EXTENSION EDUCATION IN THE WILDLIFE
CONSERVATION FIELD

by

JOHN HAMMOND LEWIS

A THESIS
submitted to the
OREGON STATE COLLEGE

in partial fulfillment of
the requirements for the
degree of

MASTER OF SCIENCE

April 1948
APPROVED:

Professor of Fish and Game Management
In Charge of Major

Head of Department of Fish and Game Management

Chairman of School Graduate Committee

Dean of Graduate School
ACKNOWLEDGMENT

To Professor R. E. Dimick, the writer owes a debt of gratitude for his constructive criticism of the organization of this research, and for his guidance and suggestions in the preparation of this thesis.

The response of the various states in reply to numerous questions was exceedingly gratifying and the writer wishes to thank those administrators of the nation's wildlife resources for their unstinted assistance to the problem.

Without the fullest cooperation of Wildlife Extension Specialists already established in a few of the states, the writer would have found the necessary assemblage of data much more difficult. The writer gives due acknowledgment to their assistance.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJECTIVES</td>
<td>1</td>
</tr>
<tr>
<td>Research Methods Used in This Study</td>
<td>2</td>
</tr>
<tr>
<td>THE LITERATURE SURVEY</td>
<td>2</td>
</tr>
<tr>
<td>Opinions Relative to the Need for Better Conservation Education</td>
<td>2</td>
</tr>
<tr>
<td>Opinions by State Fish and Wildlife Administrators of Conservation Programs in Public Schools</td>
<td>7</td>
</tr>
<tr>
<td>What is the Best Conservation Education</td>
<td>8</td>
</tr>
<tr>
<td>The Responsibility of Public Conservation Education</td>
<td>9</td>
</tr>
<tr>
<td>The Need for Standards in Conservation Education</td>
<td>11</td>
</tr>
<tr>
<td>THE RENAISSANCE OF CONSERVATION EDUCATION</td>
<td>14</td>
</tr>
<tr>
<td>A Comparative Index for Measuring the Adequacy of Present Programs</td>
<td>14</td>
</tr>
<tr>
<td>Youth Education Emphasized</td>
<td>17</td>
</tr>
<tr>
<td>Adult Education Practices</td>
<td>19</td>
</tr>
<tr>
<td>Adult Conservation Information Improved</td>
<td>21</td>
</tr>
<tr>
<td>THE PROBLEM OF THIS STUDY</td>
<td>22</td>
</tr>
<tr>
<td>The Limitations of This Study</td>
<td>22</td>
</tr>
<tr>
<td>The Methods and Preliminary Try-out of the Techniques</td>
<td>24</td>
</tr>
<tr>
<td>Evaluating the Questionnaires</td>
<td>30</td>
</tr>
<tr>
<td>General Response to Questions Asked</td>
<td>33</td>
</tr>
<tr>
<td>THE TREATMENT OF THE DATA</td>
<td>34</td>
</tr>
<tr>
<td>Where the Emphasis in Wildlife Conservation Lies</td>
<td>34</td>
</tr>
<tr>
<td>The 4-H Club Activity</td>
<td>38</td>
</tr>
<tr>
<td>Youth Education Sponsored by State Wildlife Agencies</td>
<td>42</td>
</tr>
<tr>
<td>Public Education by Private Organizations</td>
<td>51</td>
</tr>
<tr>
<td>Research in Relation to Public Education</td>
<td>54</td>
</tr>
<tr>
<td>Fish and Game Authorities See Need for More Conservation Education in Public Schools</td>
<td>55</td>
</tr>
<tr>
<td>Appropriations from State Fish and Game Commission</td>
<td>55</td>
</tr>
<tr>
<td>Budgets for Conservation Education</td>
<td>56</td>
</tr>
<tr>
<td>Man Hours Devoted to Organized Public Conservation Education</td>
<td>59</td>
</tr>
<tr>
<td>Education and Publicity Personnel Employed by Fish</td>
<td>60</td>
</tr>
<tr>
<td>and Game Departments</td>
<td>60</td>
</tr>
<tr>
<td>The Monthly Bulletin as an Educational Medium</td>
<td>61</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Lack of Wildlife Education in Agricultural Extension Service Programs</td>
<td>67</td>
</tr>
<tr>
<td>Divided Opinion Concerning State Wildlife Extension Specialists</td>
<td>68</td>
</tr>
<tr>
<td>Monetary Assistance for Wildlife Extension Specialists</td>
<td>69</td>
</tr>
</tbody>
</table>

**THE APPLICATION OF THIS PROBLEM TO OREGON**

- Oregon's Prospects for a Wildlife Extension Specialist | 73
- A National Program for Wildlife Extension Work | 77
- Working and Cooperative Agreements | 79
- A Program Outline for Wildlife Extension in Oregon | 83

**SUMMARY AND CONCLUSIONS** | 96

**BIBLIOGRAPHY** | 104
LIST OF TABLES

TABLE NO. I  Who should Shoulder the Responsibility for Wildlife Conservation Education............ 12

TABLE NO. II An Evaluation of Conservation Education in the United States (1946)..................... 16

TABLE NO. III The Projects that should be Emphasized for Adults in Wildlife Conservation Education. 36

TABLE NO. IV The Projects that Should be Emphasized for Youth in Wildlife Conservation Education.. 37

TABLE NO. V Apportionment of Funds by State Wildlife Agencies for Wildlife Education.................. 57

TABLE NO. VI Education and Publicity Personnel Employed by Fish and Game Departments.............. 62

TABLE NO. VII Financial and Labor Expenditures by State Fish and Game Agencies for Public Education in 1947....................................................... 64

LIST OF QUESTIONNAIRES

QUESTIONNAIRE NO. 1 (a) Letter of transmittal and mimeographed form to all Extension Services............... 25-27

QUESTIONNAIRE NO. 1 (b) Letter of transmittal and mimeographed form to all State Wildlife Agencies......... 28-29

QUESTIONNAIRE NO. 2 Mimeographed form to all State Wildlife Agencies......................... 31-32
EXTENSION EDUCATION IN THE WILDLIFE CONSERVATION FIELD

OBJECTIVES

This paper is an assemblage of data collected in 1946 and 1947 for the purpose of ascertaining what the various state wildlife management agencies and the State Agricultural Extension Services are doing to increase the public knowledge of wildlife values and maintenance. This research accomplished four objectives:

1. It determined what states were farthest advanced in public education programs in wildlife conservation.

2. It ascertained which phases of wildlife conservation should be emphasized in a state program.

3. It determined the value of a Wildlife Extension Specialist as an addition to the Extension Service personnel staff.

4. It formulated a standard program for public education in the field of wildlife conservation applicable to all states and specifically to the State of Oregon.

The need for better public understanding of the wildlife resource is commonly recognized by persons acquainted with this field, but a national appraisal of present efforts by the various states has not been made available until this time.

From the strength of opinions voiced in the abundant literature relative to this subject, and on the substantiating evidence assembled
in this study, there is justification that a concerted effort be made to evaluate, on a national scale, the direction conservation education is taking, as well as the degree of effort being expended.

Research Methods Used in This Study.

A background for this study was obtained by reviewing available literature pertaining to natural resource education programs conducted by the various state agencies, the national government and private organizations.

The criteria of what may be the best conservation education and how it is best broadcast to the public was obtained by personal letters, questionnaires and published material. This study, conducted over a fifteen-month period, emphasized the efforts and opinions of every state Extension Service and each state department administering the fish and wildlife resource; the two state agencies closest to the problems.

THE LITERATURE SURVEY

Opinions Relative to the Need for Better Conservation Education.

For at least a hundred years the plea for more conservation in America has been heard from the educators' desk, the legislators' halls, the pulpit, and the press, as evidenced by old outdoor publications and state laws. In older nations, like Germany, Scotland, and England, the conservation concept was already firmly established,
Evidence of stable crops of timber and game in these old nations served as a pattern by which American conservationists could point to the fact that dense human populations and dense animal populations can exist together in small areas, (Strunk:1946); (Leopold:1933). In America, however, it is different. In this country, of course, the wildlife is a heritage of all the people. Each citizen has, or should have, an interest in it. In Europe the wildlife and most of the other natural resources are usually the property of the hereditary rulers, and the masses have been forced to acknowledge such ownership as inviolate. Even poaching, normally the natural offspring of restraint, is not a serious problem, (Strunk:1946).

Unlike Europe, the thrill of hunting and fishing in America is for every American, rich or poor, young or old. For Americans this is a grand and democratic philosophy, but too often the license for exploitation to extermination of a growing list of plant and animal species.

The vast literature intimates strongly that the average hunter, trapper, and fisherman is loath to accept the fact that natural resources are exhaustible and even though examples show that they are, these sportsmen commonly believe that an adequate substitute can be developed which will equal or even improve the indigenous conditions. There are few examples to prove this belief to be true. In some instances such beliefs are encouraged and kept alive by the public schools through the history of American development and exploitation of a unique natural storehouse. An intensive public information
program seems to be the paramount method for developing a higher appreciation and a better ethical code for protecting the very valuable wildlife resource. This viewpoint establishes the motivation for this study.

Human resourcefulness has a way, or will develop a way, to exterminate or eliminate every resource of Nature that furnishes immediate value, unless legal or moral restrictions are placed upon it. Dr. Walter P. Taylor puts it in a colorful way, (Taylor:1945):

"Seemingly, unfortunately, it is always easier to educate in behalf of tearing down than building up. Nevertheless, we must tackle the job of conservation."

The need for conservation education has been stated by many persons from all walks of life. Some of these statements are cited below.

"If conservation were a lost cause, there would be no point in teaching it. On the contrary, it presents one of the most vital problems of the day because it affects all living things. It has tremendous inherent interest for young people. It guarantees results, both in practical accomplishments toward more abundant resources and in a better way of living." (Missouri Conservation Commission: 1940)

John W. Studebaker, United States Commissioner of Education is quoted as saying:

"It is more and more recognized that we need intelligent action toward a nation-wide, effective, permanent program in conservation. Organized public education offers the best, if not the only, means of ultimately and fully accomplishing this purpose." (Missouri Conservation Commission:1940)

In stating the general purpose and aim of the 275-page teachers manual, "Units in Conservation for Kentucky Public Schools", John J.
Gilpin, Kentucky Division of Fish and Game, Public Relations Representative, says:

"...The public lands are the richest inheritance ever bestowed by a bountiful Creator upon any national community. The wise use of these lands, and of all that lives above and below them, rests in the hands of the present generation. It is the highest form of patriotism for these students to do their part to ensure the wisest use of these resources 'of the people, by the people, for the people.'" (12:12)

Aldo Leopold, (Leopold:1942) in a dynamic article for the Audubon Magazine stated in 1942:

"Conservation education, in facing up to its task, reminds me of my dog when he faces another dog too big for him. Instead of dealing with the dog, he deals with a tree bearing his trademark. Thus he assuages his ego without exposing himself to danger."

One would gather from the above quotation that Leopold is indulging in destructive criticism. However, by using a quotation by Paul Sears, a renowned biologist of Oberlin College, he strengthens his viewpoint by exposing another thoroughfare in the maze of conservation education:

"Children are like grown-ups; They understand what others do better than what others are saying. Unless the grown-up world shows itself willing to practice conservation, that practice will be hard for the younger generation to adopt."

Kentucky has an educational program in operation which evidences that the youth of the state can be conservation educated under the direct sponsorship of adult sportsmen clubs. Their program is new and they have far to go as indicated by an article appearing in "Kentucky:
Happy Hunting Ground", the official publication of the Division of Game and Fish of February, 1946, entitled, "Enforcement - Do People Want It?". This article states that 25 percent of the resident hunters and fishermen pursue their sport without purchasing licenses which they should have; that in 25 percent of the counties the majority of the people do not have much respect for the Fish and Game Code; that in 30 percent of the counties, the courts do not show an attitude indicating a willingness to enforce the game and fish laws to the letter. This would seem to indicate that education is not yet "paying off" in that state, because there are not enough organized sportsmen teaching the future generation and that the program of youth education is not yet old enough.

Despite this and similar instances, it is generally agreed that education does pay. Where those who educate fail to agree is in regard to what to teach and how to teach it. To substantiate this statement refer to the works of the American Wildlife Federation (22), (23), (24), which contain the papers presented by leaders of education and conservation at three annual conferences called for the purpose of establishing a youth program in conservation education.

I. T. Bode (Bode;1937), Director of the Missouri Conservation Commission, and formerly Wildlife Extension Biologist of the Extension Service, United States Department of Agriculture, was deeply concerned with this question in 1938 as indicated by these remarks:

"The need in extension work is first of all for clarification in our attitude, appeal and approach. How shall the appeal be made? How much pure nature appreciation and how much utilitarian doctrine should
be employed in wildlife teaching? Does the use of too much pure nature-appreciation teaching draw unfavorable reactions of "sentimentalism" from rural parents and older people, thereby discouraging the interests of the juniors? Can boys be taught how to conserve wildlife and safeguard human life by the proper use of the gun and the rod? Can the conservation interest be held and constructive wildlife restoration accomplished by approaching the farm boy through his interest in trapping and marketing furs? Again, how much actual restoration rests on furnishing bird-feeding trays, raising game birds artificially, and controlling natural enemies, and how much on the fundamental principle of environmental improvement and control? Which of these elements is most important?"

Opinions by State Fish and Wildlife Administrators of Conservation Programs in Public Schools.

In reply to the final questionnaire, used in this study, see pages 31-32, in which the state fish and game authorities of the nation were asked the question, "Is conservation education adequately taught in the public schools of your state?", the replies seem exceedingly indicative. Of the 47 states answering this question, 95.5 percent said "no"! Three states other than the above, indicated their opinions by saying "in some cases", or, "in a few instances". These opinions were not included in the above percentage because of their indefinite value even though they intimate an unsatisfactory situation. The acknowledgement by 95.5 percent of the administrators of the fish and game resources of the various states has been criticized by one professional educator of high station, as a questionable figure, since wildlife administrators would have a tendency
to state a biased opinion to such a question. These figures can be supported by posing two questions: First: Who, other than the actual trustee of one or more of the state's natural resources, is closest to the practical aspects of natural resource values and use? Second: What proof can be given that the evils of natural resource exploitation have been abated appreciably as a result of public education?

What is the Best Conservation Education?

Natural resource conservation is not a simple subject. In fact, it is one of the most complex because the problems of administration and management involve nearly everything from basic soil science to human avariciousness. Even the single aspect of wildlife conservation provides enough puzzling enigmas to occupy man for as long as he has a wildlife resource to husband.

In the literature of every state fish and game authority, every department of education, every youth organization, and every adult organization, that has attempted to indoctrinate conservation teaching into its activities, is evidence that it has been confronted by one or more of the following inadequacies: general ability, facts, methods, finances, and time. The information assembled during the course of this study showed that most programs, if developed at all, were organized according to the following pattern, however, few incorporate all the units listed:

For juveniles:

1. An integrated program of conservation education throughout
the first twelve grades in the public school curriculum.

2. Organized "doing" programs in the 4-H clubs, Boy Scouts, Future Farmers, Nature Knights, and other similar youth organizations.

3. Bulletin and pamphlet series of an educational structure designed to appeal to the younger readers.

4. Lectures, movies, demonstrations and exhibits.

For adults:

1. Lectures, movies, demonstrations and exhibits.

2. Bulletins and pamphlets, usually of a technical nature dealing with one problem.

3. Official current magazines by the conservation authority of various states, for sportsmen and others interested enough to be placed on the mailing lists.

4. Press releases and other newspaper, magazine and radio outlets.

The Responsibility of Public Conservation Education Rests with Whom?

In those states which pursue extensive public conservation education programs, there is definite opinion regarding the value of cooperation among the various state agencies as well as with private organizations. Upon return of the replies to the question:

"6. Whom do you believe should shoulder the greatest permanent responsibility of further educating the people of the state in the wildlife conservation and management concept:"
It was interesting to note the correlation of those states which replied "All three", to the amount of public conservation information material being released for popular consumption, particularly youth education material.

