A STUDY OF CONSERVATION ATTITUDES IN A SELECTED GROUP OF FIFTH AND SIXTH GRADE PUPILS

Thesis for the Degree of M. S.

MICHIGAN STATE UNIVERSITY

Martha F. Sykes

1963

ABSTRACT

A STUDY OF CONSERVATION ATTITUDES IN A SELECTED GROUP OF FIFTH AND SIXTH GRADE PUPILS

by Martha F. Sykes

The purpose of this study was to develop and administer a test to determine the attitudes of Michigan fifth and sixth graders towards conservation.

The participants in this study came from three geographic locations designated Group A, Group B, and Group C. These locations were the Gull Lake area, the Lansing area, and the Upper Peninsula. There were 551 respondents.

A pretest of twenty openended questions was developed first and administered to twenty-four fifth and sixth graders. The results of the pretest were then used in part, in the development of the final questionnaire.

The final questionnaire consisted of twenty-five objective questions, the respondent circling the answer with which he agreed. A personal data sheet was developed to determine if there might be some correlation between the answers to the questions and such items as sex, home environment, activities, etc. found on the data sheet.

The results of the questionnaire were punched on IBM cards to facilitate the analysis of the data.

The results of the data indicate:

1. That the attitudes of fifth and sixth graders towards the conservation of our natural resources are, in most instances, favorable.

2. There were a significant number of unfavorable responses.
3. Parents do influence attitudes.
4. Public opinion has an effect on attitudes relative to certain resources.
5. There is apparently a degree of lack of awareness.
6. Likewise there is apparently a large degree of lack of knowledge about certain resources.
7. There is a correlation between those living on farms and in the city in terms of responses received.
8. Occupation is an influencing factor.
9. Sex and grade level did not seem to be significantly influential as it pertains to the specific grade levels involved in this study.
10. Geographic location is an influential factor.

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By

Martha F. Sykes

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Department of Fisheries and Wildlife

1963

ACKNOWLEDGMENTS

The author wishes to express appreciation to the following:

Dr. Gilbert W. Mouser for his untiring supervision, encouragement, and guidance throughout the study.

Mr. R. D. VanDeusen, Director, Kellogg Bird Sanctuary, for the use of the Sanctuary's facilities and equipment, and his assistance throughout the study.

Dr. Peter Tack, Dr. C. L. Vinge, Mr. Charles Shick, Miss Shirley Brehm, who acted as judges in evaluating the final test.

Dr. William J. Walsh, for his help in the development of the pretest.

Dr. W. D. Baten for assistance and suggestions in the statistical treatment of the data.

Miss Norma Ray for her help in processing the data. Mr. Frank Martin for help in organizing the material to be processed.

The principals, teachers, and students of Michigan who took part in the study.

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CHAPTER I

INTRODUCTION

"Conservation becomes a way of life through the building of attitudes in the hearts and minds of people. These attitudes are action tendencies within each person that determine what he will do under certain sets of circumstances."[1]

It is our job to encourage and build these attitudes in people in a constructive and positive manner, from the youngster before he enters school to the senior citizens of the country and the world.

In our rapidly changing world of population explosions, increased leisure, and urban development, it is imperative we become conservation conscious. Our natural resources are the backbone of the nation. Unless they are managed and used wisely now, and in the future, we will not remain the strong nation we are now. Therefore, it is our responsibility to develop in these youngsters who are our future educators, lawmakers, businessmen, and housewives an understanding and appreciation of our natural surroundings, and through conservation education develop positive attitudes and a conservation

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[1]Byron L. Ashbaugh, "Saving Land is Not Enough," Talk before the Ninth Annual Conference, Conservation Education Association, Stevens Point, Wisconsin, August 19-22, 1962, p. 10. (Mimeographed.)

conscience. This can all be summed up in the words of Ernest Swift in his recent booklet, Count Down on Survival:

> There is no question that education is a strong force to forestall ill-advised and unwarranted change, as well as to promote sound and intelligent planning for the future. Resource education should not be a heterogeneous mass of material crammed into the minds of people like force-feeding a Christmas goose with noodles.
>
> Conservation education should start with the small child and should relate to his daily living habits to instill in him an awareness of the problems. But above all conservation should create a reverent attitude for resources and then a deep sense of individual responsibility will follow.[2]

Out of this philosophy evolved this study--to develop and administer a test to determine the attitudes of some Michigan fifth and sixth graders towards conservation. If, and to the extent that, the test proves valid, it will guide educators in their planning of education programs in conservation.

Limitations

1. An inherent limitation is to adequately measure attitudes.
2. Tests were not given under standard and uniform conditions.
3. Variable emphasis was placed on certain items associated with the personal data sheet ranging from complete discarding of certain ones namely--education of parents, visitations to museums, sanctuaries, etc., age,participation in certain nature activities and programs as

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[2]Ernest Swift, Count Down to Survival (Washington, D.C.: National Wildlife Federation, 1961), pp. 27-28.

shown in Table 1--to considerable emphasis of the remainder.

4. No attempt was made to assign specific reasons for attitudes.

CHAPTER II

REVIEW OF LITERATURE

Research on the testing of conservation attitudes is limited. The reason for this is not known, perhaps it is due to the fact that research that has been carried out is unpublished or the more likely reason is that there has been little research done.

A search of the library and its many resources came up with very little and no tests related to conservation. From here a search was made for research done in the field of conservation testing in all areas. Here records seem to be nonexistent also.

Letters were written to professional conservation organizations in an attempt to find out if their organizations had done any research in this area. The only testing that has been done is that by the Conservation Foundation. This research consisted of the development of a test of reasoning in conservation which did not apply to the problem.

The only test found directly related to conservation attitudes was one developed by a graduate student at the State University of New York College for Teachers. The test was concerned with the opinions of teachers towards conservation. An attitude scale was used in the scoring of the test

as follows--strongly agree, agree, undecided, disagree, and strongly disagree. The respondent circled the letter which most closely represented his thinking on the subject. A personal data questionnaire covering name and year of graduation from college, where the respondent has lived the greater part of his life, grades in college, and courses taken in both high school and college, and activities participated in was also a part of the questionnaire.

A study that was of considerable help in the development of this research was one carried out by Robert H. Giles, Jr. It was a study of the "Conservation Knowledge of Virginia School Pupils."

The main purpose of this study was "to measure the conservation knowledge of Virginia public school pupils in grades six through twelve and the source of their knowledge, a test was constructed."[3] The main part of the test was divided into the following major topics: principles of general conservation, principles of soil conservation, principles of forest conservation, principles of water conservation, and principles of wildlife conservation. The questions were multiple choice. The following information was gathered at the end of the test: the sex of the student, where he lived, the school subjects or courses, membership, and other activities.

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[3]Robert H. Giles, Jr., "Conservation Knowledge of Virginia School Pupils," V.P.I. Agricultural Extention Bulletin, August, 1958, p. 5.

The results of the test are as follows:

> Both the level of attainment that appeared possible based on early grade increments of conservation knowledge and the total amount of knowledge deemed necessary for satisfactory citizenship indicate that the knowledge possessed is below a desirable level. Although average grades were progressively higher in each higher grade, the attainment was inadequate. The rate of acquisition of knowledge declined after the ninth grade. The greatest knowledge was shown in principles of general conservation, the least in principles of wildlife conservation. Caucasian pupils had significantly higher scores than Negroes; average total scores from the northern part of the state were significantly higher than those from either the southern or central areas. Insignificant differences were found between geographic regions and between sexes. Farm children were found to be significantly lower in possession of conservation knowledge than either urban or suburban pupils.[4]

No other material was found directly relating to testing.

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[4] Ibid., p. 1.

CHAPTER III

DATA COLLECTION

Due partially to the fact that little literature on research related to the testing of conservation attitudes was available, it was necessary to develop a pretest questionnaire. The purpose of this pretest was to find out through a group of pertinent questions the attitudes and familiarity of students towards some basic conservation principles and practices, the results of which would be used in developing the final questionnaire.

Development of Pretest

A series of twenty openended questions dealing with conservation principles and attitudes were developed and administered to a group of twenty-four fifth and sixth graders; six from each of four schools (see Appendix). This number was considered adequate for the pretest. The main reason for using the openended questions was to enable the student to answer the questions in his own terms and frame of reference. It was felt these results would be especially pertinent in developing and framing the statements in the final questionnaire.

