

*Wildlife Damage Management, Internet Center for
Great Plains Wildlife Damage Control
Workshop Proceedings*

University of Nebraska - Lincoln

Year 1985

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DAMAGE COMPENSATION IN
WYOMING

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Abstract: The Wyoming Game and Fish Department is responsible for controlling depredations by big game, trophy game, and game birds. Under certain guidelines landowners can submit a claim to the department for compensation from wildlife depredations. Measures used by department personnel to prevent wildlife damage are the use of scare devices, harassment techniques, repellents, fencing, trapping, issuing of kill permits, and modifying hunting seasons. In evaluating the damage to estimate monetary losses, sources of information used include AUM's, consumptive rates, fecal analysis, enclosures, production records, and necropsies. In terms of depredation compensation, the most costly species to the department over the last 5 years has been deer, both mule deer and white-tailed deer. Depredation costs to the department for all species is approximately 2 million dollars each year.

Introduction

Let me start with the organization of the Wyoming Game and Fish Department We are controlled by the Game & Fish Commission, a 7-member board appointed by the Governor. We have 5 divisions in the department; Game, Fish, Communications, Fiscal, and Habitat and Technical Services. In the Game Division we have 7 districts throughout the State. These vary in size from 8,000 to 24,000 mi². Each district has 1 damage control warden, an average of 7 game wardens, 1 enforcement specialist, and a supervisor. Each of these personnel can be notified about wildlife depredation, but the responsibility of prevention and investigation falls mainly on the damage control warden and the game wardens.

In 1973, the Wyoming Legislature enacted Law 23-I-901 and made the Wyoming Game & Fish Department responsible for damage caused by wildlife and further directed the department to compensate landowners for this damage. Over the next 12 years, new laws and Commission regulations were enacted. At present, we are responsible for depredations by big game, (elk, deer, antelope, moose, bighorn sheep), trophy game, (bear, mountain lion), and game birds (pheasants, sage grouse, waterfowl). We are not liable for damage caused by coyotes, eagles, or rodents. We are required to prevent the damage by game animals, if at all possible, and to compensate the landowner for any damage that has occurred, providing he has followed the guidelines established for him. Under State law and Commission regulations, the landowner has 15 days to notify the department of any depredation. After the damage has ceased, he has 60 days in which to submit a claim for compensation. He must also permit hunting on his land and access to adjoining land to the extent necessary for a harvest of enough animals to meet the objectives for the hunt area and herd. The game warden and/or the damage control warden for that area will investigate the damage, try to alleviate it, and then make a recommendation to the Game and Fish Commission as to whether to approve full or partial payment, or to disallow the claim. If the landowner is not satisfied with the Commission's decision, he has 90 days to seek a review of the claim through an arbitration board of District Court The money used to pay the claims comes from a \$500,000 account mandated by the Legislature. It is funded by a \$5.00 fee on ail nonresident license applications.

- Depredations Control and Prevention

Some of the most common forms of wildlife depredations we deal with are haystack damage by big game animals, standing crop damage by big game animals, and livestock losses by trophy game animals. Other types of damage we investigate to a lesser degree are waterfowl and pheasant damage to grain fields, extraordinary grass damage by big game animals, and ornamental shrub and alfalfa seed crop damage.

Depending upon the type and extent of the damage, various preventive measures can be taken. Scare devices such as AV-Alarms, zon guns, cracker shells, bird bombs, and other pyrotechnics can be used in a variety of damage situations. They tend to lose their effectiveness over a period of time, though, as the animals can become accustomed to the noises. When used in conjunction with any form of human harassment, their effectiveness will last longer.

Repellents, either commercial or homemade, have given us limited success in protecting ornamentals and haystacks. The repellents seem to work better if applied before the damage really starts. Although the Environmental Protection Agency has yet to approve the use of any commercial repellent, such as BG.R and Deer Away on stored crops, some people have had success using homemade repellents such as hairbags and scarecrows in these situations.

Fencing is the most effective means of controlling big game depredations to small fields and haystacks. An extra bottom strand or Z of barbed wire on an existing fence will keep most antelope out of an alfalfa field. Antelope will generally crawl under a fence and only jump it if they are harassed enough. Deer and elk require an 8 foot high fence and this becomes economical protection only for hay stockyards. In areas with perennial problems of haystack depredations, the department will furnish fencing materials for stockyard construction. For other areas, which experience depredations during the more severe winters, we will provide temporary 8 foot wood cribbing to set up around haystacks or other stored crops. Electric fencing has been tried to a lesser extent, but some success is achieved if it is properly erected and maintained.

