



ENVIRONMENTAL EDUCATION PROJECT

NEWSLETTER No.5

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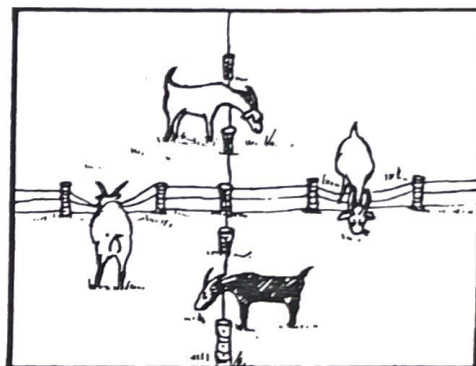
SYDNEY

FEBRUARY, 1979

In presenting ideas from overseas, I could be accused of reinforcing Australians' prejudice against the homegrown product. The purpose of this project is, of course, to find Australian examples and facilitate their publication; to date 47 projects have been funded.

However, many overseas programs are already available and some have been used extensively in Australia. This newsletter provides a brief resume of activities and programs from several countries. Follow up references have been included but many more are available, some for countries not mentioned below. If you come across articles giving overviews of environmental education elsewhere, I would be pleased to receive copies. They could then be available on request. Reports of each of the major conferences are held here at this office.

Newsletters in April and June will cover respectively:-



- : The environment as stimulus for self expression. Which values, attitudes, and behaviours for environmental education?
- : Urban environmental education. School design both inside and outside.

If you are involved in a project that might interest others, send in a brief description (about 500 words) by the 10th of the newsletter month.

INTERNATIONAL PROGRAMS IN ENVIRONMENTAL EDUCATION

The 1972 Stockholm Conference on the Human Environment led to a \$4 million UNESCO-UNEP program in environmental education and a number of conferences of direct relevance to Australia.

- : A regional meeting on "Education and the Human Environment" in Melbourne, May 1975 (report by R.Linke available from CDC, \$7.50).
- : An international environmental education workshop in Belgrade, October 1975, which developed the Belgrade Charter - a global framework for environmental education (see CDC-EHCD Kit, "Habitat - human settlements for the future"). The trend papers are available in "Trends in Environmental Education", J. Aldrich UNESCO, \$11.90.
- : A regional meeting on Environmental Education for Asia in Bangkok, Nov. 1976.
- : An intergovernmental conference on environmental education in Tbilisi, Oct. 1977 (see article by P.Fensham from "UNESCO NEWS" Vol.29, No.3, 1978).



The UNESCO-UNEP program publishes a free quarterly newsletter, "CONNECT", available from UNESCO, 7 Place de Fontenay, 75700 Paris, France.

National Project Director: John H. Smith



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Subscriptions 1979, \$2.00 or exchange Newsletter. Cheques payable "CDC - CANBERRA", and sent to the above address.

Tbilisi—An End and a Beginning For Environmental Education

Peter J. Fensham

In October 1977 the Unesco-UNEP four-year Program on Environmental Education reached its culmination at the world's first Intergovernmental Conference on Environmental Education in Tbilisi, capital of the Georgian Socialist Republic of the U.S.S.R. The Program had its beginnings in the U.N. Stockholm Conference on the Environment in 1972, and this Intergovernmental Conference was seen as an essential step in the contribution education can make to the urgent environmental situation facing the world.

Before Tbilisi, there had been four years of needs surveys, idea stimulation, workshops, regional conferences, pilot projects, exchange of news about environmental education and whatever national responses these initiatives of Unesco could encourage.

The Tbilisi meeting was aimed at a very high level of administrative and governmental decision making. Its main objective was to obtain commitments at these levels of national policy to the establishment of environmental education as a priority area and to the provision of adequate resources to foster its development in all sectors of formal and informal education.

Dr Tolba, Director of UNEP, set the scene as:

Environmental problems are marked by variety, complexity and urgency. For many in today's world, environmental education really is a matter of life and death: for thousands of industrial workers who deal with chemicals; for countless farm workers who deal with pesticides; for the millions of poorer people whose livelihood and health depend upon more enlightened management of the world's water systems; for the millions of richer ones who are threatened by environmentally induced cancer; and for the more than 600 million people who live in arid and semi-arid lands threatened by decreasing productivity induced by desertification.

and M. M'Bow, first African Head of Unesco, followed up in another opening address:

This is why one of the most important items on the provisional agenda before you concerns 'the role of education in facing the challenges of environmental problems'. In an area as new, after all, as that of environmental education, clarification of the concepts and principles which should guide our action is of crucial importance. What must be done is to state as clearly as possible not only what is meant by environmental education, but also, indeed above all, its specific functions as part of the general effort to develop and bring about a renewal in education in order to prepare each individual squarely to shoulder his responsibilities.

After such eloquent challenges, the formal proceedings of the next five or six days would have seemed to most observers (and certainly to this participant) to have been dreary and disappointing. Conferences at the intergovernmental level tend to have a carefully controlled atmosphere and a set of procedures that tend to eliminate creativity and the exchange of ideas. There is a tedium about the remorseless national statements and a formality about all the pre-prepared resolutions the delegates bring to the meeting in their briefcases or pockets. In due course Unesco will issue a report on the meeting that will contain the agenda of the Conference, a careful précis of its various items and a long list of resolutions. The resolutions occupied the final days of the Conference, but revealed only occasionally the clashes of international and intranational interests that underlie so many of the crises of the environmental situation—the reason for us being together, in fact. More often there was concern that some piece of wording or jealously held local interest was being lost in the consolidation process (probably the most interesting, though behind the scenes, activity that a few of us were able to undertake) that reduced five times as many resolutions to the still formidable list the Conference adopted. Finally, in a most carefully stage-managed last session, the Conference endorsed everything including the Tbilisi Declaration*, a cautiously worded and not debated appeal to Member States and other agencies to take environmental education seriously.