Of the forty-two states which answered this question, only six, 14 percent, definitely indicated that they had progressed far enough in the education phase to realize that all groups, specialized or otherwise, must work cooperatively toward a single objective in order to do the job well. In the words of Paul B. Sears, (National Wildlife Federation: 1940), of Oberlin College, the need for cooperation is very well stated:

"It should be clear that every special interest working at some phase of the conservation problem, needs the cooperation of every other special group, for conservation cannot be developed piecemeal. Game, fish, other wildlife, forests, water, soil, all represent details of one central problem -- a permanent and satisfying relation between man and nature. Scientific intelligence and sound design must be used to satisfy the needs of man, while maintaining the balance of living nature."

None of the forty-two answering states indicated that the State Agricultural Extension Service should have primary responsibility, but twenty-seven percent felt that the State Department of Education should shoulder the primary responsibility.

Of forty-two states, twenty-two, or 52 percent indicated that the fish and game authority should, at least, share the responsibility for wildlife conservation. For a detailed record of this response see
The only value of this question, perhaps, lies in the field of project outlines for the initiation or reorganization of educational programs, regardless of which agency instigates them.

The Need for Standards in Conservation Education.

There is uniformity of belief by a large majority of educators that the most good can be done for natural resource conservation by getting knowledge into the home, (National Wildlife Federation:1939, 1940,1941). This can be accomplished with varying degrees of success in several ways.

There are about one million teachers in the United States (23; Ward;1). If support could be enlisted today in the many teacher-training institutions throughout the nation, the natural resource conservation problem could be greatly augmented through fuller incorporation of this topic in the pupils’ course of study. Within the ranks of this strategic educational group, one discovers a pathetic lack of practical conservation information which leads to general inability for applying it, therefore avoidance of the subject except when fulfilling the requirements established by state law for its inclusion, (23; Peters; 24; Ward;24; Pack;22; Caldwell). Even when state law makes conservation subjects mandatory, few state education departments insist upon more than cursory coverage. (24; Ward;237; Also personal letters from California and Oregon Education Departments.)
## TABLE NO. I

REPLIES BY STATE WILDLIFE ADMINISTRATORS TO THE QUESTION: WHO SHOULD ASSUME THE PRIMARY RESPONSIBILITY FOR WILDLIFE CONSERVATION EDUCATION?

### Key to Symbols

- **Ed.**  .. State Department of Education
- **Ag.**  .. State Agricultural Extension Service
- **F&G**  .. State fish and game authority

<table>
<thead>
<tr>
<th>State</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Ed.</td>
</tr>
<tr>
<td>Arizona</td>
<td>Ed.</td>
</tr>
<tr>
<td>Arkansas</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>California</td>
<td>F&amp;G &amp; Ag.</td>
</tr>
<tr>
<td>Colorado</td>
<td>Ed.</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Ed.</td>
</tr>
<tr>
<td>Delaware</td>
<td>No reply</td>
</tr>
<tr>
<td>Florida</td>
<td>Ed.</td>
</tr>
<tr>
<td>Georgia</td>
<td>All three</td>
</tr>
<tr>
<td>Idaho</td>
<td>F&amp;G &amp; Ed.</td>
</tr>
<tr>
<td>Illinois</td>
<td>Ag. &amp; Ed.</td>
</tr>
<tr>
<td>Indiana</td>
<td>Ed.</td>
</tr>
<tr>
<td>Iowa</td>
<td>All three</td>
</tr>
<tr>
<td>Kansas</td>
<td>No reply</td>
</tr>
<tr>
<td>Kentucky</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Louisiana</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Maine</td>
<td>No reply</td>
</tr>
<tr>
<td>Maryland</td>
<td>F&amp;G &amp; Ed.</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Ag. &amp; Ed.</td>
</tr>
<tr>
<td>Michigan</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Minnesota</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Ed.</td>
</tr>
<tr>
<td>Missouri</td>
<td>All three</td>
</tr>
<tr>
<td>Montana</td>
<td>Ed.</td>
</tr>
<tr>
<td>Nebraska</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Nevada</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>F&amp;G &amp; Ed.</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Ed.</td>
</tr>
<tr>
<td>New Mexico</td>
<td>All three</td>
</tr>
<tr>
<td>New York</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>North Carolina</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>North Dakota</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Ohio</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Oregon</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>All three</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Silent</td>
</tr>
<tr>
<td>South Carolina</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>South Dakota</td>
<td>No reply</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Ed.</td>
</tr>
<tr>
<td>Texas</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Utah</td>
<td>Ed.</td>
</tr>
<tr>
<td>Vermont</td>
<td>F&amp;G &amp; Ed.</td>
</tr>
<tr>
<td>Virginia</td>
<td>Ag. &amp; Ed.</td>
</tr>
<tr>
<td>Washington</td>
<td>No reply</td>
</tr>
<tr>
<td>West Virginia</td>
<td>F&amp;G</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>All three</td>
</tr>
</tbody>
</table>

See pages 10 and 11.
In reply to the question asked of state wildlife administrators, "Are the public schools of your state teaching natural resource conservation at the present time?", the forty-three states which replied, furnish points worthy of consideration. Seventeen percent stated that no conservation education is included; seventeen percent answered "Little"; twenty-seven percent answered "Some"; and thirty-nine percent answered "Yes".

When asked if they thought the public schools should include more conservation education in their courses of study, all forty-three agreed with a "yes" answer.

Until the fundamental needs and principles for natural resource conservation are indelibly established in the youthful minds, there remains the impending conviction that the prevailing practice of exploitation for personal gain will far overreach the vital necessity for wise usage. If the convictions of learned economists and conservationists are true, youth education provides the most important and quickest path for entering upon a sensible era of universal understanding of the penalties that can stem from the abominable uses of the land and water resources. America has been guilty, throughout its history, of sanctioning unrestricted exploitation of most of its natural resources, (Day:1946; National Wildlife Federation:1939,1940, 1941; Taylor:1945; and others).

There is a rather well established belief that youth education is the best medium and that commensurable results cannot be obtained through adult education in proportion to the effort and cost expended.
A Comparative Index for Measuring the Adequacy of Present Programs.

A resume of the literature pertaining to programs of conservation education reveals a rather standard pattern which is designed to increase public understanding. The value of such programs might best be determined by the following comparisons:

1. Since the enactment of legal restrictions on exploitation, has there been noticeable improvement?

2. After several years of conducting public conservation programs, has the general public exercised a voluntary effort to eliminate destructive practices of the past?

3. Have the public school administrators evidenced an effort, in keeping with the need, to include more conservation education in an already crowded student curriculum?

4. Have agriculturists and industrialists voluntarily striven to reduce deleterious effects of past mis-management of the land and water resource?

5. Is law enforcement and subsidy still the most important tool for maintaining public adherence to natural resource conservation?

Until positive answers can be given to all of the above comparisons, the administrator has reason to re-evaluate present programs and seek more support for a program that will expedite the fulfillment of such public acceptance and approval of necessary conservation
measures.

A work-sheet was constructed from personal letters and questionnaires received from fish and game administrators and Extension Service Directors to show the extent of organized effort each state was making to improve public understanding of wildlife conservation. From this assemblage it was possible to compare one state against another. The results of this analysis showed that only twenty percent of the states were doing an adequate job of public conservation education, see table No. II, next page.

This appraisal was arbitrarily based upon the degree of effort being expended for the promotion of permanent programs and the amount of material being made available to the citizenry in the form of booklets, work projects, demonstrations and other teaching methods. The ten states whose programs were outstandingly the best from the above standards are explained fully in later pages.

Those states with outstanding programs were unanimous in their belief that close cooperation and integration of efforts and ideas were essential to successful education. This meant that the state wildlife agency enlisted the cooperation of the state education department, other state educational organizations, agricultural agencies, forestry departments, soil and reclamation agencies and others who exercised some interest in the land or its resources.

Up to the period of this report (1947), the state of Oregon had not initiated a sustained program of public conservation education. Sporadic attempts have been made in the past but they have lacked
**TABLE NO. II**

**AN EVALUATION OF CONSERVATION EDUCATION IN THE UNITED STATES (1946)**

(Based on extent of permanent programs, and on amount and quality of publications, projects, demonstrations, and other educational methods.)

<table>
<thead>
<tr>
<th>Outstanding Programs</th>
<th>Commendable Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Arkansas</td>
</tr>
<tr>
<td>Illinois</td>
<td>Colorado</td>
</tr>
<tr>
<td>Iowa</td>
<td>California</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Florida</td>
</tr>
<tr>
<td>Michigan</td>
<td>Georgia</td>
</tr>
<tr>
<td>Missouri</td>
<td>Indiana</td>
</tr>
<tr>
<td>New York</td>
<td>Louisiana</td>
</tr>
<tr>
<td>Ohio</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Tennessee</td>
<td>North Carolina</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Oklahoma</td>
</tr>
<tr>
<td></td>
<td>Pennsylvania</td>
</tr>
<tr>
<td></td>
<td>Texas</td>
</tr>
<tr>
<td></td>
<td>Utah</td>
</tr>
<tr>
<td></td>
<td>Virginia</td>
</tr>
<tr>
<td></td>
<td>West Virginia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Some Organized Effort</th>
<th>No Organized Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>Arizona</td>
</tr>
<tr>
<td>Idaho</td>
<td>Connecticut</td>
</tr>
<tr>
<td>Kansas</td>
<td>Maine</td>
</tr>
<tr>
<td>Maryland</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Montana</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Nevada</td>
</tr>
<tr>
<td>New Jersey</td>
<td>New Hampshire</td>
</tr>
<tr>
<td>New Mexico</td>
<td>South Carolina</td>
</tr>
<tr>
<td>North Dakota</td>
<td>South Dakota</td>
</tr>
<tr>
<td>Oregon</td>
<td>Vermont</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Washington</td>
</tr>
<tr>
<td>Wyoming</td>
<td></td>
</tr>
</tbody>
</table>
proper organization and programming. The Oregon State Game Commission, in cooperation with the Agricultural Extension Service has provided pheasant chicks to 4-H Club members who had adequate facilities for raising game birds, but the value of such experience as a means for enlarging the conservation philosophy is questionable. In 1940 the Oregon Wildlife Federation, a federation of state fish and game clubs, attempted to initiate a conservation training program in the public schools of the state, but general lack of enthusiasm, financial difficulties, and crowded school programs prevented its acceptance. Although Oregon's State Department of Education has been making an effort to integrate resource conservation principles within the various learning areas of the public school system, such a program had not met general acceptance prior to the period of this report.

In Oregon, as in California, there is little indication that youth is receiving enough factual information to establish a constructive conservation attitude, nor is the adult public well enough aware of the situation to enlarge general support.

**Youth Education Emphasized.**

There is strong majority belief among persons familiar with conservation education that the most effective results are to be obtained through youth training. This fact was determined in the course of this research by letter, questionnaire, and published opinion found in the literature.
Most of the states who have initiated any educational program at all, through one agency or another, have begun with boys and girls. In earlier years these programs were usually built around one of the following:

1. 4-H Club game-bird raising.
2. Bird house and winter feeding projects.
4. Camping.
5. Tree planting projects.

In those states which have adopted extensive plans for conservation and have done outstanding work, the activities listed above become secondary. The primary aim is to teach the public the "why" of the basic principles that create and maintain the living resources. Food-chains, life-cycles, natural balance, ecology and other basic subjects take precedence, because they determine the end-product to be obtained. Rearing pheasants, for example, is no more than an adjunct or vitalized aid for teaching the basic lesson. If pheasant rearing is an end in itself, then the emphasis is on the techniques of successful husbandry rather than on the basic "why". Instead of, "How does one raise pheasants?", it should be, "Why can't pheasants reproduce themselves adequately in the natural situation?".

The state of New York has long been explaining the basic "whys" in their "Cornell Rural School Leaflets". Missouri, through the medium of their "Nature Knights" organization begins with basic facts. Wisconsin, through its public school program, is well along the road
to better understanding; Illinois, Michigan, Ohio, and Kentucky also. Alabama and Iowa are advancing rapidly by teaching basic principles to their farm youth. Louisiana is moving ahead on a program patterned from the Missouri and Kentucky programs. Each of these states are developing methods for keeping the public interested in and alive to the situation. In later pages the fundamentals of these programs will be discussed.

Adult Education Practices.

The overemphasized value of "publicity" and "promotion" as a satisfactory educational method is beginning to wane rapidly. Fish, game, forest, soil, and grazing resource agencies find that it is no longer necessary to "sell themselves" to the public, and that even if they do, the better way is by making the public aware of the need and value of such agencies through acceptance and understanding of their purpose. Again, public awareness of the basic problems is the keynote to broader public acceptance of sustained natural resource management.

The land exploitation, especially evident in major areas of rich western valleys provide substantial proof that there is weakness in a conservation education program which will provide the highest return per unit of land area forever. This is important to wildlife conservation and management because, in most cases, the best usage of land produces the greatest numbers of desirable wildlife. The more intensive the agricultural practices become, the more dangerous the mismanagement problem becomes. The consolidation of land holdings and fewer owner
operated farms each year, together with improved agricultural machinery increases the danger of land "mining" for quick profit. An example to prove this point is the following.

A town barber, with whom the writer is acquainted, leases and operates a 300-acre rice farm in his "spare" time. Land "mining" is his business, not agriculture. In the first place he is not concerned with conservation. His management is for quick profit obtained from three or four years of rice harvests and hunting privilege fees. After that all he need do is dissolve the lease and look for other ways to exploit. Land science has no value to this lessee except to exploit faster, and land "philosophy" never entered into his plan even at the beginning. What chances have Nature's basic elements such as soil, water, fertility, and productivity in such hands? What is the result? Land out of production in a few years which results in decreased community, state, national, even world resources; poorer economy on an international scale.

Adult education has come chiefly through bulletins, pamphlets, magazines, and lectures. The average farmer finds little time for "pleasure" reading, but read by force of necessity those things which will provide ideas for improving farming ability. The usual bulletins or pamphlets relating to agriculture are usually not what one would call recreational reading. They are usually cold and often abstract. They commonly deal with a single subject of specific information, and there is little carry-over into allied subjects.
Adult Conservation Information Improved.

Whether more demonstrations, vitalized publications and intensive extension will reduce present deleterious land management practices will require constant, careful watching to determine.

Concerning conservation information that reaches the sportsmen, one sees a definite improvement in recent years. Sportsmen's magazines are growing into wildlife textbooks, often providing accurate information for the hunter, fisherman, and other outdoor enthusiasts. Even some of the outdoor story writers are indoctrinating their readers with conservation concepts. Moral appeal, bolstered by stark pictures of recent over-exploitation, is improving the thinking of those who find enjoyment in the outdoors.

The good qualities of man must be appealed to. Dr. R. S. Ihlenfeldt, State Supervisor of Elementary Schools, Wisconsin Department of Public Instruction, National Wildlife Federation: 1939, states:

"You can't make people moral by law. You can't make people conservation minded by law. You may, however, through law and compulsion keep a few from shooting birds out of season. Control and guidance from within is what we really need."

Some of the better outdoor writers are cleverly developing this method in the copy they submit for popular consumption by appealing to the qualities of fair-play and good judgment among sportsmen.

From a study of the three publications assembled by the National Wildlife Federation (22, 23, 24), one finds definite expression by the members of the panels to the effect that conservation education, on a
large scale, has very frequently been inadequate for the following main reasons:

1. Poor explanation of the results that follow detrimental exploitation, except from the "sentimentalist" viewpoint.
2. Inadequate scientific research of specific problems that provide sound conservation or management arguments.
3. Inadequate techniques or use of known ones, for informing any but the most interested public.

In regard to the third reason above; the Alabama Polytechnic Institute is making a commendable effort to avoid the unfortunate tradition of "talking over the heads" of their readers. Alabama Extension Service Circular No. 325, by Dr. Allen M. Pearson, and entitled, "How To Manage Your Fish Pond", is a good illustration. The Institute's Research Interpretation Council reduced the reading level of this manuscript from grade 8.0 to grade 6.7. By so doing, the Circular is said to have increased its potential rural readers by 17 percent; an increase of 113,000 persons, Pearson;1946. Later publications claim an increased potential of as much as 50 percent more rural readers than would have been possible with the original manuscript.

