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# An Assessment of the Coyote Problem in the Great Plains States

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AN ASSESSMENT OF THE COYOTE PROBLEM

IN THE GREAT PLAINS STATES<sup>1/</sup>

by

Dale A. Wade<sup>2/</sup>

It has now been 21 months since President Nixon's Executive Order #11643 was issued and there has been a complete annual reproductive cycle in the coyote population of the western states without any major influence by chemical controls. The use of mechanical controls, including non-lethal methods, and greater emphasis on removing only specific offending animals has been advocated during this time as a solution where coyotes prey on domestic animals. With this brief look back, what have been the results?

We do not have absolute data on coyote numbers and livestock depredations resulting from this change in coyote management programs. We can, however, consider reports from state agencies in wildlife management and agriculture. In states that employed chemical controls prior to the Executive Order, these agencies report substantial increases in coyote numbers. Similar reports were given by ten Western Region Predator Research Committee members at their annual meeting in Hopland, California, in September of this year. These committee members also reported apparent increases in livestock losses to coyotes and observations by hunters, ranchers and county Extension agents substantiate those reports.

The presence of the group here today gives additional evidence that the coyote problem is real. Moreover, it has not been solved by current mechanical and non-lethal controls in those states where chemical controls were removed by the Executive Order and federal policy.

Bureau of Sport Fisheries and Wildlife reports from various states indicate that in past control programs, roughly 80% of the coyotes removed in damage control were taken by chemicals and 20% by other methods. These data support predictions by experienced personnel that removal of chemicals without a substantial compensatory increase in mechanical control would allow coyote numbers to increase.

One may postulate a cyclic increase in the coyote population as a primary cause, but it seems highly unlikely that this should occur in all the western states simultaneously and that it should coincide so precisely with the ban on chemical controls. Whether or not chemical control methods are considered acceptable, there is a growing body of evidence that they are effective, both in reducing coyote numbers and in limiting loss of domestic animals.

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Other factors weigh heavily in affecting such losses, among them being the quantity and quality of the coyote's natural food base compared to the availability of domestic prey. The relative densities of coyote and livestock populations also play a role. The onset of the denning season increases the need for food and coincides in many states with lambing and calving seasons. The farm flock operator may be able to lamb in sheds and to pen his livestock at night to reduce losses. Under intensified operations, it may even be economical to install coyote-proof fencing, but these methods are usually not practical or possible in range livestock operations.

Capable herders provide some protection, but cannot stop predation, particularly on land heavily covered with brush or trees. Sheep operations on land of this type are particularly vulnerable and often suffer severe losses, but cattle producers also report increased predation on calves since chemical controls were removed. The type of terrain and cover is of particular significance where large tracts of public land occur and where they are widely interspersed with private land. These areas provide reservoirs of coyotes and it is not uncommon for them to travel five to ten miles to find their prey. In addition, they migrate and reproduce in other areas.

Mechanical control methods - trapping, denning, hunting from the ground or air or with dogs - are all useful tools, but no method is effective under all conditions and in all terrain. Rain, snow and freezing weather greatly reduce or prevent effective trapping. Additional logistic problems are added by regulations, concerned with the humane treatment of animals, which require that traps be checked as often as every 24 hours.

Heavy vegetative cover and rough terrain prevent effective aerial hunting or shooting from the ground, as well as hunting with dogs. In addition, aerial hunting is not allowed or is greatly restricted in many states. Coyote hunting can provide a great deal of recreation, but few sport hunters have the time or patience required to control problem animals.

Extension programs which train the individual to solve his own problems may provide a solution in areas where farms are smaller and much of the land is privately owned. However, desirable this solution may be, it does not appear feasible on open range operations. Some of these move livestock seasonally from winter to summer range and may move as far as 300 miles. These have a particularly difficult damage control problem, especially where both private and public lands with all terrain types are utilized.

Under adverse conditions and where losses are severe, professional ability is essential to provide adequate damage control. As in other professions, the ability to remove problem animals rapidly and selectively is not easily acquired nor is it retained without extensive effort. Selective control demands such ability and the cost of maintaining an adequate mechanical control program is beyond the economic limits of most range livestock operations where high coyote populations exist. Few of these producers have the time to conduct a continuous control program and would need to hire professionals. Possible exceptions would be those areas where aerial control can be effective and is not prohibited, but this too requires professional skill.