Before the test was administered to the students it was shown to several fifth and sixth grade teachers for

their opinions as to wording of the questions, length of the test, and subject coverage.

The results of the pretest were categorized on a large chart to be used as an outline in developing the questions for the final questionnaire. The answers to each question were recorded under one of the following headings: Yes, No, Don't Know. There was also a Comments heading which was a list of student answers to the questions. All answers were written down on this chart, in part, unless there were two or more similar answers, in that case only one was recorded. Questions asked on the pretest were then reviewed and evaluated as to whether it should be included in the final questionnaire. The evaluation was based upon the following criteria:

1. Was the question testing for a conservation attitude or opinion toward principles and practices of conservation?
2. Was the subject of the question definitely related to conservation?
3. Was the question worded so that we would get the desired answer?
4. Was the child's response to a particular question of such a nature that it should be included in the final questionnaire?

Results of Pretest

As mentioned above the results of the pretest were used in the development of the final test (see Appendix A).

Several questions were thrown out after they were studied in terms of the above criteria. Questions one and three were not included in the final test because the attitudes of all the respondents were similar and the author assumed the response would be the same in the final questionnaire.

Questions thirteen, fourteen, nineteen, and twenty were removed from the test because it was felt they were not testing for conservation attitudes or opinions and, therefore, not directly related to the subject.

Questions eight and eighteen were not included in the final test because of lack of knowledge on the part of the respondents in answering the questions.

The remaining twelve questions were considered relevant to conservation and, therefore, should be included in some form in the final questionnaire. In most cases the questions were reworded or the emphasis was changed so that the answer would show an attitude on the part of the respondents. For example, the question "What are natural resources?" was changed to "When thinking of conservation we should think of soil, water, forests, and wildlife as making up one huge resource to be used wisely."

The following is a summary of the answers given to those twelve questions considered relevant on the pretest written in the children's own words. Answers were selected that give an over-all picture of the total groups' responses.

Thus a study of the pretest seemed to indicate as desirable, questions aimed at securing information concerning

the following attitudes:

1. Those relative to hunting.
2. The responsibility of all people including the child himself toward promoting favorable attitudes.
3. Uses of forest resources.
4. Attitudes toward state and local education and enforcement agencies.
5. Concern for items belonging to all of the citizenry:

    a. Fish
    b. Soil
    c. Water
    d. Wildflowers
    e. Wildlife

Summary of Pretest Results

1. What do you think about shooting phesants?
    A. Okay, if you don't trespass.
    B. Okay, because you shoot them for meat.
    C. Okay, in season.
    D. Okay, once in a while to shoot a male.
    E. Okay, if you don't shoot too many.

2. Who is responsible for the conservation of our natural resources?
    A. Game warden.
    B. We are.
    C. Nature.
    D. We are when we pay taxes to help keep natural resources.
    E. Conservation Department of the U. S.

3. What is conservation?
    A. Protecting useful animals.
    B. To save our natural resources.
    C. Preserve nature.
    D. Wildlife, national forests, and parks.
    E. It means the treatment.

4. What are natural resources?
    A. Things not made by man.
    B. Water, plants, land.
    C. Great Lakes coal mine.

D. Lumber and minerals.
E. Things that have always been here.

5. When you are in the woods do you think it is alright to pick the wildflowers growing there?
   A. Yes, if you don't pick too many.
   B. No, wouldn't be any left for others to look at.
   C. Yes, but do not pull the roots out.
   D. Okay to pick a few, not too many or soil will blow away.
   E. Okay, if there are a lot of them and no law against it.

6. Is it alright to shoot hawks and owls?
   A. No, because they will run out of them for the sanctuary.
   B. Yes, because they are mean.
   C. No, they kill many animals that we don't like.
   D. Okay to shoot hawks not owls.
   E. Yes, it is the balance of nature.

7. Do you think having laws to protect wildlife is a good idea?
   A. Yes, if we didn't all the animals would be extinct.
   B. Yes, it saves them.
   C. Yes, hunters would kill them all.
   D. Yes, because some animals protect our land and help it be fertile.
   E. Yes, we want to keep our country beautiful and alive with woodland creatures.

8. Should people and industry be allowed to dump garbage and waste into our lakes and rivers?
   A. No, kill all fish and ducks, and hurt people.
   B. No, it ruins our lakes and rivers so we can't use them.
   C. Pollute the water for drinking, swimming, and fishing.
   D. Makes rivers smell.
   E. No, it would ruin our water supply and kill many animals that need this water to drink.

9. Do you think conservation is important?
   A. Yes, we can't live without it.
   B. Yes, because they can make new roads.
   C. Yes, because it protects wildlife.
   D. Conservation is important because natural resources would disappear.
   E. Yes, it will save many trees and animals from death.

10. Do you think it is alright to drain land that is used by ducks for nesting if someone wants to use it for something else?
   A. No, it would leave no place for ducks to go.

B. No, because ducks have a right to have children too.
C. Okay, if a good reason for draining.
D. Yes, there are lots of places for ducks to nest.
E. Ducks should have a place to nest without being disturbed.

11. Is soil conservation important to you?
A. Yes, because we wouldn't have some foods.
B. Important to farmers.
C. Important to everybody.
D. Yes, we can grow gardens and have trees.
E. Yes, it gives us our food.

12. Are forests important to all citizens?
A. Yes, need wood for homes and furniture.
B. Yes, to make country look beautiful.
C. No, because some people don't like forests.
D. Yes, it is a place to relax.
E. The should be, they hold back water that could create a flood and provide lumber for houses.

CHAPTER IV

DEVELOPMENT OF THE FINAL QUESTIONNAIRE

As soon as the evaluation of the pretest questions was completed, the final questionnaire was developed. The statements asked on the final questionnaire all concerned our renewable resources; wildlife, forest, soil, water, and human resources.

Constructing the Questionnaire

As a result of study of resources on the pretest, certain facts and/or trends seemed to present themselves. Using these pretest results and other factors as a guide, the final questionnaire was structured. An analysis of guiding factors follows:

1. In certain instances where lack of knowledge seemed to be evident an occasional statement was included to see if such were the case in children of the varied areas being tested.

2. Some statements, though apparently dealing with more familiar content, were included again to see how the varied backgrounds might influence the response.

3. Certainly any statement such as statement 1, where there appeared to be mixed feelings were included.

4. Some statements such as number 11 relative to pollution were slightly modified.

5. Statement number 8 relative to watersheds could have been retained yet there seemed to be no comprehension concerning the term. Accordingly, a modified question relative to water was included.

6. Certain items of a highly contested nature, though not a part of the pretest, were included.

After the statements of forty questions were developed, with the help of the pretest evaluation, they were sent to a panel of professors familiar with the subjects covered and the area of testing (see Appendix B). They were asked to judge the questionnaire in terms of the length of the questionnaire, wording of the statement for understanding on the part of the fifth and sixth graders, and any omissions in the content of the questionnaire. The questionnaire was then revised to twenty-five statements, or items, and corrections, additions, and changes were made as suggested (see Appendix).

The items were phrased to elicit either a clearly favorable or unfavorable response. Accordingly, the child would agree (Yes) or disagree (No) with the statement. Provision was made for an answer "Don't Know" in case the child was totally unfamiliar with the subject. According to Sellitz, Jahoda, et al., in the book Research Methods in Social Relations, such a response of "Don't Know" may indicate the lack of crystallized opinion.[5] It is the

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[5]Claire Sellitz, et al., Research Methods in Social Relations (2nd ed. rev., New York: Henry Holt and Company, Inc., 1960), p. 368.

opinion of the author that it may also indicate no knowledge of the subject at all.

Development of Data Sheet

Next, a data sheet was developed; the purpose of which was to obtain information which might be relevant to the children's attitudes toward conservation as answered in the test. Information obtained from the data sheet included the sex, age, and grade of the child; the occupation and education of the parents; the location where the child lives; extra-curricular activities such as membership in 4-H, Boy and Girl Scouts, nature centers or Audubon groups; participation in organized field trips to various sanctuaries, museums, etc.; and outdoor interests of the family such as family camping, attendance at screen tours and programs on conservation and nature, hunting, and fishing, etc.

