tolerance of carnivore activity. A major challenge that wildlife managers face is the development of publicly accepted carnivore management policies. The hope is that through public engagement in the design and implementation of policies this obstacle will be diminished (Decker et al., 2006). Programs with increased community participation are more likely to be successful, effective, and promote environmental stewardship because they enable users to contribute to designing policies that directly impact their lives (Jackson and Wangchuk, 2004; Nyhus et al., 2003). It is with those principles in mind that the Waterton Biosphere Reserve Association and Carnivore Working Group built off of the response to the 2009-2010 landowner survey, as well as previous work and discussions with landowners. Following an initial report issued by the WBRA and CWG summarizing 38 compensation programs, the CWG reviewed available compensation options/strategies and selected the recommendations described above as items they feel will most likely improve local attitudes towards carnivores, improve relationships between ranchers and Fish and Wildlife Officers, and contribute to sustainable co-existence between ranchers and carnivore populations.

The application of a multiplier and additional compensation for probable kills, guard animals, and purebred livestock will enable livestock producers to receive compensation for missing animals, as well as acknowledging some of the considerable indirect costs they incur as a result of carnivore activity. The delivery of a verification course will build capacity within community members to better assess and understand their losses, and also build better rapport with the program managers and Fish and Wildlife Officers. Most importantly, increased community involvement in the future development of compensation regulations in southwestern Alberta and program flexibility will enable community members to contribute to the policies directly impacting their livelihoods, and will foster trust and a more sustainable community. The increased financial support and shared responsibilities (*i.e.* verification responsibilities) outlined in the proposed changes to the Alberta Wildlife Predator Compensation Program acknowledge the concerns expressed by community members and promote an increased level of tolerance for carnivore activity.

The amendments above address concerns expressed by landowners, and attempt to build off of the current regulations of the Alberta Wildlife Predator Compensation Program. By building off of the current program, landowners are acknowledging the strong foundations for carnivore compensation already in place in southwestern Alberta, and striving to develop changes that could be more easily transferable to other regions of Alberta.

The recommendations presented by the Carnivore Working Group are intended to create a compensation program for southwestern Alberta that is more socially acceptable to the community. Livestock producers acknowledge that it is difficult to design a program that satisfies every party involved, but increasing the range of the program's support better enables producers to live with and tolerate carnivores. It is through the consideration and employment of these recommendations that livestock producers can see their input being acknowledged, respected, and applied.

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### **Personal Communication**

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**APPENDIX**

## Appendix I: Carnivore Working Group Members

### Carnivore Working Group Members:

Member Name	Positions/Affiliation
Jeff Bectell	Coordinator and Rancher in Cardston County, and Chair of WBRA
Nora Manners	WBRA Coordinator, and Rancher in the M.D. of Pincher Creek
Tony Bruder	Rancher in M.D. of Pincher Creek, also Chair of the Drywood Yarrow Conservation Partnership
Bill Cross	Rancher in M.D. of Willow Creek
Ron Davis	Rancher in M.D. of Ranchland. County Councilor.
Shane Hansen	Rancher in Cardston County, a County Councilor, and Director of WBRA
Harry Streeter	Rancher in M.D. of Ranchland and an M.D. Councilor
Stephen Bevens	Assistant Ag-fieldman Cardston County
Glen Alm	Rancher in M.D. of Willow Creek and an M.D. Councilor
Helen Cyr	Rancher in M.D. of Pincher Creek and an M.D. Councilor
Jeff Porter	Conservation Coordinator for Southwestern Alberta Conservation Partnership this is a partnership of the M.D.'s of Pincher Creek, Willow Creek and Ranchland
Greg Hale	Senior Wildlife Biologist, Southern Rockies Area – Pincher Creek, AESRD

Andrea Morehouse also attended the meetings during which the content of this report was discussed and developed. While she is currently not considered an official member of the working group, she is a resource person. Her official designation is Grizzly Bear Monitoring Project Coordinator, Southern Rockies Area – Pincher Creek, AESRD.

## **Appendix II: Carnivore Working Group Terms of Reference**

### **Waterton Biosphere Reserve Carnivore Working Group Terms of Reference January 3, 2012**

#### **Introduction and Background**

In the fall of 2011 the Waterton Biosphere Reserve Association (WBRA) became the recipient of a grant from Alberta Environment and Sustainable Resource Development (AESRD). This funding supports community-based, landowner driven, project initiatives to reduce human-carnivore conflict issues in Southwestern Alberta, with a specific focus on grizzly bears, black bears, and wolves. One of the requirements of the grant is that a community-based, landowner driven, working group be established. This document outlines the role of the WBRA, the role of the working group (CWG), and how they operate together to achieve the desired outcomes.