Potential non-lethal controls include chemicals that might repel coyotes and, literally, thousands have been evaluated by the Bureau of Sport Fisheries and Wildlife Research Group at Denver. Others have been tested by research groups in Texas, California, Wyoming and Colorado. The results have been inconclusive, at best. In general, the candidate compounds have not been effective and the coyote's adaptability is such that even if certain compounds show promise, widespread use would probably nullify their protective effects.

Reproductive inhibitors have been suggested as a possible solution to high coyote populations, but limited field testing points to problems in time and methods of application. The most promising of those evaluated must be ingested by a large percentage of female coyotes at a specific time to limit reproduction and no effective non-lethal male chemo-sterilants are currently known. Beyond these immediate problems are those associated with evaluation of both short and long-term effects and residues in target and non-target species. The Environmental Protection Agency and Food and Drug Administration regulations present severe obstacles to any early use of such compounds on other than a limited, experimental basis, even if they should be given approval as predator management tools.

Livestock insurance has been suggested and urged by some individuals as the answer to damage problems, but few insurance companies are interested in or experienced in this field. Confirmation of losses is difficult at best, often impossible, and some policies do not pay compensation before substantial losses occur. Federal insurance programs have been suggested, but have received little support in the legislature.

There are other major factors that affect control of animal damage. Laws and regulations have developed in a piecemeal fashion over decades to answer immediate local needs. They are highly variable both within and between states and often do not clearly define the status of a problem species, the areas in which it can be controlled, the methods which may be used and the authority or responsibility of federal, state and other agencies.

Substantial opposition to agency activity in damage control is common, partially due to the source of funds for wildlife management. Various combinations of federal, state, county, municipal and private funds have provided damage control program costs. Some groups feel that agriculture should provide all such costs, while others claim that private and county funding allows too much direction by the livestock interests. Some insist that only state and/or federal funds should be used and indicate that such funding procedures would force control agencies to be more responsive to environmental groups. Others insist that no control is necessary and want all programs and methods abolished.

Closely related to this belief is another, that multiple use of public lands is wrong and that livestock grazing should not be permitted. Overlap of habitat and wildlife production on private and public lands is not always considered even though both may be essential to survival of game herds and other wildlife species.

Most ranchers accept production of game species on private land for public consumption with little serious complaint. However, this acceptance

does not extend to high populations of carnivores, rodents, or other species which cause substantial economic loss. It follows, therefore, that the producer who does suffer such loss and sees it increase as a function of "public demand" will be much less willing to provide habitat for other game or non-game species. Many producers consider it unreasonable to suffer substantial loss in the public interest, without adequate compensation.

Wildlife is public property, whether ranging on private or public land, yet those who believe only "natural controls" are acceptable often fail to consider the consequences of this management concept. Management agencies receive most of their operating costs from hunting and fishing licenses and from taxes on hunting and fishing equipment. This revenue also provides habitat, in addition to management for game and non-game species on both public and private land. At present, this source is essential to state wildlife agencies and the loss of sportsman and hunter support would greatly restrict management programs. At this time, there appears to be very little effort made by non-consumptive users to provide an alternate source of wildlife management funds.

Loss of cooperation by the private landowners would be disastrous to wildlife and the public alike; therefore, concern for survival of agriculture operations is imperative. The alternatives where they cannot survive are only too evident. Commercialized recreation, shopping centers and subdivisions offer little in wildlife production, but do provide attractive alternate choices to the individual who cannot survive current production costs. These costs include taxes, equipment, operational expenses, labor and losses caused by weather; some are fixed and others are variable. Losses to predators and other problem species may be major or minor, but they are real and evident and many producers insist that they are excessive. Whether or not they are severe, if they lead to the sale of land for non-agricultural uses, the result is the same; an increased urban population, decreased agricultural production and a loss of habitat for all wildlife species.

There are not adequate methods or data at this time to determine predator populations, losses to predators and the effects of those losses on the individual and the livestock industry. It follows, therefore, that there is not enough information to determine the effects of predation on red meat and wool supplies, but with the energy crunch apparently real and growing, we may find an increased need for wool to replace hydrocarbons essential to production of synthetic fiber, heating fuels and commercial fertilizers. Serious protein shortages in many countries and an increased worldwide demand add to the problem.