THE PROBLEM OF THIS STUDY

The Limitations of This Study.

The significance of this study will be shown in two ways:
First, the need for and use of formulating a program in Oregon that will provide noteworthy assistance to better public understanding of natural resource problems; second, to furnish the many state agencies with the results of this national study which so many of them have requested.

The value of this study cannot be measured fully in the present. The degree of its acceptance and use will supply the measure of its worth.

There are two important limitations in this study of which the reader must be cognizant. With any study of this type and scope, it is exceedingly desirable that the information be gathered through personal interview by a person acquainted with the subject. It was not possible to conduct personal interviews for this study because of the expense such a method would entail. The questionnaire and personal letter were therefore adopted for the technique and a remarkable response was obtained. The many administrators, for the most part, devoted considerable time and thought to the problem. A large amount of information and data was accumulated.

The second important limitation lies in the fact that special effort to appraise conservation programs of the public school agencies of the various states was not made. Such an appraisal is greatly needed, but to include such a survey in this study would have required more facilities and time than available. It should be obvious that a combination of this study with a public school study would greatly increase the understanding of present difficulties encountered in the
teaching of conservation principles.

The importance of these limitations will not influence the value of the information pertinent to Oregon's problem, but it will preclude the concise determination of a national youth program of conservation.

The Methods and Preliminary Try-out of the Techniques.

Following the literature search at the beginning of this study, it became evident that each state might possibly be emphasizing a single phase of wildlife management and conservation. If such emphasis proved to be necessary, it seemed wise to determine where the emphasis lay. A questionnaire was composed to answer this problem, see next page, and copies were sent to each Agricultural Extension Service in the nation, as well as to each state fish and game department. Those states which did not have any organized program of wildlife education found difficulty in answering the questions. At first, this was thought to be dangerous to the study, but on further deliberation it was concluded that those same states would find difficulty in answering any questionnaire designed to gather such specific information. The result was that those agencies without organized programs set themselves definitely apart. Some difficulty was encountered in getting this questionnaire returned.

Several states, especially those with Wildlife Extension Specialists, or with Educational Supervisors affiliated with the state fish and game departments, were unusually helpful in explaining their
NOTE: This is an example of the letters of transmittal that accompanied Questionnaire Number 1, mailed to each state extension service. (See pages 26-27.)

Dept. Fish and Game Management
201 Ag. Eng. Building
(date)

State Extension Service
(Address)

Gentlemen:

In view of the present rapidly developing interest for wildlife extension in the state agricultural programs, we are attempting to gather information which will assist us in formulating a wildlife extension program for the State of Oregon. We hope to benefit from the experience of other states which thru farsightedness have already put a program in motion, thereby integrating and fitting the extension methods used by these states to our particular program.

We earnestly solicit your assistance, asking if you will furnish us with an "organization and policy" outline for both adult and juvenile programs of work in your state. Available publications would be of assistance also.

The National Advisory Group has gone on record with the recommendation that the wildlife resources be included in the development of a national land policy and this, coupled with an increasing interest by the ranchers and farmers of our state, indicates the need for a well organized program.

In an effort to conserve your time and to simplify our analysis, we have prepared a mimeographed sheet and attached it to this letter. This sheet is going out to all the State Extension Agencies and a similar one to all the State Game Departments. Perhaps we could repay you for your effort by sending the break-down of the national picture back to you, if you are interested.

The substance of all this information will be organized into thesis form, including a graphic summary and conclusions. I am 32 years of age, have been in wildlife work over eight years and, at present, am on leave of absence from the United States Fish and Wildlife Service in order that I may complete the requirements for a Master of Science degree.

Very truly yours,

/s/
John H. Lewis
QUESTIONNAIRE NO. 1 (a)  
(To every State Extension Service)

By filling in the blanks designated below, you will assist us in determining where the emphasis should be placed in formulating a project program in wildlife extension.

1. (Designate the importance of each of the following in respect to your State program by placing a numeral in the space; i.e., "1" for the most important, "2" for the next most important, etc.)

<table>
<thead>
<tr>
<th>FOR ADULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>() Fur animal production, including fur farming.</td>
</tr>
<tr>
<td>() Wildlife and fisheries management.</td>
</tr>
<tr>
<td>() Control of predatory animals and injurious rodents.</td>
</tr>
<tr>
<td>() Farm pond development and management.</td>
</tr>
<tr>
<td>() Domestic rabbit production.</td>
</tr>
<tr>
<td>() Prevention of damage to agricultural crops by wildlife.</td>
</tr>
<tr>
<td>() Develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FOR 4-H BOYS AND GIRLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>() Fur animal production, including fur farming.</td>
</tr>
<tr>
<td>() Wildlife and fisheries management.</td>
</tr>
<tr>
<td>() Control of predatory animals and injurious rodents.</td>
</tr>
<tr>
<td>() Farm pond development and management.</td>
</tr>
<tr>
<td>() Domestic rabbit production.</td>
</tr>
<tr>
<td>() Prevention of damage to agricultural crops by wildlife.</td>
</tr>
<tr>
<td>() Develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture.</td>
</tr>
</tbody>
</table>

3. (Check each of the following around which you have built demonstrations. What percentage of your time and effort has been devoted to each of the following?)

| () (%) Fur animal production, including fur farming. |
| () (%) Wildlife and fisheries management. |
| () (%) Control of predatory animals and injurious rodents. |
| () (%) Farm pond development and management. |
| () (%) Domestic rabbit production. |
| () (%) Prevention of damage to agricultural crops. |
| () (%) Development of a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture. |

100% of all wildlife extension work done by your state.
Questionnaire No. 1 (a) continued

FROM QUESTION THREE ON THE PRECEDING PAGE, PLEASE COMPLETE THE "PIE" GRAPH BELOW. (We could do this, of course, but we have found that some cooperators do not supply the complete information required, necessitating further correspondence and time.)

If you have no organized program of wildlife extension, at the present time, please so indicate. If not, also indicate if and when you contemplate such a program.

Please use the reverse side of this form for additional remarks or suggestions. We welcome them.
NOTE: This is a sample letter of transmittal that accompanied Questionnaire No. 1 (b), which was mailed to every state fish and game department.

Dept. Fish and Game Management
201 Ag. Eng. Building
Oregon State College
Corvallis, Oregon
June 7, 1946

Department of Conservation
Montgomery, Alabama

Gentlemen:

In view of a rapidly developing interest and need for conservation education and extension in each state, we are attempting to gather information which will assist us in formulating an education program for the State of Oregon. We hope to benefit from the experience of other farsighted states who already have commenced work along these lines, thereby integrating and fitting the methods of other states to our particular program.

We earnestly solicit your assistance, asking if you will furnish us with an "organization and policy" outline for both adult and juvenile programs of work in your state. Available publications would be of assistance also.

The National Advisory Group of 4-H Clubs, State Education Departments, and many of the private conservation organizations are well aware of this need and are devoting much energy to interest people in at least one or more animals other than themselves.

In an effort to conserve your time and to simplify our analysis, we have prepared a mimeographed sheet and attached it to this letter. This sheet is going out to all the State Game Departments and similar ones have been sent to each state extension service. Perhaps we could repay you for your effort by sending the break-down of the national picture back to you, if you are interested.

The substance of all this information will be organized into thesis form, including a graphic summary and conclusions. I am 32 years of age, have been in wildlife work over eight years, and at present, am on leave from the United States Fish and Wildlife Service in order that I may complete the requirements for a Master of Science degree.

(Encl.)

Very truly yours,

s/

JHL:KW

John H. Lewis
QUESTIONNAIRE NO. 1 (b)
(Mailed to every state fish and game department)

By filling in the blanks designated below, you will assist us in determining where the emphasis should be placed in formulating a project program in conservation education and extension.

1. (Designate the importance of each of the following in respect to your State program by placing a numeral in the space; i.e., "1" for the most important, "2" for the next most important, etc.)

FOR ADULTS

( ) Fur animal production, including fur farming.
( ) Wildlife and fisheries management.
( ) Control of predatory animals and injurious rodents.
( ) Farm pond development and management.
( ) Domestic rabbit production.
( ) Prevention of damage to agricultural crops by wildlife.
( ) Develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture.

FOR BOYS AND GIRLS

( ) Fur animal production, including fur farming.
( ) Wildlife and fisheries management.
( ) Control of predatory animals and injurious rodents.
( ) Farm pond development and management.
( ) Domestic rabbit production.
( ) Prevention of damage to agricultural crops by wildlife.
( ) Develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture.

3. What percentage of time do you devote to specific wildlife education? _____________________________ %

4. What percentage of time do you devote to specific wildlife extension and demonstration? _____________________________ %

5. Approximate the amount of funds expended for education and extension annually. _____________________________
programs. From their replies was found the key for obtaining other
information essential to the study, so a second questionnaire was
composed and mailed to each state fish and game agency, see next page.
This second form included questions that the administrators of the
state wildlife resources sometimes refused to answer; consequently,
repeated efforts to get returns were necessary. It required nearly
nine months to bring the response to this questionnaire up to ninety-
six percent.

That the nature of some of the questions opened up new lines of
thought was quite evident; and nearly all states asked for the results
of this study.

Quite frequently it was necessary to write for further explana-
tion or clarification so that at the conclusion of the research work a
total of 238 individual letters and 186 questionnaires had been mailed.

Evaluating the Questionnaires.

Not until actual evaluation of the replies made in the question-
naires was begun, was it possible to fully comprehend the entire scope
of this study. Primary objectives elevated themselves above the
numerous less important ones, making it possible to search the liter-
ature further for work in this field. Ten states stood out clearly
above the others because of their intensive programs and thus exposed
themselves to careful scrutiny and concentrated questioning.

All of the work of state evaluation was done on a comparative
basis, taking into consideration the location, population, type of
NOTE: This is Questionnaire No. 2 which was accompanied by a suitable and individual letter of transmittal, depending upon the local situation, and mailed to every state fish and game department.

OREGON STATE COLLEGE

Department Fish and Game Management
201 Agricultural Engineering Building
Corvallis, Oregon
July 11, 1946

TO ALL STATE FISH AND GAME DEPARTMENTS

Gentlemen:

Now, we are getting into the meat of our study "Wildlife Education and Extension in the United States"! The response we have received from each Fish and Game Department and each State Agricultural Extension Service in previous correspondence relative to this study has been very gratifying, and I take this opportunity to thank you.

To round out this study and complete the analysis, we earnestly solicit the following information, and sincerely hope you will comply:

1. What is your total operating budget for the Fish and Game Department per year? $

2. How much of this total budget did you allot to wildlife education (including extension) this fiscal year? $

3. Estimate the total man-hours for entire Department this year by the following method: (total number of employees ___ multiplied by 2,300).

4. How many man-hours are devoted to wildlife education (including extension) in your state per year?

Does this include publishing a monthly bulletin for popular consumption? Yes or no? What is its circulation?

5. Do you have an Education and Publicity Director or specific person assigned to the task of extending knowledge of wildlife conservation to the point of actual field practice? Yes or no? How many?
6. Who do you believe should shoulder the greatest permanent responsibility of further educating the people of the state in the wildlife conservation and management concept:

   a. State Fish and Game Authority?
   b. State Agricultural Extension Service?
   c. State Board of Education?

   Comments:

7. Do you believe the State Agricultural Extension Service should include Wildlife Conservation in their program to the extent of supporting a State Wildlife Extension Specialist?

8. If your answer to Question 7 is "yes", do you think the State Fish and Game Authority should support such activity by allotting monetary assistance for retaining a Wildlife Extension Specialist?

   What percent?

9. Do you believe the public schools of your state should include more conservation and wildlife education in their courses of study? Yes or no.

   Do they include any of this training at present?
   Is it adequately taught?

Yours very truly,

/s/

John H. Lewis
habitat and degree of industrialization and urban population.

**General Response to Questions Asked.**

In requesting information from public agencies, it was assumed that each agency would reply in some manner. This assumption was born out in view of the high percentage of returns obtained as stated previously.

There were several probable reasons why some state agencies failed to reply following the first request. Some states combine the general activities, relative to managing their natural resources, into what is commonly called a "conservation department", and they are concerned with all phases of conservation such as forestry, parks, wildlife, fisheries, soil, water resources, and the like.

Another reason that probably influenced response lay in the fact that many state agencies were in a process of reorganizing after the war and were either too busy to reply or were unable to fully evaluate the questions asked in the questionnaires at that time. Still another reason - perhaps the most important - was that most persons view questionnaires with a feeling of distaste and distrust, particularly following the wave of new forms and questionnaires that plagued the administrator during the war years.

Concerning the validity of the answers to the questionnaires, there were two checks. One was by the use of figures published in *Outdoor Life*, November 1946, in which the annual revenue accruing to each state from hunting and fishing licenses was listed. The
Outdoor Life figures were usually lower than those included in this report because most state fish and game departments obtain revenue in addition to that received from license sales. The second check was from a comparison of questionnaire No. 1 and questionnaire No. 2, since one question was materially the same in each form and the two were mailed several months apart. It is believed that the response from the various agencies was both accurate and equal to optimistic expectations.

THE TREATMENT OF THE DATA

Where the Emphasis in Wildlife Conservation Lies.

The phases of wildlife conservation education on which the most emphasis was placed varied considerably between states as well as between the two state agencies questioned, namely the Agricultural Extension Services and the State fish and game departments.

Below are listed the wildlife phases from which the administrators could select, by numbers in sequence, those which they believed most important to both their adult and youth populations.*

( ) Fur animal production, including fur farming.
( ) Wildlife and fisheries management.
( ) Control of predatory animals and injurious rodents.
( ) Farm pond development and management.
( ) Domestic rabbit production.
( ) Prevention of damage to agricultural crops by wildlife.
( ) Develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture.
( ) (Others)

*A copy of the complete form and accompanying letter of transmittal may be found on pages 25-29.
The next two pages contain work sheets which summarize the national views by these two agencies. Because the state wildlife administrators are naturally in closer contact with the problem than are the state extension service directors, it is difficult to attach statistical values to a comparison of the two information sources.

For adult education projects, the information from wildlife agencies shows conclusively, table No. III, that "wildlife and fisheries management" should be the vehicle for development of a better understanding and appreciation of fish and wildlife resources, but such an accord is not shown by the Extension Service administrators. There is no statistical significance in table No. IV for other projects that should be emphasized unless it be "Farm fish pond development and management", which may or may not have enough value in Oregon in the near future to warrant primary consideration.

Youth education projects, as shown by the above mentioned table does show strong agreement that the "Establishment of a better understanding and appreciation of the fish and wildlife resource", is the most important. Again the Extension Services show no agreement of secondary projects but over sixty percent of the wildlife administrators indicate "Wildlife and fisheries management projects", with farm fish ponds being emphasized.

These results pose a question, namely; how many Extension Service administrators would change their views if they had more opportunity to study the many aspects of the conservation situation. Most of the replies from western state extension services stressed the need
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Opinions of State Fish &amp; Game Depts.</th>
<th>Opinions of State Agri. Ext. Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>Fur animal production including fur farming</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wildlife and fisheries management</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Control of injurious mammals</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Farm pond development and management</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Domestic rabbit production</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Prevention of damage by wildlife to crops</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Develop a better understanding and appreciation of fish and wildlife as a permanent part of agri.</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Develop a better understanding of all natural resource conservation</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Elimination of water hyacinth and alligator grass</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total number of states reporting</td>
<td>43</td>
<td>33</td>
</tr>
</tbody>
</table>
TABLE NO. IV  
Work Sheet  
THE PROJECTS THAT SHOULD BE EMPHASIZED FOR YOUTH IN WILDLIFE CONSERVATION EDUCATION  

<table>
<thead>
<tr>
<th>Project</th>
<th>Opinions of State Fish &amp; Game Depts.</th>
<th>Opinions of State Agri. Ext. Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>Fur animal production including fur farming</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wildlife and fisheries management</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Control of injurious mammals</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Farm pond development and management</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Domestic rabbit production</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Prevention of damage by wildlife to crops</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Develop a better understanding and appreci-</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>ciation of fish and wildlife as a permanent part of agri.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop a better understanding of all nat-</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>ural resource conservation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of states reporting</td>
<td>39</td>
<td>31</td>
</tr>
</tbody>
</table>
for predator and rodent control projects which would seem natural because of the predominance of livestock raising in the western states and the damage sustained. It is questionable, however, whether the primary educational effort should evolve from a major program of injurious mammal control.