It was felt that these activities might have a significant influence on the attitudes of the children toward conservation.

Selection of Sample

The schools for the final sample were selected on the following basis. Those schools taking part in the pretest were included in the final questionnaire. Other schools were selected on the same basis as was the case for the pretest, based on their geographic location, urban-rural population, apparent economic status, and willingness to cooperate in

the testing to secure a representative sampling of Michigan School Children.

One sixth grade classroom and one fifth grade classroom was selected from each school. The selection of the classrooms in the individual schools was up to the principal and the willingness of the teacher to cooperate. There was no attempt on the part of the author to indicate rooms or teachers to be involved.

The final sample included 219 fifth and 327 sixth graders from thirteen schools.

CHAPTER V

PROCESSING AND ANALYSIS OF DATA

As soon as completed questionnaires were received, they were checked for errors or other irregularities. Three tests were removed from the sample. In one instance an entire page was not completed and in the case of the other two, the answers were inconsistent; that is, more than one answer was checked for the same question.

After checking the data sheets, results were recorded on I.B.M. punch cards and a straight count was made of all the items. The straight count furnished the following information:

1. The number of respondents answering each question and the way in which they answered the question.

2. The number of respondents answering the personal though unidentified data sheet and the way in which they answered the respective items.

3. An analysis of these answers making it possible to determine the over-all attitudes of the children toward conservation.

4. Indications showing that it was advisable to analyze the data further to determine the influence of sex, grade, occupation, home environment, and membership and activities on the answers of the respondents.

Respondents were grouped according to geographical location. There were 264 respondents from Group A. The respondents in Group A were from communities in southwestern Michigan in close proximity to Gull Lake. Of these 264 respondents, 101 live on farms, 114 live in cities of under 10,000 population, and 35 live in the country (non-farm). Ten respondents answered in other categories which did not fit the above communities. A large number of the parents in this group work for industry.

The respondents in Group B were from the Upper Peninsula. Most of the respondents are from residential areas with the exception of one school which serves a residential and farming area. There were 131 respondents from Group B.

Group C represents pupils in the area around Lansing. There were 153 respondents. Of these, 48 of the respondents live on farms although only 23 of the 48 were farmers. For a complete analysis of the three groups see Table 1.

After these questions were analyzed the answers were then calculated as percentages.

Findings

The respondents were asked on the questionnaire to answer the statement, circling what they felt was the correct answer. The results of the information received are recorded in Table 2. The number answering the statement was recorded along with a breakdown of the number answering yes, no, and

TABLE 1

CHARACTERISTICS OF SAMPLE SUMMARY
OF PERSONAL DATA SHEET

Item	Total	Group A	Group B	Group C
Sex				
Boys	264	134	63	67
Girls	257	132	69	86
Grade				
5th	219	124	10	85
6th	327	139	120	68
Age				
9 year	1			
10 year	125			
11 year	278			
12 year	125			
13 year	10			
16 year	1			
Home Environment				
1. On a farm	155	101	6	48
2. In a city over 10,000 population	90	3	58	29
3. In a suburb of a large city	87	7	62	18
4. In a city of less than 10,000	169	114	1	54
5. In the country	35	35	--	--
Occupation of Parent				
1. Works for industry	185	104	61	32
2. Self employed	52	31	12	11
3. Farmer	54	35	1	23
4. Professional	49	13	7	29
5. Company official	37	19	8	11
6. Other	159	76	38	45
7. Blank	15	--	--	--
Education of Parents				
1. Mother				
a. grade school	42	24	9	9
b. high school	333	176	80	77
c. college	147	57	27	63
2. Father				
a. grade school	55	34	13	8
b. high school	290	152	71	67
c. college	157	59	26	72

TABLE 1--Continued

Item	Total	Group A	Group B	Group C
Membership				
4-H	88	68	24	36
Scouts	194	85	53	61
Junior Audubon	7	--	--	--
Nature Center or Museum	5	--	--	--
Camping Experiences				
School Camp	45	70	1	47
Private Camp	37	--	--	--
4-H Camp	35	--	--	--
Scout or other camp	243	--	--	--
Blank	191	--	--	--
Organized Field Trips				
K.B.S.	178	--	--	--
Natural History museum	136	--	--	--
Others	80	--	--	--
Parents Activities				
Buy hunting licenses	333	170	83	80
Buy fishing licenses	112	173	77	80
Own or rent a summer cottage	67	--	--	--
Family camping	214	111	59	69
Attend Audubon Screen tours	48	--	--	--
Others	68	--	--	--

don't know. Percentages were then calculated from these numbers.

A favorable answer is one in which the attitude of the respondent coincides with the attitude consistant with good conservation practices. Accordingly, an answer of either yes or no on the questionnaire could be a favorable answer.

At the outset the author would like to indicate what is meant by the term significant since results have been interpreted percentagewise rather than statistically in each

instance wherein the author has indicated the results were significant the two following conditions were obtained:

1. There is a large enough group responding (several hundred).
2. A definite majority of the responses were of a like nature.

Taking then the two factors into consideration, the author feels with little question such responses are significant.

As one analyzes Table 2 it will be seen that in all but four of the statements over 50% of the children answered the statement favorably. In the case of 15 statements over 75% of the answers were favorable. For the remaining six statements, between 50% and 75% of the children answered the questions favorably.

Eight statements were selected for further treatment on the basis that less than 70% answered the statement favorably. Actually there were nine statements in which less than 70% answered favorably. Statement 13 was not treated further since the results did not show significant differences between the three groups.

The following eight statements were analyzed in terms of the three groups and also analyzed according to the personal data sheet to determine the significance of this information in forming conservation attitudes.

Statement 1--I see nothing wrong in shooting hawks and owls.

From Table 2 it will be seen that 59.1% responded favorably to this statement, 26.1% unfavorably, and 12.1% responded with Don't Know.

TABLE 2

SUMMARY OF GROUPS

Questions	Total Responses	Yes		No		Don't Know	
		No.	%	No.	%	No.	%
1. I see nothing wrong in shooting hawks and owls.	537	144	26.1	326	59.1	667	12.1
2. Conservation is not important to me because I am too young to do anything about it.	551	58	10.5	458	83.1	35	6.3
3. I do not think you should shoot doe deer because they give birth to fawns. If we kill the mother deer, there will not be enough for next year.	548	381	69.1	129	23.4	38	6.8
4. There are lots of substitutes for wood so I don't need to be concerned about replacing trees that have been cut.	548	68	12.3	443	80.3	37	6.7
5. Those who live in a city don't need to be concerned about soil erosion.	550	123	22.3	368	66.7	59	10.7
6. In order for conservation to really work it must be practiced all the time.	550	419	76.0	68	12.3	63	11.4

TABLE 2--Continued

Questions	Total Responses	Yes		No		Don't Know	
		No.	%	No.	%	No.	%
7. We should pay very close attention to information and recommendations that are handed out by our Conservation Department because they make a thorough study of our wildlife before telling us what we should do.	551	488	88.5	18	31.2	45	8.1
8. I have seen other people pick flowers in the woods and marshes therefore I can pick flowers in such places.	549	85	15.4	402	72.9	62	11.2
9. Since I am a citizen of the United States, I should be concerned about conservation because it helps make us a strong country.	549	494	89.6	29	5.2	26	4.7
10. People who live in the city do not have to be concerned about industry polluting the water that flows out into the country.	550	143	25.9	376	68.2	31	5.6
11. If I should see a person taking more than his limit of fish or shooting deer out of season, it is my responsibility to report him to the Conservation Officer.	548	492	89.2	31	5.6	25	4.5

