

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

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

December 1975

Progress in Coyote Hunting Depredations Research

Samuel B. Linhart

USFWS, Denver Wildlife Research Center

Follow this and additional works at: <https://digitalcommons.unl.edu/gpwcwp>



Part of the [Environmental Health and Protection Commons](#)

Linhart, Samuel B., "Progress in Coyote Hunting Depredations Research" (1975). *Great Plains Wildlife Damage Control Workshop Proceedings*. 196.

<https://digitalcommons.unl.edu/gpwcwp/196>

This Article is brought to you for free and open access by the Wildlife Damage Management, Internet Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Wildlife Damage Control Workshop Proceedings by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

ABSTRACT

PROGRESS IN COYOTE DEPREDACTIONS RESEARCH

PRESENTED AT THE GREAT PLAINS WILDLIFE DAMAGE CONTROL WORKSHOP,

MANHATTAN, KANSAS

DECEMBER 8-11, 1975

by

SAMUEL B. LINHART

USFWS, DENVER WILDLIFE RESEARCH CENTER

Coyote depredations control research from the end of World War II to about 1960 was characterized by low levels of funding, a minimum of research facilities, an emphasis on lethal agents, few legislative restrictions, a lack of public interest, and little concern for the environment. Establishment of the Leopold Committee (1964) and Cain Committee (1971) were evidence of a growing public concern and awareness of the coyote-livestock problem.

In the 1960's, Fish and Wildlife Service research was redirected toward the application of antifertility agents to reduce coyote numbers in areas where depredations were a problem. This work was conducted from about 1960 to 1967 and for the most part was unsuccessful, although ancillary studies provided a great deal of new information on methodology, population dynamics, and reproductive biology.

Issuance of a presidential Executive Order in February, 1972 prohibiting the use of toxicants on federal lands or by federal employees caused a redirection of depredations control research toward nonlethal techniques. The Order also resulted in increased funding and manpower for work on the problem at Universities, by the U.S. Agricultural Research Service (USDA), the U. S. Economic Research Service (USDA), and the U. S. Fish and Wildlife Service (USDI).

Research conducted in the last few years includes gustatory, olfactory, and ultrasonic repellents, aversive agents, fencing, antifertility agents, and the effects of control on population densities (via simulation modeling). Investigators are also looking at attractants, frightening devices, guard dogs, hypersensitivity in canids and their "allergic" responses to ovine antigens, toxic sheep collars, and studies aimed at determining the sensory parameters of the coyote and their relative importance in eliciting and inhibiting predatory response. To date, few, if any, of the above studies have reached the point where the results are of direct benefit to the livestock producer.

New coyote depredations control techniques, acceptable to the livestock producer and public alike, must be supported by carefully collected data showing both efficacy and safety to man, nontarget species, and the environment.

The proliferation of coyote research in recent years has created a communications problem and some duplication of effort. Several recent projects and publications should help solve this problem. They include a "Coyote Research Newsletter" sent out periodically by the FWS, a computer search and retrieval system for predator literature (FWS), annual meetings of the USDA's Technical Committee of Western Regional Research Project W-123, a Coyote Research Workshop in 1974 at Denver, a new book on the coyote to be published by Academic Press (M. Bekoff, editor), and at least two proposed bibliographies or literature reviews.

IN DEPTH LOOK AT SOUTH DAKOTA PROGRAM FOR PREDATOR DAMAGE CONTROL

History

In recent years (1958-1973) animal damage control in South Dakota was administered and carried out by the Division of Wildlife Services of the U.S. Bureau of Sport Fisheries and Wildlife. Since July 1, 1974 the statewide responsibility for predator and animal damage control has been assumed by the Department of Game, Fish and Parks. The animal damage control program for Eastern South Dakota (east of the Missouri River) was assumed three years previously on July 1, 1971. Other governmental agencies participating in the program include the Cooperative Extension Service, Dept. of Agriculture and the Dept. of Health. However, none of these agencies contribute to the program financially.

