

## ECOLOGICAL AND CONSERVATION EDUCATION IN ETHIOPIA\*

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The urgency for ecological and conservation education in Ethiopia cannot be overstressed. Historically, a community of people remained in one location only until the forests were depleted of firewood and the soils no longer yielded sufficient crops. The consequence in many parts of northern Ethiopia, as in parts of the present Sahara, has been the creation of eroded areas with few native game mammals and with only one or two trees where once forests grew. Because these habits of the past have not changed, the same situation is spreading southward at an alarming rate. Today all the plateau north of Addis Ababa is affected and, without methods of control, the deterioration will continue southward, depleting many of the nation's remaining stands of forest, soils and wildlife.

Only in the last two or three decades have attempts been made to conserve the forests, soils and wildlife of Ethiopia. State forests have been established, especially in Kaffa and Illubabor provinces, and reforestation has been attempted. In 1966, pamphlets on soil and water conservation practices were distributed by the Forestry Division of the Ministry of Agriculture. The young Wild Life Conservation Department, established in 1964, has made a start towards protecting the wildlife of Ethiopia. Despite these efforts little progress in ecological and conservation education has been made either in the schools of the major cities of the Empire or among the populations of rural and woodland areas. Therefore, when one discusses conservation and ecological education in Ethiopia, the problems associated with them are applicable to all the populated areas of the Empire, rural and urban.

One reason for Ethiopia's lack of conservation practices is that a substantial number of children never go to school. Another is that a comparatively small percentage of all students in the schools receive any education in conservation. Out of a total population of about 20 million, the total enrollment in all educational institutions in the academic year 1967-68 was 535,225 students (1967/68 School census for Ethiopia, Part 1. Ministry of Education and Fine Arts, Addis Ababa). A breakdown shows that in grade 1 there were 149,296 students, whereas in grade 7 there were 24,298. This indicates that from grades 1 to 7 there was an attrition rate of approximately 84%. This figure is especially interesting, for conservation and ecological education does not start in the Ethiopian school system until grade 7. This, of course, means that this large percentage of students are never exposed to these subjects.

\* A paper presented to IUCN's Commission on Education — "The problems of conservation education among the population of rural and woodland areas". 28 November, 1969, New Delhi. We are grateful to IUCN for permission to reprint.

Another factor which should be taken into account is that approximately half of the teachers in the schools in 1967-68 were Ethiopian nationals. In their training these teachers received little or no background in ecology or conservation. Subsequently, their students received no information on these subjects. Although most of the teachers of foreign nationality come to Ethiopia with some impression of conservation and ecological practices, most have but little knowledge of the local fauna and flora or of local ecological conditions. The result is that the students are often more familiar with plants and animals from other parts of the world than from their own. In illustrating their scripts students commonly use bluebells, oaks, alligators, deer and tigers, organisms which do not occur in Ethiopia.

Present teaching syllabuses in the Ethiopian school system do contain sections on conservation and ecology. Although conservation education does not begin until grade 7, grades 1-6 are introduced to simple drawings of a mammal, a fish, a bird, an insect, a seed, a flower and a stem even as early as grade 1. In grade 3 animals in relationship to habitat are discussed; in grade 5, crops and soil types are mentioned. In grades 7 and 8, the science book used (Fontaine, B. and Smith, M., 1964. Science for Young Ethiopians, books 1 & 2. Ministry of Education and Fine Arts, Addis Ababa) contains a chapter on "Forestry and Wildlife in Ethiopia", in which names of various mammals are listed with distribution maps. Colobus Monkey, Wild Lion, Mountain Nyala, etc., are included, but there are unfortunately few photographs or pictures. Students memorize the animals' names and their distributions but often do not know what the species look like. This also applies to plants. Types of forest and their distributions are given but not in Amharic. This makes identification of forest-types difficult because the students do not associate names given in the text with the Amharic names they know. There are other chapters in the science book which include topics on soil conservation and on game policy, and there is one which has maps showing rainfall, climate, soils and distribution of original and present forests.