TABLE 2--Continued

Questions	Total Responses	Yes		No		Don't Know	
		No.	%	No.	%	No.	%
12. There is very little reason why I should be concerned about conservation since I am only in grade school.	550	52	9.43	469	85.1	29	5.26
13. Food and other needs of life will let only a certain number of pheasants live through the winter. For this reason it is good conservation to kill some of the birds each fall.	550	314	57.0	167	30.3	69	12.5
14. Water is not a problem in Michigan since we have so many lakes including the Great Lakes nearby.	549	208	37.7	270	49.0	71	12.8
15. Pollution of water is a serious problem but there isn't anything I can do about it.	546	155	28.1	332	60.2	59	10.7
16. I think laws protecting wildlife are a good thing because some species are quite rare.	550	516	93.6	14	2.5	20	3.6
17. Wildlife biologists tell us the paying of bounties does not control nusiance animals and is a waste of money. Therefore, we should do away with the bounty system.	551	132	23.9	278	50.4	141	25.5

TABLE 2--Continued

Questions	Total Responses	Yes		No		Don't Know	
		No.	%	No.	%	No.	%
18. Some landowners seem to be against conservation practices because they think the practices are not worth the extra trouble. I believe the farmer is right.	549	57	10.3	452	82.0	40	7.2
19. The main purpose in conservation is to save--to store up.	547	414	66.0	68	12.3	65	11.7
20. The Conservation Officer is my friend.	549	492	89.2	19	3.4	38	6.8
21. Landowners should give some thought to ducks and muskrats before draining marshland for farming purposes.	550	448	81.3	50	9.0	52	9.4
22. When thinking of conservation we should think of soil, water, forests, and wildlife as making up one huge resource to be used wisely.	550	516	93.6	16	2.9	18	3.26
23. The attitudes of people are our greatest problem to overcome in setting up good conservation practices.	549	426	77.3	49	8.8	74	4.3

TABLE 2--Continued

Questions	Total Responses	Yes		No		Don't Know	
		No.	%	No.	%	No.	%
24. If conservation is to really work, city people, industry, government, farmers, and everyone must cooperate.	550	473	85.8	36	6.5	41	7.4
25. The Conservation Department's main interest is in selling hunting and fishing licenses.	549	64	11.6	439	79.6	46	8.3

After further analysis (Table 3) it was found in Group B that 70% of the fifth graders responding to the questionnaire were not favorable toward the statement; 15.8% of the sixth graders taking the test in Group B responded favorably. The responses of the fifth and sixth graders in Groups A and C were similar. They all were favorable toward the statement.

There were no significant differences in the answers given by boys versus girls in the three groups, nor were there significant differences between those living in cities compared to those living in the country or on farms.

The occupation of the parent did not seem to be influential.

The responses between the three groups in the last category, membership and activities did not seem to be significant. However, the responses within the group were significant. Of those taking 4-H in Group A only 55.8% were favorable toward Statement 1, while approximately 45% responded unfavorably or answered Don't Know. A similar response was characteristic in the remaining activities and memberships in Group A. The number of respondents responding unfavorably or answering Don't Know in Groups B and C were not as great. Approximately 25% to 30% responded toward the statement unfavorably or answered Don't Know.

Statement 3--I do not think you should shoot doe deer because they give birth to fawns. If we kill the mother deer, there will not be enough for next year.

From Table 2 it will be seen that 69.1% of the respondents answered this statement unfavorably; 23.4% answered

TABLE 3

(1) I SEE NOTHING WRONG IN SHOOTING HAWKS OR OWLS

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	30.5	52.2	63	19.0	74.6	67	29.8	59.7
Girls	132	27.2	50.7	69	20.2	69.5	86	24.4	62.7
Grade									
Fifth	124	24.1	50.0	10	70.0	20.0	85	29.4	58.8
Sixth	139	32.3	53.2	20	15.8	75.8	68	23.5	64.7
Home Environment									
Farm	101	31.6	48.5	6	----	----	48	31.2	58.3
City over 10,000	3	----	----	58	15.5	77.5	29	13.7	79.3
Suburb	7	----	----	62	19.3	69.3	18	22.4	72.2
City under 10,000	114	26.3	53.5	1	----	----	54	33.3	51.8
Country	35	37.1	51.4	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	32.6	50.0	61	13.1	77.0	32	21.8	71.8
Self employed	31	22.5	54.8	12	41.6	41.6	11	27.2	63.6
Farmer	35	14.2	60.0	1	----	----	23	30.4	56.5
Professional	13	30.7	61.5	7	---	---	29	17.2	75.8
Company official	19	42.1	31.5	8	---	---	11	36.3	45.4
Other	76	26.3	52.6	38	21.0	73.6	45	35.5	51.1
Membership and Activities									
4-H	68	19.1	55.8	24	20.8	75.0	36	44.4	52.7
Scouts	85	31.7	52.9	53	18.8	67.9	61	22.9	67.2
School camping	70	32.8	55.7	1	----	100.0	47	17.0	70.2
Buy hunting licenses	170	30.5	48.8	83	16.8	73.4	80	28.7	58.7
Buy fishing licenses	173	30.0	52.0	77	15.5	77.9	80	27.5	63.7
Family camping	111	33.3	50.4	59	15.2	76.2	69	26.0	63.7

*Denotes correct answer.

the statement favorably and 6.8% answered Don't Know.

As we consider Table 4 there seems to be litter difference within the five categories--sex, grade, environment, occupation of parent, and club activities. It might be noted, however, that there were a slightly higher percentage of unfavorable responses in Group B and a still slightly higher percentage of favorable responses in Group C. It is also interesting that the percentage of favorable responses was relatively constant.

However, we do note that Group C showed consistant and probably significantly higher percentage of favorable responses than did Groups A and B.

Statement 5--Those who live in the city don't need to be concerned about soil erosion.

The data in Table 2 indicate that 66.7% of the responses were favorable while 22.3% were unfavorable toward the statement and 10.7% answered Don't Know.

The responses of the three groups after further analysis seem to show that there are no significant differences between these groups (Table 5).

However, within the groups there are some interesting figures. In Group C the data shows that the boys responding with 82.0% favoring the statement, while only 66.2% of the girls favored the statement. This would be a difference of 16.8%. In Groups A and B the difference in responses was less than 2%.

TABLE 4

(3) I DO NOT THINK YOU SHOULD SHOOT DOE DEER BECAUSE THEY GIVE BIRTH TO FAWNS. IF WE KILL THE MOTHER DEER, THERE WILL NOT BE ENOUGH FOR NEXT YEAR.

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	60.4	30.5	63	58.7	26.9	67	77.6	22.3
Girls	132	65.1	25.0	69	75.3	20.2	86	84.8	10.4
Grade									
Fifth	124	64.5	33.8	10	50.0	50.0	85	74.1	22.3
Sixth	139	61.1	22.3	120	69.1	20.8	68	91.1	7.3
Home Environment									
Farm	101	63.3	28.7	6	----	----	48	77.0	18.7
City over 10,000	3	----	----	58	67.2	27.5	29	96.5	2.0
Suburb	7	----	----	62	70.9	18.7	18	88.8	11.1
City under 10,000	114	62.2	22.8	1	----	----	54	77.7	18.5
Country	35	60.0	40.0	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	61.5	33.6	61	68.8	26.2	32	81.2	18.7
Self employed	31	77.4	12.9	12	91.6	----	11	100.0	----
Farmer	35	62.8	31.4	1	----	----	23	82.6	17.3
Professional	13	38.4	23.0	7	----	----	29	86.2	10.3
Company official	19	68.4	26.3	8	----	----	11	90.9	9.0
Other	76	61.8	26.3	38	63.1	28.9	45	75.5	20.0
Membership and Activities									
4-H	68	61.7	25.0	24	66.6	20.8	36	75.0	25.0
Scouts	85	65.8	24.7	53	62.2	33.9	61	85.2	9.8
School camping	70	62.8	30.0	1	----	----	47	89.3	8.5
Buy hunting licenses	170	65.2	27.0	83	62.6	24.0	80	75.0	22.5
Buy fishing licenses	173	68.2	24.2	77	68.8	25.9	80	76.2	22.5
Family camping	111	60.3	27.0	59	79.6	16.9	69	78.2	17.3

*Denotes correct answer.

TABLE 5

(5) THOSE WHO LIVE IN THE CITY DON'T NEED TO BE CONCERNED ABOUT SOIL EROSION.

