WILDLIFE KNOWLEDGE OF SOUTHERN ILLINOIS HIGH SCHOOL STUDENTS

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ABSTRACT. — A test on wildlife knowledge was given to 593 students in 20 high schools in southern Illinois. An analysis of the performance on various sections of the test was made and comments contributed as a basis for interpretation of the results.

Because of the increasing importance of conservation, it is of value to know the level of understanding of the subject by high school students so that educational programs can be better organized and evaluated. The activities of federal, state, local and private conservation agencies are ultimately dependent upon the acceptance of a wise resource-use policy by the public. High school students influence the opinions and attitudes of parents who may voice approval or disapproval of resource management techniques. On the other hand, students of high school age probably reflect the opinions held by parents; investigation of the student then will give indication of the conservation knowledge and attitudes of parents.

A survey in 1953 of conservation education in southern Illinois high schools (Klimstra and Oberheu, 1955) indicated that over 99 percent of 113 principals felt that high school graduates should have a basic knowledge of conservation. Eighty-four percent of these administrators were of the opinion that graduates of their schools possessed an inadequate concept of this subject. Further, most administrators thought that resource management was a necessary part of high school curricula.

As a follow-up to this initial study by the Cooperative Wildlife Research Laboratory, a project was organized in late summer of 1958 to evaluate the conservation knowledge possessed by high school students in southern Illinois; because of limited funds only wildlife conservation was emphasized. However, it was believed that this phase would yield information applicable to an evaluation of the level of understanding for other facets of resource use and management.

A test was prepared concerning organization and regulations of the United States Fish and Wildlife Service and the Illinois Department of Conservation, interpretation of the Illinois Fish and Game Code, and ecology, natural history, and management of wildlife. Following the preparation of an outline of material basic in wildlife management, multiple-choice items were prepared which dealt with a sample of all material which was outlined. Many items were designed according to those utilized by other investigators (Capps 1939, Curtis 1942, Giles 1958, Selim 1951, and Weivel 1947). Several items were included as modified from a test used by Dr. B. K. Barton, former Director of Conservation Education in Illinois; some were adapted from studies conducted by the Cooperative Wildlife Research Laboratory in sampling conservation knowledge of adults, and in the mail questionnaire of Klimstra and Oberheu (1955). The test, designed to be completed in one 40-minute class period, contained 48 fact questions and 21 questions requiring an opinion. Only factual questions were used in computing percentile scores.

As the test was being designed, evalution was obtained from wildlife graduate students at Southern Illinois University; wildlife personnel of several states; Dr. B. K. Barton, former Director of Conservation Education in Illinois; and, Dr. K. D. Orton, Guidance Department, Southern Illinois University. Prior to the final preparation, the test was pretested at University High School, Carbondale; the mean scores of all students, the range and normal curve of score distribution, and test reliability were found to be satisfactory.

The early plan of this project was to investigate one or two high schools in each of the 31 counties of southern Illinois. Accordingly, letters were sent to county school superintendents in August of 1958 outlining the study and asking for approval to administer the test; 13 superintendents responded. During October of 1958 principals of 22 high schools were contacted and tests and instructions provided. High schools of various sizes, including those in small and large towns, were selected. The test was administered to one section of Junior-level English. Twenty high schools returned the completed tests for 593 students.

Results

Data concerning testing period and the reaction of students to the test were supplied by each instructor administering the test. As indicated by the instructors, an average of 44.3 minutes was allowed for the students to complete the test. The test had been designed to be completed by the majority of students in 40 minutes; however, most students completed the examination in an average time of 34.5 minutes.

According to replies of individual instructors, the most frequent questions asked by students concerned the purpose of the test. Several students asked why they should take the test and why they had not been given instruction in the subject of conservation; others questioned whether or not the results of the test might influence school curricula. There was interest expressed in results of their performance and how they compared with other high schools. Frequent questions were raised about the correct answers on the test; two groups of students asked about sources of information for subject matter of the test.

The distribution of test scores indicated little skewness or kurtosis. Mean percentage score achieved was 38.1 with a standard deviation of scores of 9.1. The standard deviation compares favorably with that recorded by Capps (1939) (10.8), Curtis (1942) (10.3), Giles (1958) (19.3), and Selim (1951) (9.6).

The mean score for students of southern Illinois high schools was lower than that obtained by others who have given similar tests. Capps (1939) obtained a score of 47.6 percent while Curtis (1942) reported a score of 49.5 percent. Giles (1958), testing grades 6 through 12, reported an average score of 48.6 percent; however, students of Junior level in high school, averaged 62.2 percent. Selim (1951) reported an average of 56.6 percent and Wievel (1947), testing 9th and 12th grades, obtained an average score of 51.0 percent.