The Cooperative Federal Predator Control Program was financed by the Predatory Animal Control Fund (PAC) under contract with the Department of Game, Fish and Parks. The PAC Fund is established by state statute which levies a surtax of 4 cents per head on sheep and 1 cent per head on cattle, not in feedlots, against the owners. Tax collected must be matched by the Dept. from sportsmen licenses revenue and must be used for animal damage control. From 1958 to 1973 the surtax collections have totalled \$975,050, a 16 year average of \$60,941 (TABLE I, ITEM D). Under the terms of this agreement, the Department provided a total of \$1,739,055 (\$108,691 annually, 1958-1973) to the federal agency which conducted the program (TABLE I, ITEM B). Contributions from the Bureau of Sport Fisheries and Wildlife to the Animal Damage Control Program are also listed in TABLE I, ITEM F. Total dollars expended by the Department for predator control exceeded two million dollars (TABLE I, ITEM E).

During fiscal year 1974-75 (first year of operation of statewide Damage Control Program by the Department of Game, Fish and Parks) a total of \$317,760 was budgeted for the Animal Damage Control Program (ADC). This included a \$75,000 legislative

appropriation for equipment and \$17,000 from the Governor's Contingency Fund for the purchase of an airplane.

Present Status

The last year ADC budget of \$317,760 supported the activities of a supervisor, his assistant, 18 extension trappers and 2 pilots. The current fiscal year (76) ADC budget amounts to \$376,000. Personnel will be reduced by not filling two trapper vacancies created by one trapper leaving and one retiring. In addition, the Department is presently required by state law to pay a bounty on coyotes, at the rate of 5 dollars each for adults and 2 dollars a piece for pups. Mammalian bounties have been paid for years. In the period 1958 to 1973, a total of \$1,324,807 was paid, ranging from a high of \$244,530 in fiscal year 1960, to a low of \$15,089 in 1963 (TABLE I, ITEM A). Bounty paid for fiscal year 1975 amounted to \$39,536 for 6,436 adults and 96 pups. Bounty claims are paid out of the ADC budget.

No bounty is paid by the state of South Dakota on any species other than the coyote. Past attempts by the Department to remove the coyote bounty have been unsuccessful but a continued effort is planned with expectations that the coyote bounty will be repealed in the forthcoming legislative session.

The Department now has four extension trappers stationed east of the Missouri River. These men carry out an extension approach in animal damage control aimed at assisting landowners with predator and nuisance animal problems, promoting self-help, and encouraging the hunting and trapping of predatory and furbearing animals for sport and profit. Assistance in the Extension concept is provided by the Extension Wildlife Specialist stationed at South Dakota State University. In contrast there are presently thirteen extension trappers and two pilots stationed west of the Missouri River. Their primary objective is the direct control of predators (mainly coyotes) inflicting losses upon domestic livestock

(mainly sheep). Their secondary objectives are to promote self-help in educating landowners in solving predator and nuisance animal problems and to promote sport trapping and hunting for recreation and profit.

The ADC Supervisor is responsible for both the East River Extension Trapper Program and the West River Animal Damage Control Program. Primary responsibilities are to provide supervision, compile necessary data to achieve management and program objectives, and to keep abreast of predator research control techniques. In addition furbearer management efforts and fur harvest recommendations are the responsibility of the ADC Supervisor.

The Assistant ADC Supervisor directs field operations, coordinates aircraft activities and represents the program to the livestock producer and organizations in close contact with the ADC program.

Our primary objective in predator control is to reduce or alleviate predation on domestic livestock. East of the Missouri River this is accomplished mainly using an Extension approach. In western South Dakota this objective is carried out through direct control of predators on a complaint basis when verified losses occur. Control is not directed at predator populations but rather at damaging individuals. In some instances it does become necessary to control local populations when existing conditions do not permit pinpointing of specific animals responsible for the damage complaint.

West River Animal Damage Control

Combined air and ground operations were responsible for a total of 1862 coyotes taken on a complaint basis from July 1, 1974 through June 30, 1975, (FIGURE 1). Aerial hunting accounted for 1062 coyotes in 1317.5 hours flying time. An average of 1.2 hours of flight was required per coyote taken. In the same time period 353 coyotes were taken in traps, 209 shot on the ground, 230 pups denned and 8 taken in snares making 800 coyotes taken by ground methods, (TABLE 2). This table

also shows the ground methods used to resolve problems connected with species other than the coyote. During the last three months (April, May, June) of fiscal year 1975, 820 predator and nuisance animals were taken or 47% of the annual total.

The coyote is not the only wild predator found responsible for sheep depredation. In several western South Dakota counties, sheep become victims of red fox. Fox depredation of sheep seems to occur at or soon after lambing, when the lamb is small and vulnerable to this predator. With the exception of two counties this type of predation is of no major significance in South Dakota.

