

WILDLIFE KNOWLEDGE AND ATTITUDES OF PUBLIC SCHOOL TEACHERS

by

SUSAN E. TAYLOR
Division of Forestry
West Virginia University
Morgantown, West Virginia

DAVID E. SAMUEL
Division of Forestry
West Virginia University
Morgantown, West Virginia

ABSTRACT

A questionnaire was administered to 312 public school teachers and seniors in education who were taking courses in West Virginia colleges. Attitude toward hunting was listed as strong disapproval (16 percent), mild disapproval (21 percent), undecided (17 percent), mild approval (33 percent), and strong approval (12 percent). Attitudes and knowledge were often related to basic attitude toward hunting, and those who favored hunting usually answered questions correctly in greater numbers than those who disapproved. Chi-square tests of independence were applied to the results. The results indicate there is a lack of knowledge about basic wildlife concepts on the part of the teachers.

INTRODUCTION

A growing concern about anti-hunting sentiment has prompted some studies on knowledge and attitudes of certain types of people toward wildlife. Groves (1972) studied hunting popularity in Pennsylvania. Shaw (1972) worked with college students, and Applegate (1973b and 1974) with attitudes on deer hunting in New Jersey. Applegate (1973a) found a lack of knowledge about deer on the part of the New Jersey residents.

An increase in environmental education occurred in the past decade when educators recognized the lack of training that school children have in the environmental areas (Studebaker 1973). One problem in implementing an effective program for children is that "there is a severe shortage of classroom teachers prepared to effectively integrate environmental education into instructional programs" (Stapp 1973).

Thus to see if there is a lack on the part of West Virginia science teachers, the purpose of this study was to determine the wildlife knowledge and attitudes of public school teachers and to see if they are related to attitudes toward hunting.

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METHODS

A questionnaire on biology of wildlife and management techniques (especially hunting) was given in late 1974 and early 1975 to 312 public school teachers and college seniors in education. The questionnaire was administered by either the classroom teacher or one of the investigators during class time at West Virginia University, West Liberty State College, and Fairmont State College. In order to sample those teachers who would most likely have formal contact with students from a science, nature, or biology standpoint, the teachers chosen for the questionnaire were those who taught or would be teaching elementary school (K-6) and secondary general science or biology teachers.

The questionnaire consisted of multiple-choice items on the teachers' experience with wildlife and hunting, general knowledge about wildlife, and opinions they held on various wildlife-related issues. All responses were punched on data cards and fed into the West Virginia IBM 360/75 computer to determine the percentages choosing each answer to the question.

The final question asked the respondent to state his/her attitude toward hunting by choosing from strong approval, mild approval, undecided, mild disapproval, and strong disapproval. A Chi-square

test of independence was then run on each question to determine whether attitude toward hunting was related to the answer given to the question. Results were tested at $p = .05$ and beyond.

RESULTS AND DISCUSSION

Of the 312 persons surveyed, 74 were from West Liberty State College, 38 from Fairmont State College, and the remaining 200 from West Virginia University. Only six percent of the teachers were secondary teachers or seniors in secondary education and 30 percent were experienced teachers (one or more years of teaching experience). Less than ten percent were males and 71 percent were in their early twenties (20-24).

When asked to state their attitude toward hunting, 16 percent strongly disapproved, 21 percent mildly disapproved, 17 percent were undecided, 33 percent mildly approved, and 12 percent strongly approved. In his first study in New Jersey, Applegate (1973b) found 54 percent in favor of deer hunting, 38 percent against and 8 percent undecided. Two years later the percentages had changed to 49 percent pro, 43 percent con and 8 percent undecided (Applegate 1974). West Virginia teachers showed less support of hunting (45 percent) than New Jersey residents, but also showed less anti-hunting sentiment since only 37 percent disapproved. The lesser anti-hunting sentiment could be due to the more rural background of most West Virginians as compared to New Jersey residents. The undecided group was much larger in the teachers than in the New Jersey studies. This could reflect the larger proportion of women in this study who have a family member who hunts, but are not sure of their feeling toward the sport. Also, this questionnaire refers to hunting in general and not just to deer hunting.

