NATIONAL ASSOCIATION FOR ENVIRONMENTAL EDUCATION

Environmental Education

a statement of aims

Second Edition

Environmental Education

The National Association for Environmental Education is the association of teachers, lecturers and others concerned with education and the environment.

This document presents the policy of the National Association for Environmental Education on the aims and content of environmental education for the formal education service.

A STATEMENT OF AIMS FOR THE FORMAL EDUCATION SERVICE

The N.A.E.E. recognises the definition of Environmental Education originally written by the International Union for Conservation of Nature at their Conference in Nevada, September, 1970—

> **Environmental Education** is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings.
> Environmental Education also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality.

Throughout primary and secondary education, the human environment, both rural and urban, should be regarded as a continuum from the wilderness, through the productive countryside, small settlements and suburbs, to the heart of the inner city.

Guidelines have been set out in the Schools' Council Project Environment — Education for the Environment — Longman, London 1974, and more recently amplified in the Department of Education and Science — Curriculum 11–16, supplementary papers — HMSO, London 1979, and D.E.S. — Environmental Education: A Review — HMSO, London 1981. Identified are three strands "Education FROM, ABOUT and FOR the environment". These are not mutually exclusive at any stage in formal education. The establishment of an environmental ethic should parallel these processes.

PRE-PRIMARY (TO 5)

Pre-primary school children are full of curiosity and a desire to explore their environment. They should have every opportunity to gain experience through contact with basic materials, plants and animals. This contributes to their emotional and physical well-being, to their understanding and language development.

PRIMARY (5–10)

At the primary stage environmental education is seen as involving pupils in personal experience of the environment by direct exploration with all their senses, using the school and its immediate surrounds and going further afield when necessary. Such environments will involve both the living environment in small nature reserves, school gardens or in the countryside and the built environment in streetwork. At this stage emphasis should be placed on the development and deepening of concepts. Teachers are expected to use these experiences to develop language in all its aspects, numeracy, scientific methods of enquiry, aesthetic appreciation and creative expression as well as to encourage the development of value judgements and an environmental ethnic. Children at this stage should be introduced to the statutory and accepted codes of environmental behaviour.

It is not suggested that a specific subject should be established for this area of study in primary schools but that environmental education should involve the children's total learning. It is felt that it is important to keep in mind during this period of education the sequential development of concepts whereby understanding is built on previous experiences, and stress the need to build up basic vocabularies and skills which will be needed in studies leading to an appreciation of variations and the ecological significance of phenomena in the environment.

MIDDLE (9–13)

In the middle years a variety of transition situations exist for example primary/secondary transfer at 11, or the provision of middle schools grouping together children from 8–12 or from 9–13.

During the middle years it is hoped to see a move into deeper studies of the environment, initially in a non-fragmented framework based on observational situations and developing according to the age and ability of the children by the end of this period into accepted "subject" areas. Thus local history, geography, science, will all grow from environmental experiences (as well as from other sources). So will specific courses in environmental studies which deal in an equally structured way with their particular syllabuses.

Such specialisation ought to occur later rather than earlier in this age range for most pupils, and the establishment of an interim stage between the integrated approach of primary education and the subject discipline structure of the upper secondary school years is recommended. Thus "Environmental Studies" may appear as an "area of study", at this stage, in a manner usually referred to as "integrated", covering spatial and chronological understanding of the pattern of the human environment and leading on to separate geography and history courses as well as to structured environmental courses later. Such an area of study should maintain a wide and balanced approach and the tendency to isolate science and scientific method should be resisted. While appreciating the difficulties of achieving this ideal, during this stage all children should have regular experience of working in the field (and street) locally and whenever possible, in a residential situation in a contrasting environment. The focus at this stage should be on the emerging patterns and inter-relationships of environmental features on local and national scales, with an emphasis on conservation and the action of man. As knowledge widens and skills grow there will be a rational need for organisation into recognised subject disciplines.

A list of suggested performance objectives to be attained by the time children reach age 12 is given in *Appendix A*.