The subject material on conservation and ecological education for grades 9-12 follows what has been taught in grades 7-8 but in more detail. Soil conservation and agricultural methods are emphasized in the 11 and 12 grade technical schools. In grades 9-12 the phyla of animals are discussed; the plant kingdom is covered in detail. Yet terminating students (grade 12), writing the Ethiopian School Leaving Certificate Examination, are regularly unable to place certain named animals and plants into major (taxonomic) groups they have studied. Often a jellyfish becomes an amphibian, an amoeba a mammal and a fern a fish.

This problem arises from the fact that teachers fail through lack of appreciation or understanding to cover these subjects, although textbook material on conservation and ecology is available. Another difficulty is the language in which conservation and ecology are taught. By the time a student reaches grade 7, he is taught in English although his mother-tongue is Amharic or perhaps one of the other Ethiopian languages. Ethiopian tradition seldom has encouraged people to become familiar with the plants and animals of their surroundings, e.g. the Amharic word for any fish is usually simply "fish", that for birds is generally "big bird" or "little bird". Hence, learning the names of different plants and animals is a new concept to many of the students.

Efforts are being made in elementary and secondary education to improve science teaching, including conservation and ecology. Walshe and Brown in 1966

adopted the IUCN publication, "Our Mother Nature", for teaching conservation in Ethiopian schools. Mr. M. Watson, Science Advisor, Ministry of Education and Fine Arts, is at present preparing new courses and a new teacher's manual, in which photographs and drawings of all Ethiopian animals and plants are presented. Suggestions are given for practical exercises which can be done with little equipment and money, yet which illustrate sound scientific ideas, including conservation practices. With an instructor's guide and with exercises planned for him, hopefully the inexperienced teacher will become more inclined to teach conservation and ecology.

Other efforts are being made to encourage ecological and conservation education in Ethiopia. The Haile Sellassie I University College of Agriculture at Alemaya is stressing conservation practices; within the last five years several of the graduates have gone into the field to introduce these practices to the local people. We at the Biology Department in the University are attempting to give our biology majors a good background in ecology. In the third year the biology major is required to take general ecology with field trips. Although the lectures in general ecology are similar to the lectures of ecology courses in other parts of the world, the field trips are different. There are three weekend trips, one to the Rift Valley to study the habitats provided by four large lakes of varying chemical, physical and biological features; one to the Arussi Mountains, during which the students are able to see mountain flora and faunal zonation from 7,000 to 12,700 feet (Podocarpus and Juniper to Erica and alpine flora); and one to the Awash National Park with its dry lowland vegetation and large mammals. Although the students are kept fairly busy, they are not expected to spend most of their time in academic exercises. One of our aims is to show the student that not only can he learn ecological principles while in the field but that he can have an enjoyable experience, that he can live and work in the bush without fear and apprehension (many students insist that we camp at the local police compound), that he can enjoy the out-of-doors and at the same time learn something. Because we are training future secondary and elementary biology teachers, we hope that whatever interest and enthusiasm we have instilled in them will be passed on to their students.

A very serious difficulty in establishing modern conservation and ecological practices is the lack of vocational incentive. The majority of young Ethiopians are not aware of the immensity of the problem nor of its national importance. However, international and national agencies are helping to alleviate the problems, notably the African Wildlife Leadership Foundation, U.N. Agencies, the Ethiopian Wildlife and Natural History Society, the Haile Sellassie I University College of Agriculture and the Biology Department. With their help and with encouragement from the Ethiopian Government the educational attitude towards conservation and ecology is slowly changing.

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**Acknowledgement:** We are grateful to T.G. Jefford and R.M. Baxter, Haile Sellassie I University, for helpful discussion and criticism, and to the African Wildlife Leadership Foundation for providing financial support which has helped to make the field trips in our ecology course possible.