The 4-H Club Activity.

Less than forty percent of the states have specific wildlife projects incorporated in their 4-H programs. Many of the states which do carry wildlife projects do little more than incidental work in this field, assisting only those 4-H members who indicate a strong voluntary desire to work in a certain phase of wildlife management or propagation.

Eight states, 16.7 percent, of the nation indicated that they were conducting extensive 4-H wildlife projects, while Maryland and South Dakota reported that they were in the process of beginning intensive programs. If the opinions of conservation educators and others who have made substantial contributions to the conservation movement are accurate in concluding that youth education is the most important step toward a better public understanding of natural resource conservation needs, then it seems indicative that the state agricultural services have neglected an important problem.

The Iowa Extension Service, in cooperation with Iowa State College, the game commission and the United States Fish and Wildlife Service, has compiled exceptionally good booklets and leader's keys
for their farm youth, and also sponsors a summer conservation camp for outstanding boys and girls. Fur handling demonstrations and food and cover planting projects are also important.

The extension program of Iowa, under the guidance of a Wildlife Extension Specialist, considers a better understanding of the wildlife resource as a permanent part of agricultural practices, the primary educational aim. They use actual game and fish management as the example for "learning through doing".

Michigan's Extension Service, with the guidance of a Wildlife Extension Specialist, is concerned, primarily, with developing a better understanding of the conservation problem, and they, likewise, have published an impressive set of 4-H Conservation bulletins which are organized to inspire and encourage active projects for the rural youths.

Oklahoma, also under the guidance of a Wildlife Extension Specialist, is conducting a program including active projects shaped around the construction and management of farm fish ponds. There are said to be about 100,000 farm ponds in the state, of which over 25,000 are suitable for rearing food fish or bait minnows.

West Virginia, also with a Wildlife Extension Specialist, is conducting an active 4-H program in which the leaders concentrate on establishing a better understanding of the conservation need and conduct active projects with farm fish ponds and bobwhite quail.

Texas, also with an Extension Game Management Specialist, did not indicate a specific 4-H program; however, it seems very probable that
their extensive state-wide "Game Management Demonstration" includes the 4-H program. The Director of the Extension Service stated that the 4-H work is to be intensified in the wildlife management phase.

Ohio, under a new program by which an Extension Specialist is retained by the State fish and game department, has begun a 4-H and Future Farmer program, including summer conservation camps and wildlife projects.

Alabama, with a Wildlife Extension Specialist, is conducting an intensive farm fish pond program among the rural youth as well as stressing better public understanding of the wildlife resource.

There are six other states, all without extension specialists, which are doing noteworthy wildlife work in the 4-H club program.

New York, through their fifty-year old program of rural education and the outstanding Cornell Rural School Leaflet series is now developing an intensified 4-H conservation education program.

In Wisconsin, Wakelin MoWeel, 4-H Club Leader, has, for many years, used the radio to good advantage. His "Ranger Mac" programs are broadcast to the public schools and incorporated into the regular class program. Over 30,000 pupils are reached each year.

South Dakota has been active with 4-H rodent control projects. Florida has established 4-H wildlife conservation projects which are sponsored by various local "service" clubs. Georgia has an active 4-H program with good manuals and bulletins. There is, also, an annual summer conservation camp in the Chattahoochee National Forest whose operation is a cooperative arrangement between the State
Agricultural Extension Service, the National Cartridge Corporation, and the United States Forest Service. It is stated that twenty percent of the total 4-H effort is devoted to the wildlife conservation phase.

Kentucky is conducting an intensive program of youth education in conservation which extends into the 4-H and Utopian clubs of the state. This state, also, has a summer conservation camp for boys and girls who have done outstanding work with conservation projects.

Massachusetts has done some special work with rat and other rodent control projects in the 4-H program.

Oregon, Washington, Utah, and New Mexico, in cooperation with the state game agency, have sponsored game bird rearing projects.

Tennessee and South Carolina have emphasized the farm fish pond project as a part of 4-H work, usually in cooperation with the Soil Conservation Service, the Tennessee Valley Authority and the state game department. Several other states voluntarily indicated that they were well aware of the need for more wildlife conservation activity and hoped that they would be able to establish a program soon.

Although no conclusion can be definitely formulated, it seems practical to conclude that youth can best be educated to the conservation concept by the cooperative efforts of the state fish and game department and the state education department, while the Agricultural Extension Service can be instrumental in extending these teachings to the rural youth in a program of simple, dynamic projects and activities. This seems true because a solid conservation background can be
laid down before the boys and girls are old enough to become members of 4-H Clubs.

Youth Education Sponsored by State Wildlife Agencies.

With the information obtained from questionnaires, letters, and annual reports, it is difficult to evaluate the educational programs of the state fish and game departments on the basis of intensity. There is a tendency by administrators and publicity departments to overemphasize the actual work being done. These sources of information are not entirely to blame, however, because there is no accurate method devised to test the youth of various states for a comparison of their knowledge of the conservation problem; even then it would be difficult to say which cooperator, since there are usually several, should receive the greatest credit. A standard test for conservation understanding would seem a worthy project for consideration. Through its use each state would have an index for comparing their own education effort.

There are some states, of course, in which the fish and game agency is conducting outstanding educational programs for boys and girls. An effort to point out the salient features of the ten outstanding state programs will be made in the following paragraphs. The states will be treated alphabetically, as it appears unwise to segregate them by intensiveness or relative value.

The Illinois Natural History Survey Division, a branch of the Board of Natural Resources and Conservation, has cooperated with the
State Board of Education and the Agricultural Extension Service, to put into operation a youth education program that begins by training the public school teachers. This training program prepares the teacher so that he is able to develop conservation education as an integral part of the pupils' course of study. With an annual expenditure of $40,000, this teacher-training service utilizes the efforts of at least ten persons in the various phases of conservation education.

The Iowa State Conservation Commission has a two-fold conservation program established. The first objective is to "assist in the broad concept of conservation", the second to "secure a general understanding of and sympathy with the objectives and programs of the State Conservation Commission...". The Conservation Commission's youth education program is difficult to appraise because it is tied up so closely with the adult program; however, there is a close cooperation with the Wildlife Extension Specialist office of the State Extension Service which has resulted in some very appealing bulletins dealing with the state's wildlife resource. The Commission personnel also address many school assemblies and classes, 4-H Clubs, Boy Scouts, and other juvenile clubs. "Iowa Conservationist", the monthly bulletin of the conservation department, goes out free to accredited schools, libraries, school superintendents (for distribution to rural schools) and many other places. There is also a noteworthy motion picture library for use in public education. The greatest effort to educate Iowa's youth in wildlife conservation is being made, according to the information available, by the state college and its extension agency in close
cooperation with the state conservation commission and the public school authorities, as well as other federal and private agencies.

Kentucky has what appears to be a very dynamic and successful youth program underway. It was organized in 1915 as a separate section of the Kentucky Division of Game and Fish. This section is named the Junior Conservation Organization, and requires the full-time services of five employees. It operates on an annual expenditure of about $30,000. The Junior Conservation Organization has already gone into more than 105 Kentucky schools and has a membership of between 10,000 and 15,000 members. A 275-page Teachers Manual (12) has been assembled which provides instructors with a teaching guide for each grade from first to twelfth. Strong cooperation between public and private agencies and organizations is noticeable, particularly between the Department of Agriculture of the University of Kentucky, the League of Kentucky Sportsmen (comprising Game and Fish Clubs throughout the State), the State Department of Education, and the Division of Game and Fish.

Many pages would be required to go fully into the activities of Kentucky's program of conservation education. Perhaps, it would be wise to do so, but instead, let it suffice that any person interested in program organization acquire the large assemblage of Kentucky data by writing James J. Gilpin, Superintendent of Conservation Education, Division of Game and Fish, Frankfort, Kentucky.

The pattern of Kentucky's Junior Organization includes the following:
1. Integration of conservation education into regular school program.

2. A 12-point program which provides the club members with a particular monthly activity.

3. Membership cards and buttons.

4. Club pictures and stories published in the monthly official publication of the Division of Game and Fish.

5. Active projects such as farm fish ponds, quail projects, and others.


7. Summer camps.

8. Projects and activities for 4-H clubs, Boy and Girl Scouts, Future Farmers, and others.

Michigan's conservation education program is in its tenth year. This is another state which has come to the realization that wildlife conservation is just a part of natural resource conservation, and therefore, it has adopted a program that integrates all phases into a central plan. Michigan has gone deeply into youth training in several ways. Some of the most important are:

1. Training schools and institutes for aiding the teacher-training institutions of the state.

2. An intensive 4-H conservation education program for the more than 10,000 4-H Club boys working on conservation projects.

3. Close cooperation with the state college of agriculture by paying the salary of a Farm Game Extension Specialist who coordinates wildlife resource education with the agricultural practices of the state.

4. Extremely forceful folders relating to management practices (27).
5. A unique school camp program (26:21).

6. Teacher Guides and excellent bulletins.

7. Three persons assigned by the Department of Conservation to work exclusively with the teacher-training institutions of the state.

8. A good motion picture and slide library.

About $203,000 is expended for conservation education annually and six persons are delegated with the responsibility of extending the public understanding of natural resource conservation. Again, it is recommended to anyone contemplating a similar organization, that a careful study be made of Michigan's program.

Missouri has a decidedly well organized conservation education program. With seven persons assigned by the Conservation Commission to strengthen and extend the public understanding, the annual outlay of $38,700 compares with expenditures by other outstanding states.

The aims and purposes of their program are set forth in "fourteen points" (19:65-67):

1. To develop a popular understanding of natural resources.

2. To create geographical habits of thinking.

3. To sensitize the individual to evidences of resource waste.

4. To correct the belief that resources are inexhaustible.

5. To promote the idea of trusteeship instead of ownership.

6. To dispel the notion that science is a substitute for resources.

7. To explode the idea that foreign trade can compensate for exhausted resources.
8. To teach an appreciation of alternative land uses.
9. To create a new evaluation of ownership.
10. To build a new social philosophy of rights.
11. To evolve and employ a new biological premise in education and social reward.
12. To obtain better laws and regulations.
13. To develop new customs and practices.
14. To cultivate a new community ambition.

There is a close tie-up with the teachers and schools of the state and intensive instruction, both through individual contacts and by teachers' manuals (18).

The Missouri Nature Knights is the official organization for youth conservation training. The work completed by these clubs in 1944 is remarkable (19:68-71). They are sponsored, in most cases, by the public school; moreover, active cooperation is maintained by the Education Section with other youth organizations, such as 4-H Clubs, Future Farmers, Boy and Girl Scouts, and others. Missouri appears to rank among the highest in its youth program.

An excellent group of student manuals and teachers' guides enable those Missouri instructors who have had little opportunity to acquaint themselves with conservation problems, to work the interesting phases into their classes. The seven persons employed by the Section assist them and also work closely with the State Board of Education and the various teacher-training institutions.

New York can be placed among the outstanding states because of
their use of the Cornell Rural School Leaflets. Begun nearly fifty years ago, this program has done more to help the youth of New York and the surrounding states in outdoor problems than any other similar medium of education so far attempted by that state. Each Cornell Rural School Leaflet has gone out to as many as 250,000 city and rural children, but is now limited, because of inadequate funds, to 90,000. Over ninety editions of these bulletins have been sent from the State College of Agriculture. The American Nature Association has been a valuable cooperator to the series. To most persons interested in conservation education, these Leaflets are well known. The influence of these works upon the communities of New York is indicated by an inquiry conducted by the editors of the leaflets (22:37). It was found that conservation studies in New York, even though they are not required by law, formed a much larger part of elementary and secondary courses prior to 1939 than in other states. The New York State Conservation Department has recognized the value of these bulletins, and their Division of Conservation Education, in cooperation with the New York State College, has recently published what well may be a classic in conservation education. It is entitled, "The Story of Conservation in New York" (30) as another in the Cornell Rural School Leaflet series. The New York Conservation Department had one full-time employee and six part-time workers in 1947 concerned with youth conservation education. About $32,500 annually is used to publish a magazine and other information, maintain a motion picture service, conduct radio programs, and prepare exhibits to extend the public conservation concept.
Ohio maintains a noteworthy youth program in conservation education by encouraging a strong teacher-training program. With the recent establishment of a Wildlife Conservation Extension Service Section within the State Division of Conservation, an effort is made to acquaint the schools, youth organizations, and adult groups with the need for wildlife conservation. It is too early to evaluate this specific program, but previous education work through Conservation Laboratories for teachers, a good monthly bulletin, summer camps for 4-H and Future Farmers clubs, and other public relations methods, evidences good work begun. The Division of Conservation is expending $78,000 annually to improve public understanding.

The Tennessee Conservation Department maintains the Conservation Education Service. This service has undertaken the task of "making conservation a living thing" to each of the six million school children and seventeen thousand school teachers in the state.

"Since the Educational Service was organized two years ago (1937?) conservation has been recognized by the State's educational authorities as an essential part of the curriculum.

"In two years, workers of the Educational Service have met with and discussed the needs of conservation with one hundred groups of teachers; they have contacted directly or indirectly every teacher in the State; they have visited six hundred schools, talked to 150,000 pupils and lectured to more than six million people."*

Tennessee law made it mandatory that forestry conservation be taught in the public schools of the state. Accordingly, a forestry

textbook was adopted and forestry was taught in the fifth grade for one-half of the school year. As other states with similar laws had found, Tennessee learned that most of its teachers were unable to teach forestry or, since 1935, wildlife conservation, from lack of understanding of these subjects, and it was an unwelcome burden to most of them. Teacher-training is thus the paramount problem and it occupies much of the time of the six persons in the Service. Eight teacher-training institutions have adopted conservation courses which stress method rather than content in their teaching thus giving the teachers the "how" rather than the "why", thereby providing them with a way to teach it which they lacked before. Over one thousand teachers were enrolled at one time. A conservation summer school in which academic credit is given has been inaugurated in cooperation with the University of Tennessee and the Tennessee Valley Authority.

The public school program encourages practical projects for the pupils; and a system of demonstration schools were established, to which the surrounding schools could come in order to see the work that has been accomplished. Several conservation bulletins and teachers' guide books have been composed by the Department of Education to fit the needs of teachers of all grade levels. Work with the Boy Scouts, 4-H clubs, and other youth organizations has been begun. The annual budget for this service by the Tennessee Department of Conservation is approximately $17,000.

Wisconsin also maintains a noteworthy conservation education program with the primary objective of extending the teacher's knowledge.
of conservation problems and methods for teaching them. They retain the services of a Supervisor of Conservation Education and allot $25,000 for educational purposes each year. A section of the Wisconsin Conservation Department's official publication, "Wisconsin Conservation Bulletin", is devoted to providing the teachers of the state with useful information to aid them in integrating natural resource conservation concepts into the daily course work. A lively response has been obtained.

The foregoing remarks conclude this section of the study and provide the reader with an understanding of the programs and techniques being used by states doing the most outstanding work. From this appraisal Oregon educators and conservationists have a guide for shaping a program in that state.

Public Education by Private Organizations.

No special effort was made to obtain information concerning the conservation education programs of private organizations, but in the course of this study several programs noteworthy enough to be important to this paper were encountered. These agencies are listed with hesitancy because such a listing is known to be incomplete to the extent of excluding some organizations with good programs.