#### **Vision**

The purpose of this section is not to lay out the specifics of how issues with large carnivores are to be solved, but to provide a guiding statement which reminds people what the desired outcome is. The ideal outcome may not ever be fully achieved, but the vision statement gives us something against which to measure our plans, and results; it can keep us from drifting away from the mandate of the Carnivore Working Group (CWG) and the grant. Ideally, we would like to see the following outcomes:

- People and large carnivores can both have a place on the landscape in southwest Alberta.
- Economic losses to the ranchers and farmers of the area are prevented through cooperative projects.
- When economic losses occur, due to large carnivores, the individuals are fairly compensated.
- Projects improve public safety and prevent bears and wolves from becoming problem animals.
- Accurate bear and wolf population numbers are determined, and these numbers are instrumental in managing the populations at levels that are appropriate and sustainable, both biologically, and within the context of keeping human-carnivore conflicts to minimum.

#### **Role of WBRA**

The WBRA is the grant recipient and is accountable to AESRD for completion of the project deliverables. The WBRA provides project administration, and appoints and oversees the work of the CWG Coordinator. The WBRA establishes and maintains the CWG, and receives direction and guidance from it, regarding use of grant funds, to achieve the deliverables listed below.

### **Role of CWG**

The CWG will be composed of producers who represent the community, and also AESRD representation. CWG members bring concerns, knowledge, and ideas to the table and help relay information back to the community and AESRD with the vision in mind. The CWG provides direction and guidance to the WBRA regarding use of grant funds to achieve the deliverables listed below, including specific advice regarding projects to be completed.

### **Deliverables**

The mandate of the CWG is to achieve the project deliverables of the AESRD grant as summarized below:

1. Establish a community-based, landowner driven, working group including local representatives of SRD-FWD, and other agencies/NGO/stakeholders to develop a 3-year strategic and operation plan for a community-based large carnivore program (e.g. MT's Blackfoot Challenge); including an annual operating budget (including allocations for this grant funding) for the duration of this agreement, that is approved by SRD representatives and meets the intent/terms and conditions of this grant agreement. In addition, develop a long-term vision, goals and long-term plan beyond the next three years.
2. Develop community-shared goals that continue to support existing landowner-driven projects and efforts that reduce human-carnivore conflicts (risk management) with a focus on attractant management including electrical fencing projects, grain bin conversions, bone-yard clean-up, dead stock removal and composting, residential garbage disposal, and additional agricultural practice change that strive/is known to reduce risk of conflict, etc. Part of this goal, is to take into consideration/review the economic burden landowners are currently facing, and where possible, determine cost-effective program, policy or legislative recommendations, to find workable long-term solutions that balance social and biological interests on both private and public land.
3. Facilitate, create, support workshops, tours, field days and other forums that provide the necessary tools and information for rural and urban communities in the area, to make better decisions related to living with large carnivores; while providing a process to actively engage with wildlife management and other relevant agencies/partners to provide feedback/input (gathered and communicated during the process) on large carnivore management and local program need.
4. Put in place a communication strategy that continues to build on the trust and commitment from all parties to collaborate on commonly shared issues, goals and resources, that encourages a strong understanding of the issues while openly communicating past and current success at finding solutions (what's worked, what's hasn't and what's needed); in doing so, create an environment of sharing and transparency related to large carnivore issues. If successful, key messages generated will allow for better decisions to be made

- by the appropriate decision makers, benefiting landowners, community members and large carnivores in the process.
5. Provide coordination and support to local existing landowner groups related to their local project/program efforts and to generate/establish others to follow suit, specifically in the form of financial support to projects, including securing additional funding resources (public and private) to support local and long-term large carnivore program needs.
  6. Work with partners and working group members to assess and evaluate the progress and overall success of program efforts annually and over the three-year MOU period. Annual progress reports will be required and submitted by January 30th each year, as well as an overall final report at the end of the term of this MOU.
  7. Timelines related to these deliverables are expected to be outlined in the three-year planning documents indicated in Item 1.

