Contents:

2  Predation and Livestock Production-Perspective and Overview
   Maurice Shelton

6  Economic Impact of Sheep Predation in the United States
   Keithly Jones

13 The History of Federal and Cooperative Animal Damage Control
    Donald W. Hawthorne

16 Status and Management of Coyote Depredations in the Eastern United States
    J. M. Houben

23 The Coyote in the Edwards Plateau of Texas — An Update
    Gary Nunley

29 Coyote Predation Management: An Economic Analysis of Increased Antelope Recruitment
   and Cattle Production in South Central Wyoming
   Stephanie A. Shwiff and Rod J. Merrell

34 Feral Swine Impacts on Agriculture and the Environment
    Nathan W. Seward, Kurt C. VerCauteren, Gary W. Witmer, and Richard M. Engeman

41 Managing Wolf Depredation in the United States: Past, Present, and Future
    Stewart Breck and Tom Meier

47 Compensation Programs in Wyoming for Livestock Depredation by Large Carnivores
    M. T. Bruscino and T. L. Cleveland

50 Direct, Spillover, and Intangible Benefits of Predation Management
    Stephanie A. Shwiff and Mike J. Bodenchuk

53 Indirect Effects of Carnivores on Livestock Foraging Behavior and Production
    Larry D. Howery and Thomas J. DeLiberto

58 Livestock Depredations by Black Vultures and Golden Eagles
    M. L. Avery and J. L. Cummings

64 Non-lethal Alternatives for Predation Management
    John A. Shivi

72 Use of Livestock Guarding Animals to Reduce Predation on Livestock
    W. F. Andelt

76 Predacides for Canid Predation Management
    K. A. Fagerstone, J. J. Johnston, and P. J. Savarie

80 Selective Targeting of Alpha Coyotes to Stop Sheep Depredation
    M.M. Jaeger

85 Using Genetic Analyses to Identify Predators
    C. L. Williams and J. J. Johnston

89 Economic Impact of Protected Large Carnivores on Sheep Farming in Norway
    Leif Jarle Asheim and Ivar Mysterud

97 Review of Canid Management in Australia for the Protection of Livestock and Wildlife —
   Potential Application to Coyote Management
    L.R. Allen and P.J.S. Fleming
Compensation Programs in Wyoming for Livestock Depredation by Large Carnivores

M. T. Bruscino and T. L. Cleveland

Key words: Compensation, Predators, Livestock.

Introduction

Common law in America, which has been continually reinforced in the courts of the United States, holds that the people of the state own the wildlife within its boundaries. No person or entity holds absolute property rights to wildlife regardless of the ownership of the land on which the animal is found. The courts have construed that since wildlife belongs to everyone, everyone must share in its keep. As a result of this interpretation, courts have ruled the government, both state and federal, is immune from liability for damage caused by wild animals, unless the government waives its sovereign immunity and voluntarily assumes liability.

The federal government has long invoked its sovereign immunity from liability for damage caused by species managed under federal law, such as migratory waterfowl, passerine birds, and those species listed as threatened or endangered, such as grizzly bears and gray wolves. In addition, many states have traditionally invoked their sovereign immunity from liability for damage caused by wild animals. As an example, the state of South Dakota does not accept monetary liability for damage done by wildlife. Conversely, some states, such as Wyoming, Utah, Washington and Idaho, have waived their sovereign immunity to a limited degree and assumed liability for some types of damage caused by some types of wild animals.

After a century of persecution that resulted in large scale population reductions, large predator numbers have increased over much of their former ranges in North America. Predators such as wolves, cougars and grizzly bears are making a comeback in parts of the West. The comeback is largely due to a variety of changing societal values about predators that have resulted in reduced control campaigns. Along with the increase in predators, predator compensation programs have evolved in some jurisdictions. Currently, fourteen states and four Canadian provinces have government administered programs to reimburse livestock owners for losses caused by some predators. In addition, Defenders of Wildlife, a private conservation group, reimburses livestock producers for losses caused by grizzly bears in two western states and wolves in three western states. Most programs pay for losses caused by only the large predators (black bears, grizzly bears, cougars, and wolves) even though in most states smaller predators, such as coyotes or golden eagles, cause a far more significant monetary loss to the livestock industry. This industry is important, and in some instances critical, to the rural infrastructure and local economies of Wyoming.