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	27.6	65.6	63	20.6	63.4	67	11.9	82.0
Girls	132	19.6	64.3	69	28.9	62.3	86	22.0	66.2
Grade									
Fifth	124	20.1	69.3	10	30.0	70.0	85	15.2	76.4
Sixth	139	26.6	61.1	120	25.0	61.6	68	20.5	69.1
Home Environment									
Farm	101	22.7	65.4	6	----	----	48	25.0	64.5
City over 10,000	3	----	----	58	20.6	68.9	29	----	93.1
Suburb	7	----	----	62	30.6	54.8	18	16.6	77.7
City under 10,000	114	21.9	69.2	--	----	----	54	18.5	70.3
Country	35	31.4	48.5	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	24.0	63.4	61	19.6	63.9	32	21.8	68.7
Self employed	31	22.5	64.5	12	25.0	66.6	11	36.3	54.5
Farmer	35	17.1	68.5	1	----	----	23	21.7	73.9
Professional	13	23.0	61.5	7	----	----	29	3.4	86.2
Company official	19	10.5	84.2	8	----	----	11	18.1	72.7
Other	76	27.6	65.7	38	23.6	68.4	45	1.5	75.5
Membership and Activities									
4-H	68	10.2	72.0	24	16.6	79.1	36	22.2	69.4
Scouts	85	21.1	68.2	53	33.9	54.7	61	13.1	78.6
School camping	70	22.8	65.7	1	----	----	47	6.3	87.2
Buy hunting licenses	170	25.2	64.7	83	26.5	62.6	80	21.2	66.2
Buy fishing licenses	173	19.0	68.2	77	20.7	68.8	80	18.7	72.5
Family camping	111	18.0	71.1	59	25.4	66.1	69	11.5	76.8

*Denotes correct answer.

The difference in responses between the fifth and sixth graders did not seem to be significant.

In reading across the table there seemed to be little variation in answers within the categories--occupation of parent and membership and activities with two exceptions. A slightly higher percentage of those whose parents are professional people and those who have had school camping in Group C gave favorable responses to the statement.

Statement 10--People who live in the city do not have to be concerned about industry polluting the water that flows out into the country.

Analysis of Table 2 will show that 68.2% of the respondents were favorable toward the above statement, while 25.8% were unfavorable toward the statement and 5.6% responded Don't Know.

After careful analysis of Table 6 the following results became apparent. First of all, a somewhat higher percentage of girls answered the statement favorably than boys. This was the case in all three groups with Group C showing the greatest difference.

Secondly, differences were found that would seem to be significant between the three groups and within the individual groups. Group A shows a higher percentage of fifth graders favored the statement than sixth graders. Group B and C shows that a larger percentage of sixth graders favored the statement than fifth graders. However, you will notice that the percentage difference in Group B (58.3%) is

TABLE 6

(10) PEOPLE WHO LIVE IN THE CITY DO NOT HAVE TO BE CONCERNED ABOUT INDUSTRY POLLUTING THE WATER THAT FLOWS OUT INTO THE COUNTRY.

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	32.0	59.7	63	25.3	71.4	67	28.3	70.1
Girls	132	26.5	63.6	69	20.2	75.3	86	18.6	79.0
Grade									
Fifth	124	20.9	66.9	10	60.0	20.0	85	25.8	70.5
Sixth	139	35.9	57.5	120	19.1	78.3	68	19.1	80.8
Home Environment									
Farm	101	32.6	60.3	6	----	----	48	33.3	62.5
City over 10,000	3	----	----	58	12.0	87.9	29	24.1	75.8
Suburb	7	----	----	62	27.4	64.5	18	11.1	88.8
City under 10,000	114	23.6	64.9	1	----	----	54	18.5	79.6
Country	35	45.7	48.5	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	38.4	53.8	61	22.9	73.7	32	25.0	71.8
Self employed	31	25.8	70.9	12	25.0	75.0	11	18.1	81.8
Farmer	35	34.2	57.1	1	----	----	23	39.1	60.8
Professional	13	7.6	76.9	7	----	----	29	17.2	82.7
Company official	19	10.5	78.9	8	----	----	11	9.0	90.9
Other	76	25.0	64.4	38	13.1	84.2	45	22.2	75.5
Membership and Activities									
4-H	68	23.5	69.1	24	16.6	79.1	36	36.1	63.8
Scouts	85	27.0	64.7	53	16.9	81.1	61	21.3	77.0
School camping	70	34.2	54.2	1	----	----	47	19.3	80.8
Buy hunting licenses	170	36.4	54.7	83	20.4	77.1	80	26.2	72.5
Buy fishing licenses	173	30.6	62.4	77	16.8	80.5	80	26.2	71.2
Family camping	111	34.2	57.6	59	16.9	81.3	69	21.7	76.8

*Denotes correct answer.

significantly higher than the difference shown in Group C (10.3%).

The categories Occupation of Parent and Membership and Activities show that the percentage of those favoring the statement consistently lower in Group A as compared to Group B and C where the differences were more nearly alike.

Statement 14--Water is not a problem in Michigan since we have so many lakes including the Great Lakes nearby.

As indicated in Table 2, 37.7% of the respondents gave unfavorable responses toward statement 14; 49.0% were favorable and 12.8% answered Don't Know.

There is considerable variation in answers among the three groups concerning the above statement (Table 7). The answers given in Group C are more or less constant with the majority of responses being favorable in all categories--sex, grade, environment, occupation of parent, and membership and activities.

The differences in responses by boys and girls among the three groups varied. In Group A and C a slightly higher percentage of girls favored the statement, while in Group B a significantly higher percentage of boys (44.4%) favored the statement than did the girls (30.4%). However, you will notice also in Group B that a higher percentage of their answers were unfavorable, that is, they agree with the statement. There were almost 25% more girls with unfavorable responses toward the statement than there were favorable

TABLE 7

(14) WATER IS NOT A PROBLEM IN MICHIGAN SINCE WE HAVE SO MANY LAKES INCLUDING THE GREAT LAKES NEARBY.

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	43.2	47.7	63	46.0	44.4	67	16.4	59.7
Girls	132	34.8	48.4	69	55.0	30.4	86	30.2	61.6
Grade									
Fifth	124	37.9	46.7	10	60.0	30.0	85	28.2	63.5
Sixth	139	40.2	49.6	120	50.0	38.3	68	19.1	57.3
Home Environment									
Farm	101	37.6	50.4	6	----	----	48	27.0	60.4
City over 10,000	3	----	----	58	50.0	37.0	29	6.8	62.0
Suburb	7	----	----	62	51.6	35.4	18	44.4	50.0
City under 10,000	114	39.4	48.2	1	----	----	54	22.2	64.8
Country	35	45.7	40.0	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	40.3	53.8	61	49.1	36.0	32	37.5	59.3
Self employed	31	35.4	54.8	12	50.0	33.3	11	27.2	63.6
Farmer	35	45.7	37.1	1	----	----	23	26.0	56.5
Professional	13	38.4	46.1	7	----	----	29	6.8	72.4
Company official	19	42.1	36.8	8	----	----	11	18.1	63.6
Other	76	40.7	42.1	38	50.0	36.8	45	26.6	53.3
Membership and Activities									
4-H	68	29.4	51.4	24	54.1	33.3	36	26.0	61.1
Scouts	85	34.1	56.4	53	52.8	35.8	61	21.3	62.2
School camping	70	45.7	42.8	1	----	----	47	14.8	61.7
Buy hunting licenses	170	45.8	44.1	83	54.2	40.9	80	30.0	60.0
Buy fishing licenses	173	41.0	49.1	77	59.7	32.4	80	23.7	65.0
Family camping	111	41.4	47.7	59	50.8	33.8	69	23.1	65.2

*Denotes correct answers.

responses. In the case of the boys the difference was only 1.6 per cent.

In the second category you will notice that more of the respondents in Group A and C were favorable toward the statement, and that there was only a slight difference in the responses of the fifth graders as compared to the sixth graders. However, it would seem to be significant that in Group A over 50% of the respondents either answered unfavorably or Don't Know, while in Group C this was not true. On the other hand, higher percentage of the respondents in Group B answered this statement unfavorably.

Those respondents living on farms or in a city of under 10,000 had a greater percentage favoring the statement than did those who live in the country (non-farm) in Group A. In Group B, those who live in cities of over 10,000 or in the suburbs answered the question unfavorably.