### **Guiding Principles**

The CWG will operate on a consensus model which will be guided by the following principles:

- The working relationship of the CWG will be cooperative, in that all members will strive to reach the best possible conclusion for the group and all of its members.
- CWG members will actively participate in discussion and in the formulation of recommendations and advice to the WBRA.
- The CWG will be solution-oriented, in that members will strive to emphasize areas of agreement rather than differences, and reach effective conclusions using compromise and cooperation.
- CWG members will conduct themselves with courtesy and respect of each other's opinions and beliefs at all times.
- CWG members will effectively exchange information and engage their community members in a manner that is supportive of the other members of the CWG and the overall vision of the group.

### **Meetings**

Meetings of the CWG will be held at a minimum three times a year. Meetings will be held either in person or by teleconference to minimize costs. The location of in person meetings can be rotated within the project area. An agenda for each meeting will be sent in advance. A written summary of meeting discussions will be kept and submitted for approval at a future meeting. The CWG Coordinator as identified by the WBRA will serve as chair of the CWG.

### **Appendix III: Introduction of Conflict Review and Analysis of Carnivore Activity in Southwestern Alberta**

Southwestern Alberta is a unique part of the province; it is where the prairies meet the mountains. The human population abuts public forestry lands; homes and ranches lie on the edge of the mountains, and within the geographical ranges of several large carnivore species. This high degree of overlap allows for more human wildlife conflict here than elsewhere in the province. Understanding the patterns of carnivore conflicts is critical to developing effective mitigation directives. By understanding the factors influencing conflicts and the spatial and temporal patterning of those conflicts, mitigation efforts and resources can be most appropriately allocated.

The conflict analysis report represents a collaborative effort between Alberta Environment and Sustainable Resource Development (ESRD), and the Waterton Biosphere Reserve Carnivore Working Group to identify and understand the patterns underlying large carnivore conflicts in southwestern Alberta. The specific objectives were to:

- 1) Analyze enforcement records for grizzly bears, black bears, wolves, and cougars in southwestern Alberta to determine the number and types of conflicts for each species;
- 2) Map all conflicts for each species to identify areas on the landscape with the greatest number of conflicts historically; and
- 3) Map conflicts by species/year to understand how conflict distribution has changed over time.

The past 13 years of enforcement (ENFOR) records for grizzly bears, black bears, wolves, and cougars from Cardston, Pincher Creek, Blairmore, and Claresholm Fish and Wildlife Districts were summarized and mapped to understand the spatial and temporal patterns of carnivore conflicts in this region of Alberta. Each occurrence was classified as either a sighting, incident, or human conflict. We then subdivide the aforementioned categories to provide more insight into the factors potentially driving the event. Occurrence records were mapped to illustrate the changing spatial distribution of carnivore conflicts since 1999. Additionally, we created maps indicating the areas on the landscape with the highest number of conflicts for each species. Because the quarter section scale was the finest resolution available for many of the occurrence records, this is the scale at which “hotspots” were mapped.

From 1999 to 2011 there were 5073 ENFOR occurrence records for the large carnivores in southwestern Alberta. Of those 5073 occurrences, 1265 were grizzly bear occurrences, 1962 were black bear occurrences, 709 were wolf occurrences, 880 were cougar occurrences, and 257 were occurrences that were unfounded (meaning there was not actually a carnivore involved). In general, the number of

occurrences for all species increased from 1999 to 2011. Patterns and trends, however, tended to be species specific.

It should be noted that occurrence records only capture information about large carnivores that is reported by the public to Fish and Wildlife District Offices. Certainly, there are other sightings, incidents, and/or human conflicts that are not captured by this dataset because they are not reported. We recognize this as a gap in the data set. It is our hope that the information contained in this report will help guide future work on carnivore conflicts, and provide a baseline framework against which the efficacy of new mitigation programs can be measured.

Full copies of the report can be obtained by contacting:

Andrea Morehouse  
Grizzly Bear Monitoring Project Coordinator  
[Andrea.morehouse@gov.ab.ca](mailto:Andrea.morehouse@gov.ab.ca)  
403-627-1143

## **Appendix IV Summary of Alberta Wildlife Predator Compensation Program**

### *Program Type:*

Ex post

### *Administration:*

Operates under the Alberta Environment and Sustainable Resource Development (AESRD) Department of the Government of Alberta. The Wildlife Predator Compensation Program is administered by a compensation committee comprised of representatives from Alberta Sustainable Resource Development, Alberta Beef Producers, Western Stockmen's Association, Department of Agriculture, and Alberta Veterinary Medical Association.

### *Funding:*

Financed through hunting and fishing licenses. The Alberta Conservation Association acts as the fiscal agent for the program. There are no federal funds attached to this program.

