UC Agriculture & Natural Resources
Proceedings of the Vertebrate Pest Conference

Title

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Permalink

https://escholarship.org/uc/item/591641cc

Journal

Proceedings of the Vertebrate Pest Conference, 17(17)

ISSN

0507-6773

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Publication Date

1996

TECHNIQUES AND EXPERTISE IN WILDLIFE DAMAGE CONTROL: A SURVEY AMONG THE NATIONAL ANIMAL DAMAGE CONTROL ASSOCIATION (NADCA) MEMBERSHIP

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ABSTRACT: The membership of the National Animal Damage Control Association (NADCA) was surveyed during 1995 to collect information about specialty fields, preferred methods and experience. Respondents had broad experience that included 44 species or species groups. Members reported firsthand experience with an average of 17.6 different species and 2.9 vertebrate groups. Forty-three percent indicated that their specialization was among carnivores. In this group, coyotes, *Canis latrans* (45%), raccoon, *Procyon lotor* (23%) and skunk (13%) were most frequently mentioned. Members reporting carnivore experience had firsthand experience with an average of five different species. Rural and urban members did not significantly differ in breadth of experience with carnivores. Respondents most frequently specialized with coyote (11.8%), raccoon (11.5%), beaver, *Castor canadensis* (9.6%) and tree squirrel, *Sciurus* spp. (6.8%). Trapping was the most used technique for most mammals. Exceptions were deer or elk where exclusion was preferred. Blackbirds and starlings, *Sturnus vulgaris*, were most often controlled by repellents or scare tactics. Removal of an animal was the most common and preferred method and represented about 70% of responses for first choice.

KEY WORDS: animal damage control, questionnaire

INTRODUCTION

The National Animal Damage Control Association (NADCA) is an organization dedicated to supporting professionalism and education in the wildlife damage control field. Included in its membership are individuals associated with private business, universities, and government agencies. During late 1994, a committee for information and techniques was formed. The charge of the committee was to expedite the exchange of information between members and to better understand the expertise of the membership. Committee members identified a survey as a method toward fulfilling their charges.

METHODS

A mail survey was sent to 454 NADCA members during February 1995. The survey document was kept brief and contained seven questions with space for comments and discussion. Members were asked about their specialty fields, preferred damage control techniques and primary experience with depredation situations and sites. They were also asked about firsthand experience with species, geographic area of operation and specialized training. During the summer of 1995, questionnaires were remailed to NADCA members who had not previously responded and to 74 National Urban Wildlife Management Association (NUWMA) members who had recently become NADCA members.

RESULTS

The first mailing of the questionnaire had a 43% response rate. The second mailing had a 24% response rate. Respondents generally completed the questionnaire with only 19 respondents not answering all questions. These individuals typically were involved in laboratory research or administrative activities.

(To clarify discussion, questions from the survey are sometimes shown in italics with discussion following.)

Your speciality field(s). Please write your first three areas of proficiency.

> *Species*
> *Most proficient control method(s)*
> *Depredation site/situation*

Forty-four species or groups of species were mentioned among the top three specialty fields of NADCA members, although only a few species predominated. Coyote, raccoon and beaver represented 40% of all first place rankings among specialty fields. Coyotes (11.8%), raccoon (11.5%), beaver (9.6%) and tree squirrels (6.8%) represented 40% of all responses to specialty fields. Deer (4.1%) and bats (3.2%) were also commonly listed. Animal groups most often mentioned were carnivores (43%), rodents (29%) and birds (19%). Table 1 illustrates how each species is represented within its animal group.

Species listed as specialty fields were grouped as rodents, carnivores or birds and analyzed by technique (Table 2). Members most often felt proficient in trapping as a technique for rodents and carnivores but selected other techniques more often for birds. These included repellents, scare tactics, exclusion and cultural methods.

Specialty fields were analyzed by techniques chosen for the ten most reported species (Table 3). Live trapping was most frequently chosen for rodents, carnivores, and pigeons, *Columba livia*. Exclusion was most chosen for deer and elk, *Cervus elaphus*, and repellents or scare tactics were most chosen for blackbirds and starlings.

Table 1. Areas of specialization among National Animal Damage Control Association members during 1995.