Those respondents whose parents are farmers or company officials in Group A had a slightly higher percentage of unfavorable responses than favorable, while those who work for industry, are self employed, professional, or other, a somewhat higher percentage answered favorably. In Group the results were similar.

A slightly greater percentage of respondents in Group A gave favorable responses toward the statement than unfavorable with the exception of those who have had school camping and those whose parents buy hunting and fishing licenses.

In the latter cases the opposite was true. In Group B a considerably greater percentage responded unfavorably to the statement, while in Group C the opposite was again true.

Statement 15--Pollution of water is a serious problem but there isn't anything I can do about it.

Favorable responses were given by 60.2% of the respondents answering this statement, as shown in Table 2; 28.1% answered unfavorably and 10.7% answered Don't Know.

The responses of the three groups were very similar, as can be seen in Table 8. There were a few exceptions.

The differences in answers between boys and girls were slight. On the other hand, the differences in answers between fifth and sixth graders was somewhat greater, and in the case of Group B, 19.1% more sixth graders answered the question favorably. Also in Group B it should be noted that 50% of the fifth graders answered the question unfavorably. This was not the case in Groups A and C.

The only other significant differences or exceptions were in Group C. A higher percentage of those students living in cities of over 10,000, professional parents, and those who have had school camping experiences answered the question unfavorably.

Statement 17--Wildlife biologists tell us the paying of bounties does not control nuisance animals and is a waste of money. Therefore, we should do away with the bounty system.

An analysis of Table 2 will show that 23.9% of the responses were favorable toward the above statement, while

TABLE 8

(15) POLLUTION OF WATER IS A SERIOUS PROBLEM BUT THERE ISN'T ANYTING I CAN DO ABOUT IT.

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No %*
Sex									
Boys	134	30.5	58.2	63	22.2	66.6	67	34.3	59.7
Girls	132	25.0	56.8	69	26.0	66.6	86	30.2	59.3
Grade									
Fifth	124	33.0	54.8	10	50.0	40.0	85	27.0	58.8
Sixth	139	23.7	59.7	120	21.6	69.1	68	38.2	60.2
Home Environment									
Farm	101	22.7	60.3	6	----	----	48	29.1	64.5
City over 10,000	3	----	----	58	20.6	74.1	29	86.2	13.7
Suburb	7	----	----	62	22.5	62.9	18	11.1	88.8
City under 10,000	114	28.9	57.8	1	----	----	54	12.9	72.2
Country	35	42.8	42.8	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	25.0	62.5	61	26.2	65.5	32	25.0	65.6
Self employed	31	22.5	70.9	12	16.6	75.0	11	36.3	63.6
Farmer	35	8.5	62.8	1	----	----	23	34.7	65.2
Professional	13	30.7	61.5	7	----	----	29	51.7	37.9
Company official	19	31.5	47.3	8	----	----	11	27.2	63.6
Other	76	38.1	47.3	38	26.3	65.7	45	20.0	71.1
Membership and Activities									
4-H	68	23.5	58.8	24	25.0	75.0	36	38.8	61.1
Scouts	85	28.2	58.8	53	20.7	73.5	61	40.9	49.1
School camping	70	31.4	50.0	1	----	----	47	51.0	38.3
Buy hunting licenses	170	31.1	52.3	83	25.3	67.4	80	30.0	60.0
Buy fishing licenses	173	28.3	58.3	77	23.3	68.8	80	31.2	57.5
Family camping	111	30.6	54.9	59	22.0	66.1	69	31.8	60.8

*Denotes correct answer.

50.4% were unfavorable and 25.5% answered Don't Know.

You will notice in Table 9 that the responses among the three groups are very similar. There seems to be very little differences in responses among the individual categories and, if anything, the responses of those in Group B indicate a slightly higher percentage of favorable answers. In all cases the number of favorable responses is less than half the total number of responses.

Statement 19--The main purpose in conservation is to save--to store up.

Of the respondents 66.0% gave unfavorable responses to the above statement, while 12.3% were favorable, and 11.5% answered Don't Know. This is shown in Table 2.

Further analysis, as shown in Table 10, indicated that a slightly higher percentage of the responses in Group B were unfavorable, while a still higher percentage from Group C were unfavorable. In only one case was there a favorable response; respondents from Group A who have had school camping responded with 44.2% answering favorably and 37.1% answering unfavorably.

TABLE 9

(17) WILDLIFE BIOLOGISTS TELL US THE PAYING OF BOUNTIES DOES NOT CONTROL NUISANCE ANIMALS AND IS A WASTE OF MONEY. THEREFORE WE SHOULD DO AWAY WITH THE BOUNTY SYSTEM.

Items	Group A			Group B			Group C		
	Total	Yes %*	No %	Total	Yes %*	No %	Total	Yes %*	No %
Sex									
Boys	134	29.8	52.9	63	31.7	42.8	67	22.3	56.7
Girls	132	15.9	54.5	69	33.3	36.2	86	15.1	52.3
Grade									
Fifth	124	17.7	58.8	10	40.0	60.0	85	15.2	57.6
Sixth	139	26.6	49.6	120	31.6	38.3	68	22.0	50.0
Home Environment									
Farm	101	19.8	53.4	6	----	----	48	14.5	50.0
City over 10,000	3	----	----	58	29.3	29.3	29	31.0	58.6
Suburb	7	----	----	62	35.4	43.5	18	16.6	66.6
City under 10,000	114	21.0	57.0	1	----	----	54	14.8	51.8
Country	35	28.5	51.4	--	----	----	--	----	----
Occupation of Parent									
Works for industry	104	25.0	54.8	61	37.7	44.2	32	9.3	68.7
Self employed	31	32.2	51.6	12	41.6	----	11	27.2	45.4
Farmer	35	20.0	51.4	1	----	----	23	8.6	65.2
Professional	13	23.0	53.8	7	----	----	29	27.5	51.7
Company official	19	15.7	63.1	8	----	----	11	18.1	54.5
Other	76	21.0	52.6	38	23.6	44.7	45	20.0	44.4
Membership and Activities									
4-H	68	26.4	47.0	24	25.0	50.0	36	16.6	66.6
Scouts	85	27.0	55.2	53	28.3	41.5	61	24.5	49.1
School camping	70	37.1	44.2	1	----	----	47	25.5	51.0
Buy hunting licenses	170	22.3	55.2	83	33.7	40.9	80	20.0	60.0
Buy fishing licenses	173	21.9	55.4	77	28.5	49.3	80	16.2	63.7
Family camping	111	24.3	53.1	59	35.5	42.3	69	20.2	57.9

*Denotes correct answer.

TABLE 10

(19) THE MAIN PURPOSE IN CONSERVATION IS TO SAVE--TO STORE UP

Item	Group A			Group B			Group C		
	Total	Yes %	No %*	Total	Yes %	No %*	Total	Yes %	No. %*
Sex									
Boys	134	76.1	13.4	63	71.4	11.1	67	88.0	4.4
Girls	132	65.9	14.3	69	82.6	13.0	86	74.4	13.9
Grade									
Fifth	124	68.5	11.2	10	60.0	20.0	85	74.1	14.1
Sixth	139	74.1	15.1	120	79.1	11.6	68	88.2	4.4
Home Environment									
Farm	101	69.3	10.8	6	----	----	48	81.2	8.3
City over 10,000	3	----	----	58	81.0	6.8	29	89.6	3.4
Suburb	7	----	----	62	77.4	14.5	18	66.6	22.2
City under 10,000	114	74.5	13.1	1	----	----	54	79.6	9.2
Country	35	60.0	25.7	--	----	----	--	----	----
Occupation of parent									
Works for industry	104	68.2	15.3	61	78.6	11.4	32	84.3	9.3
Self employed	31	74.1	22.5	12	75.0	8.3	11	90.9	----
Farmer	35	62.8	20.0	1	----	----	23	78.2	8.6
Professional	13	92.3	7.6	7	----	----	29	79.3	6.8
Company official	19	68.4	10.5	8	----	----	11	81.8	9.0
Other	76	72.3	9.2	38	76.3	13.1	45	77.7	1.5
Membership and Activities									
4-H	68	69.1	14.7	24	83.3	12.5	36	91.6	5.5
Scouts	85	67.0	15.2	53	83.0	11.3	61	78.6	1.1
School camping	70	37.1	44.2	1	----	----	47	80.8	8.5
Buy hunting licenses	170	68.8	15.2	83	75.9	12.0	80	82.5	8.7
Buy fishing licenses	173	68.7	16.1	77	72.7	14.2	80	82.6	7.5
Family camping	111	70.2	16.2	59	76.2	13.5	69	76.8	10.0

*Denotes correct answer.