Behind Tbilisi

There is, however, much more that needs to be said and reacted to in Australia, if the whole Program of Unesco-UNEP is to be as useful to us as it potentially can be. The many ideas that have emerged through all the phases of the Program need to be transmitted widely in Australia and elsewhere, so that their challenge to existing educational practices can have a hope of stimulating some sort of response. Whichever of the possible responses occur—adoption, adaptation or rejection—at least it will mean that national educational programs and institutions are alive and conscious of the political and social functions they serve in the environmental situation confronting the world. It is the null response that is frightening and, apart from one Australian State, the reports prepared by these departments of education as briefing for the delegates at Tbilisi gave almost no suggestion that there was much awareness of the ideas that were already fairly readily available from the earlier stages of the Program.

The working papers for Tbilisi and *Connect*, the newsletter of the Program, are available from the Australian National Commission for Unesco. *New Trends in Environmental Education* (Unesco 1977) may be purchased through Educational Supplies Pty Ltd, P.O. Box 33, Brookvale, N.S.W. 2100.

Some useful concepts

In the Australian statement to the Conference it was possible to introduce the concepts of 'environmental luxuries' and 'environmental essentials' as useful criteria to use in environmental education that sets out to develop skills of 'identifying the options that environmental situations present and of choosing between them'. The power of these concepts was clear from the responses that they evoked at the Conference. A number of delegates referred to them in their later statements—a responsive feature that, as I have said, was almost totally absent from the formal proceedings.

Exploration of these two concepts may help to overcome the middle class values that have strongly shaped so much of the development of environmental education so far in Australia and elsewhere. For example, is energy conservation about giving up a second car or about giving priority to public and other alternative transport systems?

Again these concepts may prove useful in the continuing public debate and education concerning the relative needs of the Australian Aborigines who live on and near the uranium deposits and those of us whose interest in uranium is largely associated with its economic aspects.

The interdependence of environmental conditions internationally and the dilemmas this raises for individual countries were also mentioned. For example, it is comparatively easy (in terms of social and economic costs) for Australia to maintain reasonable forest environments but very costly for Thailand or Malaysia (from where we now import much timber) to do so. Again, Japan has made moves to control its serious pollution problems, but some of these involve the exportation of the problem to countries like the Philippines, which are in no position economically to insist on the environmental safeguards that are now expected in Australia, the origin of the iron ore, and in Japan, the ultimate user of the processed metal.

*The Declaration makes an interesting comparison with the Belgrade Charter—a product of an early phase of the same Program. The latter was the result of a very dynamic process in contradiction, and the issues of conservation and development were all in an open cauldron of debate. It is worth taking the trouble to obtain from the Australian National Commission for Unesco as it challenges much of our Australian practices in education.

When is education environmental?

There has been a tendency in the Program for more aspects of education to be seen as potentially part of environmental education and there is a danger that the term can be so broad and diffuse that it loses specific significance. Accordingly, it was good to hear at Tbilisi some contributions that addressed this problem. The objectives mentioned, about 'identifying options' and learning how to 'choose' between them, are a particularly useful example of a criterion to check what environmental education is. Of course, in a general sense any education *about* the environment or which *uses* the environment is environmental. However, it does not get to the heart of the environmental situations described above by Dr Tolba unless it assists the learners to make discrimination about what is possible and to become more in harmony with the other elements of the environment—immediate and more extended.

This insight helps to make sense of what has been an oft-repeated slogan—environmental education is not another subject but a dimension, that should manifest itself in all subjects of the curriculum. In practice, it is geography and biology that have been the subject areas most able to identify with the environmental education movement. However, subjects like literature, social studies, commercial subjects, physical sciences and mathematics are much more likely to be the real bases that will get at the social values, political organisations, economic policies and structures, technological control and development, and national and international patterns of distribution that determine the environmental situations. The Tbilisi Conference recognised that much will need to be done to assist teachers to recast their content and teaching methods in these subjects, but at least the problem is now clearly stated.

The Conference also recognised a number of groups in society to which little attention seems yet to have been drawn in Australia. Among these were:

I. Consumer organisations, producers and consumers in general

There was a strong concern that the whole consumption pattern has a major impact direct and indirect, on the environment. The agents for environmental education in this area were seen to be the mass media and the appropriate educational authorities which are responsible for formal education.

II. Professionals indirectly involved in environmental situations

A number of countries have begun to explore ways of incorporating into the education of economists, business administrators, architects, engineers and so on a common interdisciplinary core of environmental studies that relates to the direct and indirect effects these professionals will have on the environment. Tertiary education and professional institutes are the key agencies here.

III. Vocational workers and technicians

The curricula for these workers should include information about the changes in the environment that result from their work and the collective effects of related trades, for example in construction, manufacturing and so on, on the environment. Technical and Further Education is the obvious authority to introduce this emphasis in Australia.

However, education for groups II and III needs also to include analysis of the constraints such individuals experience, and the roles they can play collectively as unions or as professional groups, to determine societal environmental policies.

IV. Workers in general

A number of countries stressed the importance of environmental education that sees the work environment as a very important local environment. It was seen as perhaps the most natural environment for the environmental education of adults. For millions of present workers the informal channels for education will need to take up this challenging aspect of environmental education, regardless of how well formal education copes with the environmental education of the new generation of workers. What do international programs achieve?

A number of tangible products of this Program have already been mentioned but these need dissemination. This process has already begun in Australia through person-to-person meetings. Certainly numerous Australians have made contact abroad with persons identified by the Program.