SECONDARY (13–19)

At the secondary/upper stage it is the practice for schools to offer options to pupils, generally at the age of 14 (end of third year of secondary school). Variations exist both in the numbers of subjects that are required to be taken and the degree of guidance of choice that is offered.

The traditional subjects that are likely to contain clear environmental material dealing with ecological inter-relationships are geography, history, science, rural studies and geology. Wide variations exist, however, and some syllabuses may omit any study of the essential inter-relationships of man and the biophysical world.

History may deal with local history in the surrounding area but is unlikely to involve an understanding of the historical development of human population, society and technology, with the consequent effects on the environment. Other subjects may contain specific environmental references—energy flow may appear in the physics or in the chemistry syllabuses.

Environmentalists in schools should study such syllabuses and try to have environmental information included in them wherever appropriate. They should also ensure that within any such subject course reference is made to environmental effects and causes outside the particular discipline.

In the present situation it appears unlikely, however, that all students at this stage will be introduced in a sufficiently clear way to the major environmental concepts either at an immediate local, a national or a planetary level, or that the vital understanding of the inter-relationship of so many factors across subject disciplines will be sufficiently stressed.

All option lists should therefore include an option for an environmental studies or environmental science course, to be available in parallel with existing subjects, both at examination and non-examination levels.

Such a course should, where appropriate, offer C.S.E. and 'O' level examinations, and provide a foundation for later courses. It should follow a syllabus based on items selected from the "Environmental education objectives for every secondary school student" agreed at the I.U.C.N. International Conference at Zurich in December, 1971, and listed in *Appendix B*. These objectives cover secondary education up to age 19 so that syllabuses for fourth and fifth years (C.S.E. and 'O' level) should not be expected to cover the whole range.

Syllabuses already exist in the majority of boards and condensed versions of a representative selection are available in the form of NAEE publications — see current lists.

The importance is stressed of ensuring that all secondary school students continue their environmental education towards the achievement of the suggested objectives either through adequate syllabuses in traditional environmental subjects or through specific courses in environmental studies.

Teachers should make full use of field study centres, urban study centres and museum services to widen the horizons of their pupils and provide deeper experiences than can be gained from their immediate locality in school based activity.

SIXTH FORM (16–19)

There is a particular need for sixth form environmental studies in order to provide, for those entering a wide range of specialist careers in environmental science, technology or administration, a thorough understanding of the importance of the ecological relationships that exist across the disciplines.

The provision of environmental studies/science courses for C.E.E., O/A or 'A' level should be encouraged to provide for study in depth by sixth-formers at their various levels.

Syllabuses for such courses should aim at achieving so far as possible the objectives listed in *Appendix B* and in addition those concerning "Inter-relationships and evaluation" listed in *Appendix C*.

Details of recognised sixth form examination syllabuses existing at present are contained in the NAEE publication — Environmental Courses for G.C.E. 'O', 'OA' and 'A' level Examinations.

Throughout the whole of the secondary years the emphasis in environmental education ought to remain firmly on field work and outdoor studies. There are limitations on how much time can be spent in the field, and such time should be used with careful efficiency. Some concepts can be more readily explained in a classroom but require to be based on outdoor experience for full understanding. When dealing with the planetary scale, however, it is clearly impossible to use much field work although students are now travelling at least to Europe much more generally than in the past. At present television provides a useful secondary source of experience which should be used as well as films and books.

The examination system should be used where appropriate to ensure that acceptable academic standards in environmental education are maintained.

EDUCATION FOR THE ENVIRONMENT

In parallel with increasing environmental knowledge and skills throughout the whole of a pupil's school life there should be developed "education for the environment". While teachers should take care to be objective in their approach, it may be appropriate to declare a commitment as education which does not lead to attitudes of conservation would have little purpose.

A list of objectives suggested for this aspect of environmental education is given in *Appendix D*.

TERTIARY EDUCATION

The NAEE recognises that the minority of students carrying on their education into the tertiary stages are a most important group. Some colleges of further education have initiated 'environmental' courses at 'A' level and have found that these contribute to the educational potential of students in science, as well as in humanities and in sociology courses.

