

# THE VISITOR

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## SUGGESTIONS FOR TEACHERS ON CONSERVATION AND NATURAL SCIENCE

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Relationships between different kinds of plants or different kinds of animals as well as between plants and animals are one of the most fascinating phases of nature study. When left alone, nature arrives at a balance of its own, but the progress of civilization upsets this balance and causes many a problem. The job of the conservationist, then, is to prevent a complete upset of this balance and to provide for future generations, not only for their pleasure but to prevent the necessity for the use of too many artificial means to restore a balance.

The aquarium is the best classroom teaching device to illustrate this balance of nature. Unless the temperature of a schoolroom goes down below freezing, a balanced aquarium can be very satisfactorily maintained. Guppies are best when the room temperature remains above 60 degrees, but goldfish or a number of kinds of small fish from local waters will give good results at much lower temperature.

The smell of burning grass is one of the joys of spring and extremely provocative of spring fever, but think of what it does to nature's balance! It destroys the home of field mice and other rodents. At first thought this sounds like a good argument for fires but what about other predators that depend upon the rodents for food? The weasel, skunk, hawk, and the owl all must have food, and when rodents are scarce, they seek a substitute. This often takes the form of eggs and the young of our song and game birds, also rabbits and squirrels, with the result that the cry goes up to kill all predators, and they are destroyed in large numbers. Still the desired goal has not been reached. The predatory animals, the little white-striped black "wood's pussy," hawks, and many others have been killed ruthlessly, and they have decreased tremendously, while at the same time our birds are also decreasing.

The plant life is also destroyed by

spring burning. According to one authority, more damage is done to our disappearing wild flowers in one year's burning than in five years' picking. (Close pasturing probably ranks next in flower destruction.) Picking runs a weak third. So, why should there be a law against picking flowers if nothing is done about the fires?

All over the world we find examples of the upset of the balance of nature. Tiger hunting in Bengal has so reduced the number of tigers that there has been a great increase in the number of the small deer, the natural tiger food. These deer have become so numerous that they have eaten enough tree seedlings to have caused a very real reforestation problem. This is also true of the rounding up of the mountain lions and the effect on the deer in the Kaibab National Forest in the United States. The shortage of food due to the over population of the deer in the protected area of Itasca State Park may mean that Itasca is doomed. The death rate of the young moose on Isle Royal is extremely high, due to the fact that the increase in the moose population has raised the winter feed line beyond the reach of baby moose.

Most adults have rather definite ideas regarding the question of conservation; hunters have such definite ideas, they become almost a religion with them. Therefore, it is to the children we must look for real conservation. It is up to the teachers and club leaders to instill in the minds of our young people a love of nature which will be so intense that there will be no danger of our wild life being destroyed. (See "The Visitor" for April, 1935.) One of the leaders in our Minnesota Conservation Department made the statement that he could do more along conservation lines with 25 children than he could do with 25,000 adults. It must also be understood that this problem of conservation is a very large problem and should be handled by people with vision, who fully appreciate the relationships between plants and animals. Few people understand the importance of conservation; consequently, we must have laws to impress upon them the need for regulatory measures. Each person should take it upon himself to see to it that these laws are kept, not through fear,

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but because he understands why these measures are so necessary.

Our lands and minerals are one of our most important resources. The organic materials taken from the earth are renewable but the inorganic materials can never be returned. Here is a real need for intelligent conservation.

Replacements help where replacements are possible. Forestry has been developed to a very exact science for this purpose. The Bureau of Fisheries has also developed a definite plan with its system of fish hatcheries and regulations. In Minnesota we have 18 such hatcheries. Many other bureaus and departments are in the making, but many are still in the experimental stage.

Water, which is so vital to life, is being guided by the Bureau of Reclamation into channels where it will be useful in a multitude of ways. This Bureau began its work in 1902 and since that time has completed 27 irrigation projects. This not only brings water to the land for the raising of crops but creates lakes which supply not only beauty and recreation, such as boating, fishing, and swimming but also are the habitat of water plants which serve as food for fish and other water creatures that are such a joy to every nature lover.

It should be the aim of the teacher to develop in his pupils an admiration for and an understanding of nature which will completely push out the desire to kill or destroy everything that wiggles. If this is done, and emphasis is put on the balance of nature and how to keep it from being upset, a big step will have been taken in the teaching of conservation. This is all that should be attempted in the elementary grades.