Discussion

The question begs to be asked, "Why would government waive sovereign immunity and assume liability for damage to livestock that is the result of depredation by animals, such as black bears, grizzly bears, and cougars?"

Let’s look at the Wyoming example. In Wyoming, Title 23, the Game and Fish Act states, "all wildlife in Wyoming is property of the state. It is the purpose of the act and the policy of the state to provide for an adequate and flexible system for control, propagation, management, protection, and regulation of all Wyoming wildlife." The livestock producers, and the majority of residents in Wyoming, agree livestock owners should not have to carry the entire financial burden associated with having wildlife in the state and of damage done by wildlife, in this case large predators. For this reason, long ago the Wyoming Legislature enacted laws that waive the State’s sovereign immunity to a limited degree and accept responsibility for damage done to livestock by bears and cougars (and will do so to a limited degree for wolves in geographic locations where they are classified as trophy game animals when wolves are removed from Endangered Species Act protection). In addition, Wyoming statutes allow any black bear or cougar doing damage to private property may be immediately taken and killed by the owner of the property, employee of the owner or lessee of the property. The statutes also provide for reimbursement to producers for the value of the livestock killed or damaged, which includes bees, honey and hives. How reimbursement is to be administered was left vague by the legislature, so interpreting how compensation programs should be structured is left to the Wyoming Game and Fish Commission.

Revenues collected from application fees for limited draw big game and wild bison hunting licenses fund the current damage-claim program in Wyoming. While the entire public enjoys the benefits of healthy wildlife populations, in the case of carnivores, the management costs, including damage payments, are largely borne by sportsmen and the livestock industry. A recent study conducted by Jessica Montag et al at the University of Montana entitled, “Political and Social Viability of Predator Compensation Programs in the West,” concluded that a large percentage of the public and livestock producers endorsed a compensation pro-
Compensation for dead livestock is only one facet of managing predator-livestock conflicts. Most chronic livestock damage problems result in management challenges that cannot be solely mitigated by monetary compensation. Livestock that are routinely preyed upon by large carnivores are often difficult to distribute for ideal range utilization, may tear down fences while escaping predators, and generally are more problematic to manage. Costs associated with finding dead livestock, managing livestock distribution, and those costs associated with filing and defending damage claims all add to the costs of predator damage. Most damage reimbursement programs pay for the value of the livestock at the time of death and not for indirect costs associated with predations, so managing the conflicts in addition to compensating for losses is often the desired action for both the agencies and the producer. Management of the conflict may come in several forms: 1) the producer may be asked to relocate or remove the livestock from the grazing lands; 2) the producer may be allowed to control the offending predator; 3) the wildlife agency or the producer may initiate a livestock protection action; 4) steps may be taken to deter the predator; or, 5) the agency may implement control actions.

The Wyoming Game and Fish Commission has long recognized that neither the producer nor Department personnel detect every sheep or calf killed by large carnivores. It is recognized that when a bear or cougar kills a sheep, the entire sheep carcass is routinely moved and may be hidden, making it difficult to locate or decomposition may make it impossible to determine the cause of death. Since 1985, in a portion of the state where cougar numbers are high, the Commission has reimbursed owners of livestock for up to the value of three missing sheep believed to have been killed by a cougar for every one sheep confirmed by the Department as having been killed by a cougar. Until recently black bear-caused losses had no multiplier. Due to the difficulty in finding losses in mountainous terrain where calves have been killed by grizzly bears, the Commission has for several years utilized a formula based on the value of a confirmed loss to pay for missing calves, never detected, but believed to have been killed by bears. In order for these formulas to be applied for missing sheep or calves, Department or USDA/APHIS-Wildlife Services personnel are required to confirm at least one calf or one sheep as having been killed by a bear or lion. Total reimbursement for missing livestock never exceeds the total number of sheep or calves placed on the grazing allotment minus livestock lost to non-predator reasons. Formulas do not apply to yearling or adult cattle since experience indicates that losses occur at a much lower rate and when such animals are killed, often times sufficient evidence exists to find a portion of the dead animal for evaluation purposes.