Another product is rather different and it did surprise me, steeped as I am in the cumbersome Australian educational system with its State structure—an organisational pattern which seems singularly impervious to good ideas either from outside Australia or from the grass roots or local level. The formal reports of a number of countries and informal discussion with delegates made it clear that the Unesco-UNEP program has been a very effective catalyst in developing environmental education. The progress since the Belgrade meeting of 1975 was very evident. What for many countries then was simply an idea has now a much more concrete form. Evidence for this took a variety of forms, including (i) considerable curricular materials for schooling; (ii) national plans and programs for expanding environmental education; (iii) quite detailed models for environmental education throughout schooling; (iv) expanded non formal environmental education of many kinds; (v) considerable educational efforts by ministries (other than education) which are contributed both independently and through the formal channels of the Ministry for Education; (vi) greater recognition of non governmental organisations (NGOs) involved in the environment; (vii) new legislation establishing environmental education; (viii) senior administrators in various ministries who have specific and explicit responsibilities for environmental education.

I believe that, in a number of countries at least, educational innovators are able to use an international program, like this one for environmental education, to get their innovation recognised and established. In some cases, the added weight leads to legislation and this for their country is the only way environmental education gains a foothold. The use countries make of international programs will vary and depend on their own structures and institutional patterns. Australia does not have an easy pattern for responding to what is of merit in the international program.

In the case of environmental education, some of the best ideas (in my opinion) are arising out of the experience of some of our neighbouring Asian countries, and personnel from these countries rarely appear on the Australian educational circuit. Accordingly, only by central dissemination are these ideas likely to reach many Australian schools.

Up to 1975 Australia through the Academy of Science, the National Commission for Unesco, the Curriculum Development Centre, the Schools Commission and the Educational Research and Development Committee had taken a number of initiatives in environmental education that when reported made quite an impression at Belgrade. At Tbilisi I was conscious that we had not continued to progress very much. For example, we had no national report to present and at least twenty countries had such reports often specially prepared for distribution at the Conference—the only means of persistent communication at such a meeting.

The international program has opened up many opportunities for Australia to contribute to, and receive from, the development of environmental education. It is up to us as individuals and as institutions to respond.

*Professor Fensham, Professor of Science Education at Monash University was Australian delegate to the Conference.

HEARD AT TBILISI

COLOMBIA

If the "disease" can be sold, it ought to be possible to sell the cure ... consumption of resources goes on while millions barely exist ... This Conference should reach the hearts of business men so that they can realise that new harmonies can be achieved ... A model for environmental education has emerged from programs involving grass roots people and technical people who, in short periods together, defined problems and established structures to tackle them.

U.S.S.R.

The development of a no-waste society is a major task for environmental education ... Environmental education needs to develop skills that enable the identification of what is socially and economically disastrous and what is advantageous.

DENMARK

Students in higher education who will qualify for planning posts are a prime target for environmental education....

SWITZERLAND

Our duty now is to offer the options that are more akin to "geography" rather than "technology".

GREECE

An immense problem with the historic environment - 30,000 sites of real merit. There have been clashes between the interests of villagers living near the sites and those of metropolitan environmentalists.

HUNGARY

The law for the Protection of the Environment in 1975 has now begun to enable environmental education to infuse all three levels of education.

FINLAND

Environmental education should illustrate how the inter-relation of nations occurs. How the rich are rich because the poor are poor. It is closely related to education for international understanding.

NETHERLANDS

Study centres are being established in urban areas. A concentric model for environmental education is being used ... Environmental education must stress limits for growth, particularly consumer trends.

ITALY

Need to overcome the queer separation that has developed between the natural and social sciences.

FED. REP. of GERMANY

Civil rights movements are encouraged, and they have contributed considerably to a very wide public awareness.



ENVIRONMENTAL EDUCATION IN THE U.K.

David I. Smith

Centre for Resource and Environmental Studies
A.N.U.

These comments are not based on any form of detailed review but are the impressions of a university teacher formerly involved with field study at the secondary school level in the United Kingdom in geography and environmental studies.

The growth of any school subject in the U.K. especially at the secondary school level, is limited until the various Examination Boards offer it as an examination subject. In the case of environmental studies this "take-off" situation has been attained only within the last year or so. A number of Examination Boards have recently published their syllabuses and guidance notes for both ordinary and advanced levels, which are the external examinations taken at the equivalent of Year 10 and Year 12. It must be stressed that these examinations are only attempted by the more academically able pupils but the syllabuses tend to be reflected in the content of the teaching for all school children. It should also be firmly stated that geography, at all levels of education, is a widely taught subject which enjoys considerable status and is one of the most popular university courses.

The aims of all Examining Boards are to integrate studies on the physical environment with those of resources and management. A dominant theme in all the syllabuses is the stress placed upon field observation and individual student project work. For several of the Boards a considerable proportion of the total examination mark, up to perhaps 30% of the total, is allocated for the assessment of this student project work. The assessment is generally school-based with external moderation.

The guidelines of the University of London Examination Board for A level gives useful examples of the general approach of the fieldwork based project expected from all students. They suggest that an individual "industry" be selected and that it be considered within a particular "area". The industry can include agriculture or "beefed-up" scientific element and less emphasis on studies outside the U.K. The potential strength of environmental studies is in a team teaching approach within the schools offering the subject. Where this has formed the focus of the course, the results are normally to be recommended. For students at the average or below average ability level or at primary school, the potential of environmental studies is perhaps even greater. There the subject acts as a bridge between science and social science and at its best is taught within a fieldwork setting with the emphasis firmly on the local environments.