A few of the general knowledge questions showed that the teachers seemed to know a little about wildlife. Eighty-three percent could identify a buck rub and those with a favorable attitude toward hunting had a significantly higher number ($p = .03$) correctly choosing the right answer, (Table 1).

When asked to identify the major cause of the decline of several animal species in the U. S., 65 percent of the teachers responded 'habitat loss,' 29 percent replied 'hunting,' four percent 'weather changes,' and two percent 'none of the above.'

Less than 50 percent of the teachers answered any of the other questions correctly. Thirty-nine percent of the teachers correctly picked out 'pheasant' as a non-native species, and 32 percent of the teachers knew that only male turkeys were hunted during spring gobbler season. The only sub-group to have more than 50 percent correctly answer this question were those who strongly approved of hunting (Table 2.)

Teachers were widely split on whether there is a hunting season on any rare and endangered species. Thirty-three percent said 'no,' 31 percent 'yes,' and 31 percent didn't know. There was no significant difference due to attitude toward hunting on this question.

The knowledge questions in which the answer chosen by the greatest percentage of respondents was incorrect, included the following three questions. The first asked how hunting affected the yearly populations of small game. Only 30 percent of the teachers replied 'very little, if any.' The only sub-group that had over 50 percent correctly answering this question was again those who strongly approve of hunting with 54 percent (Table 3). These results were significant at $p = .001$.

When asked which animal uses a drumming log, 61 percent chose 'beaver' and only 24 percent picked 'ruffed grouse.' Even those who approve of hunting didn't make an impressive showing on this question with only 49 percent of those who strongly approve of hunting answering correctly (Table 4). The difference was still significant ($p = .02$) between the various attitude sub-groups.

Forty-six percent of the teachers thought it was illegal to hunt black bear in West Virginia. Forty-three percent correctly answered that the bear can be hunted if it has caused damage or is in season. Of those who strongly approve of hunting, 70 percent answered correctly, and only 16 percent didn't think black bear could be hunted (Table 5). The differences in percentages were significant at $p = .0001$.

It seems from the results of the knowledge-type questions that there is a serious lack of factual knowledge by public school teachers about wildlife and that attitude toward hunting and the experiences which caused these attitudes significantly influence the answer given in the questions.

Those who favor hunting have had more personal experience with wildlife and its management (51 percent versus 24 percent of all teachers) and therefore tend to respond correctly more often than those without the experience. In each question which showed a significant difference in the sub-group answers, those who strongly approve of hunting answered correctly in a greater percentage than those who do not approve of hunting (Tables 1-5).

Table 1. Response to "A buck rub is:" in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>	<i>S.D.</i>	<i>Attitude Sub-Group</i>			
			<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.</i>
Where a male deer has rolled in the dirt to rid himself of parasites	7	16	10	6	4	3
The clearing where two bucks fight for a female	9	8	12	15	8	3
Where a buck has removed the velvet from his antlers on a tree	83	72	78	79	88	95

* All percentages have been rounded to the nearest whole number.

Key: S.D. = Strong Disapproval
M.D. = Mild Disapproval
U. = Undecided
M.A. = Mild Approval
S.A. = Strong Approval

Table 2. Response to, "What is a 'spring gobbler' season?" in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>	<i>S.D.</i>	<i>Attitude Sub-Group</i>			
			<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.**</i>
Male turkeys can be hunted	32	18	27	23	38	60
Female turkeys can be hunted	7	4	10	6	9	3
Any turkeys can be hunted	28	30	28	29	27	27
It is the mating time for turkeys	31	42	36	40	25	11
No answer	2	6	0	2	1	0

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

Table 3. Response to, "How does hunting affect the overall yearly numbers of small game populations?" in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>	<i>S.D.</i>	<i>Attitude Sub-Group</i>			
			<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.**</i>
Greatly	24	48	33	21	15	11
Somewhat	46	42	46	54	46	32
Very little, if any	30	10	21	25	39	54

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

Table 4. Response to "What animal uses a drumming log?" in percentages* by all teachers and hunting attitude sub-groups.

