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RESULTS OF A NON-LETHAL SURVEY AND REPORT PROVIDED TO THE NEW MEXICO LEGISLATURE

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ABSTRACT: Social and political pressures affect decision making regarding wildlife damage management issues tremendously. In fact, these areas are included in the Animal Damage Control decision model outlined in the programmatic Environmental Impact Statement. Growing concern regarding pain and suffering of animals trapped by ADC Specialists prompted two actions by the 41st Legislature of the State of New Mexico in 1994. The legislature directed New Mexico ADC not to spend over three-quarters of its \$304,000 appropriation on lethal methods. The legislature also passed a memorial bill requesting the New Mexico Department of Game and Fish, in cooperation with the U.S. Fish and Wildlife Service, and Animal Damage Control, to prepare a report with recommendations on non-injurious methods for controlling wildlife damage to private property. In response, the report was prepared and ADC employees in New Mexico conducted a survey of cooperators to determine what non-lethal methods they had implemented. Over 1,300 active agreements were surveyed to determine what non-lethal methods had been tried, what it cost to implement those methods, which methods were successful, why some methods were discontinued, and whether lethal methods were also used to reduce agricultural and other property losses. Survey results, the report on non-injurious methods, and a fiscal account of state appropriations spent on non-lethal methods was provided to New Mexico legislators during the 1995 session.

KEY WORDS: animal damage control, non-lethal control, surveys

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INTRODUCTION

Increasing public concern regarding animal welfare and humane issues requires that Animal Damage Control (ADC) administrators, managers, and field staff carefully consider all aspects of any wildlife damage control project before taking corrective action. Leopold (1964) noted that efficiency, selectivity, safety, humaneness, and reasonable cost are the principal criteria needed to evaluate predator control. In fact, modern ADC employees evaluate sociocultural, economic, physical, and biologic impacts on the environment when deciding which wildlife damage control methods may be used (ADC EIS 1994). Legislators are often lobbied by groups which are unaware of this decision making process. It is not immediately obvious to persons outside animal damage management circles why some control methods are chosen over others. The public has no perception of the alternatives that are considered and applied in developing an integrated control program (Berryman 1992).

In November of 1992, former New Mexico (NM) State Land Commissioner Jim Baca, prohibited ADC from working on state trust lands. This position has been continued by current state land office personnel. At least part of the disagreement in this issue has centered around the use of non-lethal methods due to concerns about pain and suffering and impacts on nontarget species. Unless animal damage management professionals adequately explain how they arrive at decisions regarding what methods they use, public lands managers, legislators, and others will continue to question those decisions and view wildlife damage managers as uncaring, callous, cruel individuals. In the absence of accurate information, policies and practices may potentially be misdirected, counter productive, and wasteful.

Further, persons who conduct or need wildlife damage control are apt to be frustrated when bad policy, influenced by uninformed opinion, governs their actions (Timm and Schimnitz 1988). Our most immediate challenges are with the media, the public, and the legislators and regulators (Truman 1988).

In 1994 the NM state legislature passed a bill requiring that NM ADC spend no more than three-quarters of its state appropriation of \$304,000 on lethal control. The legislature also requested that the NM Department of Game and Fish (NMGF), in cooperation with the U.S. Fish and Wildlife Service (USFWS) and ADC prepare a report with recommendations on non-injurious methods for controlling wildlife damage to private property.

SURVEY

Many wildlife damage situations require a cooperative Integrated Pest Management (IPM) approach with the cooperator conducting the non-lethal phase (Green 1993). In an effort to find out what non-lethal methods had been used and what the costs were, NM ADC field specialists surveyed over 1,300 agreements in 1994. For each resource that ADC protects, the following questions were asked: 1) What nonlethal methods were used? 2) What was the cost of those methods? 3) If the method(s) were discontinued, what was the reason (too costly, maintenance, ineffective, management conflict, or other)? 4) Were losses reduced to an "acceptable level"? No attempt was made to define "acceptable level" for the respondents.

Cooperators were also asked if lethal control methods were used in conjunction with non-lethal methods? Results of this survey are outlined in Tables 1-5.

Table 1. Number of non-lethal methods used on each agreement for the protection of a resource.