As new proposals emerge for the further education and training of unemployed young people the NAEE recognises the need for all such developments to contain an element on environmental education which unequivocally relates to the individual's personal background and experiences.

A wide range of environmentally orientated courses exist in Colleges/Institutes of Higher Education, Polytechnics and Universities; the NAEE supports the establishment of such courses on two grounds. Firstly as important contributions to a cultural education for graduates entering national life as decision makers and opinion formers. Secondly as preparation for careers directly concerned with the environment such as planning, environmental health, land management, architecture and construction, amongst others. A full list of courses is available in the three NAEE publications — Environmental Courses in Higher Education — Parts One, Two and Three.

Teacher training for graduates in Environmental Studies or Environmental Science

Courses for post-graduate certificates in education for graduates in Environmental Studies or Environmental Science should be made more freely available, as the lack of such qualified teachers is causing difficulties in staffing courses in secondary schools. This is an urgent matter and pressure should continue for their establishment at university schools of education, polytechnics and colleges of higher education.

INTRODUCTION TO APPENDICES

Appendices A, B, C and D represent performance objectives, not course content or method of teaching. They are not syllabus outlines. That is to say they represent the condition which we hope will be established in the pupil at the appropriate age level in relation to information, skills and attitudes developed. Some will not be attained by every pupil but they are considered not to be so idealistic or advanced that a proportion of pupils from the full ability range might be expected to attain them to a large degree.

APPENDIX A

Objectives in Environmental Education for Primary or Middle Schools (5–12)

AREA AND LOCATION

Experiences basic orientation within the local and national environments. Perceives the earth as the home of man but shrinking in terms of time, distance and limits of resources. Observes how man uses and influences the environment. Learns the use to be made of local and world maps.

ATMOSPHERE AND COSMOS

Can describe and measure simple climatic factors in the local environment and appreciates their significance for food production. Recognises the role of the atmosphere in the life of the plants and animals. Can identify the major climatic and vegetative patterns of the world.

LANDFORMS, SOILS AND MINERALS

Knows that soil is dynamic: (a) it forms, (b) it contains living things and supports plant growth, (c) it erodes or becomes less fertile. Can identify different soil types. Sees the interaction between soil and living things. Understands that mineral resources are limited. Can point out on a map the general arrangement of landforms in Britain and the World.

PLANTS AND ANIMALS (BIOTA)

Knows from first-hand experience various kinds of plants and animals in their own environment. Recognises inter-dependence among soil, atmosphere, plants (producers) animals and man (consumers). Knows what is meant by the food chain. Is aware of some endangered species and measures for their conservation, particularly food species important to man.

WATER

Knows the necessity of water for life and its importance as a natural resource. Knows the water cycle. Is aware of water pollution.

PEOPLE

Recognises the varieties and similarities among people. Knows how people live in and use different environments. Knows of rural depopulation as a world-wide phenomenon. Is aware of population growth and its relation to the quality of life.

SOCIAL ORGANISATION

Learns individual and group responsibility concerning environment. Uses environmental experience to gain self-discipline. Recognises agencies working on environmental problems and recognises international co-operation as a means of solving world environmental problems.

ECONOMICS

Relates food, clothing and shelter needs to available resources in various societies. Recognises the organisation of resources into farming, forestry, fishing, mining, manufacturing, servicing, transportation and communication.

AESTHETICS, ETHICS, LITERACY, NUMERACY

Uses environmental experience to acquire basic skills. Builds a basic vocabulary of environmental terms. Uses the visual arts and music to describe and interpret various environments. Develops an appreciation of art and design factors in the built environment.

BUILT ENVIRONMENT

Recognises different buildings and functional areas in the locality (residential, shopping, work places, leisure provision). Knows the main local services (police, fire brigade, hospital).

ENERGY

Recognises manifestations of energy in various forms, and the control of energy by man. Knows that energy arrives from the sun. Knows the origin of fossil fuels.

APPENDIX B

Environmental Education Objectives for every Secondary School student (based on the International Union for the Conservation of Nature, Zurich Conference, 1971).