From the broad perspective of the entire livestock industry, livestock lost to predation by large carnivores, such as black bears, grizzly bears, cougars, and gray wolves may be argued as insignificant, yet these large predators can cause significant livestock losses and resulting financial hardship to individual livestock operators in the West. In fiscal year 2003 (July 1, 2002 through June 30, 2003), Wyoming Game and Fish Department or Wildlife Services personnel confirmed livestock lost to black bear, grizzly bear or cougar predation as 83 lambs, 78 ewes, 35 calves, 11 adult cows, and 1 bull. In addition, during 2002 Wildlife Services or U.S. Fish and Wildlife Service personnel confirmed 23 cattle killed by wolves. The depredations resulted in the Wyoming Game and Fish Commission reimbursing livestock operators $16,417.91 for sheep losses and $48,770.52 for cattle. In addition, the Department expended $28,221.99 to compensate beekeepers for damage inflicted on bees, honey, and hives by black bears and grizzly bears. Defenders of Wildlife paid producers in Wyoming $13,751.21 for wolf-caused losses in 2002. The addition of gray wolves to the list of predator losses for which the State of Wyoming pays compensation may result in a substantial increase in damage payments and associated management costs for both the wildlife agency and the producer. Under the current system, compensation for wolf-caused losses will be paid from hunters’ license dollars.

**Implications**

As a result of increasing concern by livestock producers to be paid for losses that remained undiscovered, the 2003 Wyoming Legislature enacted legislation enabling the Wyoming Game and Fish Commission to, “establish 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”. In July 2003, the Commission adopted formulas in rule and regulation to guide the Wyoming Game and Fish Department in offering reimbursement for missing sheep or calves killed by trophy game animals.

“Any claimant whose verified claim is for missing sheep or calves believed to have been damaged as a result of a trophy game animal, shall include on his verified claim the total known death loss, including missing animals, for the sheep or calves for the grazing season together with the number of such losses known to be due to causes other than damage by a trophy game animal.

Notwithstanding the use of the formulas, the Department shall not offer compensation for more than the total known death loss less the number of such losses known to be due to causes other than damage by a black bear, grizzly bear or cougar. In order to utilize any formula, the Department or its representative must have confirmed the claimant had at least one (1) calf or one (1) sheep injured or killed by a trophy game animal.

Veterinary costs for the treatment of individual livestock that have been injured by a trophy game animal shall be considered up to a maximum amount that is not to exceed the value of the livestock injured, only in cases where a licensed veterinarian believes the individual livestock in question had a reasonable chance to survive and return to a productive state. If the individual livestock died as a result of an injury inflicted by a trophy game animal, even though the livestock received veterinary care, payment shall only be made up to a maximum of the value of the livestock.”
The factors and formulas contained in the Department’s rule and regulation are based upon a combination of analysis of data collected by the Department; historic use of similar formulas to pay producers for sheep missing as a result of cougar depredation in the Big Horn Mountains; and cattle and sheep death loss data compiled by a livestock producers association in the Upper Green River area near Pinedale, Wyoming that has frequently experienced missing livestock that are believed to be the result of grizzly and black bear depredation.

In Wyoming, a second solution has been for the Wyoming Game and Fish Department to develop a program to deal with conflicts that occur between large carnivores and livestock. The program consists of depredation evaluation training for all district game wardens, so that losses can be investigated and documented quickly. In addition, a specialized staff has been formed in the northwest portion of the state to prevent, investigate, and manage damage caused by black and grizzly bears in chronic damage areas. Also, a statewide agreement with specialists at the Wildlife Services to control offending animals at the Department’s direction has been adopted. This multifaceted approach seeks to conserve large carnivore populations while managing the impacts to local livestock producers.

**Literature Cited**