Science Service, through its publications and its awareness of the problem, has done a great deal to bring conservation facts before its readers. In speeches made by Watson Davis, (23:25), Director of Science Service; and Dr. Frank Thone, (23:22), Editor in Biology,
Science Service, Washington, D. C., there are constructive suggestions for strengthening the educational programs, together with a statement concerning the purposes of Science Service in regard to bettering public conservation understanding.

The National Wildlife Federation has, since 1939, sponsored a strong movement for better youth conservation education, (22,23,24). Its committees have made a sincere effort to determine the need, and in 1942 had developed a booklet series for boys and girls. No information has been available for evaluating its worth; however, it was possible to be present on several occasions when the Oregon Wildlife Federation was attempting to get this material into the public schools of the state. The procedure, at that time, was to have sportsmen's clubs of the various Oregon localities buy the booklets and present them to their individual local schools. The plan was not a success, seemingly because of a lack of interest and also because of the expense involved. The opinion commonly voiced was that the expense of such an educational program should be the responsibility of the state educational systems and other state agencies.

The conservation program integrated into the Boy and Girl Scout organizations is well known. The Boy Scout Handbook devotes considerable space to this subject; yet the author, from experience as a Scout Master, believes that the handling of this topic is adequate only if the Scout Masters are interested in the subject, and informed of the facts.

The popular outdoor magazines have done some good public
education work in the past, and in recent months a noticeable improvement is recognized. Even though the art and satisfaction of killing is still predominant in the publications, the editors and their staff members are considerably more "conservation minded". Because of this change of viewpoint, more professional wildlife managers and other scientifically trained persons are writing valuable articles for these publications. Through the active interest of the Outdoor Writers' Association, and better choice by the editors, the conservation theme is running through a larger number of the outdoor stories currently published.

Information that, in the past, would have been considered too technical for the average reading public, is now finding wide public approval, if one considers the "Readers Comment" section of these outdoor publications as acceptable verification. 'Sports Afield', a current outdoor magazine, by retaining a "Washington Correspondent" is providing a great deal of interesting and usable information relating to wildlife legislation, and the activities of various conservation agencies.

Some books, written by trained conservationists, have done much to improve the public understanding of the wildlife problem. Such books as Gabrielson's "Wildlife Conservation"; Ross Stevens' "Talk About Wildlife"; "Conservation In The United States" co-authored by Gustafson, Reiss and Hamilton; and Leopold's "Game Management" have all found wide use.

There are, of course, many other organizations and individuals
that are aiding in improving the public conservation concept. A very incomplete list would include the following:

The Isaac Walton League
The Audubon Societies and other ornithological societies and associations.
Various mammal and fish societies.
The Wildlife Management Institute who sponsor the annual North American Wildlife Conferences.
The Associated Sportsmen groups of several states.
The American Nature Association
Several cartridge and ammunition manufacturers.
Several fishing and hunting equipment manufacturers.
The California Conservation Council.

Research in Relation to Public Education.

Dr. Frank Thone, Editor of Biology, "Science Service", (23:23), points out the need for research by saying that research provides the broad foundation from which, through publication and application, the conservation needs can be met. He also expresses the opinion that conservation practices must be put into operation immediately, even if basic research has not discovered an answer to every problem. Even though research will improve techniques and methods, it is imperative that those already valuable be put to full use. "Even an inferior pump may save a ship from sinking to the bottom".

In Michael Hudoba's column in "Sports Afield", Outdoor Magazine, (13:114), the need for larger appropriation of funds for publishing the wealth of research material is expressed. Hudoba states that:

"...only one percent of each dollar spent for research by the United States Fish and Wildlife Service is authorized for printing. It is inconsistent to a progressive program that new developments, techniques, and information on fish and game resources developed by the research staffs
must be filed indefinitely, awaiting a schedule for printing due to lack of an adequate proportion of printing funds."

**Fish and Game Authorities See Need for More Conservation Education in Public Schools.**

On question 9 of Questionnaire No. 2 (see pages 31-32) there was wide agreement by the wildlife administrators of the nation. The question was, "Do you believe the public schools of your state should include more conservation and wildlife education in their courses of study?" The forty-three states which replied answered "Yes", in all but one instance; South Carolina indicated that the above topics were being handled adequately. This seems strange in view of the fact that there is not an organized youth program in conservation either in the State Department of Game and Fish, or in the State Agricultural program in South Carolina.

In reply to the second part of question 9, "Do the public schools include any of this training at present?" the forty-three administrators replied as follows: sixteen "yes"; ten "some"; eight "little"; and nine "no". Thus in sixty-three percent of the cases the wildlife administrators indicate that wildlife is deficiently handled.

When asked if it was adequately taught, forty-one were willing to reply. Thirty-six said "No", (88%); three said "In some cases", (7%); and two said "Yes", (5%).
From the above information it is obvious that wildlife administrators are in general accord that much needs to be done to better the youth conservation education program on a national scale. Just how much the state wildlife agencies are doing from a financial standpoint is quite enlightening as can be seen in the following figures.

Appropriations from State Fish and Game Commission Budgets for Conservation Education.

In reply to the second question of Questionnaire No. 2, "How much of your total budget did you allot for wildlife education, including extension activities, this fiscal year?" (1947), forty-three states provided figures.* These returns are listed in table No. V, page 57.

The five state fish and game departments from which a reply could not be obtained, or which were unable to supply a figure were:

<table>
<thead>
<tr>
<th>State</th>
<th>Total Annual Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas</td>
<td>$250,000</td>
</tr>
<tr>
<td>Maine</td>
<td>610,000</td>
</tr>
<tr>
<td>Oregon</td>
<td>1,000,000</td>
</tr>
<tr>
<td>South Dakota</td>
<td>2,156,000</td>
</tr>
<tr>
<td>Washington</td>
<td>1,225,000</td>
</tr>
</tbody>
</table>

The income of these forty-three fish and game departments other than the five above, totaled $33,296,733 and of this amount $1,447,660 were budgeted by them for public wildlife education and extension. This means that 89.6 percent of the state wildlife agencies of the

* An example of Questionnaire No. 2 may be found on pages 31-32.
### TABLE NO. V

**APPORTIONMENT OF FUNDS BY STATE WILDLIFE AGENCIES FOR WILDLIFE EDUCATION (1947)**

<table>
<thead>
<tr>
<th>State</th>
<th>Total annual operating budget</th>
<th>Allotment for education</th>
<th>Percent of total budget for education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>$500,000</td>
<td>$50,000</td>
<td>10.0%</td>
</tr>
<tr>
<td>Arizona</td>
<td>250,000</td>
<td>1,350</td>
<td>.5</td>
</tr>
<tr>
<td>Arkansas</td>
<td>339,000</td>
<td>10,000</td>
<td>3.0</td>
</tr>
<tr>
<td>California</td>
<td>3,587,260</td>
<td>40,000</td>
<td>1.0</td>
</tr>
<tr>
<td>Colorado</td>
<td>600,000</td>
<td>25,000</td>
<td>4.0</td>
</tr>
<tr>
<td>Connecticut</td>
<td>1,500,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>Delaware</td>
<td>55,000</td>
<td>17,000</td>
<td>31.0</td>
</tr>
<tr>
<td>Florida</td>
<td>750,000</td>
<td>40,000</td>
<td>5.0</td>
</tr>
<tr>
<td>Georgia</td>
<td>294,000</td>
<td>10,000</td>
<td>3.5</td>
</tr>
<tr>
<td>Idaho</td>
<td>1,000,000</td>
<td>5,000</td>
<td>.5</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,212,000</td>
<td>40,000</td>
<td>3.0</td>
</tr>
<tr>
<td>Indiana</td>
<td>876,000</td>
<td>20,000</td>
<td>2.0</td>
</tr>
<tr>
<td>Iowa</td>
<td>929,000</td>
<td>38,000</td>
<td>4.0</td>
</tr>
<tr>
<td>Kansas</td>
<td>250,000</td>
<td>no reply</td>
<td>-</td>
</tr>
<tr>
<td>Kentucky</td>
<td>600,000</td>
<td>30,000</td>
<td>5.0</td>
</tr>
<tr>
<td>Louisiana</td>
<td>980,000</td>
<td>12,000</td>
<td>4.0</td>
</tr>
<tr>
<td>Maine</td>
<td>810,000</td>
<td>&quot;very low&quot;</td>
<td>-</td>
</tr>
<tr>
<td>Maryland</td>
<td>313,000</td>
<td>5,000</td>
<td>1.0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>516,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>Michigan</td>
<td>2,489,561</td>
<td>203,000</td>
<td>8.0</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1,500,000</td>
<td>20,000</td>
<td>1.0</td>
</tr>
<tr>
<td>Mississippi</td>
<td>360,000</td>
<td>10,000</td>
<td>3.0</td>
</tr>
<tr>
<td>Missouri</td>
<td>672,000</td>
<td>38,700</td>
<td>6.0</td>
</tr>
<tr>
<td>Montana</td>
<td>400,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>Nebraska</td>
<td>672,000</td>
<td>38,000</td>
<td>6.0</td>
</tr>
<tr>
<td>Nevada</td>
<td>66,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>450,000</td>
<td>15,000</td>
<td>3.0</td>
</tr>
<tr>
<td>New Jersey</td>
<td>530,000</td>
<td>5,200</td>
<td>1.0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>1,400,000</td>
<td>10,000</td>
<td>2.5</td>
</tr>
<tr>
<td>New York</td>
<td>1,300,000</td>
<td>32,500</td>
<td>2.5</td>
</tr>
<tr>
<td>North Carolina</td>
<td>714,500</td>
<td>22,450</td>
<td>3.0</td>
</tr>
<tr>
<td>North Dakota</td>
<td>219,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,275,000</td>
<td>70,000</td>
<td>5.0</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1,400,000</td>
<td>17,000</td>
<td>1.4</td>
</tr>
<tr>
<td>Oregon</td>
<td>1,000,000</td>
<td>&quot;?&quot;</td>
<td>?</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>2,335,210</td>
<td>136,900</td>
<td>6.0</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>96,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>South Carolina</td>
<td>250,000</td>
<td>none</td>
<td>-</td>
</tr>
<tr>
<td>South Dakota</td>
<td>2,156,000</td>
<td>no reply</td>
<td>-</td>
</tr>
<tr>
<td>Tennessee</td>
<td>350,000</td>
<td>5,000</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Table No. V. Apportionment of Funds by State Wildlife Agencies for Wildlife Education (1947) (continued).

<table>
<thead>
<tr>
<th>State</th>
<th>Total annual operating budget</th>
<th>Allotment for education budget</th>
<th>Percent of total budget for education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>$1,000,000</td>
<td>$35,000</td>
<td>3.5%</td>
</tr>
<tr>
<td>Utah</td>
<td>800,000</td>
<td>10,000</td>
<td>1.0</td>
</tr>
<tr>
<td>Vermont</td>
<td>220,000</td>
<td>4,400</td>
<td>2.0</td>
</tr>
<tr>
<td>Virginia</td>
<td>536,000</td>
<td>32,470</td>
<td>6.0</td>
</tr>
<tr>
<td>Washington</td>
<td>1,225,000</td>
<td>no reply</td>
<td>-</td>
</tr>
<tr>
<td>West Virginia</td>
<td>535,000</td>
<td>34,460</td>
<td>6.5</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1,711,242</td>
<td>25,000</td>
<td>1.5</td>
</tr>
<tr>
<td>Wyoming</td>
<td>700,000</td>
<td>17,000</td>
<td>2.5</td>
</tr>
</tbody>
</table>
nation allocate 4.3 percent of their total operation budget for educational purposes.

How much do the states with large educational programs allocate in comparison with the national average? If this average of 4.3 percent is compared with the allotments provided by the wildlife agencies with broad, intensive educational programs, the results are found to be as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>10%</td>
</tr>
<tr>
<td>Illinois</td>
<td>3%</td>
</tr>
<tr>
<td>Iowa</td>
<td>4%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>5%</td>
</tr>
<tr>
<td>Michigan</td>
<td>8%</td>
</tr>
<tr>
<td>Missouri</td>
<td>6%</td>
</tr>
<tr>
<td>New York</td>
<td>2.5%</td>
</tr>
<tr>
<td>Ohio</td>
<td>5%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1.5%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>6%</td>
</tr>
</tbody>
</table>

Total $51\% \div 10 = 5.1\%$

Thus from an average of allotments made by the ten states selected for their extensive programs it is found that 5.1 percent is budgeted as against 4.3 percent budgeted by the forty-three states. This analysis offers evidence that good educational programs are not entirely the result of large monetary expenditures, but more the result of well organized and well projected efforts.

Man Hours Devoted to Organized Public Conservation Education.

Because some state wildlife administrators believe that considerable conservation work was being done by employees not specifically assigned to education, an effort was made to obtain the number of man hours each fish and game department was devoting to wildlife education. Thirty-seven state wildlife administrators provided the necessary
information for evaluation of this question.

The total man hours expended by the thirty-seven state departments for their operation is 17,934,900 annually. Of this amount 832,800 man hours were utilized in wildlife education. Thus it is determined that 4.5 percent of the total man hours of the thirty-seven states is used this way. This does not differ, significantly, from the monetary allotment of 4.3 percent determined in the previous section, and the conclusion is reached that the national average for wildlife education by state wildlife agencies is less than five percent of their total annual income. Whether this is an adequate expenditure of time and money can be determined only by the individual circumstances of each state, since total human population, the ratio of urban population to rural population, the type of terrain and the agriculture, as well as the principal species of game animals present always circumscribe both the intensity and the program necessary for best results. In no state can it be said, however, that there is a general overabundance of game birds or animals. The need for good conservation programs to improve public understanding is essential to the protection and perpetuation of the wildlife heritage.

Education and Publicity Personnel Employed by Fish and Game Departments.

The information for this section was obtained from replies from the fish and game authorities of thirty-seven states. Two percent of all state fish and game department employees of these thirty-seven states are serving in education and publicity. There are 7,571
employees retained by these states, of which 141 are in the publicity and education branch. The total of 141 includes a small, but unknown, number of persons employed as editors and assemblers of department publications and, possibly, a very few clerical and stenographic personnel.

In those states which maintain a "Department of Conservation", or "Division of Natural Resources", it is usually found that the publicity and education is handled by the larger general department rather than their subordinate branches. For example, Michigan has a Department of Conservation with a Section of Education, the latter being maintained through contributions of money from the subordinate Division of Game, Division of Forestry, Division of Water Resources, and so forth. When such an organization plan is encountered it is usual that all natural resources are treated as an entire unit with wildlife included as a part of the whole. There is one possible danger in such a plan: that domination by one or more of the other divisions may leave the wildlife resource inadequately treated. Whether such a condition exists is not known, for it would require more intensive and individual research than was possible.

The Monthly Bulletin as an Educational Medium.