When the depredation is caused by a few animals, trapping and transplanting the animals to a new area will generally work. Whether it is caught with snares, box traps, or culvert traps, the animal can be taken alive and transported to an area where it has less chance of causing depredations. This is a common practice for removing nuisance bears and furbearers.

If trapping is not feasible and other means have failed to prevent the depredation by small groups of animals from occurring, then the more drastic step of issuing a kill permit can be undertaken. Under a kill permit, the area game warden and the damage control warden are allowed to kill a specified number of animals in an attempt to end the damage. This action must be agreed upon by the complaining landowner, the game warden and his supervisors, and the area's Commission member. This is mainly used as a last resort to stop the damage. Outcry from the public and adjoining landowners can become quite vocal.

Greater success has come from modifying the hunting seasons and gives the public a chance to harvest the depredating animals. Early, late, doe-fawn only, or additional license seasons can be set up to reduce the overall game animal population in areas where heavy damage has occurred. Special depredation seasons can be instituted in parts of a hunt area to reduce specific populations.

When a combination of all these preventative measures are undertaken, more control is accomplished than when 1 method is used. Hunting season modification and fencing have been the most successful means of dealing with damage.

Damage Evaluation

Once the damage has stopped or been controlled to an acceptable level, evaluation of the depredation is undertaken to obtain a monetary figure for reimbursement to the landowner. Although the methods used may not be 100% accurate all of the time, we feel they are the fairest, both to the landowners and the department.

One widely used method for evaluation of standing crop damage is the use of A.U.M.s and consumptive rates for the type and numbers of the animals involved. Through work done by our Habitat and Technical Services Division, we use the consumptive rate values of 12.46 lb/ day for elk, 3.44 lb/ day for deer, 2.46 lb / day for antelope and 21.72 lb / day for moose. Along with this, data from fecal analysis and plot exclosures trials can be combined into the evaluation. We have found that, although antelope appear to spend 100% of their time in an alfalfa field, fecal analysis shows no more than 50% of their diet to be alfalfa.

Comparing production records kept by the landowner for the previous year's harvest is another means of estimating damage on the present crop.

In determining the amount of damage done to haystacks, we count the missing or partial bales, or measure a similar sized undamaged loaf or loose haystack and compare it to what is left in the damaged stack.

Evaluating livestock losses caused by trophy game animals is more difficult. Even if you find the carcasses, they are usually several days old and the scavengers have consumed part of them. Determining whether they are killed by a lion or bear and not from coyotes, eagles, lightning, poisoning or other causes is difficult. Necropsying the animal may give an indication of what killed it.

After the damage investigation is finished, the area game warden and/or the damage control warden will usually meet with the landowner and discuss the results. From this meeting, if a disagreement in the results does come up, the landowner and the wardens can try to work out a compromise.

Damage Compensation

The number of damage claims filed against the department has been increasing over the last 5 years. Since 1980 the total amount paid out for claims has averaged \$100,000 per year, with the exception of 1984 when \$215,000 was paid out. This was the result of the severe winter in 1984 and the increased damage to haystacks. There were 155 claims submitted that year. In fiscal year 1985, 164 claims were filed for a total of \$176,000, even though the winter was mild.

The costs for preventing damage throughout the state for all species combined has approached \$300,000 each year. The costs for investigating the damage have been more variable, ranging from \$140,000 in 1982 to over \$1,000,000 in 1984.

During the last 5 years, the most costly species to the department, in terms of the damage they cause, has been deer, both mule deer and white-tailed deer. The money spent

preventing and investigating deer depredation averages more than \$185,000 each year and exceeds \$926,000 for a 5 year total Antelope depredation prevention and investigation averages \$169,000 each year and exceeds \$848,000 for the last 5 years. Elk costs averaged \$86,000 each year and trophy game costs are \$42,000 each year. All these monies come out of the general Game and Fish Fund, as only damage claim payments are deducted from the \$500,000 account The department is funded totally from license sales and receives no monies from the legislature.

In conjunction with damage payments, the department also provides for a landowner coupon from each deer and antelope license. If the deer or antelope are killed on private land, the hunters are asked to turn in the coupons to the respective landowner. The landowner can turn the coupons back into the department and receive \$8.00 for each one. This program was initially set up to provide some compensation to the landowner for forage eaten by the deer and antelope and provide some financial incentive for allowing hunters onto his land. In 1984, \$771,000 was paid to landowners in the state for returned coupons. In fiscal year 1985 this amount was \$676,000.

As you can see, wildlife depredation costs to the Wyoming Game and Fish Department are high. These costs approach \$2,000,000 each year, which is about 1096 of the department's yearly budget. These costs can increase substantially when the summers are hot and dry and the winters become long and cold.

References

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