CHAPTER VI

CONCLUSIONS

In most instances, the attitudes of fifth and sixth graders seem to be favorable towards the conservation of our natural resources. However, there were many instances in which there were a significant number of unfavorable responses. Analysis of the questionnaire seemed to reveal four relatively consistent facts:

1. Parents do influence attitudes.
2. Public opinion has an effect on attitudes relative to certain resources.
3. There is apparently a degree of lack of awareness.
4. Likewise there is apparently a large degree of lack of knowledge about certain resources.

The following are examples of these characteristics:

1. The influence of public opinion on the attitudes of fifth and sixth graders was shown in the answers to statements three and seventeen. Both of these statements are very controversial subjects in the state of Michigan and have been for a long time. There have been many articles in the paper concerning both the bounty system and the shooting of does. Responses definitely parallel attitudes of the more verbal expression of public opinion.

2. The significance of lack of knowledge was indicated in the answers given to the openended questions on the pre-test and then further substantiated by the results of the final questionnaire. The results indicating that the children are not aware of or do not have the knowledge concerning the importance of water conservation.

The results of the final questionnaire indicate that there is a correlation between those living on farms and in the city. In general, the attitudes of those living in cities of over 10,000 or their suburbs are more favorable than those living on farms, in the country, or in a city under 10,000. However, the responses of those living in a city of under 10,000 were more favorable than those living on farms. The reason for this is not known and can only be assumed. The reason might be that children from large city schools get a better education than those from the small farm community.

There is some indication that those children whose parents are professional or company officials have better attitudes toward the conservation of our natural resources than those whose parents are in other occupations. Whether or not more emphasis is placed upon conservation in these homes is not known. These results indicate that the more money you make the better are the attitudes toward conservation, if you assume that professional people and company officials are higher paid.

The attitudes of boys versus girls towards conservation is not significantly different nor was there any indiciation that grade level was significant as a whole in building conservation attitudes.

Geographic location plays a very influential role in the development of attitudes toward conservation. For example, those respondents living in the area of Group C had better attitudes toward conservation than those in Group A and B. This is probably due to the fact that Group C is a large industrial and educational area.

It should be added that no one category or item within the category was always the determining factor in influencing the attitudes, rather it seemed to be a combination of factors.

In conclusion, it is the opinion of the author that the attitudes of fifth and sixth graders, although favorable in some cases, are not as favorable as we would like them to be. We would be rather certain it is not the fault of the children. Just where the fault lies is not as clean-cut as we might hope it would be. It would appear from the study that both home and school influences, or lack of same, are very closely related to the problem. No real correlation between attitudes and youth activity groups seemed to be evident. Accordingly, it would seem that much responsibility lies within the home and at school.

Unless parents and teachers assume some of the responsibility by setting an example of good conservation ideals

and practices they will not have favorable attitudes nor will their children. As Ernest Swift states, "Young people representing the future not only have the responsibility of leadership in protecting resources and guiding their sane use, but they have the all-important responsibility of seeing that democracy does not fail."[6] It is our responsibility to see that these young people have the wherewithal to meet these responsibilities.

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[6]Swift, op. cit., p. 45.

APPENDIX A

QUESTIONNAIRE

Directions:

The questions below are about the conservation of our natural resources. Please answer them to the best of your ability. If you do not have the slightest idea of the answer, write under the question "Do not know." You will not be graded on your answers. We are interested in finding out what you think and feel about conservation, so please answer them carefully.

1. What do you think about shooting songbirds?

2. What do you think about shooting phesants?

3. Is it necessary to get permission to hunt on private land?

4. Who is responsible for the conservation of our natural resources?

5. What is conservation?

6. What are natural resources?

7. When you are in the woods do you think it is all right to pick the wildflowers growing there?

8. Do you think watersheds are important? Give a reason for your answer.

9. Is it all right to shoot hawks and owls? Give a reason for your answer.

10. Do you think having laws to protect wildlife is a good idea? Why, or why not?

11. Should people and industry be allowed to dump garbage and other waste into our lakes and rivers? Why, or why not?

12. Do you think conservation is important? Give a reason for your answer.

13. Why do you think people are not allowed to cut trees, pick wildflowers, and hunt animals in State and National parks?

14. Do you think it is important to have places such as sanctuaries, refuges, and national parts? Why, or why not?

15. Do you think it is all right to drain land that is used by ducks for nesting if someone wants to use it for something else? Give a reason for your answer?

16. Is soil conservation important to you?

17. Are forests important to all citizens? Give a reason for your answer.

18. Do you think air pollution is a problem in Michigan? Give a reason for your answer.

19. What do you like about being in the out-of-doors?

20. What is the first thing you think about when you see birds and other forms of wildlife in the out-of-doors?

Return Questionnaire to:

Miss Martha Sykes
c/o Kellogg Bird Sanctuary
Hickory Corners, Michigan

APPENDIX B

PROPOSED QUESTIONS FOR FINAL TESTING

1. I think it is all right to shoot hawks and owls because they kill chickens.

   1. Yes
   2. Don't know
   3. No

2. Conservation is not important to me because I am too young to do anything about it.

   1. Yes
   2. Don't know
   3. No

3. Since there is a bounty on bobcats in Michigan, it is all right to shoot them even if they are quite rare.

   1. Yes
   2. Don't know
   3. No

4. I don't need to be concerned about water shortages in the West because the shortage of water doesn't effect me anyway.

   1. Yes
   2. Don't know
   3. No

5. I don't think it is nice to shoot songbirds because they sing prettily.

   1. Yes
   2. Don't know
   3. No

6. I do not think you should shoot doe deer because they are "mothers" and are too cute.

   1. Yes
   2. Don't know
   3. No

7. There are lots of substitutes for wood so I don't need to be concerned about replacing trees that have been cut.

   1. Yes
   2. Don't know
   3. No

8. Other people throw paper and litter on our highways so it is all right if I do.

   1. Yes
   2. Don't know
   3. No

9. I don't need to be concerned about soil erosion when I live in the city.

   1. Yes
   2. Don't know
   3. No

10. It is all right to cut initials in trees since other people do?

    1. Yes
    2. Don't know
    3. No

11. Since we have food surpluses we do not need to worry about soil erosion.

    1. Yes
    2. Don't know
    3. No

12. There is no reason for me to be concerned about pollution of the Kalamazoo River when I do not live near the river.

    1. Yes
    2. Don't know
    3. No

13. In order for conservation to really work it must be practiced all the time.

    1. Yes
    2. Don't know
    3. No

14. We should pay very close attention to information that is handed out by our Conservation Department because they make a thorough study of our resources.

    1. Yes
    2. Don't know
    3. No

15. I have seen other people pick flowers in the woods and marshes, therefore, there is no reason why I shouldn't.

    1. Yes
    2. Don't know
    3. No

16. Since I am a citizen of the United States I should be concerned about conservation because it helps make us a strong country.

    1. Yes
    2. Don't know
    3. No

17. When walking through the woods it is all right to take frogs and snakes, even if I don't plan to take care of them.

    1. Yes
    2. Don't know
    3. No

18. Since I live in the country I do not have to be concerned about industry polluting the water in the city.

    1. Yes
    2. Don't know
    3. No

19. If I see a person taking more than his limit of fish or shooting deer out of season it is my responsibility to report him to the Conservation officer.

    1. Yes
    2. Don't know
    3. No

20. The Conservation Officer is my friend.

    1. Yes
    2. Don't know
    3. No

21. Since we have an abundance of trees, minerals, and wildlife, we do not have to be careful about how we manage these resources.