The fact was recognized that several current monthly publications, emanating from state conservation or fish and game departments, are providing a valuable medium for getting information to the public. It was not known how many states were publishing such periodicals or
### TABLE NO. VI

**EDUCATION AND PUBLICITY PERSONNEL EMPLOYED BY FISH AND GAME DEPARTMENTS (1947)**

<table>
<thead>
<tr>
<th>State</th>
<th>Personnel employed</th>
<th>State</th>
<th>Personnel employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>2</td>
<td>Nebraska</td>
<td>2</td>
</tr>
<tr>
<td>Arizona</td>
<td>$\frac{3}{4}$</td>
<td>Nevada</td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1</td>
<td>New Hampshire</td>
<td>1</td>
</tr>
<tr>
<td>California</td>
<td>2</td>
<td>New Jersey</td>
<td>1</td>
</tr>
<tr>
<td>Colorado</td>
<td>3</td>
<td>New Mexico</td>
<td>None</td>
</tr>
<tr>
<td>Connecticut</td>
<td>None</td>
<td>New York</td>
<td>1 plus</td>
</tr>
<tr>
<td>Delaware</td>
<td>No reply</td>
<td>North Carolina</td>
<td>3 plus</td>
</tr>
<tr>
<td>Florida</td>
<td>2</td>
<td>North Dakota</td>
<td>$\frac{3}{2}$</td>
</tr>
<tr>
<td>Georgia</td>
<td>4</td>
<td>Ohio</td>
<td>5</td>
</tr>
<tr>
<td>Idaho</td>
<td>1</td>
<td>Oklahoma</td>
<td>2</td>
</tr>
<tr>
<td>Illinois</td>
<td>10</td>
<td>Oregon</td>
<td>None</td>
</tr>
<tr>
<td>Indiana</td>
<td>4</td>
<td>Pennsylvania</td>
<td>8</td>
</tr>
<tr>
<td>Iowa</td>
<td>3</td>
<td>Rhode Island</td>
<td>None</td>
</tr>
<tr>
<td>Kansas</td>
<td>No reply</td>
<td>South Carolina</td>
<td>None</td>
</tr>
<tr>
<td>Kentucky</td>
<td>5</td>
<td>South Dakota</td>
<td>No reply</td>
</tr>
<tr>
<td>Louisiana</td>
<td>9</td>
<td>Tennessee</td>
<td>1 plus</td>
</tr>
<tr>
<td>Maine</td>
<td>None</td>
<td>Texas</td>
<td>28</td>
</tr>
<tr>
<td>Maryland</td>
<td>1</td>
<td>Utah</td>
<td>1</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>12</td>
<td>Vermont</td>
<td>None</td>
</tr>
<tr>
<td>Michigan</td>
<td>6</td>
<td>Virginia</td>
<td>6</td>
</tr>
<tr>
<td>Minnesota</td>
<td>10</td>
<td>Washington</td>
<td>No reply</td>
</tr>
<tr>
<td>Mississippi</td>
<td>2</td>
<td>West Virginia</td>
<td>9</td>
</tr>
<tr>
<td>Missouri</td>
<td>7</td>
<td>Wisconsin</td>
<td>3?</td>
</tr>
<tr>
<td>Montana</td>
<td>None</td>
<td>Wyoming</td>
<td>1</td>
</tr>
</tbody>
</table>
what the content of them consisted of. A part of Questionnaire No. 2
provided this information, as well as the number of persons on their
mailing lists. An effort was also made to obtain these periodicals.

Forty-three state fish and game agencies answered the question-
naire and sixteen sent copies of their periodical. Those who did not
reply to the questionnaire are believed not to publish monthly
periodicals. (See Table No. VII, next page.)

The following is a summary of this information:

<table>
<thead>
<tr>
<th>Current Monthly Circulation</th>
<th>Number of States</th>
</tr>
</thead>
<tbody>
<tr>
<td>No publication...............</td>
<td>18</td>
</tr>
<tr>
<td>5,000 or less..............</td>
<td>9</td>
</tr>
<tr>
<td>6,000 to 10,000............</td>
<td>5</td>
</tr>
<tr>
<td>11,000 to 25,000...........</td>
<td>9</td>
</tr>
<tr>
<td>26,000 or more...............</td>
<td>7</td>
</tr>
</tbody>
</table>

There is a total of 549,300 copies of these bulletins mailed
each month to their readers (1947). This would mean that one out
of every seventy-five families in the United States receives a copy
of their state fish and game department's official periodical. This
is rather a facetious remark because there are large blocks of the
nation whose people receive no such publications.

There are 190,000 copies going out to the people of Illinois,
Indiana, and Ohio whose combined family population is 4,798,940 per-
sons. This means that one out of twenty-five families receives a
copy. No other section of the nation receives more than that.
# TABLE NO. VII
(Worksheet No. 3)

## Financial and Labor Expenditures by State Fish and Game Agencies for Public Education in 1947

<table>
<thead>
<tr>
<th>State</th>
<th>Annual operating budget</th>
<th>Annual allotment for public education</th>
<th>Per-cent for public education</th>
<th>All employees of agency assigned to public education</th>
<th>Total man-hours of department</th>
<th>Public relations section from all nat'l. resource agencies</th>
<th>Provide current publication: (No. of each issue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>$500,000</td>
<td>$50,000</td>
<td>10.0%</td>
<td>90</td>
<td>2</td>
<td>207,000</td>
<td>None</td>
</tr>
<tr>
<td>Arizona</td>
<td>250,000</td>
<td>1,350</td>
<td>5</td>
<td>60</td>
<td>8</td>
<td>138,000</td>
<td>None</td>
</tr>
<tr>
<td>Arkansas</td>
<td>339,000</td>
<td>10,000</td>
<td>3.0</td>
<td>110</td>
<td>1</td>
<td>253,000</td>
<td>None</td>
</tr>
<tr>
<td>California</td>
<td>3,587,260</td>
<td>40,000</td>
<td>1.0</td>
<td>500</td>
<td>2</td>
<td>1,150,000</td>
<td>None</td>
</tr>
<tr>
<td>Colorado</td>
<td>600,000</td>
<td>25,000</td>
<td>4.0</td>
<td>200</td>
<td>3</td>
<td>460,000</td>
<td>None</td>
</tr>
<tr>
<td>Connecticut</td>
<td>150,000</td>
<td>None</td>
<td>0</td>
<td>50</td>
<td>None</td>
<td>115,000</td>
<td>None</td>
</tr>
<tr>
<td>Delaware</td>
<td>55,000</td>
<td>17,000</td>
<td>31.0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Florida</td>
<td>750,000</td>
<td>40,000</td>
<td>5.0</td>
<td>2</td>
<td>2</td>
<td>14,600</td>
<td>None</td>
</tr>
<tr>
<td>Georgia</td>
<td>294,000</td>
<td>10,000</td>
<td>3.5</td>
<td>107</td>
<td>4</td>
<td>216,100</td>
<td>None</td>
</tr>
<tr>
<td>Idaho</td>
<td>1,000,000</td>
<td>5,000</td>
<td>0.5</td>
<td>100</td>
<td>1</td>
<td>230,000</td>
<td>None</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,242,000</td>
<td>40,000</td>
<td>3.0</td>
<td>200</td>
<td>10</td>
<td>460,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Indiana</td>
<td>876,000</td>
<td>20,000</td>
<td>2.0</td>
<td>3</td>
<td>4</td>
<td>None</td>
<td>70,000</td>
</tr>
<tr>
<td>Iowa</td>
<td>929,000</td>
<td>38,000</td>
<td>4.0</td>
<td>3</td>
<td>None</td>
<td>Public relations section from all nat'l. resource agencies. 28,000</td>
<td></td>
</tr>
<tr>
<td>Kansas</td>
<td>Refused to reply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>15,000</td>
</tr>
<tr>
<td>Kentucky</td>
<td>600,000</td>
<td>30,000</td>
<td>5.0</td>
<td>200</td>
<td>5</td>
<td>460,000</td>
<td>None</td>
</tr>
<tr>
<td>Louisiana</td>
<td>980,000</td>
<td>42,000</td>
<td>4.0</td>
<td>255</td>
<td>9</td>
<td>586,500</td>
<td>None</td>
</tr>
</tbody>
</table>
Table No. VII, Worksheet No. 3 (continued)

<table>
<thead>
<tr>
<th>State</th>
<th>Operating budget</th>
<th>Annual allotment for public education</th>
<th>Percent of total</th>
<th>All employees of public education</th>
<th>State budget for public education</th>
<th>Total man-hours for public education</th>
<th>Total percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maine</td>
<td>$93,000</td>
<td>$5,000</td>
<td>0.56</td>
<td>0</td>
<td>131,600</td>
<td>1,400</td>
<td>0.75</td>
</tr>
<tr>
<td>Maryland</td>
<td>3,43,000</td>
<td>5,000</td>
<td>1.0</td>
<td>None</td>
<td>27,600</td>
<td>9,000</td>
<td>None</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>516,000</td>
<td>None</td>
<td>0</td>
<td>12</td>
<td>None</td>
<td>7,000</td>
<td>None</td>
</tr>
<tr>
<td>Michigan</td>
<td>2,489,561</td>
<td>203,000</td>
<td>8.0</td>
<td>1,200</td>
<td>2,760,000</td>
<td>500,000</td>
<td>19,000</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1,500,000</td>
<td>10,000</td>
<td>3.0</td>
<td>130</td>
<td>920,000</td>
<td>6,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Missouri</td>
<td>672,000</td>
<td>153,000</td>
<td>6.0</td>
<td>351,900</td>
<td>16,100</td>
<td>50,000</td>
<td>None</td>
</tr>
<tr>
<td>Montana</td>
<td>4,000,000</td>
<td>107,000</td>
<td>0</td>
<td>138,000</td>
<td>14,500</td>
<td>20,000</td>
<td>None</td>
</tr>
<tr>
<td>Nebraska</td>
<td>672,000</td>
<td>107,000</td>
<td>0</td>
<td>138,000</td>
<td>14,500</td>
<td>20,000</td>
<td>None</td>
</tr>
<tr>
<td>Nevada</td>
<td>66,000</td>
<td>None</td>
<td>0</td>
<td>21</td>
<td>50,000</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>750,000</td>
<td>15,000</td>
<td>3.0</td>
<td>181,000</td>
<td>2,300</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>New Jersey</td>
<td>550,000</td>
<td>155,000</td>
<td>1.0</td>
<td>356,500</td>
<td>3,950</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>New Mexico</td>
<td>400,000</td>
<td>72,000</td>
<td>2.5</td>
<td>165,600</td>
<td>5,000</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>New York</td>
<td>1,300,000</td>
<td>32,500</td>
<td>2.5</td>
<td>783</td>
<td>1,800,000</td>
<td>18,400</td>
<td>15,200</td>
</tr>
<tr>
<td>North Carolina</td>
<td>714,500</td>
<td>22,450</td>
<td>3.0</td>
<td>160</td>
<td>368,000</td>
<td>6,900</td>
<td>1,500</td>
</tr>
<tr>
<td>North Dakota</td>
<td>219,000</td>
<td>None</td>
<td>0</td>
<td>25</td>
<td>57,500</td>
<td>1,500</td>
<td>1,000</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,275,000</td>
<td>70,000</td>
<td>5.0</td>
<td>300</td>
<td>690,000</td>
<td>11,500</td>
<td>60,000</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>400,000</td>
<td>17,000</td>
<td>4.0</td>
<td>77</td>
<td>177,000</td>
<td>6,900</td>
<td>6,600</td>
</tr>
</tbody>
</table>
Table No. VII, Worksheet No. 3 (Continued)


<table>
<thead>
<tr>
<th>State</th>
<th>Annual operating budget</th>
<th>Annual allotment for public education</th>
<th>Percent of public education</th>
<th>Assigned to public education</th>
<th>Total man-hours of department</th>
<th>Total per-cent (No. of each issue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon</td>
<td>$</td>
<td>No report</td>
<td>250</td>
<td>None</td>
<td>575,000</td>
<td>None 0% 25,000</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>2,335,210</td>
<td>136,900</td>
<td>6.0</td>
<td>241</td>
<td>561,200</td>
<td>18,400 3 4,000</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>96,000</td>
<td>None</td>
<td>0</td>
<td>22</td>
<td>50,600</td>
<td>None 0 None</td>
</tr>
<tr>
<td>South Carolina</td>
<td>250,000</td>
<td>None</td>
<td>0</td>
<td>100</td>
<td>230,000</td>
<td>None 0 None</td>
</tr>
<tr>
<td>South Dakota</td>
<td></td>
<td>No reply</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- None 1 None</td>
</tr>
<tr>
<td>Tennessee</td>
<td>350,000</td>
<td>5,000</td>
<td>1.5</td>
<td>100</td>
<td>230,000</td>
<td>3,700 2 4,000</td>
</tr>
<tr>
<td>Texas</td>
<td>1,000,000</td>
<td>35,000</td>
<td>3.5</td>
<td>248</td>
<td>570,100</td>
<td>66,000 12 10,000</td>
</tr>
<tr>
<td>Utah</td>
<td>800,000</td>
<td>10,000</td>
<td>1.0</td>
<td>1</td>
<td>-</td>
<td>2,300 1 2,500</td>
</tr>
<tr>
<td>Vermont</td>
<td>220,000</td>
<td>4,400</td>
<td>2.0</td>
<td>-</td>
<td>None</td>
<td>Very little 0 None</td>
</tr>
<tr>
<td>Virginia</td>
<td>556,000</td>
<td>32,470</td>
<td>6.0</td>
<td>116</td>
<td>333,500</td>
<td>13,800 4 10,000</td>
</tr>
<tr>
<td>Washington</td>
<td></td>
<td>No reply</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- None 1 None</td>
</tr>
<tr>
<td>West Virginia</td>
<td>535,000</td>
<td>314,600</td>
<td>6.5</td>
<td>116</td>
<td>266,800</td>
<td>20,700 8 4,750</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1,711,202</td>
<td>25,000</td>
<td>1.5</td>
<td>697</td>
<td>1,603,000</td>
<td>6,900 1 35,000</td>
</tr>
<tr>
<td>Wyoming</td>
<td>700,000</td>
<td>17,000</td>
<td>2.5</td>
<td>67</td>
<td>1 plus 1,54,100</td>
<td>4,000 2 4,500</td>
</tr>
</tbody>
</table>
There is a wide difference in the type of material contained in the various periodicals. Several appear to be building political fences by conspicuous advertising of individuals, and telling the sportsmen what they want to hear rather than the true facts of the situation. The true contribution to wildlife conservation is sometimes overlooked or overshadowed. Perhaps too much emphasis is placed on killing game rather than on sustained production. There are, however, some periodicals that are outstanding in their educational value. Among those outstanding may be included Minnesota's "Conservation Volunteer", Oregon's "Game Commission Bulletin", the "Wisconsin Conservation Bulletin", and California's quarterly "California Fish and Game".

**Lack of Wildlife Education in Agricultural Extension Service Programs.**

At present (1947) there are six states in which the state Agricultural Extension Services retain extension specialists in wildlife conservation. Those states are Alabama, Iowa, Michigan, Ohio, Texas, and West Virginia. With the exception of Oklahoma, which had a wildlife specialist between 1936 and 1943, and Illinois, together with the above six states, wildlife conservation education is incidental to other activities of the Extension Service; thus, only sixteen percent of the states are emphasizing wildlife as another crop in the national agricultural program.

Recognizing the general interest for wildlife conservation, the Extension Service and the Bureau of Biological Survey (now the United
States Fish and Wildlife Service) employed a full-time national wildlife specialist in 1936. This position was maintained for four years and then terminated with the resignation of I. T. Bode, National Extension Biologist. It was not until 1946 that the Extension Service and the Fish and Wildlife Service, framed a new cooperative agreement for "cooperative extension work in wildlife and fisheries conservation and restoration". (9)

With the re-establishment of this office, added effort will be made to increase the number of wildlife extension specialists to one in each of the remaining forty-two states. By such action the rural population of the United States will be better acquainted with the wildlife conservation and management problem than ever possible before. For the text of this cooperative agreement see page 79.

**Divided Opinion Concerning State Wildlife Extension Specialists.**

In Questionnaire No. 2, the question was asked, "Do you believe that the State Agricultural Extension Service should include wildlife conservation in their program to the extent of supporting a state wildlife extension specialist?"

Forty-four state wildlife departments replied in the following manner: Thirty-two said "Yes", eleven said "No", and one would not be committed so answered with a question-mark.

Wildlife administrators who did not believe that the extension specialist office should be established in their state indicated so by margin notes or correspondence to the effect that such an office
would only duplicate the efforts of other agencies.

In view of various opinions expressed in previous pages of this treatise, there is a definite need for expanded activity in this field, providing close cooperation is maintained between the land-use and educational agencies. A serious shortage of experienced leaders in all aspects of wildlife conservation and management education is frequently stated by interested organizations as being a very important handicap. The addition of more workers in agricultural circles could certainly augment present efforts by other agencies. Although only twenty-two percent of today’s national population is engaged in agriculture, it is the landowner that retains the greatest responsibility for maintaining and perpetuating the wildlife crop.

Monetary Assistance for Wildlife Extension Specialists.