I do not personally mind if the tuition is under the umbrella title of "geography" or "environmental studies". Either, if well taught, combines a multidisciplinary approach integrating across the natural and social sciences and investigating man's role in a changing world.



E. IN THE U.K. (Cont.)

fishing through to mineral extraction, motorway construction or tourism; the area can vary from rural through central town area to National Park. The emphasis is then upon the student using, as far as possible, primary data sources such as census returns, interviews, traffic counts and the like, together with appropriate specialised maps at a variety of scales. In addition, more specific practical work with a laboratory basis or using the immediate school environments is also encouraged.

It is usual for schools, normally under the auspices of the geography or biology departments, to provide the possibility for "away match" fieldwork often for a period of a week or so within the school year. The beginnings of this field study can be ascribed in the Field Studies Council, a non-profit-making trust which was formed in 1943. It now has over ten centres distributed throughout England and Wales in a wide variety of environments. The basic course is of a week's duration, board and lodging is provided together with simple but adequate laboratory, map and field equipment. There is a choice of tuition, either provided by the graduate staff at the centres or the schools can use the facilities and provide their own tuition. The FSC will either cater for school parties or individual students. The aim is to provide field education for all ages and abilities but the demand is for courses for the more academic students at the advanced levels of secondary education. There is no doubt that the FSC has acted over a period of some 35 years as the innovating organisation for school fieldwork, aided perhaps by the fact that it has retained its financial independence of government educational funding. The dissemination of its ideas is also aided by courses given for teachers in the field sciences either by the FSC staff or by invited outside specialists. During the last 10-15 years there has been a considerable growth of Local Education Field Centres which are similar in purpose to those of the FSC. It would be a fair generalisation to say that the majority of Local Education Authorities in the U.K. now have field centres staffed by resident teachers and the total number of such centres is probably in excess of 400.

The development of environmental studies as a school subject is not in itself responsible for the growth of school fieldwork, but it has linked itself to this movement. Also, as the syllabuses are of recent origin, this has been combined with an emphasis on individual student project work.

The problem faced by environmental studies is that there is often considerable overlap with a well established and well taught geography syllabus. Thus both schools and universities are reluctant, at the more advanced levels of secondary education, to provide students with both subjects. Indeed in some syllabuses the differences are small and critics would say the only discernible differences are that environmental studies has a rather

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In June-July 1978, the British Council ran in Wales a course on "The Use of the Environment in Education". Participants from Western Europe and Australia found the approach exemplified in the course very similar to the approaches in their own countries and were interested to pool ideas and problems; participants from India, Africa and Asia Minor heard something very new and rewarding but potentially threatening. The main problems occupying them were -

- : What would it cost? - because it mustn't cost.
- : What would the inspector say? - because that could be the end of the matter.
- : Would it improve the students' chances of exam success? - because that is their major (sole?) measure of educational worth.

As in so many conferences, the interactions were the best part.



ENVIRONMENTAL EDUCATION IN NEW ZEALAND

Ruth Upchurch and Ian Young

Primary and secondary schools have no specific subject called "Environmental Education" and there is no suggestion that they should introduce such a subject. However, the environment is a major resource and an important part of many school programs. Such programs vary enormously. They might include a ten-day camp in wilderness country; an activity trail around the school grounds; a canoeing trip; a shore-line science survey; a visit by a rural school to an urban community; a study of a farm; an experience of living on a marae; or a visit to a factory, a museum or an art gallery.

These activities are often known collectively as outdoor education. This term does not apply to any one subject but rather to a range of programs designed to help pupils understand the world about them and their place in it. They help pupils to learn, enrich the curriculum and provide an opportunity to integrate two or more subjects.

Schools have organised field work, outdoor club activities, educational trips and camping for many years. These have largely depended on the enthusiasm and interests of teachers and on the willingness of the parents to provide support. Possibly, there has been more outdoor education in primary schools where teachers have felt less constrained by examination requirements and rigid timetables.

Changes in attitudes and curriculum

Teachers and pupils are making increasing use of the learning environments outside the classroom. We are recognising that all people learn better with direct experience. There is also the concern of conservationists for the wise use of the natural environment and for better planning of man-made environments. Many of the submissions made to the Johnson Committee in 1977 recommended an extension of schooling into environs outside the classroom.

Concern for environmental issues is reflected in proposed new syllabus requirements. These contain objectives such as the development of "an ability to contribute to a planned use of the environment" and "a desire for continuing involvement in the balanced use of the environment". When educationists discuss these topics, the traditional boundaries of subject disciplines tend to disappear.

A relatively new development is the increasing use of residential centres for more prolonged outdoor activities. In 1973, the Department of Education officially approved outdoor education centres. Since then, interest in outdoor education has rapidly increased. Schools have run more residential courses, making use of existing centres or building their own centres. The programs at the centres vary considerably.

The Working Party

In August 1977, a working party was set up to study environmental and outdoor education. Members of the working party include education officers from primary and secondary levels; subjects included in the study are art, geography, health and safety education, outdoor pursuits, physical education, science, social studies, audio-visual resources and an environmental studies project.

The working party's discussions brought together numerous experts and material from earlier groups such as the environmental education conference of 1975, national refresher courses, regional and local in-service course. They also included a study of curriculum development both in New Zealand and overseas.

The members of the working party aim to work with teachers and others interested in outdoor education and environmental studies to define the boundaries of outdoor education, and to decide on the experiences which pupils should have had by the time they leave school. They aim to decide which particular experiences can be introduced for each age-group in schools. They will also find out what teachers are already doing in schools and what else could be done, from preschool level through to secondary.

Finally, the most important and most difficult task will be to recommend ways in which schools can use existing resources, and how they can build up new resources. This will include the study of teacher training and personnel, physical settings, buildings, transport and administration.