Complaints of substantial damage and danger to non-target wildlife species by various control methods and programs are common, but also lack documentary support. This lack of data leaves emotion as the primary support for claims that animal damage control programs cause imminent hazards to the environment.

The terminology used in reference to problem animals and control programs is often imprecise and inaccurate. "Eradicate" and "exterminate" as used in statutes and regulations mean different things to different people. To some they mean, literally, removal of a population or species and "predator control" seems to carry the connotation of indiscriminate, widespread use of chemicals. To the professional in damage control, they mean something far more precise

and discrete, with chemicals a limited part of control activity. Misunderstanding is common, often due to inaccurate use of terms, but the communication gap is present, it is serious, and it is further affected by non-professional use of some control methods.

There is a marked lack of agreement between and within groups regarding the need for control programs, agencies that should be involved, source of operational funds, acceptable methods and professional versus non-professional control. These are some of the solutions that have been offered in public testimony to the coyote damage problem:

A damage assessment research program to determine if the problem really exists.

A federal insurance program to indemnify ranchers when losses occur.

A federally subsidized program to train unemployed urban residents to herd sheep and trap coyotes in the western states.

A bounty on coyotes in the western states to avoid taking animals not causing damage.

A bounty on coyotes in the western states to reduce coyote populations.

Removal of only the specific offending animal by a mechanical method.

The use of lethal chemical and mechanical methods to reduce coyote numbers and livestock losses.

Placement of sheep flocks in confinement, with lights during night-time hours.

Construction of fences to keep coyotes away from livestock wherever they cause losses.

The use of guard dogs to replace other control methods.

Other suggestions include various combinations of professional and non-professional control, Extension training and sport hunting as major control methods.

The relative safety, efficiency, specificity, selectivity, humaneness and cost of various control methods have been argued at all levels. Even presumed experts don't seem to agree. The "Leopold Committee" concluded that the steel trap is one of the most damaging control methods in being non-selective and that much unnecessary killing of wildlife in the western United States has resulted from the use of traps in coyote control. The committee also concluded that when properly used, 1080 (sodium monofluoroacetate) meat baits are an effective and humane method of coyote control, with very little damaging effects on

other wildlife. The "Cain Committee" did not agree. It stated that the use of chemicals is likely to be inhumane and non-selective and recommended that land-owners be trained in the use of steel traps as a major method of coyote control. Bureau of Sport Fisheries and Wildlife reports indicate a higher degree of selectivity for the M-44 and the "Coyote Getter" than for steel traps, but opposition to the chemical method appears greater than to the use of traps.

Over-simplification of this complex issue is common. There are groups opposed to the ownership and use of firearms and traps. Others oppose all management and harvest of wildlife and some advocate a purely vegetarian diet. Biological, sociological and economic principles are often ignored in attempts to apply additional political pressure. Many seem to consider this only as a "predator versus livestock" or "agriculture versus the environment" problem and offer simplistic solutions from their various points of view.

A stereotyped view of biologists, ecologists, game managers, farmers, ranchers and other professions is common and serves only to increase the communications gap. Equally as narrow is the common concept of the "balance of nature" which more accurately is a perpetual imbalance seeking constantly to correct itself.

Perhaps the most difficult element in the entire field of wildlife management is within our educational system. We have grown up as a nation with a background of nursery rhymes and comic books that lay the foundation for a dream world of wildlife management. Uncle Remus' Tales, Bugs Bunny, Mickey Mouse and countless other sources have effectively humanized wildlife and have emphasized our loss of contact with the land, the elements and biological fact. We now have a complete generation and more of people who began watching TV and movies before they could walk and have advanced their "education" through Bambi and similar programs.

We need, very badly, educational programs that present truth and fact in contrast to many of those that provide superb photography to support a great deal of biological bilge.

There is a simple, ecological truth that is often overlooked or ignored; that in managed ecosystems, like this one, we must manage all components equally well. We find it necessary to manage people, traffic and urban animals; it is accepted that dogs and cats, mice and rats must be controlled. In this same system, with intensive management of soil and water, range vegetation and crops, livestock and game species, there seems to be little logic in allowing predator and rodent populations to grow without limits and to roam at will.

An additional truth is that non-lethal controls are not necessarily good, right, or humane; and lethal controls are not necessarily bad, wrong, or inhumane. These are human definitions for processes we often do not understand and they require subjective judgment; nature ignores human definitions, employs both, and is concerned only with results.