Percent of Response by Animal Group							
Carnivores		Rodents		Birds		Other Mammals	
	_%_		_%_		_%_		_%_
Coyotes	45	Beaver	45	Blackbirds/ Starlings	25	Deer/Elk	54
Raccoon	23	Tree Squirrels	23	Pigeons	20	Bats	30
Skunk	13	Woodchuck	15	Waterfowl	15	Moles	11
Fox	10	Commensals	8	Gulls	14	Rabbits	5
Bobcat/ Lion	7	Pocket Gophers	4	Birds (General)	11	Misc.	1
Opossum	2	Muskrat	3	Fish-eating birds	10		
		Prairie Dogs	2	Jays/Crows	5		
Totals	100		100		100		100

Table 2. Techniques chosen for rodents, carnivores and birds by National Animal Damage Control Association members, 1995.

Techniques	Percent Response		
	Rodents	Carnivores	Birds
Exclusion	7.7	5.3	19.2
Traps	60.0	56.6	10.0
Snares	10.7	14.7	
Firearms	5.9	11.1	11.1
Toxicants	7.0	7.8	11.1
Fumigants	2.6		
Scare Tactics	1.0	2.8	35.7
Cultural	4.8	<1	11.7
Miscellaneous		<1	1.2
Totals	100	100	100

Species/ No. of Respondents	Percent Response							
	Exclusion	Live* Traps	Kill Traps	Snares	Firearms	Toxicants or Fumigant	Repellent or Scare Tactics	Cultural
Coyote (176)	2	35	<1	20	19	17	5	<1
Beaver (123)	2	37	20	23	10	1		7
Raccoon (92)	12	75	4	5	1		2	1
Tree/Squirrel (63)	21	73	2				4	
Skunk (52)	10	87		1		2		
Deer or Elk (45)	42				24**	3	20	11
Blackbirds or Starlings (43)	7	9			9	23	40	12
Woodchuck (40)	5	65	13		8	8		1
Fox (38)		53		26	13	8		
Pigeon (36)	22	28			17	14	17	2
Totals for Ten Species	10	46	5	11	11	8	6	3

*Includes cage and leghold traps
**Includes hunting seasons

Preferred techniques: (rank first (1), second (2), and third (3) your areas of expertise)

> Exclusion
> Traps
> Snares
> Firearms
> Toxicants/Fumigants
> Scare Tactics (Explain)
> Reproductive Agents (Explain)
> Cultural Practices (Explain)
> Other (Explain)

Members most often ranked trapping and exclusion as preferred techniques (Table 4). Toxicants/fumigants, firearms, scare tactics, snares, and cultural techniques followed in rank. Certain techniques were grouped by method. Removal method responses (live traps, kill traps, snares, firearms, calling, toxicants, fumigants, denning, and chase with dogs) represented 70% of first choice responses and 63% of all responses. Exclusion was the second most commonly chosen method with only 18% of first choice responses.

Another question asked members about their primary experience in different damage control situations (Table 5). Most respondents had experience with private homes, range or pastures, and commercial areas or buildings.

Your firsthand species experience: circle each species listed.

Sixty-three species or groups of species were listed where members may have experience in control techniques. The list included and grouped 10 rodents, 14 carnivores, 17 birds and 6 amphibians and reptiles. Mammals not included as rodents or carnivores were grouped under the heading "Other Mammals." These 11 species included deer and other ungulates, insectivores, bats, and rabbits. An "other" option in each group allowed members to write in species not listed.

Members showed great breadth and diversity in firsthand species experience. They reported having worked with an average of 17.6 species within 2.9 different vertebrate groups. Least firsthand experience among members occurred with amphibians and reptiles. An average of less than one species was indicated by respondents who had experience with this group.

Table 4. Rankings of techniques by National Animal Damage Control Association members.

Technique	Percent Among First Ranked (n)*		Technique	Percent Among Top Three Ranked (n)	
Trapping	51.1	(118)	Trapping	28.9	(181)
Exclusion	18.2	(42)	Exclusion	21.2	(132)
Firearm	6.5	(15)	Firearm	15.0	(94)
Snares	4.8	(11)	Snares	10.8	(68)
Toxicants/ Fumigants	7.3	(17)	Toxicants/ Fumigants	8.5	(56)
Repellents	1.7	(4)	Repellents	14.0	(9)
Scare tactics	5.6	(13)	Scare tactics	6.4	(45)
Cultural	4.3	(10)	Cultural	6.0	(38)
Miscellaneous	0.5		Miscellaneous	1.9	
Totals	100			100	

*Number of respondents

Table 5. Firsthand species experience of rural and urban National Animal Damage Control Association members by animal group.