The working party has consulted with, and received suggestions from, teachers, inspectors and many groups in the community. It has organised several national courses at Lopdell House and Hogben House. More courses are being planned. The aim is to produce a statement recommending national guidelines for the use of learning environments outside the classroom, to achieve the objectives of environmental and outdoor education.

Permanent Wealth

An old Maori proverb sums up the belief of educationists about the value of environmental and outdoor education: *Toitu he kainga, whatungarongaro he tangata* - the land still remains when the people have disappeared.

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ULURU (Ayers Rock) is currently under pressure from three airlines for helicopter services to the top. Paddy Uluru, the traditional owner of the rock has filed a land claim on it.

Australian National Parks & Wildlife Services, who administers both Uluru and Kakadu would like comments on the proposal.

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FILM AUSTRALIA has released a new 20 min. colour film illustrating the spiritual attachment of the Aborigines to the land.

"WALTANGAMARDIKI - THE LAND MY MOTHER"



WORLD ENVIRONMENT DAY - June 5th - sponsored by U.N.E.P. - an outcome of the 1972 Stockholm conference on the Environment.

Theme this year is - *THINGS WE WANT TO KEEP - OUR NATURAL ENVIRONMENT*. The Department of Science and the Environment is producing a booklet, posters, and a small exhibition.

Further information may be obtained from P.O. Box 449, Woden, A.C.T. 2606 or telephone 062-83.2211.

The final issue of "Environs" from the Department of Environment, Housing & Community Development has National Parks in Australia as its theme - with 8 pages of colour on Kakadu.



ERIC - SMEAC

One solution to the information explosion is provided by the ERIC Clearinghouse for Science, Mathematics and Environmental Education. ERIC collects, screens, organises and disseminates reports; prepares summaries, reviews and bibliographies on critical topics and provides copies of educational documents.

It keeps up with educational innovations by collecting documents on new curricula, media and methods.

How do you use it?

- Read: "Resources in Education" (RIE)* - monthly abstracts of research reports, outstanding programs, etc.
and: "Current Index to Journals in Education" (CIJE)* - monthly abstracts of 700 educational journals.
- Use author's name or subject descriptions from the ERIC Thesaurus* to help narrow down your target, and order a computer search. You receive a print-out of abstracts from which you can select the item(s) you want.

Once you have the specific reference (accession number) you can order* the full document in hard copy or microfiche.

ERIC also produces fact sheets and bulletins: you can join their mailing list free by writing to ERIC/SMEAC Information Reference Center, 1200 Chambers Road, 3rd Floor, Columbus, Ohio, 43212, USA.

ENVIRONMENTAL EDUCATION IN THE U.S.A.

David Tribe
Gould League of N.S.W.



The two years which have passed since I completed a short study tour of the U.S.A. have given me time to reflect upon the impressions I received.

1. Environmental education covers a wide area, so much so that nobody in the U.S. has been able to offer a definition which meets all the requirements and ideals outlined by those involved. It is regarded not as a new subject, but rather as an educational process which is interdisciplinary, multidisciplinary, and endeavours to solve environmental problems through pupils' involvement in real life situations.

Environmental education deals with outdoor education where people are involved in activities considering natural life support systems. Through these experiences people are brought to a realisation that they are part of these natural systems and that they depend upon their functioning in order to survive. One such process is called "acclimatization" which has been developed by Dr. Steve Van Matre of Wisconsin.*

Acclimatization uses all the senses to create an environmental awareness and sensitivity. It endeavours to:

- : help people to be aware of the ecological processes that govern life and to understand their own role as a part of these processes;
- : increase both sensory awareness and conceptual understanding of the natural world;
- : break down the barriers and remove the disguises between man and nature through the use of special immersion techniques whereby people become at one with nature.

Environmental education is also concerned with urban areas and their investigation in a practical manner to discover ways of improving the quality of life in them. This is a rapidly growing field of investigation because most people in the United States live in an urban setting.

2. Environmental education centres are being developed across the whole of the United States by many bodies, such as local school districts, governmental bodies, private bodies (e.g. National Audubon), state colleges, universities, etc. The centres hold many and varied workshops which seek to involve the whole community. Many workshops offer credit to undergraduate and postgraduate students.

State, interstate and national conferences in environmental education are often held at the centres. These conferences are of great value in maintaining open lines of communication for the continuous interchange of new ideas in environmental education.

3. Energy conservation. Owing to an awareness of an energy crisis developing in the United States, much environmental education material is now being prepared for schools and the public on the conservation of energy. In 1978 a day was set aside in May, called "Sun Day", with activities being held on energy conservation. One outstanding program developed by the Iowa Department of Public Instruction in cooperation with the Iowa Energy Policy Council is entitled "Energy Conservation Activity Packet". This is material

* "Acclimatization" and "Acclimatizing", S. Van Matre, Publ. American Camping Association.

especially developed for pupil use from K to 6th grade. It assists a school to examine the energy situation with reason and logic. The goal of the material is to create a growing awareness of the need for dealing with existing energy problems in a positive way and to develop in pupils an energy conservation ethic.

4. The Environmental Education Act was passed by the Federal United States Government in 1970. Among other things, this Act provided financial grants to states, local school districts and other environmental agencies for the writing of suitable material for use in schools. Much of the presently available program material in environmental education throughout the United States has been written with the assistance of such grants. Some of this has been collected at the Gould League Office; more can be accessed through ERIC (see below).

Many people involved in environmental education in the United States expressed the wish to contact people in other countries interested in this field. Addresses are available at the Gould League of N.S.W. office, at Milson's Point Public School, Burton Street, Milson's Point, 2061, N.S.W.