Just the other day this story was related. A doctor who had been living in an apartment house spent many weekends in the country shooting squirrels.

Recently he moved to the suburbs. Here he has a feeding table for birds and squirrels. He has become so interested in the habits and lives of these creatures that now his hunting consists of shooting bottles and tin cans. To quote him, "After becoming acquainted with these little creatures, I could no more shoot them than shoot a friend." This same feeling instilled in our youngsters should be the aim of every conservationist.

Definite lesson plans are difficult to suggest because the personality and interest of the teacher are such vital factors. Another factor is the local situation and general sentiment of the class. There is much literature available and many publications suggest suitable outlines and projects. There are a few books for general reference that each teacher should have at hand both for personal and class use.

Recently letters were sent to various government and private agencies connected with conservation work, requesting information about literature available for distribution. The following notes on the material received, while not complete, give some idea as to what is available for the use of teachers of conservation and nature study.

### DEPARTMENT OF CONSERVATION STATE OF MINNESOTA ST. PAUL, MINNESOTA

The department of conservation is headed by a commission of five men and a state commissioner. It is divided into the following departments:

1. Division of Lands and Minerals.
2. Division of Forestry and Fire Prevention.
3. Division of Game and Fish.
4. Division of Drainage and Water.
5. Division of State Parks.
6. State Tourist Bureau.

Suggestions:

1. Direct questions or problems can be quickly solved by a conference with any of the directors of the above named departments; any one of them may be seen easily by appointment. Very little educational material is available for distribution as the commission does not overlap the work of the Department of Education.

2. Subscribe for its official publication, "The Minnesota Conservationist," at \$1.00 per year or \$2.00 for three years.

3. The department has a few maps and brief pamphlets which may be had for the asking. For this a letter written to the division concerned gives the best results.

4. The Forestry Division has a few publications. Its "Forests and Forestry Through the Camera" has pictures which will make any red blooded youth want to be in the woods next summer.

FOREST SERVICE  
UNITED STATES DEPARTMENT OF  
AGRICULTURE  
WASHINGTON, D.C.

The forest policy of the United States had its beginning in 1876 when Congress appropriated \$2,000 for the employment of a competent man to investigate the timber conditions of the country. The office "Commissioner of Forestry" was created and Dr. Franklin B. Hough was the first commissioner appointed. On June 30, 1886, the Division of Forestry was created. In 1901 the name was changed to the Bureau of Forestry and on February 1, 1905, the Bureau of Forestry became the Forest Service.

Suggestions:

1. Write the Forest Service to ask that all the material of interest to teachers be sent you. Every bit of it is stimulating, helpful, and in a form suitable for use. Much of the material is in mimeographed form.

2. Those of special interest which should be obtained by purchase if the free supply is exhausted are:

- a. "Our Forests, What They Are and What They Mean To Us."
- b. "Forestry Facts for Young Folks."
- c. "Famous Trees."
- d. "Forestry Lessons on Home Woodlands."
- e. "The Forest, A Handbook for Teachers."

SOIL CONSERVATION SERVICE  
UNITED STATES DEPARTMENT OF  
AGRICULTURE  
WASHINGTON, D.C.

The Soil Conservation Service puts out many mimeographed sheets for their workers and the E. C. W. Engineers. Many of these have to do with soil erosion and its prevention. They may be had for the asking. This service is not to be confused with the Soil Erosion Service of the Department of the Interior.

The following are of special interest to the conservationist:

A. "Wild Life and Erosion Control," by H. H. Bennett. 13 mimeographed sheets.

B. "The Land Today and Tomorrow." A pamphlet issued monthly by the United

States Soil Erosion until April, 1935. No longer published but back copies are still available.

C. "The Tragic Truth About Erosion." A pamphlet published by the Forest Preservation Association of the State of New York, Inc. 24 pages. This may be obtained at the above address.

BUREAU OF BIOLOGICAL SURVEY  
UNITED STATES DEPARTMENT OF  
AGRICULTURE  
WASHINGTON, D.C.

This agency was first established on July 1, 1885, as a section of the Economic Ornithology of the Division of Entomology of the United States Department of Agriculture. In 1886 it was made an independent division and became known as the Division of Economic Ornithology and Mammalogy; in 1896 it became the Division of Biological Survey. This was made a bureau of the department in 1905. Its six divisions now are:

1. Biological Investigations.
2. Food Habits Research.
3. Fur Resources.
4. Predatory-Animal and Rodent Control.
5. Game and Bird Conservation.
6. Land Acquisition.