1. PHYSICAL ENVIRONMENT

Planet Earth

Recognises the limits of the planet earth, its relation to the sun and moon.
Recognises the sun as the source of energy, understands in general terms the transport of energy and radiation, insolation and absorption of energy by the earth.

Energy Flow

Understands how the ecosystem is maintained by a flow of energy.
Gains basic knowledge of different forms of energy in the ecosystems including air and water movement.

Atmosphere, Climate and Meteorology

Can describe and measure climatic factors and the role of the atmosphere in relation to plants and animals. Can identify and explain the major climatic patterns of the world and relate these to vegetative patterns of the earth and economic activities of man. Observes the climatic variations in a locality noting air pollution and its effects.

Lithosphere

Knows the earth's crust is made up of rocks which weather into soils.
Recognises distribution limits of natural mineral resources (and energy resources) and demonstrates their uneven distribution. Recognises common minerals and rocks.
Recognises time factor involved in the formation of non-renewable resources.

Landforms and Soils

Can identify different landforms.
Knows the processes of soil formation.
Recognises and explains origin and development of landforms.
Understands causes and effects of erosion and simple soil conservation measures.
Recognises main soil groups. Understands main soil nutrients and their replenishment.

Surface Water

Knows the necessity of water for life and its importance as a natural resource (partially non-renewable).
Knows the hydrological cycle, and the various stages in the evolution of streams and still water. Is familiar with the distribution of water on the earth.
Recognises the influence of water on the distribution of biological communities and how distribution and balance can be disturbed by pollution. Appreciates man's influence on the hydrological cycle.

Ocean

Recognises the distribution of land and sea water and elementary features of the sea floor.

Knows basic characteristics of ocean circulation, waves and tides.

Understands basic air-sea interaction, energy exchanges, hydrologic cycle and thermostatic influence.

Knows factors affecting the distribution of living organisms.

Knows major marine resources.

N.B. It is necessary to assume that the attainment of many of these environmental education objectives will be in the context of a basic knowledge of chemistry, mathematics (especially statistics), physics and physiology (the internal functioning of organisms).

2. LIVING THINGS

General Ecology, Populations and Behaviour

Knows of and sees various plants and animals in their natural environment.

Recognises interdependences among soil, air, plants (producers), animals and man (consumers).

Recognises the main types of biological communities and the influence of man upon them, both directly and indirectly.

Identifies and explains a biological community in relation to its environment.

Understands the basic environmental significance of the processes of respiration and photosynthesis.

Understands the significance of water relations and nutrients; recognises the effects of plants on animals' oxygen and food.

Understands the various nutrient cycles including those of nitrogen and carbon.

Recognises the existence of organisms in the soil.

Understands webs of dependence and the delicacy of the ecological balance.

Understands the main factors affecting the distribution of organisms including competition.

Is aware of endangered species and their importance and of measures for their conservation.

Understands and interprets simple dynamics of populations and knows how population growth is controlled in nature.

Understands man's reliance on the stable balance of natural systems.

3. HUMAN ACTIVITIES

Social Organisations, Production Systems, Economics

Recognises ways in which people organise themselves.

Recognises variation and similarities in people—knows how they use different environments.

Relates food, clothing and shelter needs to available resources.

Recognises population movements and settlement patterns in relation to natural resources.

Observes trends in urbanisation.

Observes patterns in organising economic and other resources with an emphasis on their rational use (agriculture, mining, wilderness, transport, communications).

Cultural, Historical, Aesthetic Conditions

Builds a suitable vocabulary.

Understands classification.

Learns to express feelings in art, music, writing.

Develops a sense of historical values.

Recognises the evolution of human cultures such as language, communication and religious ideas.

Applies aesthetic values in relation to other values in environmental situations.

Enjoys recreation in natural environments.

Recognises impact of technology on social structures.

Knows the history of settlement and land use.

Is aware of the leading personalities involved in the environmental field both past and present.

Controls and Planning

Knows the local legislative controls. Understands the main political and other decision-making processes.

Appreciates the criteria involved in land use decisions.

Recognises the main types of pollution, the principles of conservation and of the wise use of resources.

Knows the main local, national and international agencies of conservation.