AN AUSTRALIAN IN IOWA

Joan Webb**

Lecturer in Science at Kurung-gai C.A.E., N.S.W., who visited the mid-west of the U.S.A. in July 1978



How do the "nature centers" of Iowa compare with the school-oriented field studies centres in Australia? Firstly, their establishment and continued support by both the state government and the local community is a feature which must contribute to a greater impact than that found here. The 1970 Environmental Education Act is a sign that those in higher places recognise the urgency of the situation - namely to educate the total population to a point of not only awareness but ability to make meaningful decisions. The work of the County Conservation Boards is another indication of support at the governmental level.

Local community support is evident in such bodies as the Community Advisory Council at Hartman Reserve, Cedar Falls, and the large supportive group of board members at Indian Creek Nature Center, Cedar Rapids. As a noted naturalist from Hartman said, "The people here wanted this land and this center - the demand was there."

Secondly, staff and facilities are available to all members of the community, week-ends and vacation time included. Programs are provided for both school and adult groups.

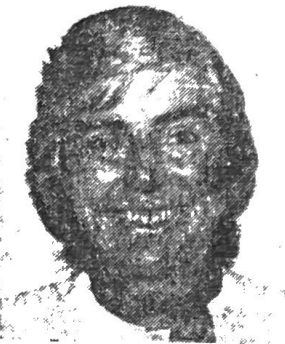
The work of the Youth Conservation Corps, although geared to areas other than nature centres, must be mentioned as a worthwhile concept. The young people are paid by the government to work on improvements and renovations for the centres, but ten hours each week is allocated to classes in environmental education.

In Australia a greater effort needs to be made to transmit concerns to the decision-makers - those in authority, at federal, state and local government levels. Iowa has demonstrated that government and community can work together in such an effort, but as a superintendent of the Iowa Department of Public Instruction said, "We still have a long way to go - we have involved the children, but our general public is not yet fully attuned."

** Joan is currently preparing a report on "Field Study Centres around Australia" for the Australian National Parks & Wildlife Service.

CENTRES AROUND THE WORLD

Dorothy Pearson
Armidale - (N.S.W.)



It is a pleasure to have this opportunity to write about some of the things that have excited me recently. The things have not been within schools, but rather within books and libraries and myself and letters and pamphlets and people and conservations - and also within field studies centres that I have visited in N.S.W., Queensland, S.A. and the A.C.T. This research identified some 500 centres around the world: it is a brief overview of these that I here wish to present.*

Firstly, what is it that centres have? Well, centres often have buildings. These are sometimes modified from those of commercial camping areas, of old construction sites and of disused country schools; large country houses, youth hostels or a few tumble-down huts are also so used. British centres are more likely to be thus purpose modified rather than purpose built: American centres are more likely to be purpose built - and palatial!

The buildings especially constructed include administrative blocks, gymnasias, green-houses, laboratories, libraries, shops, animal houses and enclosures, aviaries, boat sheds, dormitories, observatories and audio-visual rooms. Rarely are they of rough-hewn bush timber, rarely are they aesthetically one with the bush, and rarely do they include areas where fieldworkers may change and dry wet outdoor gear. Commonly at residential centres and even at many day centres, classrooms, libraries and laboratories are regarded as essential.

Trails are one of the many structures that are built to assist fieldwork. Others are such things as compost heaps, slopes, dams, bogs and marshes, outdoor amphitheatres, classrooms and meeting places, rock piles, animal gardens, bridges, picnic areas, camp sites, sign posts, information boards, board walks, and even touch-and-see nature trails for the blind - to name but a few! There is an emphasis upon those that give information, provide access and diversify the natural environment.

Within the buildings of centres much equipment is usually found. Typical school laboratory equipment is there duplicated and individual field kits are often provided. The kits comprise such things as dip nets, geology hammers, collecting bags, decibelmeters, cameras, clipboards, films, barometers, hand lenses, knives, labels, hygrometers, buckets, thermometers, trowels, string, sample bottles, metre sticks and pH test paper. If such equipment is absent, fieldwork may then be a sensory experience unfettered by the complications inherent in youngsters carrying handfuls of clipboards, pencils, field kits and burst plastic lunch bags.

Planners often advocate that centres be in or have ready access to diverse, spectacular, unique, distant and near-wilderness environments; rarely is the usual, the uniform, the nearby, the ordinary, the obvious or the durable utilized. Hence nature reserves, national or state forests,

* These centres are listed under country, referenced, classified and annotated in the author's thesis: "Fieldwork in Environments Out-of-Doors" 1978, University of New England, Armidale, N.S.W. 2351, Australia, pp.211-238.

and national parks have been much used as centres; centres on school grounds are seen as requiring to be diversified with, for example, nature areas, trails, ponds and bogs; and centres are often seen as needing to be sited in areas of great natural beauty. Rarely do centres utilize sugar cane farms, soccer fields, extensive plains, familiar parks, roadside verges, grazed paddocks or city streets.

Curricula or study guides or particular topics are offered at some centres; then these have established their own curricula. Alternatively centre staff plan programs with visiting staff; the experiences then are either designed to conform to examination requirements, or to be entirely separate from school activities. Secondary centres tend to be discipline based and primary ones to be multidisciplinary.