Of the 593 students, 333 females showed a score of 35.5 percent compared to 38.8 percent for 260 males. Inasmuch as the test stressed wildlife, the higher male score might be expected.

Analysis of the test results on the basis of subject matter showed that the highest mean score was attained in interpretation of items from the Illinois Fish and Game Code (42.6%); state and federal regulations and organizations ranked second with 39.0 percent; natural history third with 36.6 percent; management practices fourth with 34.3 percent; and ecology fifth with 30.5 percent. Students with the most successful score knew most about natural history whereas those with lowest scores seemed to be best informed about regulations and organization. However, neither the upper nor lower group averaged more than 50 percent on any category of questions.

The following represent some selected answers to questions which are believed to reflect the basis for much misunderstanding regarding administration of wildlife conservation in Illinois. Approximately 50 percent knew that a hunting license was required of everyone who hunts regardless of age, whereas, 27 percent indicated that the 17th birthday was the minimum age. When asked to interpret a section from the Fish and Game Code concerning the possession of game, only 17 percent gave the correct answer. The identification of the Director of the Illinois Department of Conservation was correctly given by only 34 percent. Fourteen percent knew that the United States Fish and Wildlife Service was a Bureau of the United States Department of Interior while 66 percent said it was a bureau of the Department of Fur, Fish and Game. About 50 percent knew that Illinois was in the Mississippi Valley Waterfowl Flyway. Regarding the basic principle for managing game animals 67 percent selected the incorrect answer, "solely to protect wildlife from extinction." In a question concerning the most effective long range wildlife management practice, 29 percent said supplying food and cover, 30 percent said placing restrictions on the hunter, and 31 percent said establishing refuges where no hunting is allowed.

Answers to the opinion type questions yielded information which should be of interest to parents, teachers, school ad-

ministrators and the State Superintendent of Instruction. Because of the nature of these questions, and their answers, some will be commented on.

When asked what mass media contributed most to their knowledge about wildlife, 54 percent said magazines, 21 percent television, 20 percent movies, 3 percent newspapers and 1 percent radio. Regarding their relationship with associates 28 percent said personal experience provided them with the greatest amount of knowledge, 25 percent family, 23 percent friends, 12 percent teachers, and 11 percent membership in clubs.

Seventy-six percent felt that their school did not place sufficient emphasis on conservation. In contrast the study by Klimstra and Oberheu (1955) revealed that 58 percent of the school principals felt that their schools did give adequate stress. These same school principals, however, indicated that 84 percent of their graduates did not have an adequate concept of conservation. Fifty percent of the students believed that most graduates have a fair amount of knowledge.

Among the students, 48 percent thought that if conservation was included in their curriculum, it should be integrated in specific courses. The survey of the principals by Klimstra and Oberheu (1955) showed that integration in specific courses was preferred by 64 percent.

Conclusions

The results of this survey suggest a number of factors which bear special enumeration:

1. The fact that 52 percent of those who took the test thought that it was easy indicated many were confident that they knew the answers; much of this probably reflected the influence of parents and friends. In fact, results of this test possibly reflected training at home as well as in school. This was believed especially evident in attitudes regarding stocking, predators, and hunting pressure.

2. Because only 12 percent indicated they learned most about conservation from their teachers implied that not much is emphasized, or that not much is learned, in the classroom. This may well be related to the background of teachers and the attitude of the administrators that natural science and agriculture instructors should be solely responsible for conservation training. A teacher certification requirement in conservation could contribute to a correction of this problem.

3. The mass media need attention and our support in dissemination of conservation information. Certainly magazines, television and movies could be vastly improved in quality and in distribution. These apparently already serve major functions in reaching the high school-age group.

4. The fact that 524 of 593 students replied to a question as to why the people concerned with the management of wildlife were interested in what you know, suggested a genuine interest. Their comments would enlighten many school administrators.

5. One of the real answers to the general low level of knowledge of conservation was evident in the response of county school superintendents to the initial query regarding the survey in their respective counties. Only 13 of 31 replied to the initial contact; a subsequent letter resulted in 8 more replies. This suggested that there is considerable lack of interest at the administrative level.

These data suggested that the Illinois public has reason to be alarmed about the present training of secondary pupils in conservation. However, much of this could be corrected through appropriate changes in the requirements for certification of all secondary school teachers and the redesigning of school curricula.

Acknowledgments

The authors wish to acknowledge the assistance of the County Superintendents of Schools and high school administrators and teachers who made this study possible. This paper is a contribution from Project No. 48, Cooperative Wildlife Research Laboratory, Southern Illinois University.

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Manuscript received July 6, 1964.