West river trappers received and responded to 742 separate complaints. Coyotes were responsible for 469 individual complaints. Of 4285 head of livestock claimed lost to predators by producers, trappers verified 2642 (61.7%). Livestock includes only cattle, sheep and swine.

Before the Department of Game, Fish and Parks shouldered administration of the ADC program, funds were contributed to a program which provided it little or no control over how the money was expended. Complete supervision of the program has brought about closer control of policies and personnel, and closer relationships between trappers and other Department personnel. Greater flexibility to meet varied situations is the result of free exchange of ideas and suggestions at frequent meetings and a direct line of communication.

The program has proven to be effective and is largely accomplishing objectives and goals by solving most problems in a satisfactory manner. However, the program is expensive and particularly so to the Department of Game, Fish and Parks. Surtax collected on sheep and cattle paid for \$70,000 of the current budget, the balance of \$306,000 was derived from sportsmen license revenues.

Income and expenditures are critical factors in the near future. Department fiscal reserves are low stemming from a significant reduction in license sales. With no

new reserves apparently available the ADC program may be forced to cutback and curtail expenditures. ADC Budget funding does have, however dim, one ray of hope in the form of federal grant-in-aid for state animal damage control programs. On April 21, 1975, a proposed Cooperative Agreement for federal assistance on Animal Damage Control was submitted to the U.S. Fish and Wildlife Service. September 22, 1975, our Department was advised that the U.S. Fish and Wildlife Service is not in a position to provide assistance through grants-in-aid for new state programs. Director Greenwalt did inform that the grant-in-aid program is still viable - there remains a possibility for fiscal year 77. The Department is presently searching for ways of streamlining to obtain maximum efficiency from the animal damage control effort as economically as possible.

Louis Huffman
Animal Damage Control Supervisor
South Dakota Department of Game, Fish & Parks

Figure 1. Total coyotes killed by month, July 1, 1974 - June 30, 1975.