Now, secondly, what is it that people actually do at centres? Well, their activities there could encompass the whole gamut of human activities; and there would be happening such things as talking, thinking and day-dreaming; but it is not these, it is the planned fieldwork activities there that I wish to discuss. For example, a centre emphasizing competitive sport, regards an afternoon's picnic on the beach as a field experience. Another centre offering experiences in natural crafts restricts fieldwork to such things as the collection of clays for potting. A third centre concerned with visits from the general public emphasizes the giving of information through audio-visual tapes, indoor displays and a system of extensively documented nature trails: fieldwork there is consequently very much a passive receiving of information. A fourth centre focussing upon outdoor adventure pursuits makes understanding of the environment merely incidental to man's leisure time use of that environment. Then centres primarily concerned with the social and personal growth of their students may structure fieldwork in such a way as to maximize person-to-person communication, not to maximize any sensory experiences with the environment: hence, there, the cabin counsellors become of more importance than the field teachers. And, finally, at centres where fieldwork dominates the planned activities, a more traditional academic approach to the out-of-doors may be found.

I would also suggest to you that fieldwork must be fundamentally a sensory and direct experience with the out-of-doors; moreover it is this multi-sensory, direct experiencing that characterizes fieldwork and places it in stark contrast to many of the teaching/learning transactions within four walls. So during fieldwork, students do such things as watch bulldozers, observe traffic flows, touch rocks, smell exhaust fumes, listen to animals in zoos and taste wild rose hips. Or they experience multi-sensually the one environment by, for example, wading through bogs! Such experiential learning is at times structured around pre-programmed cassette tapes, trails with prescribed stops and guides, and/or information booklets and field display boards; alternatively, students are placed in an environment and left there to observe only that which they already can see - that is, to sense in any way at all only that to which they themselves are already responsive. Both structured and unstructured experiential learning are considered by some to be sufficient. But I would suggest that students of all ages need to go beyond the sensory world to those other worlds where sensory data is used and manipulated. Hence students must be drawn into both the cognitive and affective domains of learning. Be that as it may, fieldwork is typically planned as a direct, structured, and observational experience only.

And might I say, finally, that I have not yet even mentioned that which I would suggest to be a crucial determinant and perhaps even the ultimate determinant of the outcomes of any teaching/learning transaction, whether at centres or not - the people involved in that transaction. But that is another story for another time.

Environmental Education Centers Must Be!

Environmental
education centers
must be

created,
designed
and
operated
so as to best
assist all teachers in their
continuing development of
personal
and
professional
awareness
and
responses

to environmental education
needs
and
necessities,
opportunities
and
potentials

Environmental education centers
can derive energy
from collaborations,
formal
informal,
of individuals
who will sometimes
represent

groups,
institutions,
directions,
dreams,
or
visions;
universities,
colleges,
LEAs,
schools,
communities,
agencies,
teachers,
non-profit groups,
profit organizations.

Environmental education centers
will make use of a wide variety of
spaces
special uses,
general uses,
pluralistic uses.

Spaces
such as:
inside
outside
fixed
traveling
old buildings
new buildings

centralized
localized
dispersed
permanent
temporary
negotiated
leased
loaned

purchased
borrowed
liberated
entrapped

personal
public
shared
mutual
long-term
momentary

Reference
This is one of the many novel ideas
to be found in "What Makes Educa-
tion Environmental?" edited by
McInnis and Albrecht, pub. Data
Courier Inc. at \$14.20. Others
include Lucifers Lexicon of en-
vironmental terms, e.g.

**may - where we say we throw things
away - when we put them where they
will change the ecosystem.**
The total effect of elec-
tricity is not only non-essen-
tial but also harmful.
Under doing - any of a group of
highly effective, broad spec-
trum pharmaceuticals used
widely in overpopulated areas
to ensure that starvation
is the chief cause of human misery
and mortality.
Not all of the book is quite so
lighthearted! Other sections
include:
: The basis for E.E. - back-
ground (U.S.A.), economic
barriers, politics of
education change.
: Instruction - pre- and in-
service, K-12 program, adult
and tertiary E.E.
: Perception and communication
- language, social mytholo-
gies, behaviour, mass commu-
nications, games.
E.E. advocacy - everyone's
role, school/community pro-
jects, political process.
: E.E. needs - attractive in-
struments, funding, and of
native.

And whatever the space, it must be
made and maintained to be
humanly
and
environmentally
attractive,
useful,
responsive.
Each environmental education center
must define
and refine
its own

styles,
roles
and
goals
in ways which keep
both the

processes
and the
purposes
of environmental education
active,
continuous,
and
self-renewing

of available
resources
time
space
energy
perceptions

Environmental education centers
might offer (some do):

short courses,
which are
adaptable
immediate
responsive
modular

tutorials,
self-study programs
self study moments
demonstrations
films,
team building,
problem sensing,
problem solving,
colloquia,
group work,
special
projects,
activities,
field work,
advisory services,
consultative aid,
environmental counseling,
mentors,
access to
stuff
technologies
sites and sights
information
sensoriums
others
energy

Environmental education centers
must continuously strive
to be responsive to
teachers and
communities

in short, PEOPLE,
interesting people,
interested people,
and their interests

**An excellent summary of the E.E.
scene in the U.S.A. with lots of
implications for Australia.**

through programs
which are pluralistic
in conception,
a time
design,
direction
motivation
and assessment,
focus on

within the limitations

EDUCATION POLICY

If you wish to graduate from a high school in Oregon, U.S.A., you need to achieve some 67 social competencies, including:

- : Personal Development; Computational Skills; Science and Technology; Health, Mind and Body; Social Responsibility; Citizen: Environmental; Citizen: Street and Highways; Consumer of Goods and Services; Career Development; Training and Education.