Response	All Teachers		Attitude Sub-Group			
	S.D.	M.D.	U.	M.A.	S.A.**	
quail	9	18	10	11	6	5
ruffed grouse	24	16	18	11	29	49
beaver	61	56	66	71	59	46
owl	5	8	4	6	5	0
no answer	1	2	3	0	1	0

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

Table 5. Response to "Is it legal to hunt black bear in W. Va.?" in percentages* by all teachers and hunting attitude sub-groups.

Response	All Teachers		Attitude Sub-Group			
	S.D.	M.D.	U.	M.A.	S.A.**	
yes, under any conditions	9	4	4	11	12	14
yes, when the bear has caused damage or is in season	43	54	39	31	46	70
no	46	58	55	56	41	16
no answer	1	2	1	2	1	0

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

The other major source of experience with wildlife was 'Television' with 49 percent of all teachers while 24 percent listed 'personal experience.' People who strongly disapproved of hunting listed television 60 percent of the time while those who mildly disapproved listed television 65 percent of the time.

The occurrence of a family member who hunts was related to the attitude toward hunting of the individual. Forty-five percent of all teachers had no member of their immediate family who hunted. Of those who strongly disapproved of hunting, 76 percent had no family member who hunted (Table 6). Many of those who strongly approved of hunting did not hunt themselves (68 percent), but only eight percent of the strong approval sub-group had no person in their family who hunted. Applegate (1973b) found that the single most important factor in determining a person's attitude toward hunting was direct association with hunters. In this study it seems that having a member of the family who hunts influences the attitude toward hunting, and that those who oppose hunting often have not been exposed to it within their immediate family. Familiarity with the sport tends to bring a favorable reaction. Only eight percent of all teachers hunt and these fell in the approval sub-groups excepting one in the undecided category (Table 6).

The remaining questions requested the respondent to make a judgement as to what they thought would happen in a particular situation or how they themselves felt about a certain statement.

When asked what they thought about the status of wildlife in the country, the teachers overwhelmingly (795) replied that wildlife was decreasing. It is more understandable that many people are against hunting if they feel wildlife is declining, even though most felt that it was due to habitat loss. Perhaps they feel that any extra deaths through hunting just adds to the problem.

Table 6. Response to "the following members of my family hunt:" in percentages* by all teachers and hunting attitude sub-groups.

Response	All Teachers		Attitude Sub-Group			
	S.D.	M.D.	U.	M.A.	S.A.**	
father	22	14	22	17	25	32
mother	1	0	0	0	1	0
brother(s)	21	8	21	19	28	22
sister(s)	1	2	0	0	1	0
self	8	0	0	2	11	32
none	45	76	55	62	32	8

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

They were asked if they thought game species of wildlife should be harvested as a crop when excesses exist (Table 7). Twenty-seven percent of all teachers replied 'yes' and 60 percent of the strong approval sub-group said 'yes.' Interestingly 16 percent of the strong approval group answered 'no' to the question. Possibly they may have interpreted it as meaning some type of harvesting other than sport hunting, such as market hunting. The responses were significant at $p = .0001$.

Table 7. Response to "do you feel that game species or wildlife should be harvested as a crop when excesses exist?" in percentages* by all teachers and hunting attitude sub-groups.

