April 1991

EDUCATING PEOPLE ABOUT WILDLIFE DAMAGE

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Proceedings 10th Great Plains Wildlife Damage Conference
(S.E. Hygnstrom, R.M. Case, and R.J. Johnson, eds.)
Published at the University of Nebraska-Lincoln, 1991.

Managing the damage that species of wildlife cause to human-owned resources is a legitimate area of specialization in the field of wildlife management. In recent years, wildlife damage management, particularly the Federal government's Animal Damage Control (ADC) program, has come under increased scrutiny and opposition. Reasons for the increased focus on ADC are varied but no doubt center on the fact that some of ADC's activities involve killing animals.

Groups opposed to ADC have used the media to gain a following, but the glimpses of ADC they have shown to the public are rarely balanced or objective. Stories usually focus on the killing of wildlife and are often punctuated with gruesome pictures and enumerated lists of the dead by species. Most sensible people are offended at what they are led to believe is an unnecessary waste and destruction of living things. Since the other side of the story is rarely presented, it is not surprising that people who see the sensational presentations become opponents of ADC. In reality, many people simply do not fully understand the ADC program or its mission. They only hear that a Federal program uses tax dollars to kill wild animals.

Since wildlife is a public resource, the public should be accurately informed about the realities of managing wildlife damage (Decker and Connelly 1990, Adams et al., 1988). Wildlife professionals, including those in ADC, are developing an appreciation of the importance of this issue (Acord 1991, Manfredo 1989, Hendee and Potter 1971), but an even stronger emphasis is warranted.

I had the opportunity to give a presentation on wildlife damage management to seventh grade junior high school students in Littleton, Colorado. Prior to my visit, their science teacher had taught them a segment dealing with livestock predation. The objective of my visit to the students was to convey what has been termed the ADC message - "Wildlife is a valuable public resource which is managed for abundance and diversity. However, wild animals often cause damage that affects every citizen. Wildlife must be managed in a responsible and caring manner. This is ADC's purpose."

This paper describes my presentation to the students and offers information gleaned from some questions the students answered before and after my visit.

METHODS

Approximately 130 students were divided among the teacher's five daily science classes. On a Friday prior to my Monday visit to the school, the teacher gave a question sheet to each student to complete (Table 1). The questions were used to determine the attitudes and understanding of the students about several issues related to

wildlife damage. The students were told that the questions were not a test and that they did not need to put their name on the sheet. The students were not aware of my upcoming visit to their class.

At the outset of each of the classes, I was introduced by the teacher and was given approximately 40 minutes to make my presentation which consisted of showing 70, 35mm slides and giving supporting dialogue. Although I had made notes of key points to make with each slide, the oral presentation was given without a script. The first 11 slides depicted mountainous outdoor scenes and various species of wildlife. In the accompanying dialogue, I indicated that wildlife was part of a natural resource heritage that is important and valuable to the citizens of the United States.

The next 40 slides showed examples of the damage that wildlife could cause. Damage to agriculture and public and private property along with the species responsible for the damage were shown. With each example I discussed the potential impacts in terms that the students could relate to. For example, a 5-slide series showed a gray wolf *(Canis lupus),* a cow that had been fed on by wolves but not killed, a steer that had been killed and extensively fed on by wolves, a cow smelling the remains of her calf that had been killed and eaten by wolves, and finally a pet dog that had been disemboweled and killed by wolves. Most of the students probably did not raise cattle, but many of them likely had a pet and could personally relate to such a situation.

The following wildlife damage problems were shown to the students: 1) blackbird (subfamily *Icterinae)* damage to sunflowers, feedlots, and the impact roosting birds had on residential areas; 2) heron (order *Ciconiformes)* and gull *(Larus spp.)* damage to aquaculture; 3) woodpecker (order *Piciformes)* damage to structures; 4) bird hazards at airports; 5) raccoon *{Procyon lotor)* damage to crops; 6) beaver *(Castor canadensis)* damage to woodlots and roadways; 7) porcupine *(Erethizon dorsatum)* damage to timber, 8) wolf, coyote (C. *latrans),* grizzly bear *(Ursus arctos),* and mountain lion *(Felis concolor)* damage to livestock; 9) rabbit *(Lepus spp.)* damage to croplands, and 10) white-tailed deer *(Odocoileus hemionus)* damage to trees.

The remaining slides illustrated various techniques that could be used to prevent or minimize animal damage. Both nonlethal (e.g., propane canons, livestock guarding dogs, antipredator fencing) and lethal (e.g., shooting, livestock protection collar) methods were shown.

Following the slide presentation which lasted approximately 35 minutes, I briefly responded to questions from the students. After the discussion, the teacher gave each student an unmarked copy of the 5-question sheet that they had completed the week before. The students were asked to respond again to the questions before the class was dismissed.