Since two-thirds of the fish and game departments believed that an Extension Specialist in wildlife work would be an asset to the program, it was thought advisable to find out if the wildlife agencies would be willing to provide monetary assistance for retaining such a person. In reply to the question, "Do you think the State Fish and Game Authority should support a wildlife extension specialist, and if so what percent?", forty-four states replied as follows:

<table>
<thead>
<tr>
<th>Support Level</th>
<th>Number of States</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 will not support.</td>
<td>22</td>
</tr>
<tr>
<td>2 will provide 5% support.</td>
<td>1</td>
</tr>
<tr>
<td>1 will provide 20% support.</td>
<td>7</td>
</tr>
<tr>
<td>2 will provide 25% support.</td>
<td>2</td>
</tr>
<tr>
<td>1 will provide 33% support.</td>
<td>7</td>
</tr>
<tr>
<td>2 will provide 50% support.</td>
<td>2</td>
</tr>
<tr>
<td>1 will provide 100% support.</td>
<td>7</td>
</tr>
<tr>
<td>2 will provide some(?) support.</td>
<td>2</td>
</tr>
<tr>
<td>7 will provide some(?) support.</td>
<td>2</td>
</tr>
</tbody>
</table>

44
Oregon was among the half not willing to provide monetary assistance as of December 1946, and does not think that a wildlife extension specialist is justified. The two states who answered "100 percent" were Michigan and Ohio.

Michigan's Farm Game Specialist job is a cooperative one, the Michigan Department of Conservation paying the salary of the position, and the State College assuming costs of equipment, travel expenses, stenographic services and office space. In Ohio, there is a recently established Wildlife Conservation Extension Service Section within the Ohio Division of Conservation. Although this section, and the five persons connected with it are financed and administered by the Division of Conservation, it will be "correlated to some extent" with the Agricultural Extension Service of the Ohio State University.*

Illinois does not have an organized wildlife extension program in their Extension Service, but there is the Illinois State Natural History Survey Division functioning as a part of the State Board of Natural Resources and Conservation. They report that sixty percent of their wildlife work is devoted to bettering the public understanding in wildlife conservation and management.

The projects around which six states with organized extension programs convey the wildlife education program are summarized on the following page:

* Information obtained from a clipping and letter from A. W. Short, In Charge, Wildlife Conservation Extension Service Section, Ohio Division of Conservation, Columbus, Ohio.
1. Alabama:

- 85% Farm pond development and management.
- 10% Wildlife and fisheries management.
- 2% Prevention of crop damage by wildlife.
- 1% Fur animal production.
- 1% Domestic rabbit production.
- 1% General wildlife conservation.

2. Illinois:

- 35% Wildlife and fisheries management.
- 25% General wildlife conservation education.
- 15% Fur animal production.
- 10% Injurious mammal control.
- 10% Farm pond development and management.
- 5% Prevention of crop damage by wildlife.

3. Iowa:

- 25% Wildlife and fisheries management.
- 20% General wildlife conservation education.
- 15% Injurious mammal control.
- 10% Farm Pond development and management.
- 10% Prevention of crop damage by wildlife.
- 10% Domestic rabbit production.
- 10% Fur animal production.

4. Michigan:

Program centered around the following specialized projects:

1. Game management in land-use.
2. Youth conservation projects.
3. Distribution of general information on game management.
4. Leader training.
5. Publications.

5. Texas:

- 40% Wildlife and fisheries management.
- 25% Farm pond development and management.
- 10% Injurious mammal control.
- 10% Fur animal production.
- 5% Domestic rabbit production.
- 5% Prevention of crop damage by wildlife.
- 5% General wildlife conservation education.
6. West Virginia:

- 50% General Wildlife conservation education.
- 25% Wildlife and fisheries management.
- 25% Farm pond development and management.

**THE APPLICATION OF THIS PROBLEM TO OREGON**

The Oregon Agricultural Extension Service is considering the feasibility of retaining a specialist in Wildlife Management. The administrators of the Extension Service recognized the value of such service.

Nearly all of Oregon's agricultural lands provide habitat for heavy populations of wild animals, both good and bad in the eyes of the landowners. Cooperative understanding by landowners and the hunters is in definite need of adjustment so that both may reap the most from sensible management and harvest.

Diversified farming technique has been the hallmark of the Oregon farmer for many years. There is no reason why wildlife cannot take the position of another diversified crop and provide another substantial return.

This study is expected to show a justification for the expense of a Wildlife Management Specialist in Oregon. In the last section of this paper, specific project outlines are constructed. They indicate the degree of cooperation essential to the best progress, and finally, provide an outlined program for such an office.
Oregon’s Prospects for a Wildlife Extension Specialist.

Oregon’s agricultural program and the inseparable wildlife resource appears ready for the introduction of an intensive educational program.

Wm. A. Schoenfeld, Dean of the School of Agriculture of Oregon State College and Director of Oregon’s Extension Service posed many opportunities for the advancement of wildlife work in Oregon as well as the nation in his address presented at the North American Wildlife Conference in 1936, Schoenfeld;1936. He said,

"...Wildlife is a positive resource of the farming population. To the extent that these other agencies (state, federal and private) interested obtain the cooperation of the farmers of the nation will the ultimate aims of our wildlife program be achieved."

In the following remark Dean Schoenfeld anticipates the value of trained personnel in wildlife and agriculture inter-relationships.

"In Oregon, and I feel sure elsewhere, wildlife and agriculture on public and private lands cannot be divorced. They are inseparable by nature and the problem is to conduct the two in harmony and to their mutual benefit. The problems of agriculture must be fully realized by those administering the wildlife resources if game and fish management are to be effective. Furthermore, if wildlife is to be produced jointly with the various forms of agriculture including forestry, it is important that game production through management be approached in the same spirit and by similar methods as are used with other phases of agriculture. Wildlife management is the production of sustained annual crops of wild creatures in harmony with the major uses of the land...this will require considerable change in the thinking regarding many formerly accepted practices both by farmers and sportsmen.

"Grass and trees are, from the acreage standpoint, still the chief crops on the 61 million acres of Oregon's
territory. Only a little more than 10 percent of this vast area is actually devoted to cultivated farms. Of some 55 million acres of timber and grass land, some 32 million acres or 58 per cent are administered by the federal government. Another two million acres are state and county land and 21 million acres are privately owned.

"Observation has shown that a normal crop of game in no way interferes with the livestock, and likewise the big increase of game in this area shows rather conclusively that the livestock did not interfere with the normal crop of game.

"If we are to create favorable public sentiment it will be necessary first to convince our farmers of the practicability of such a wildlife program and then to show that it will be profitable both from an economic and a social standpoint. Our farmers are perfectly willing to join in any movement for the general good if they are not expected to bear all of the expense and get little if any return.

"Although our leading farmers are becoming conscious of the possibilities in this field, there are many misconceptions that will have to be corrected, both among rural folk and among the sportsmen, if a wild life program is to succeed. A great majority of farmers still do not fully realize what an economic asset a reasonable wild life population is, aside from direct returns. As has been brought out recently, they often fail to recognize the value of wild life in controlling insects, destructive small animals and weeds. They are inclined to lay more stress on the small amount of crop that is damaged at seeding and harvesting than to see the good work that is done in the remaining 1/2 to 1/3 weeks of the year.

"It is our belief, however, that given properly trained leaders, we can show our farmers how to aid in building up a game population so attractive to hunters that the latter will be glad to pay for the privilege of hunting. Then farmers will find their otherwise unharvested lands giving a substantially better return. I can see no conflict between wild life conservation and agriculture, because they can be made integral parts of the same industry."
An early appreciation of an increasingly serious problem is found in these words of Dean Schoenfeld. Also in his words of ten years ago is found the key to obtaining better understanding of the wildlife resource, but the use of that key has not been evident to any appreciable degree. Conditions remain little changed as a wider gap continues to grow between the policies of landowners and sportsmen of the state. The agricultural interests of state and nation are exceedingly concerned over the condition of the natural resources, and strong appeal is voiced for continued and intensified use of educational mediums to extend and develop state-wide plans for 4-H club conservation work (Extension Service; 1946).

At present, Oregon's use of natural resources, including wildlife and fish, still is largely of the exploitive sort which served usefully when the nation was young, but can lead only to want and distress if long continued. The results of past and present exploitation are evident from nearly every window of every home if one is made aware of what to look for.

At present there is no organized program for conservation education in the public schools of the state*; nor is there a concerted organized effort being made by the Oregon State Game Commission, except by the monthly bulletin publication and the usual press release service. The Oregon Agricultural Extension Service has included wildlife conservation education only when this subject was incidental to other programs.

In comparison to the work of other states which are conducting intensive conservation education programs previously mentioned, Oregon ranks low in her program for improving the public understanding of not only wildlife conservation education but all natural resource conservation as well.

It is not as though Oregon were a poor state, and unable to afford the expense of an improved program; in fact the reverse is true since it is richly endowed with natural resources. The wildlife resource alone, from sales of hunting and fishing licenses and other sources, provides an income to the state that places it ninth highest in the nation.

The need for conservation has not become generally evident, and because Oregon is often spoken of as being a frugal state, a need has not justified the expense of initiating a conservation education program in the past. By the very nature of frugality in contrast to the wastefulness of exploitation, it can be anticipated that something will be done about conservation in a not-to-distant future in Oregon.

If justification must be established, the evidence brought out in the previous chapters of this paper would seem to provide adequate reason for three state agencies, the Oregon State Game Commission, the State Department of Education and the State Extension Service, to conduct an intensive appraisal with the possible objective of each allocating funds and personnel to the early expedition of a conservation education project.
In view of the present situation in Oregon, it would appear obligatory that a well chosen Wildlife (or Conservation) Extension Specialist could do much toward improving an increasingly serious situation. It would also seem that the qualifications of such a specialist would include a clear understanding of the subject of all natural resource conservation, present agricultural problems and practices, the sportsman's problems, and above all, an understanding of educational techniques and organization relating to this area of thought for both adult and youth of the state.

A National Program for Wildlife Extension Work.

A summary of the various views taken by administrators, educators, and conservationists through the nation show five definite phases of foremost importance concerning wildlife conservation education.

1. Acquainting state extension directors with the need for wildlife conservation in the programs of each state.

2. A general education program to create better understanding of wildlife requirements and its place in the national agricultural plan.

3. Curtailment of despolage and pollution of the water resource of the nation.

4. Promotion of more agreeable farmer-sportsman relations.
5. Emphasis of wildlife conservation as a crop of the soil and water with definite monetary value as well as its immeasurable esthetic values.

The recent reorganization of a national program shows promise that the above phases will have universal consideration. The text of the cooperative agreement entered into by the United States Fish and Wildlife Service and the United States Extension Service for cooperative extension work in wildlife and fisheries conservation and restoration is copied below. The inclusion of its text in this prospectus is for two reasons: First, to establish this agreement in the literature of natural resource education subjects; and secondly, to place it in a position where Oregon and other states can be guided by its aims and objectives in shaping their own projects.
Cooperative Agreement
between
THE FISH AND WILDLIFE SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
and the
EXTENSION SERVICE,
UNITED STATES DEPARTMENT OF AGRICULTURE,
for
COOPERATIVE EXTENSION WORK IN WILDLIFE AND FISHERIES
CONSERVATION AND RESTORATION.

TITLE: Cooperative Extension work in Wildlife and Fisheries Conservation and Restoration.

DATE EFFECTIVE: _______________________


OBJECT: The establishment of a cooperative extension program in wildlife and fisheries conservation between the Fish and Wildlife Service and the Extension Service will have the following objectives:

1. To develop a better understanding and appreciation of fish and wildlife resources as a permanent part of agriculture and in the development of a national land policy.

2. To stress the importance of fish and wildlife resources in land management policies in both State and Federal activities embracing the following:

   a. Control of predatory animals and injurious rodents (as outlined in Memorandum of Understanding of March 29, 1941).

   b. Farm pond development and management.

   c. Fur animal production, including fur farming.

   d. Domestic rabbit production.

   e. Wildlife and fisheries management.
f. Economic value of fish and wildlife.

g. Wildlife disease control.

h. Prevention of damage by birds to agricultural crops.

i. Status and distribution of fish and wildlife.

j. Game and fish laws as conservation measures.

3. To perfect cooperative arrangements for extension work in wildlife conservation and fish management with state agricultural colleges in order that information may be placed before public agencies and into practice by landowners and operators.

4. To review fish and wildlife projects submitted by the various state extension services, and to study methods most effective in securing their adoption.

5. To prepare for publication information on fish and wildlife subjects and to disseminate this information in a manner best designed to carry out purposes of this agreement.

6. To establish an effective liaison between the Fish and Wildlife Service and the Extension Service on all matters pertaining to fish and wildlife subjects.

ORGANIZATION AND PROCEDURE:

A National Extension Specialist in fish and wildlife conservation and management shall keep in touch with the fish and wildlife extension work in each State, and shall assist the Extension Service, particularly the State specialists assigned to this work, in the best methods of procedure, in full accord and in cooperation with State extension directors. He shall report in writing on the progress of work projects being carried out with Federal and State funds.

The general policies concerned with the development of a fish and wildlife extension program shall be mutually agreed upon between the Directors of the Extension Service and the Fish and Wildlife Service. The Extension Service agrees to pay the salary and
travel expenses of the specialist and provide suitable stenographic services. Should the Fish and Wildlife Service Chicago office be returned to Washington, that Service and the Extension Service will furnish the specialist with office space, supplies and equipment. In the interim, office space will be furnished by the Extension Service.

The Fish and Wildlife Specialist shall be responsible to the Fish and Wildlife Service for all technical information used in the extension program. He shall be responsible to the Extension Service for establishing the proper operational contacts through the state Extension Directors and for the extension methods used in developing the program.

The extension specialist shall submit a report for each period of field travel, one copy to the Fish and Wildlife Service, and one copy to the Extension Service. At the end of each fiscal year, he shall make a full progress report of the cooperative fish and wildlife extension work for submission in the same manner as field reports. From time to time as may be mutually agreed upon, he shall prepare reports on special features as the subject matter may require.

**COOPERATION:**
Fish and Wildlife Service, United States Department of the Interior, and Extension Service, United States Department of Agriculture.

**PUBLICATION:**
Publications issued by the extension specialist in furtherance of this program shall be mutually acceptable to the Fish and Wildlife Service and the Extension Service, and these shall state clearly the cooperative relationship.

**SOURCE OF FUNDS:**
Annual appropriation acts providing for Extension Service in accordance with a budget mutually agreed upon at the beginning of each fiscal year.

**DURATION:**
It is intended that this cooperative agreement shall continue in force until terminated by written notice
given by either Director to the other 90 days in advance of the effective date of the termination.

March 7, 1946
s/ Ira N. Gabrielson
Director, U. S. Fish and Wildlife Service

March 7, 1946
s/ M. L. Wilson
Director of Extension Work

s/ Oscar L. Chapman
Secretary of the Interior

s/ Clinton P. Anderson
Secretary of Agriculture
A Program Outline for Wildlife Extension in Oregon.

In a letter from Mr. Ellis A. Hicks, formerly an Extension Specialist in Wildlife Conservation in Iowa, the objectives of that state program are listed. He includes many suggestions that would be useful in an Oregon program. Those that appear applicable to Oregon are given below.

1. To make the people conscious of the esthetic values contained in our wildlife resources, so that they may appreciate, enjoy and benefit from them.

2. To educate the people so they will properly use our wildlife resources.

3. To develop the practices of wildlife conservation as an integral part of all natural resource conservation.

To attain these objectives many different educational methods are used. A listing of these methods follows with explanations of important uses for each.

1. Radio - One of the most important of its uses is in release of current news items such as open season dates, hunting and fishing tips, state park facilities, seasonal emergencies, and new conservation projects.

2. Newspapers - For thorough coverage the radio and newspapers serve as complements to each other. It is thought greater emphasis can be obtained by widespread use of newspapers, especially with incorporation of pictures with the news item.
3. **Correspondence** - Various inquiries on all phases of wildlife conservation and related subjects are received continuously. Many of the inquiries are requests for control measures to be applied to animals which have become pests or predators. Animal care, feeding, and raising, and purely academic information are often requested. Correspondence serves as an individual means of educating.