Response	All Teachers		Attitude Sub-Groups			
	S.D.	M.D.	U.	M.A.	S.A.**	
yes	27	8	21	35	25	60
only if they are destroying the habitat	43	42	54	40	45	24
no	29	48	25	25	28	16
no answer	1	2	0	0	1	0

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

Replying to what they thought should be done when a population of animals becomes too large for the environment to sustain and the habitat is suffering from overbrowsing, most of the teachers (58 percent) thought that the excess should be removed by hunting (Table 8). Twenty-six percent thought you should let nature take her course; 10 percent, use sterilization techniques; and five percent, bring in extra food. Eighty-six of those who strongly approve of hunting wanted to remove the excess by hunting as compared to 22 percent of those who strongly disapprove of hunting. The strong disapproval sub-group thought (42 percent) that nature should be allowed to take her course. Twenty-two percent of this group chose hunting as their alternative which is somewhat puzzling since they strongly oppose the sport. Perhaps they didn't feel that any of the other possible answers were reasonable. These results were also significant at $p = .03$.

Next, they were asked to state their position on a statement. The first statement was that man should quit interfering with wildlife and let nature take care of her own (Table 9). Thirty-one percent mildly agreed with this statement, 25 percent mildly disagreed, 17 percent strongly disagreed, 15 percent were undecided, and 12 percent strongly agreed. Sixty-eight percent of those who strongly disapprove of hunting agreed with the statement and 84 percent of those who strongly approve of hunting disagreed with the statement. The hunters tend to think that man should keep up the work

Table 8. Response to "If a population of animals becomes too large for the environment to sustain and the habitat is suffering from overbrowsing, what do you think should be done?" in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>		<i>Attitude Sub-Groups</i>			
	<i>S.D.</i>	<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.</i> **	
let nature take her course	26	42	37	23	20	3
remove the excess by hunting	58	22	46	63	73	86
bring in extra food	5	14	4	6	2	3
use sterilization techniques	10	20	12	8	5	8

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

with wildlife which would include hunting, habitat management, etc. It would seem that the teachers didn't really consider rare and endangered species in this question because a later statement read, "man should let nature take care of rare and endangered species," and 77 percent of the teachers disagreed with it. Possibly they equated "interfering with wildlife" with hunting in the first question.

The last statement was that hunting upsets the balance of nature. Fifty-one percent of all teachers disagreed with this and 36 percent agreed (Table 10). When divided by sub-group, 98 percent of those who strongly approve of hunting disagreed and 68 percent of those who strongly disapprove agreed with the statement (significant at $p = .0001$).

Table 9. Response to "Man should quit interfering with wildlife and let nature take care of her own," in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>		<i>Attitude Sub-Groups</i>			
	<i>S.D.</i>	<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.</i> **	
Strongly agree	12	24	15	10	8	3
Mildly agree	31	44	37	29	29	8
Undecided	15	12	18	29	12	5
Mildly disagree	25	10	21	21	40	19
Strongly disagree	17	8	10	11	11	65

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

School teachers definitely show a lack of knowledge about wildlife and management. Those who approve of hunting tend to know a little more than the average teacher, but this is probably to be expected since they have had more contact with the profession. Since environmental education is still increasing within the school systems, the colleges should require that their education majors, particularly the ones who might be teaching science, take a course in environmental science, natural resources, conservation, or some related subject.

A strong push should be made by the Information and Education department of each state to reach these teachers who can do so much to mold the thinking of school children, so that they have all the facts about wildlife management and not just what they pick up from television programs. They might provide assistance to the colleges by providing information on wildlife and conservation, suggesting texts, and supplying guest lecturers.

Table 10. Response to "Hunting upsets the balance of nature," in percentages* by all teachers and hunting attitude sub-groups.

<i>Response</i>	<i>All Teachers</i>		<i>Attitude Sub-Group</i>			
		<i>S.D.</i>	<i>M.D.</i>	<i>U.</i>	<i>M.A.</i>	<i>S.A.**</i>
Strongly agree	11	38	10	4	5	3
Mildly agree	25	30	43	23	20	0
Undecided	13	20	10	25	13	0
Mildly disagree	35	12	34	40	47	30
Strongly disagree	16	0	4	8	16	68

* All percentages have been rounded to the nearest whole number.

** See key in table 1.

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