Chi-square procedures were used to compare the data gathered before and after the presentation.

RESULTS AND DISCUSSION

With the exception of question 5, there was a significant difference ($P < 0.01$) between the students' responses to the questions before and after receiving the presentation on wildlife damage (Table 2). The number of students who agreed there was a problem with wildlife causing damage increased 414% after the presentation, and most of them could give several examples to support the point.

When asked who should pay for the losses wildlife caused, the students were divided. Following the presentation, most of them thought the government should pay for the loss, but many stated that the individual experiencing the loss should bear the cost. The students were well aware that they and other citizens, in essence, were the "government." Likewise, concerning who should be responsible for preventing wildlife damage, the students were divided in their opinions with most favoring "the government" or "the person whose property was damaged."

Prior to the presentation, 60% of the students thought it was "OK" to control animals that were causing damage. After the presentation, 86% (an increase of 43%) of the students thought control was "OK." Six of the 108 students who responded "Yes" to this question, added wording to the effect that control was "OK" as long as it did not involve killing the animal. Several students made the same comments to me during discussion after the slide presentation and again in a "thank you" letter I later received from the students.

A person's attitude concerning a subject is a result of knowledge (information) about the subject and personal experiences related to the subject. Underpinning attitude is a system of values that encompasses, among other entities, customs and social institutions. While merely presenting information about a subject may not be sufficient to change a person's attitude in some instances (Morgan and Gramann 1989), it could be in others. Whether a change in attitude results, depends in part, on the measure of the other factors that are the basis for the particular attitude.

With respect to educating young people about wildlife damage, it is conceivable that attitudes are not yet firmly developed, and presenting objective information on the subject may be sufficient to allow them to form realistic attitudes. The students' responses to the questions presented in this report revealed that their knowledge was increased (i.e., students could give examples of wildlife causing damage) and that some of their attitudes were changed (i.e., most thought it was "OK" to control wildlife to prevent damage) as a result of the slide presentation. Whether the students' attitudes will remain unchanged after receiving more information and having other experiences, is not known.

This exercise indicated that attitudes about wildlife damage can be formed or modified as a result of receiving information. With respect to wildlife management in general and wildlife damage management in particular, it is the responsibility of the wildlife community to ensure that accurate, objective information is made available to the public. The public should understand the need for managing the wildlife resource they jointly "own" and the realities of that management.

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TABLE 1. The question sheet completed by seventh grade students before and after a slide presentation on wildlife damage.

You do not need to put your name on this paper. This is not a test. The information you provide here will be used to help plan for better ways to inform the public about important natural resource issues. The term "wild animals" as used here means wildlife species or animals that are not domestic.

QUESTIONS ABOUT WILD ANIMALS CAUSING DAMAGE

I. Do you think there is a problem in the United States with wild animals damaging agricultural crops, other property, or endangering human health and safety? *(Check one response)*

No _ Yes ___ I don't know ___

II. If you answered yes, please give some examples. *(List all you can think of but no more than five.)*

WILD ANIMALS	TYPE OF DAMAGE IT CAUSES
1.	
2.	
3.	
4.	
5.	

III. If a wild animal damages someone's property, who should have to pay for the loss? *(Check one response)*

No one _ The person whose property was damaged ___
The government ____ I don't know ___

IV. Is it OK to control wild animals in some way to prevent them from damaging agricultural products, other property, or endangering human health and safety? *(Check one response)*

No Yes I don't know

V. Who should be responsible for preventing the damage that wild animals cause to someone's property or to someone's health and safety? *(Check one response)*

No one ___ The person whose property was damaged ___
The government _ I don't know

TABLE 2. Results from the questions to determine the knowledge and attitudes of seventh graders before and after a slide presentation on wildlife damage

I. Do you think there is a problem?

	BEFORE PRESENTATION	AFTER PRESENTATION
No	56	13
Yes	22	113
I don't know	50	6

II. Give some examples.

#	BEFORE PRESENTATION	AFTER PRESENTATION
0	110	20
1	6	6
2	5	8
3	4	15
4	0	12
5	3	71

III. Who should pay for the loss?

	BEFORE PRESENTATION	AFTER PRESENTATION
No one	15	8
The person	31	49
The government	50	59
I don't know	30	14

V. Is it OK to control animals?

	BEFORE PRESENTATION	AFTER PRESENTATION
No	26	9
Yes	77	108
I don't know	24	9

VI. Who should be responsible for preventing damage?

	BEFORE PRESENTATION	AFTER PRESENTATION
No one	11	7
The person	44	47
The government	42	56
I don't know	28	19