Resource	0	1	2	≥3
Cattle/Calves	190	523	139	54
Sheep/Goats	5	153	48	49
Multiple Resources (Beaver)	26	26	2	0
Multiple Resources (Bird)	9	17	23	20
Total	230	719	212	123

Table 2. Non-lethal expenditures by New Mexico producers for the protection of livestock.

Method	Resource		
	Cattle/Calves (Total \$)	Sheep/Goats (Total \$)	All Livestock (Total \$)
Harassment	49,200	7,600	56,800
Husbandry	802,950	269,310	1,072,260
Net-wire Fencing	5,293,875	36,549,050	41,842,925
Electric Fencing	500	96,500	97,000
Pens	47,800	--	47,800
Habitat Management	153,800	74,000	227,800
Guard Dogs	3,500	132,190	135,690
Guard Llama	--	1,400	1,400
Guard Burro	--	2,200	2,200
Propane Exploder	--	670	670
Scare Device	--	2,050	2,050
Night Pens	--	29,400	29,400
Lights	--	21,050	21,050
Total	6,351,625	37,185,420	43,537,045

Table 3. Number of agreements that continued or discontinued the use of a non-lethal method.

Method	Resource					
	Cattle/Calves		Sheep/Goats		All Livestock	
	Total Continued	Total Discontinued	Total Continued	Total Discontinued	Total Continued	Total Discontinued
Harassment	50	17	7	1	57	18
Husbandry	646	28	73	11	719	39
Net-wire Fencing	89	6	263	3	352	9
Electric Fencing	2	0	11	1	13	1
Pens	22	0	--	--	22	0
Habitat Management	105	4	3	4	108	8
Guard Dogs	2	0	34	4	36	4
Guard Llama	--	--	2	0	2	0
Guard Burro	--	--	2	0	2	0
Propane Exploder	--	--	1	1	1	1
Scare Device	--	--	4	0	4	0
Night Pens	--	--	14	0	14	0
Lights	--	--	6	0	6	0
Total	916	55	420	25	1336	80

Table 4. Reasons non-lethal methods were discontinued.

Resource Method	Too Costly	Maintenance	Ineffective	Management Conflict
<u>Cattle/Calves</u>				
Harassment	3	--	11	1
Husbandry	5	1	17	4
Net-wire Fencing	1	--	--	--
Habitat Management	--	--	4	--
<u>Sheep/Goats</u>				
Harassment	--	--	1	--
Husbandry	--	1	10	1
Net-wire Fencing	3	--	--	--
Propane Exploder	--	--	1	--
Electric Fencing	--	--	1	--
Guard Dog	--	--	4	--
Habitat Management	--	--	4	--
Total All Livestock	12	2	53	6

Table 5. Did non-lethal methods reduce losses to an acceptable level?

Method	Resource					
	Cattle/Calves		Sheep/Goats		All Livestock	
	Yes	No	Yes	No	Yes	No
Harassment	5	65	0	5	5	70
Husbandry	159	515	14	63	173	578
Net-wire Fencing	10	88	45	243	55	331
Electric Fencing	1	0	--	10	1	10
Pens	18	2	--	--	18	2
Habitat Management	11	92	0	8	11	100
Guard Dogs	2	1	11	28	13	29
Guard Llama	--	--	1	1	1	1
Guard Burro	--	--	0	2	0	2
Propane Exploder	--	--	0	2	0	2
Scare Device	--	--	0	4	0	4
Night Pens	--	--	8	6	8	6
Lights	--	--	0	6	0	6
Total	206	763	79	378	285	1,141

Following are some of the highlights from the survey:

- Over \$43.5 million was spent by livestock producers in NM to implement and maintain non-lethal methods.
- 83% of livestock producers surveyed used at least one non-lethal method to reduce losses to predators.
- Non-lethal methods commonly used by livestock producers include net wire fencing, electric fencing, husbandry practices, habitat management, guarding animals, and harassment.
- Over \$1 million was spent on husbandry methods, and \$227,800 was spent on habitat management to reduce predation on livestock in NM.
- Livestock producers in NM reported spending \$139,290 on guarding animals including dogs, llamas, and burros.
- 28% of the livestock producers in NM who had tried guarding dogs indicated that the dogs helped reduce losses to an acceptable level.
- Of 1,416 non-lethal methods implemented by producers, 94% are still being used.
- Livestock producers indicated that 80% of the non-lethal methods used did not reduce losses to an acceptable level.
- 90% of the livestock producers surveyed use an integrated wildlife damage management approach in which lethal methods are used in addition to non-lethal methods.