Contrasts the attitudes of stewardship and exploitation of natural resources.

Is aware of the roles of individuals, local, national and international organisations working on environment problems.

APPENDIX C

Objectives for Secondary Education (16–19)

Inter-relationships and Evaluation

Appreciates the inter-relationship of factors in the total environment in such details as:

The effects of geological and climatic conditions on the patterns of land use.

The evolution of man's role in altering his physical and biological environment.

Evaluates the variety of ways and the dynamic processes by which environments affect personality developments and social organisation.

Evaluates man's effects on the process of degradation, erosion, depletion of resources, pollution.

Supports planning and research on wise land use and resource management.

Interprets trends in population growth and distribution, analyses how these are related to the quality of life.

Examines implications of social and economic plans designed to rationalise population and resources.

Formulates means to ameliorate environmental conditions through personal involvement.

Considers questions of ethnic and social diversity in relation to territory and resources, e.g. colonialism and economic structures.

Evaluates social and environmental impacts of scientific technology.

Encourages constructive action in social and environmental matters.

Examines the environmental implications of various economic policies.

Evaluates renewable and non-renewable resources.

Is aware of the philosophy of obsolescence and its environmental implications.

Considers environmental problems in an ethical context.

APPENDIX D

Objectives in Education for the Environment to be attained by the individual at the appropriate level and in varying degrees throughout formal education.

AREA AND LOCATION

Supports planning and research on wise land use and landscape management.

ATMOSPHERE AND COSMOS

Supports the taking of care in decisions affecting the quality of the atmosphere.

LANDFORMS, SOILS AND MINERALS

Knows how man accelerates processes of degeneration and appreciates the need to take steps to ameliorate these conditions whenever they come within his environment.

PLANTS AND ANIMALS

Acts so as to create and preserve conditions under which ecologically balanced ecosystems can evolve in his local environment.

WATER

Analyses and contributes to the decisions affecting the availability and quality of water.

PEOPLE

Accepts his personal responsibility in population determination, accepts people of differing culture without prejudice, accepts his responsibility towards the conditions of people in developing countries.

SOCIAL ORGANISATION

Is willing to play his part in alleviating environmental problems through laws, public policy and active participation.

ECONOMICS

Is willing to work towards domestic and international solutions of environmental problems related to nutrition, poverty, transportation, waste disposal, sources and distributions of energy resources.

AESTHETICS, ETHICS, LANGUAGE

Has personal attitudes and habits reflecting a caretaker responsibility towards environment and communicates this feeling to others. Has an aesthetic appreciation of the natural and built environment in which he lives or which he visits.

BUILT ENVIRONMENT

Plays his part in caring for his village, town or city including his immediate locality and particularly conservation areas. Supports research into the problems of urban living.

ENERGY AND RESOURCES

Conserves energy and resources in all forms in his home life and work.

Are you a member?

National Association for Environmental Education

Environmental Education involves those disciplines which contribute to an understanding of man in his environment. There is an increasing recognition that the ecological understanding of the biophysical environment is an important factor for the survival of man. There is a deep concern about the quality of life and the problems of human society in the built environment.

The National Association for Environmental Education is the association of teachers, lecturers and others concerned with education and the environment.

Its members work in all types of schools, colleges, polytechnics and universities. They include representatives of all the disciplines involved in environmental education, both from the sciences and the humanities.

The Association presents the ideas of its members and continually promotes environmental education in discussion and constructive activities.

National Conferences and International Courses are held regularly. To these come educationalists and leading speakers on national and world wide environmental problems.

Study Conferences are designed to produce solutions to specific educational problems.

Working committees carry out research, construct examination syllabuses and outline possible courses and useful activities.

The Association publishes the results of its work, newsletters and Journals.

In addition, the Association continually presses for financial and other facilities for environmental education in schools and colleges through the Department of Education and Science and local authorities. It is also very concerned to encourage a considerable extension of teacher training in this field.

The Association presents the needs of schools to outside bodies and encourages them to help in their special provision.

The Association takes part in the work of the Council for Environmental Education.

Further information is available from:

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