Animal Group	Mean Number of Species	
	Rural	Urban
Rodents	3.5	4.6
Carnivores	5.4	4.1
Other Mammals	2.9	3.1
Birds	4.4	4.1
Amphibians or Reptiles	0.5	1.1*

*Significant at the 95% confidence level

Characterize your experience by circling one of the county codes below:

County Code	Percent Respondents
Metro (500,000 per county)	21.5
Urban (100,000 per county)	23.8
Suburban	15.3
Rural	39.4

Despite NADCA members being more involved in wildlife damage control activities in rural areas than elsewhere, the responses are noteworthy for their even distribution across population areas.

Table 6 compares members whose primary business is either rural or urban. Differences were examined between respondents who marked only "metro" or "rural" as to breadth of species experience. Only the category of amphibians and reptiles showed significant differences (95% confidence level) between the two groups.

Members were also asked about the geographic area where they had experience. Every state but Hawaii and South Dakota was represented in respondents to our survey. A few respondents also had experience in Canada, Europe, Asia, Australia and Africa.

Table 6. Situations where 1995 National Animal Damage Control Association members have most expertise.

Situation	Percent Respondents
Private residence	25.2
Range and Pasture Lands	17.1
Business/Commercial Buildings	17.0
Woodlots/Forests	11.1
Field Crops	9.1
Municipal Areas (specify)	6.1
Airports	4.8
Aquaculture Facilities	3.8
Other, (haystacks, rivers, & lakes, public utility sites, feedlots, etc.)	3.2
Truck Crops	1.6
Orchard	1.0
Total	100

DISCUSSION

Recent surveys related to wildlife damage management include those that examine industry characteristics and attitudes Barnes (1995a, 1995b) and those that examine public attitudes (Schmidt Proc. 17th Vertebrate Pest Conf.).

The survey shows that NADCA members have a variety of experiences with different species. It also shows the use of different techniques, depending upon species, animal group, and depredation situation. Generally, members have most experience with carnivores and least with reptiles and amphibians. Most members choose a removal method, most commonly trapping, as a technique with each animal group. Birds are the exception. Most techniques chosen for birds are repellents or toxicant and fumigants.

Many factors influence responses to questions about proficiency and preference. Included are issues in legality, agency or company policy, and public sentiment. Barnes (1995a) surveyed the nuisance wildlife control industry at a recent wildlife control operator's short course and, again, through a telephone survey of animal damage control operators in Kentucky (1995b). He found that live trap and release methods were preferred for raccoon, tree squirrel, skunk and woodchuck, *Marmota monax*. His survey and earlier studies suggest that preference for this non-lethal method might be related to public relations. It was also found the greatest use of live trapping among these species, but cautions that leg hold traps were not distinguished in the survey.

The main objective of the committee was to identify expertise and specialty fields of NADCA members and not to assess or directly compare effectiveness of techniques. However, the authors do propose that the legal constraints and public attitudes that influenced respondents in the survey need to be considered when comparing the usefulness of different techniques in the animal damage control industry.

About 48% of those responding to the survey answered a general question about specialized training. Many of these responses included formal education and on-the-job experience and training in field techniques. Barnes' (1995a, 1995b) surveys analyzed specialized training experience and needs in detail. In the latter, only a minority of respondents had specialized training or university level courses in wildlife management. Most of the respondents surveyed at an NWCO short course indicated no in-service training in wildlife management or wildlife damage management. The survey among NADCA members shows a wide range of educational background and formal training. A potential need is seen for specialized or formal training opportunities among animal damage control professionals.

A few respondents took the opportunity to express their concerns in the two page questionnaire, stating that it was too general for them to complete. A few were skeptical of the use or benefits of the survey to their enterprise or occupation. Some commented upon issues in the animal damage control field like the prospect of too much regulation or certification requirements. One respondent expressed a trend that he saw when he stated, "Almost everything I grew up with is either illegal, immoral, or no longer made!" Others, spoke with self-effacing humor about the changing industry of animal damage control. One responded "Retired over 20 years. Now age 83. Don't know 'nuttin'."

Perhaps the survey reveals more about the nature of the animal damage control industry than ordinary tables suggest. A professional organization like NADCA needs to identify and express its strengths and weaknesses among its members to better the profession. Any future assessment should include how member and public attitudes affect the use of animal damage control techniques.

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