### *Eligible Livestock:*

Cattle, bison, sheep, swine, and goats.

### *Eligible Predators:*

Wolves, grizzly bears, black bears, cougars, and eagles. Not coyotes or any other predator.

### *Husbandry Requirements:*

No.

### *Compensation:*

- Compensation is based on the average commercial value for the type and class of animal on the day it was killed.
- Confirmed predator kills receive 100% of the market value
- For potentially bred females (bred heifers and cows) a 1.75 multiplier is applied to the D1/D2 cow price
- If the livestock killed is cattle of less than one year of age, the producer has the following options:
  - To accept compensation at the time of loss
  - Choose to wait until the end of October and receive compensation based on the Canfax average for the month of October, based on an average weight of 550 pounds
- The minimum payment on a confirmed kill is \$400.
- Probable kills receive 50% of the compensation value.
  - However, a confirmed kill by the same carnivore species must be found within 10 km either 90 days before or after the incident in

question

- No compensation for missing livestock
- Veterinary costs and medication associated with the incident or loss are covered up to the value of the animal
- Incidents of feeding on livestock that had already died of disease or other causes not related to wildlife predation are not compensated.
- Compensation is reduced by any amount realized from the sale or salvage of a dead or injured animal

*Investigation/Verification Required:*

Yes.

*Program Operation:*

- Within 3 days of learning about a livestock injury or death livestock producers must report the incident.
- Contact the nearest ASRD Fish and Wildlife office as soon as possible. The Fish and Wildlife Officer may request that you move or cover the carcass to prevent the evidence from being lost to scavengers.
- The officer will examine the livestock and evidence from the area to confirm whether a predator killed or injured the animal.
- An investigation may be conducted by an appointed officer, a veterinarian, or, if such an officer is not readily available, a problem wildlife specialist employed by the Department of Agriculture and Rural Development.
- If the evidence confirms that predators killed the livestock or that a predator kill was likely, the officer will file the claim on behalf of the producer.

*Losses or Amounts Paid Out for 2010:*

The total amount paid out in 2010 for livestock damage for predators considered under the program was approximately \$195,000. Included within these payouts were claims for 220 cattle. Of all claims submitted, 79% were confirmed, 9% were probable, and 13% were rejected.

Table 1: Alberta Wildlife Predator Compensation Claims Paid for 2010.

Predator	Claim	Compensation
Eagle	0	\$0
Cougar	21	\$8,515.66
Grizzly Bear	10	\$8,878.08
Black Bear	12	\$9,556.19
Wolf	162	\$165,111.43
Unknown Predator	3	\$2,286.48
TOTAL	209	\$195,326.29

*Strengths:*

- The ranchers want to build off of the current program indicating that a strong foundation exists.

- Use of Canfax averages in establishing livestock values is a positive feature of the current program, especially in the case of commercial animals under one year of age.
- Giving producers the option (for animals under 1 yr) of taking payment on value at time of death or on value in October when calves are often sold.
- Officers are relatively prompt in responding to and investigating livestock predation incidents.
- Payment for the treatment of injured livestock.
- Probable claims receive at least some payment (50% of market value).

*Weaknesses:*

- No compensation for missing/unconfirmed animals
- Burden of proof is too high
- Payment for compensation is too low
  - No Additional compensation for purebred animals.
  - Yearlings cannot be valued at Canfax average in the fall when they would likely have been marketed, but are only valued at time of death.
  - Bred Cattle cannot be valued at Canfax average in the fall when they may have been marketed, but are only valued at D1/D2 average at time of death
  - Compensation does not address the non-consumptive losses (land owner's time, weight loss, and reproductive loss to livestock)
- Trust issues between Fish and Wildlife Officers and livestock producers
- Livestock predation in certain seasons can take a lot of F&W Officer time and increase administration costs.
- Current program lacks incentive to reduce the risk of carnivore depredation and fails to reward landowners investing in such equipment/preventative measures

*Recommendations:*

- Changes to the types of damages that program users are compensated for (e.g. missing livestock and coyote kills)
- Changes to the compensation process such as reducing the burden of proof, a simplified process, reduced program costs, and/or prompt payments
- Changes to the compensation value
- Improve relationships between livestock producers and Fish and Wildlife Officers
- Program users are interested in experimenting with other approaches to compensation
- Increase incentives to reduce risk

*Source for Strengths, Weaknesses, and Recommendations:*

Collected from an academic review by the Miistakis Institute.

*References:*

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