    1. Yes
    2. Don't know
    3. No

22. Pheasants and grouse are very pretty birds, therefore, you should not shoot them.

    1. Yes
    2. Don't know
    3. No

23. The killing of pheasants is all right so it is all right to shoot songbirds.

    1. Yes
    2. Don't know
    3. No

24. Since we have lots of forests that are free from insects we should not spray the trees that are being destroyed because the spray kills the songbirds.

    1. Yes
    2. Don't know
    3. No

25. There is no reason why I should be concerned about conservation when I am only in grade school.

    1. Yes
    2. Don't know
    3. No

26. There should be more land made available for National and State parks because they are important.

    1. Yes
    2. Don't know
    3. No

27. Many of our resources are renewable, that is they can be replaced; therefore, it is all right to mine as much coal and iron, drill for oil, and cut trees as we want to with no thought for future generations.

    1. Yes
    2. Don't know
    3. No

28. Water is not a problem in Michigan since we have lots of rain.

    1. Yes
    2. Don't know
    3. No

29. One of the main purposes of a sanctuary is to protect birds. That is a good idea because then there will be more birds to hunt when they leave the sanctuary.

    1. Yes
    2. Don't know
    3. No

30. I don't think we should be allowed to shoot wild animals because they are getting extinct.

    1. Yes
    2. Don't know
    3. No

31. Pollution of water is a serious problem, but there isn't anything I can do about it.

    1. Yes
    2. Don't know
    3. No

32. I think laws protecting wildlife are a good thing because some species are quite rare.

    1. Yes
    2. Don't know
    3. No

33. Air pollution is not a problem in Michigan, therefore it doesn't concern me.

    1. Yes
    2. Don't know
    3. No

34. The government should drop the bounty system since we know it doesn't work, from the reports the Conservation Department has given us.

    1. Yes
    2. Don't know
    3. No

35. Some farmers are against conservation practices because they are not practical.

    1. Yes
    2. Don't know
    3. No

36. Conservation is saving.

    1. Yes
    2. Don't know
    3. No

37. Farmers should not be allowed to drain land where ducks nest because the ducks were there first.

    1. Yes
    2. Don't know
    3. No

38. When thinking of conservation we should think of soil, water, forests, and wildlife as one huge resource to be used wisely.

    1. Yes
    2. Don't know
    3. No

39. People are the greatest problem to good conservation practices.

    1. Yes
    2. Don't know
    3. No

40. In order for conservation to really work industry, government, farmers, and everyone else must cooperate.

    1. Yes
    2. Don't know
    3. No

APPENDIX C

DIRECTIONS FOR THE TEACHER

The accompanying test is one organized with the hope that it will be possible to learn something of the attitudes and/or opinions of children relative to conservation principles and practices. If, and to the extent the test proves to be valid it will guide educators in their planning of educational programs in conservation.

Tell the child that if he agrees with the statement to circle number 1 in front of yes.

If he does not agree with the statement circle number 2 in front of no.

If he has no idea whether the statement is right or wrong, or he has no feeling about the statement circle number 3 in front of Don't know.

The teacher should feel free at all times to put sentences in the language of the child. However, please do not in any way give away your feeling concerning the statement.

Tell the child that he will not be graded on his answers. We are interested in finding out what he thinks and feels about conservation.

Please return all tests to:

Martha Sykes
Kellogg Bird Sanctuary
Hickory Corners, Michigan

DO NOT WRITE IN THIS SPACE

Name_____

Name of Teacher_____

School_____

Columns 1-3

4 1. Are you a (Circle your answer)
1) boy
2) girl

5 2. Grade in school (Circle your answer)
1) 5th
2) 6th

6-7 3. _____Age

8 4. Do you live (Circle your answer)
1) on a farm
2) in a city over 10,000 population
3) in a suburb of a large city
4) in a city of less than 10,000

9 5. What is your fathers occupation (Circle your answer)
1) works for industry
2) self employed
3) farmer
4) professional - Doctor, Dentist, Lawyer, Teacher
5) company official
6) other

10 & 11 6. My mother graduated from
1) grade school
2) high school
3) college

7. My father graduated from
1) grade school
2) high school
3) college

(Circle answer)

12 8. Are you a member of (Circle your answer or answers)
1) 4-H
2) Boy or Girl Scouts of America or Campfire Girls
3) Junior Audubon
4) Nature Center or Museum

13 9. Have you ever attended (Circle your answer or answers)
1) School Camp
2) Private camp
3) 4-H Camp
4) Scout or other camp

14 10. Have you ever been on an organized field trio to (Circle your answer or answers)
1) The Kellogg Bird Sanctuary
2) A Natural History Museum or Nature Center
3) Others

15 11. How many of the following do your parents do (Circle your answer or answers)
1) Buy hunting licenses
2) Buy fishing licenses
3) Own or rent a summer cottage
4) Go family camping
5) Attend Audubon Screen Tours or other conservation and nature programs

A TEST OF ATTITUDES AND OPINIONS OF 5th and 6th GRADERS
AS THEY RELATE TO CONSERVATION PRINCIPLES AND PRACTICES

1. I see nothing wrong in shooting hawks or owls.

   1. Yes
   2. No.
   3. Don't know

2. Conservation is not important to me because I am too young to do anything about it.

   1. Yes
   2. No
   3. Don't know

3. I do not think you should shoot doe deer because they give birth to fawns. If we kill the mother deer there will not be enough for next year.

   1. Yes
   2. No
   3. Don't know

4. There are lots of substitutes for wood so I don't need to be concerned about replacing trees that have been cut.

   1. Yes
   2. No
   3. Don't know

5. Those who live in a city don't need to be concerned about soil erosion.

   1. Yes
   2. No
   3. Don't know

6. In order for conservation to really work it must be practiced all the time.
   1. Yes
   2. No
   3. Don't know

7. We should pay very close attention to information and recommendations that are handed out by our Conservation Department because they make a thorough study of our wildlife before telling us what we should do.

   1. Yes
   2. No
   3. Don't know

8. I have seen other people pick flowers in the woods and marshes therefore I can pick flowers in such places.

   1. Yes
   2. No
   3. Don't know

9. Since I am a citizen of the United States I should be concerned about conservation because it helps make us a strong country.
   1. Yes
   2. No
   3. Don't know

10. People who live in the city do not have to be concerned about industry polluting the water that flows out into the country.

    1. Yes
    2. No
    3. Don't know

11. If I should see a person taking more than his limit of fish or shooting deer out of season it is my responsibility to report him to the Conservation Officer.

    1. Yes
    2. No
    3. Don't know

12. There is very little reason why I should be concerned about conservation since I am only in grade school.

    1. Yes
    2. No
    3. Don't know

13. Food and other needs of life will let only a certain number of pheasants live through the winter. For this reason it is good conservation to kill some of the birds each fall.

    1. Yes
    2. No
    3. Don't know

14. Water is not a problem in Michigan since we have so many lakes including the Great Lakes near by.

    1. Yes
    2. No
    3. Don't know

15. Pollution of water is a serious problem but there isn't anything I can do about it.

    1. Yes
    2. No
    3. Don't know

16. I think laws protecting wildlife are a good thing because some species are quite rare.

    1. Yes
    2. No
    3. Don't know

17. Wildlife Biologists tell us the paying of bounties does not control nuisance animals and is a waste of money. Therefore we should do away with the bounty system.

1. Yes
2. No
3. Don't know

18. Some landowners seem to be against conservation practices because they think the practices are not worth the extra trouble. I believe the farmer is right.

1. Yes
2. No
3. Don't know

19. The main purpose in conservation is to save - to store up.

1. Yes
2. No
3. Don't know

20. The Conservation Officer is my friend.

1. Yes
2. No
3. Don't know

21. Landowners should give some thought to ducks and muskrats before draining marshland for farming purposes.

1. Yes
2. No
3. Don't know

22. When thinking of conservation we should think of soil, water, forests, and wildlife as making up one huge resource to be used wisely.

1. Yes
2. No
3. Don't know

23. The attitudes of people are our greatest problem to overcome in setting up good conservation practices.

1. Yes
2. No
3. Don't know

24. If conservation is to really work city people, industry, government, farmers, and everyone must cooperate.

1. Yes
2. No
3. Don't know

25. The Conservation Departments main interest is in selling hunting and fishing licenses.

    1. Yes
    2. No
    3. Don't know

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