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Conservation and the Biology Teacher

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State Conservation Commission

Conservation practices are based on a need to retain the best features of soils, plants, and animals. These are the raw materials of commerce. Commercialization has accelerated until most land areas are now exploited. Along with commerce, the number of schools has increased and by 1966 the U.S. school system—which began under a 1785 ordinance—had over 43,000,000 pupils in elementary and secondary schools. Pupils are taught the advantages of prosperity and should also know the result of overexploitation which is opposed to the cautious use, and replacement practice which is called conservation. Such practices have been advocated in America since European settlement here: British traders wanted large areas designated as production sites for hides and fur. Later, the American Bison Society attempted to retain some wild herds. Finally, there was a widescale plan outlined by Teddy Roosevelt to conserve areas of natural forest. Each proposal was nullified or limited by demands for new low-cost farm or commercial lands.

Today, grazing lands bring fifty or more dollars per acre, while tillable or commercial land is very expensive. Also taxes devour much of our income; this means that high production is sought. This, in turn, leaves little of the lightly used land needed for recreation or study.

It is desirable to retain some land for recreational use, and much of this may be used for farming as well. Fourteen per cent of Iowans hunt. Furthermore there are hikers, fishermen, and picnickers. Children are already taking part in such activity; and since each will soon become another tax bearer, he has a right to know effects of both conserving and exploiting. The Iowa Conservation Commission oversees the forests, streams, and public hunting, fishing, picnic, and camp grounds. The Conservation Commission staff works out recommendations for the management and use of such areas.

Teachers may bring a part of this information to children in the indoor classroom: But for the youngster who thinks more in terms of the out of doors, there should be opportunity to observe, to hike, or to study.

Teaching aids are available from the Conservation Commission, and from universities, ASC, SCS, and many other agencies. Training for those wishing to teach outside is available through a number of teacher training schools, and through the University of Northern Iowa summer school near Guthrie Center, where Conservation Commission personnel and others in allied fields aid in presenting information. Further aids are mentioned at the end of this report.

Outdoor study opportunity has

been offered for seven years in some of the Ottumwa, Iowa, sixth grades: and Conservation Commission biologists, foresters and officers assist. In Ottumwa indoor classrooms, basic science has been taught at all levels with lower grades learning the simple reproductive processes such as butterfly-egg-caterpillar-butterfly. In Junior High, there are four biology instructors who teach courses in life, earth, and space science. Of these teachers, one does have some outdoor sessions. In high school there are four biology teachers and six science teachers; teaching is traditional, or it is taught in the inside classroom, by the book. Some ecology is taught. Laboratory methods are offered to the college bound. Planned field trips are available mostly to sixth graders in selected schools.

Ecology and allied studies can be carried out in the field (though school time is limited) since it is comparatively easy to record observations as do field biologists and agronomists.

Quail are an example of wildlife whose life history is easy to follow; they usually walk or run rather than fly and much of their activity can be traced by examining the ground. This is especially true in winter because when there is snow, the feeding, resting, and escape activities are printed out by tracks and signs. In spring the males call "Bobwhite." This is a clue to whether the population is high or low, as there is more calling where there are more males. Then in late summer, broods can be located and a record can be made of those seen. In the same way, life history of any common species can be recorded.

Environmental changes can also be traced by students; an example is a farmer interview which indicates the per cent of wildlife cover removed per year or per ten years. Urbanization and intensive land use cause excessive air, land, and water pollution; this the student should know, through seeing it in smoke and vapor-veiled skies, in dumps, in deserted buildings and lands, and in the stinking rivers. He should see that to farmer and builder, wildlife areas are simply more potential usable sites for intensive use. Any child should have opportunity to decide if he wants to go along with complete destruction of all natural land cover.

In conclusion, on state, national, and world levels, both the wild lands and settled areas have always been exploited; Iowa and this nation were built by commercializing cheap land and cheap raw materials. Nationally and world wide, there has been such a demand for more space and more material that there have been 1,560 major wars since 1497, which was about the time Columbus came to America. These events indicate that exploitation and expansion are inevitable.

Nevertheless, there are still areas of open land. Retention of wildlife habitat has a price and will require continual effort by those interested. Information on this must come to the child through interested teachers. The Conservation Commission can supply information and visual aids. Staff members of several sections can advise in preparing programs.

BIOLOGY AND RELATED INFORMATION SOURCES

M. E. Stempel, Game Biologist
Iowa State Conservation Commission

State Conservation Commission, 300 4th St., Des Moines, Iowa 50319: game mammals and birds, hunting and fishing seasons, forest lands, camping, boating, gun safety for hunters, public hunting and fishing areas. Information available: folders, maps, films and slides, licenses and permits, wildlife exhibit.

Soil Conservation Service, main office: Biologist, Sylvan T. Runkel, 823 Federal Bldg., Des Moines, Iowa 50309. Farm ponds and wildlife, forests, farming; local offices are in county-seat towns.

Iowa State University, Ames, Extension Specialist, Dr. Robert Moorman, Insectary Building. Wildlife subjects, Conservation Information Sources Reference Book.

Media centers, in many cities.

Remington Arms Co., Ilion, N.Y., Movies: Hunting, target shooting, safety.

Winchester, western: East Alton, Ill. Movies: Hunting, shooting, safety.

Federal Cartridge Corp., Minneapolis, Minn. 52402. Movies: Hunting, shooting.

Izaak Walton League, Robert C. Russell, Executive Secretary, RFD 1, Box 306, Iowa City, Iowa 52240.

Clean water, summer camps for young people.

Iowa State University, Ames, Wildlife Section, Science Hall. Information for the student who wants to know about a career in wildlife.

Outdoor camps for sixth graders. Mr. Cecil Stevens, Principal, Franklin School, 305 Walnut, Ottumwa, Iowa 52501.

Many Izaak Walton Clubs have outdoor facilities useful for school groups.

NEW BIOLOGY BOOK FOR TEACHERS

A new book, *Creative Biology Teaching*, by Delma Harding, Roger Volker, and David Fagle is just off the Iowa State University Press.

The book was designed to help teachers solve the everyday problems they meet in the classroom and in the field, and to make them aware of the exciting challenges that exist in teaching modern biology.

The book includes the following ten chapters: Impact of the New Biology; Teaching Form and Function Together; Artistry in the Classroom; Personalized Teaching; The Biologist in His Community; Planning a Science Center; Planning a Science Laboratory; Ways To Use Basic Materials; Planning Field Trips; and Shaping Biology Units.

In addition there are nearly one hundred appendices grouped under these headings: Teaching Aids; Working With Protists; Using Plant Materials; Techniques Using Animals; Books, Magazines, Periodicals, Journals; Sources of Materials; and Projects and Class Studies.

Copies of *Creative Biology Teaching* may be obtained by writing directly to the Iowa State University Press, Ames, Iowa 50010. List price is $10.50.

Iowa Section of AAPT Will Meet in November

The Annual Fall Meeting of the Iowa Section of the American Association of Physics Teachers will be held on Saturday, November 8, 1969, at Coe College, Cedar Rapids, Iowa. High school, junior college, and the college teachers of physics may apply for membership by writing to William Azbell, Secretary-Treasurer, Wartburg College, Waverly, Iowa 50677. All persons interested and involved with physics teaching should plan to attend.