4. **Informative literature** - The many publications from federal, state, and private sources serve mostly as correspondence supplements.

5. **Illustrated lecture** - This method is used most advantageous-ly for large groups such as public school assemblies.

6. **Discussion** - This method is successfully employed with medium-sized and small groups such as farm bureau meetings, local 4-H club groups and conservation clubs.

7. **Hikes and tours** - Both of these are used almost exclusively in summer camp work with 4-H clubs. They are most success-ful with young people as a means of field illustration.

8. **Demonstrations** - This method is best for combining the "know how" with the "do". It is especially valuable if arrangements can be made so that as many "pupils" as possible take an active part in the demonstration. Instances of successful demonstrations are those held at fur-processing houses for 4-H club boys to learn proper methods of skinning, fleshing, casing and drying pelts.
Mr. Hicks also included a list of the four most important phases of wildlife extension work in Iowa now organized into an action program or in the process of organization. They are listed in order of importance:

1. Habitat improvement through cooperation with extension soil conservationists and foresters in establishing tree, shrub, vine and grass plantings on Iowa's eroded watersheds.

2. Preparation of educational circulars covering all phases of conservation for use primarily by 6th to 8th grade pupils in all public schools of the state.

3. Presentation of wildlife conservation and nature study program at spring and summer 4-H club camps.

4. Demonstrations on care and handling of pelts for the benefit of farm boy trappers.

In this section, tentative outlines are composed. These are subject to revision and completion, but the basic elements for beginning a program of farm and range game and fish conservation subjects are believed to be properly handled. The first project is for the purpose of establishing a corps of leaders to guide the activities of youth groups in conservation. The second project is designed to assist farmers and ranchers in correlating the wildlife resources with good land-use practices. The third project is designed to teach boys and girls the value of our wildlife resource and the need for its conservation.
There is need for cooperative agreements between the Extension Service, the State Department of Education and the Oregon State Game Commission, but sufficient information is lacking on the conservation education program being considered by the State Department of Education to accurately propose such an agreement.
A PROJECT FOR LEADER TRAINING


II. SPECIALIST: To be appointed.

III. OBJECT: To improve the activities carried on by local communities and to discuss common wildlife conservation problems. Such meetings might be composed of:

1. The officers of game and fish clubs.
2. 4-H Club Leaders.

IV. LOCALITY: The specialist is available to all areas of the state.

V. PLAN OF WORK:

1. County Agent's duties:
   a. Determine the need for such meetings with assistance of specialist.
   b. Make all arrangements for place, time and local equipment for such meetings.
   c. Notify through letters, telephone, news articles, and personal contacts all members concerned.

2. Specialist's duties:
   a. Attend all leadership meetings.
b. Furnish necessary materials for such meetings.

c. Direct discussion at leader's conference to bring out necessary information.

d. Give illustrated lectures when deemed advisable to such groups.

3. Cooperator's duties:
   Prompt attendance at all such discussion meetings.

4. Time required:
   At least one such meeting of the leaders of each group concerned.

5. Equipment:
   Suitable audio-visual equipment if desirable.

6. Publicity:
   Considerable effort through all available means should be taken to have all leaders present.

7. Literature available:
   If necessary.

VI. MEASURING RESULTS:

1. Number of meetings.

2. Attendance at meetings.

3. Number of individual groups in county having leader-training meetings.
A PROJECT FOR LAND USE AND LAND PLANNING FOR WILDLIFE
CONSERVATION

I. PROJECT TITLE: Land Use and Land Planning for Wildlife
Conservation.

II. SPECIALIST: To be assigned.

III. OBJECT: To assist farmers in correlating Wildlife
Management with good land-use practices. In any land-use program a place for animal life
is generally recognized. Counties in which land-planning projects are formed or where
Soil Conservation districts may be formed may be especially interested in this assistance.
It may be desirable to have the specialist present to aid with land-use tours or to
attend various types of local meetings in connection with land-use programs.

IV. LOCALITY: The specialist is available to all counties of the state.

V. PLAN OF WORK:

1. County Agent's duties:
   a. Make all local arrangements for tours or meetings.
   b. Locate individuals interested in carrying on project.
   c. Arrange for specialist attendance and assist him with such activities.
d. Distribute publicity concerning
tours and meetings.

e. Keep specialist informed of progress
of project in relationship to other
land-use agencies.

f. Correlate specialist's assistance
with similar aid from local tech-
nicians who may be assigned to
community project. (Refer to
Biologists who may be assigned to
project by Federal or State Agencies.)

g. Keep informed on the extent to which
cooperators apply recommendations.

2. Specialist's duties:

a. Supply literature and visual mater-
ial (slides, projector, film strips)
for local use.

b. Conduct illustrated discussions or
tours pertaining to project.

c. Accompany and assist other land-use
specialists on tour of projects to
discuss interrelationship of activ-
ities to wildlife management.

d. Assist wherever feasible local tech-
nicians who may be assigned to
project.
e. Aid cooperators with general wildlife management plan for area.

3. Cooperator's duties:
   a. Take part in tours or attend meetings arranged to discuss project.
   b. Apply to farm insofar as possible the game management recommendations of specialist and county agent.
   c. Allow farm to be used for a reasonable amount of demonstration work.

4. Time required:
   This will depend on scope of project and interest of local community.

5. Equipment furnished by cooperator:
   All materials, including seed, trees and shrubs, and labor can be furnished by Cooperator unless certain items are furnished by other agencies.

6. Publicity:
   Notices of meetings and tours should be given wide publicity through all possible means. It is suggested
that progress publicity be issued occasionally to keep public informed and interested.

7. A bibliography to be assembled by Specialist as soon after appointment as possible.

VI. MEASURING RESULTS: 1. Number of meetings and tours.

2. Attendance at such activities.

3. Number of cooperators who put recommendations into practice.

4. Attitude of cooperators in assisting program.
A PROJECT FOR TRAINING BOYS AND GIRLS IN WILDLIFE CONSERVATION


II. SPECIALIST: To be assigned.

III. OBJECT: To teach boys and girls the value of our wildlife resources and the means whereby they may be conserved. These groups may include 4-H clubs, Future Farmers, Rural Youth groups, Junior Farm Bureaus, public school conservation clubs or classes, etc.

IV. LOCALITY: All counties of the state.

V. PLAN OF WORK:
1. County Agent's duties:
   a. Secure local leaders.
   b. Have supervision over work.
   c. Arrange for field trips and tours.
   d. Make all arrangements for meetings.
   e. Send out publicity and notices concerning these meetings.
   f. Distribute to members all available material.
   g. Make all arrangements to visit demonstrations.

2. Specialist's duties:
   a. Furnish subject matter.
b. Attend promotional meetings.

c. Train local leaders.

d. Attend the meetings at Achievement Days of summer camps.

e. Assist with project tours.

f. Summarize achievements.

g. Assist schools and other youth groups in making work plans for their projects.

h. Assist where possible in obtaining material for project work, especially where state-owned material is involved.

i. Attend general educational meetings.

3. Local Leader’s duties:

a. Serve as adviser for activities.

b. Follow suggestions of specialists and county agents.

c. Attend all group meetings.

d. Assist in arranging exhibits.

e. Check to see that members are conscientiously following the plan of work.

f. Make an effort to have all members present at meetings.
4. Time required:

Should be a year-around project.

5. Material:

Some material may be obtained from state sources, in some localities from local sportsmen's clubs. However the bulk of the material can be obtained at home.

6. Local finances:

Local prizes may be desirable. Other costs will depend upon activity.

7. Publicity:

Notices of meetings should be sent to each individual. A certain amount of general publicity concerning work is desirable.

8. Literature available:

A bibliography to be assembled by specialist at earliest date possible.

VI. MEASURING RESULTS: Results will be measured by:

1. Number of clubs participating.
2. Number of project finishers.
3. Number of meetings attended.
4. Variation of youth groups contacted.
SUMMARY AND CONCLUSIONS

The purposes of this study conducted in 1946 and 1947 are:

1. To assemble the scattered literature having to do with conservation education;
2. To survey the conservation education programs of all the state fish and game agencies and Agricultural Extension Services; and
3. To outline a conservation education program in Oregon expedited by a Wildlife Extension Specialist.

From replies to questionnaires and personal letters sent to all wildlife agencies and agricultural extension services of the nation four objectives were attained. These objectives determined the following:

1. The states farthest advanced in wildlife conservation education programs.
2. The phases of wildlife conservation which should be emphasized in a state program.
3. The value of a Wildlife Extension Specialist as an addition to the Extension Service personnel staff.
4. A standard program for public education in the field of wildlife conservation applicable to all states and specifically to the State of Oregon.

This work is believed to provide adequate evidence to fully justify a universal program of public conservation education in every state school system and in every organization that sponsors the use and perpetuation of natural resources.
A large literature was assembled which expresses an increasing need for an improved public understanding of the necessity for natural resource conservation. (See pages 2-7, 73-75.)

Ninety-five percent of the state fish and game administrators of forty-four states indicated that conservation education was inadequately taught in the public schools. (See pages 7-8.)

In those ten states where the greatest effort is being made to teach the public the need for conservation, there is high agreement in the belief that cooperation between all educational and natural resource agencies is essential. (See pages 9, 10, 15.)

According to sixty-five percent of the wildlife administrators of forty-two states, the state fish and game authority should assume the primary responsibility for public conservation education. Twenty-seven percent believed it to be the primary responsibility of the state department of education, and none believed that the primary responsibility should be vested in the Agricultural Extension Service. (See pages 9-10.)

Most specialists of this problem believed that youth, rather than adult education offers the greatest possibilities for improving the conservation concept. (See pages 14, 17-19.)

There was belief by some educators and conservationists that great advances could be made by indoctrinating the one million teachers of the nation through teacher-training institutions, summer workshops, and school visits by extension specialists assigned to conservation education projects. (See pages 11-13.)
Many authorities believed that most public school teachers lack an understanding of natural resource problems, especially soil, water, forest, and wildlife conservation problems.

Conservation education in the public schools made mandatory by state law was stated to be ineffectual and often detrimental, because the solution to the problem was too often believed to lie in the passage of the law, when in actuality the law merely provided a reason for beginning conservation teaching. (See page 49-50.)

Wildlife administrators replied that no wildlife conservation topics are taught in seventeen percent of forty-four states. In forty-four percent there is "little" or "some", and in thirty-nine percent wildlife conservation topics are being taught. (See pages 55-56.)

Most writers on the subject of conservation education stated or implied that detrimental exploitation of natural resources is general throughout the nation even today, thus lending proof that the American public does not realize the vital penalty that results from mismanagement of the natural resources of land and water.

Conservationists have stated that the greatest advancements in conservation achievement have been made only when public thought and concern have been awakened to the need. Public support, they agree, is essential to any public program.

If the public school system is not fully cognizant of the problem, then how much effort is being expended by state fish and game departments and state extension services to improve public understanding in the area of wildlife conservation and management? These
Most authorities agree that conservation education has not kept pace with the rapid progress of agricultural and industrial expansion, and expensive retrenchment necessary to perpetuate a sustained crop must follow continuing exploitation. Few examples were found where conservation doctrines have been adhered to well enough for avoiding the catastrophe of extermination or depletion. The need for re-evaluation of present programs by conservation administrators is believed very desirable by many authorities. (See pages 14–15.)

In most states conservation education has been inadequately handled in the past, primarily because the basic fundamentals that permit growth of natural resources have been passed over and end-products of man's exploitation used as examples. (See pages 19–22.)

The "publicity" and "promotional" schemes of past years have given way to cooperative educational programs and public response has increased. There is need for vitalizing and broadening the usual official conservation bulletins and pamphlets. The better outdoor magazines may be leading the way in this because of the improved contents of their publications. Like "Reader's Digest", and "Life", and others they may become one of the most powerful public education mediums in conservation education.

Alabama Polytechnic Institute, by reducing the reading level of each manuscript, is doing commendable work in getting more persons to read conservation material. As much as fifty percent more readers
have been obtained. (See pages 19-22.)

The Oregon Agricultural Extension Service is in need of facts and information that will fully justify the establishment of an office of Wildlife Extension Specialist. This study is designed to fulfill this need and also be of value to the forty-two states who are without Extension Specialists at this writing. Its research required 236 individual letters, and 186 questionnaires.

Most of the administrators of state wildlife agencies and state extension services believe that the large, intensive educational projects should be of a general nature to first infuse the public mind with a better understanding of the wildlife resource. Fish and game management projects would serve as demonstrations of the principle.

Sixty percent of the states do not have wildlife projects incorporated in their 4-H wildlife projects. Eight states have outstanding programs of which all but two are guided by Wildlife Extension Specialists. (See pages 38-42.)

This study showed that the most inclusive youth programs are developed by the state wildlife agency in close cooperation with the state education department, providing the former retains well trained personnel for this purpose and develops a sound program. The Extension Service can be instrumental in extending the subject matter of this cooperation to the rural youth by projects and activities. (See pages 34-38, 42-51.)

Eleven states, through their fish and game departments, are conducting outstanding conservation programs for boys and girls. The
techniques they use are covered in detail on pages 42 to 51. Some private organizations have contributed valuable aid to wildlife conservation programs, and several outstanding books have been written on conservation subjects.

Research is required for progressive programs, but adequate funds for publishing the findings of such research are often lacking. (See page 54.)

Ninety percent of the state wildlife agencies allocate 4.5 percent of their total operation budget for educational purposes. This would imply that Oregon's fish and game agency would spend $43,000 annually for this purpose.

Approximately 4.5 percent of the total man-hours of state wildlife departments are devoted to public education, while only two percent of the total employees retained by them serve in the education and publicity phase.

The annual allocations for education made by ten states with education programs definitely organized averaged 5.1 percent of their total budgets which would indicate that good programs are largely the result of good planning. (See pages 56-61.)

Thirty states publish some type of official wildlife agency periodical. They are valuable educational aids if their subject matter is good. Some are still of the "political fence building" type, or promotional type, while some are outstanding and serve as wildlife texts. About one out of seventy-five families in the nation receive current copies. (See pages 61-67.)
Wildlife conservation, at present, is incidental to the Agricultural Extension Service program in all but sixteen percent of the states. There were six wildlife extension specialists in the nation in 1947, and provision was made in 1946 for a National Wildlife Extension Specialist whose principal duty was to correlate and improve the state programs. (See pages 67, 79-82.)

Two-thirds of the state fish and game administrators replied that wildlife extension specialists would be a valuable addition to the state programs, and twenty-two state wildlife agencies said they would contribute financial assistance to such extension programs, two as much as one-hundred percent. Although the Oregon Game Commission did not offer support in 1947, it seems that in view of their progressive departmental program and fuller acquaintance with the problem, some financial aid could be expected in the future. Michigan and Ohio provide one-hundred percent support to their wildlife extension programs. (See pages 68-70.)

There was no organized conservation education in the public school system, in the Extension Service program, or in the game commission program of Oregon prior to 1947.

On pages 87 to 96 are found project outlines for beginning a wildlife extension program in Oregon.

There is need for further research to determine the policies and procedures of conservation education in the public schools of the nation. This study included this phase only incidentally, leaving much in the way of inter-agency correlation and program development
to be determined.

There is an important need for some measure by which the educational programs of one state can be measured against another and thereby provide a measure to the success and value of individual teaching programs. It would seem that such a measure would be most valuable in answering the earnest query, "What is good conservation teaching?". (See page 42.)
BIBLIOGRAPHY


8. Extension service, U. S. Dept. of agriculture. 10,000,000 youth: let's help them plan their future. 1946. A report of the activities of the national advisory group on 4-H post-war programs. 55 pp. mimeo.


27. Porter, Amy. This school is a picnic. Reader's Digest. vol. 50, no. 301, May 1947, pp. 21-23. (condensed from Collier's magazine, Mar. 1, 1947.)