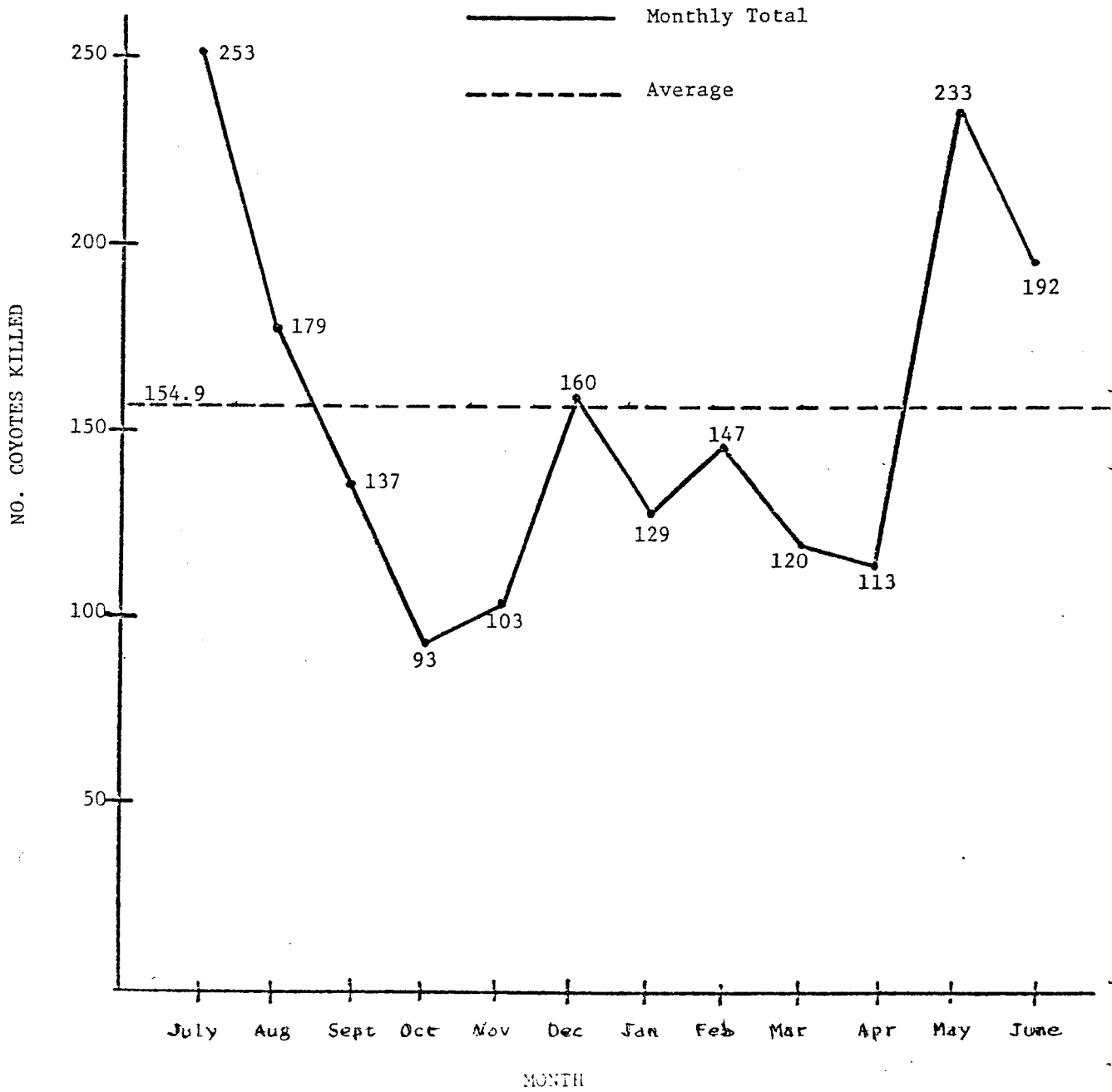


TABLE 1

APPROXIMATE COSTS FOR CONDUCTING PREDATORY ANIMAL CONTROL PROGRAM
IN SOUTH DAKOTA (1958-1973)

Fiscal Year	(A) Municipal Bond	+(B) Predatory + Animal Fund	+(C) East River + Extens. Trap = Total (ABC)	-(D) - Surtax	(E) Total GFP Contribution	+ (D) + Surtax	+ (F) Bureau +SF&WL (PC)	Total Animal = Cost (EDF)
1958	103,054	\$ 74,957	-	\$ 63,938	\$ 114,073	\$ 63,938	\$ 29,608	\$ 207,619
1959	181,320	84,970	-	74,525	191,765	74,525	31,733	298,023
1960	244,530	91,850	-	52,461	283,919	52,461	29,049	365,429
1961	118,462	80,026	-	71,028	127,460	71,028	33,861	232,349
1962	26,768	84,705	-	67,301	44,172	67,301	48,464	159,937
1963	15,080	121,540	-	70,449	66,180	70,449	45,217	181,846
1964	62,221	117,027	-	52,773	126,475	52,773	49,249	228,497
1965	78,575	121,658	-	33,034	167,199	33,034	54,842	255,075
1966	36,833	121,991	-	27,790	181,089	27,790	52,588	261,467
1967	69,701	129,057	-	46,506	152,252	46,506	70,000	268,758
1968	60,430	122,356	-	66,632	116,154	66,632	73,000	255,786
1969	90,587	131,794	-	69,215	153,166	69,215	80,000	302,381
1970	43,102	123,870	-	71,832	95,140	71,832	81,300	248,272
1971	57,221	123,189	-	68,451	111,959	68,451	81,797	262,207
1972	67,647	106,111	66,142	68,062	171,838	68,062	63,285 (1)	303,185
1973	19,212	103,954	37,867	71,053	89,980	71,053	52,600 (2)	213,633
TOTAL	\$1,324,807	\$1,739,055	\$ 104,009	\$ 975,050	\$2,192,821	\$ 975,050	\$ 876,593	\$4,044,464
16 Yr. Ave.	\$ 82,800	\$ 108,691	\$ 52,005*	\$ 60,941	\$ 137,051	\$ 60,941	\$ 54,787	\$ 252,779

* 2 year average

(1) Lower figure is due to state taking over east river program.

(2) Only one supervisor paid from fund.

NOTE: This table does not include time and expense of wardens and conservation officers assisting landowners in nuisance animal control work; estimated at \$20,000 per year.

Table 2. Summary of ground methods used and species taken,
July 1, 1974 - June 30, 1975.

Species	Trapped	Shot	Denned	Snared	Total
Coyote	353	209	230	8	800
Red Fox	151	42	365	2	560
Bobcat	8	--	--	--	8
Badger	17	--	1	--	18
Raccoon	89	--	--	--	89
Beaver	152	35	--	--	187
Skunk	90	3	--	--	93
Porcupine	5	--	--	--	5
	865	289	596	10	1760