- 52% of agreements for beaver control used at least one non-lethal method to reduce damage caused by beaver.
- 87% of middle Rio Grande valley farmers surveyed reported that they used at least one non-lethal method to protect crops and pasture from damage caused by sandhill cranes and geese.

HOUSE MEMORIAL REPORT

The 41st Legislature of the State of NM, 1994, passed House Memorial 104 requesting that the NMGF, in cooperation with the USFWS and the USDA/Animal and Plant Health Inspection Service, prepare a report with recommendations on non-injurious methods for controlling wildlife damage to private property. Thirty-nine separate methods were discussed in the 32-page report and each method was placed into one of three general efficacy categories.

The recommendations section of this report indicated that an integrated wildlife damage management program is recommended and more likely to be successful over a longer period of time. Any animal damage control program that does not consider noninjurious, non-lethal and lethal methods will be incomplete and unrealistic.

TRACKING NON-LETHAL EXPENDITURES

To demonstrate compliance with the non-lethal mandate from the state legislature, NM ADC employees tracked the amount of time and resources spent

conducting non-lethal activities. A total of 6,570.1 hours were tallied during NM FY 94. This total reflects time spent conducting operational non-lethal activities, time spent providing technical assistance regarding non-lethal methods, time spent maintaining and repairing equipment used for non-lethal control, training in non-lethal methods, and time spent conducting office duties or in meetings directly related to non-lethal activities. An hourly rate of \$21.30 was multiplied by the total number of hours to arrive at a non-lethal expenditure of \$139,943.13. This hourly rate is a state-wide average operating expense which includes salary, benefits, vehicle operating and replacement costs, all terrain vehicle and horse expenses, radio repairs, uniforms, and supplies.

An additional \$11,227.16 was spent providing non-lethal information at state and county fairs bringing the total NM non-lethal expenditures to \$151,170.29 in NM FY 94. This was almost double the required state non-lethal expenditure of \$76,000.

MANAGEMENT IMPLICATIONS

It is important to point out that most non-lethal techniques must be implemented by the producers and are not methods that ADC Specialists may implement. For example, although ADC employees may recommend non-lethal methods such as moving livestock out of a pasture which is particularly vulnerable to predation, use of predator resistant fencing, removal of carrion, habitat management, shifting of calving or lambing seasons, or use of guarding animals, these methods must be implemented by the producer. ADC specialists often provide technical advice regarding availability and application of non-lethal methods. ADC is commonly called upon to provide lethal assistance where potentially viable non-lethal methods are in place but fail to prevent losses (Green 1993).

For the practitioners of animal damage control, the changing attitudes of Americans toward wild animals are resulting in new values for which it will be necessary to make professional and scientific adjustments (Wagner 1989). ADC managers should be prepared to provide a detailed account of how monies are spent. With the overwhelming political majority now resting within urban populations, how urbanites perceive wildlife and the kinds of interactions they have with wild animals will increasingly translate through the political process into legislative and regulatory authorities that will guide wildlife managers in the years to come (Hadidian 1992). We must live with political realities. However, this does not mean that we cannot try to influence those realities through education. Our credibility and, consequently our effectiveness, are dependent upon public understanding

(Owens and Slate 1992). Wildlife damage managers must continually evaluate all the complex social, biologic, economic, and physical impacts when making decisions. It will always be necessary to be aware of the conflicting sources at work in determining our attitudes (Rutzmoser 1972).

New control measures that are both effective and socially acceptable are urgently needed or the program will continue to lose its capability to protect livestock (Green 1993). As Dr. Dale Brooks (1988) says, "Each of us must become active vocal proponents of the benefits of what we are doing and that we are caring people who practice the highest standards of animal welfare."

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