Suggestions:

1. Send for "Wildlife Research and Management," Leaflet BS-4. This is a list of available publications of the Bureau.

2. "Wildlife Review" is a mimeographed publication of about 30 pages established "for the benefit of employes and cooperators of the Biological Survey. Its primary purpose is to abstract articles bearing on wildlife management." It is made up of brief abstracts of various current articles along with brief informative sketches and bibliographies. It will be put out irregularly from time to time. Address all communications to "Wildlife Review," Biological Survey. The first issue was under date of September, 1935.

BUREAU OF FISHERIES  
UNITED STATES DEPARTMENT OF  
COMMERCE  
WASHINGTON, D.C.

The federal government set up machinery in 1872 to assure future generations a supply of marine foods and a continuation of the sport of angling. This took the form of a Bureau of Fisheries in the Department of Commerce and it is organized into divisions which attack separate phases of the problem of con-

servicing fish life. The divisions, five in number, are:

1. Division of Scientific Inquiry.
2. Division of Fish Culture.
3. Division of Fishery Industries.
4. Alaska Division for Care of Seals and Salmon.
5. Angler's Division.

Suggestions:

1. Pamphlets of interest:
  - a. "The United States Bureau of Fisheries," a four-page leaflet.
  - b. "Functions and Activities of the Bureau of Fisheries."
  - c. "Practical Fish Cookery," Fishery Circular No. 19. 26 pages with bibliography. Interesting cookbook for the cook. Short discussion on food values and tips on buying.
2. Mimeographed material:
  - a. Memo. S. 200. 15 pages. A list of mimeographed memoranda relating to the capture, the preservation, and the utilization of fishery products, distributed gratis through the Division of Fishery Industries. The list is cross-indexed and complete. The memoranda listed are extracts from governmental and state reports, trade journals, and various other sources including employes of the Bureau.
  - b. Inquiry Memoranda. I.—53 (Index.) 10 pages. This list relates to mimeographed material on fish, shellfish, aquatic plants, aquatic mammals, etc., that are distributed gratis through the Division of Scientific Inquiry.

NATIONAL PARK SERVICE  
UNITED STATES DEPARTMENT OF  
INTERIOR  
WASHINGTON, D.C.

The National Park idea was first suggested by Cornelius Hedges at a campfire gathering. On March 1, 1872, as an outgrowth of this suggestion, Yellowstone National Park was established by an act of Congress "as a pleasuring ground for the benefit and enjoyment of the people." Today the national parks are "recognized as a major land use vital to the well-being of the people of the nation, and to the preservation of our biological resources." The National Park Service, a Bureau of the Department of Interior, was created by Congress in

1916 to manage the Federal Park areas. The establishment of national parks in the United States has led to the establishment of similar parks in many other countries. The material available is practically limitless for a pamphlet may be obtained to answer almost any question relating to any individual park or monument.

Suggestions:

Some more desirable materials are:

- A. "Glimpses of Our National Parks." A 92-page publication giving a complete survey.
- B. "The National Parks and Emergency Conservation."
- C. "Radio (Independents) 1935 Natural Science Series." Mimeographed copies of 15 radio talks giving excellent information "on the natural sciences as exemplified in the park and monument system."

AMERICAN NATURE ASSOCIATION  
1214 SIXTEENTH STREET N.W.  
WASHINGTON, D.C.

This association was organized in 1922 for the purpose of furthering nature activities; its main objective is nature education. At present it is headed by Charles Lathrop Pack and Arthur Newton with William Finley, E. Lawrence Palmer, R. Bruce Horsfall, and Russell T. Edwards for associates. The official publication of this association, "Nature Magazine," should be in every classroom. The school rate is \$2.40 per year, instead of the regular \$3.00. Pupils have to be encouraged to become acquainted with any new magazine; accordingly, to get full benefit from this, special assignments are very helpful.

"Nature Magazine" has various departments, as follows:

1. One page devoted to the months.
2. Photographic notes.
3. Sixteen pages of color pictures suitable for bulletin boards or general work.
4. A new department, Conservation, is decidedly to the point and very useful for class work.
5. The stars of the month.
6. Nature rambles with Uncle Dick.
7. "Nature Magazine" in the school, a department of notes to give teachers ideas on how to "put over" each issue.

(Continued in July issue)