Under *Citizen Environmental* is listed:

- : Students will recognise the complexity of the relationships of the interdependent life systems in the environment.
- : The student will be able to explain the causes and effects of various forms of environmental pollution.
- : The student predicts effects of man's use of the finite natural resources of his environment.
- : The student describes effects of human population increase and urbanisation on the environment.
- : The student will be able to defend the need for preplanning the use of land, space, and natural resources.
- : The student will be able to analyse the costs and benefits of alternative solutions to environmental problems.
- : The student knows the positive actions that can be taken in preserving, restoring, and recycling earth's natural resources.
- : The students will identify solutions to various forms of environmental pollution.
- : The student will be able to identify alternative solutions to the problems of overpopulation and urbanisation.

* * * * *

Once you have decided your objectives for an environmental education program, how can you tell when you achieve them?

Rodney Doran in the *Journal of Environmental Education* Vol.9, No.1, 1977, has reviewed existing measures under Cognitive, Affective and Combination instruments. His conclusion in the article, "State of the Art for Measurement and Evaluation of Environmental Objectives" is that the field is embryonic and requires help from the fields of sociology, psychology, etc. The clarity of this review makes it worthy reading for those still thinking about objectives.

ESSENCE I AND II

The Environmental Studies for Urban Youth Project, under the sponsorship of the American Geological Institute first created the ES materials in 1970 to encourage growth, awareness, responsibility and creativity in the learner.

What they created was something unique in curriculum development, viz. materials that do not focus, or even appear to focus, on content, but rather focus on the openness of learning, or, as the authors call it, on the Access Mode.



Assignment cards, carefully designed to invite perusal, offer open-ended, even ambiguous, activities which, so long as the educator has patience and faith, force the learner to decide the content and the method of carrying them out. e.g.

**GO OUTSIDE
AND FIND
A MILLION
OF SOMETHING...
AND PROVE IT**



or

The action:

Make some place in the room more beautiful

more:

- Get permission and do it in the school the community
- Do it with actions and attitudes
- Is it possible that in making a place more beautiful for yourself you could have made it beautiful for others?
- See if you can come up with a universally agreeable beautiful list

This is stimulus for lateral thought at its best; bright learners would thrive on it, especially if available as fillers at the end of other "content" lessons ... and that isn't to suggest they are only important enough to be regarded as optional extras! Less imaginative learners, however, would need lots of encouragement to "have a go" and the rewards to them could be even greater.

One incredible achievement of the materials is the range of ages at which they might be used - primary, secondary and even adult. The prerequisite is motivation to accept the challenges offered.

Essence I ((24.95) contains 78 assignment cards
Essence II (\$54.95) contains 171 assignment cards in 10 mini units, each with a guide booklet.

The themes are:

- : Enviros : Astrology
- : Communicate : Community
- : Coping with Complexity
- : Creature : Evolution
- : Movement Expression
- : Peephole : People Patterns

Each kit comes with a 48-p. teachers booklet outlining the essence of the philosophy behind it. A Sampler of 6 cards is available at \$1.95 from the publishers, Addison-Wesley and the kits are readily available in Australia.

Like many U.S. materials in environmental education, these go well beyond what we might regard as E.E. but they provide opportunities for much E.E. activity. Highly recommended for divergent thinkers (and those who would like to be!)

LETTERS TO THE EDITOR

"In Newsletter No.3 you give four points of concordance in the articles. I would hope we were moving towards a consensus as you say, BUT... the point of agreement which stands out in nearly all articles, the one which I believe could give spirit and identity to the whole movement, is

"education for (the preservation and enhancement) of the environment".

Surely this is the point of the Belgrade and Tbilisi documents. I base this Centre on such."

"I was intrigued with your verse quotation from "Alice in Wonderland" but can assure you that we who are involved with the salinity problems of the River Murray system most certainly know which way we want to go in "environmental education". We want a continuing education program in every secondary school in the Murray Basin to ensure a basic and elementary understanding of ecological principles as practically applied in every local environment."

RESERVICE ENVIRONMENTAL EDUCATION FOR TEACHERS

South Australia

David Prideaux
(Hartley C.A.E.)

Potential environmental education teachers need two types of experiences in their pre-service education; some understanding of the knowledge and skills necessary in the study of the relationship between human beings and their environment and opportunities to examine and clarify their own attitudes to this relationship, as well as an examination of means of developing environmental learning experiences with children.

All South Australian colleges are active in the first area, particularly in science and geography. At Adelaide College of Arts and Education (formerly Adelaide and Torrens Colleges of Advanced Education) students can take an environmental studies major through combining units from geography, science and physical education, and Sturt College of Advanced Education has provision for environmental studies majors. Both Sturt and Hartley Colleges of Advanced Education (formerly Murray Park and Kingston Colleges of Advanced Education) offer units in the second area for primary students. These are compulsory units which examine science, social studies and health education and ways of integrating these into environmental education programs.

What perhaps has been lacking in pre-service environmental education in South Australia is opportunity for students to take studies in both areas, i.e. to take majors in environmental studies together with curriculum or methodology units. However, recently there have been some important developments in this context. In its Bachelor of Education program Sturt College of Advanced Education offers advanced general and curriculum units in environmental studies for students who have undertaken environmental studies majors or majors in related areas. Salisbury College of Advanced Education offers a graduate Diploma in Outdoor Education and Adelaide is planning to offer a graduate Diploma in Applied Arts where students can undertake an environmental studies option. Graduate diplomas should perhaps be considered more a part of inservice education than pre-service, nevertheless they represent a significant step towards educating teachers who have both a background in environmental education and knowledge of implementing environmental education programs. It is important, too, that the contribution of a number of disciplines is being considered in graduate or bachelor programs.

It is difficult to ascertain the concern with environment in other pre-service subjects such as art or music, although there is some evidence that the environment has become a focus for study in some of these subject areas. Environmental issues are considered in a range of courses at all Colleges and Universities, both in the general and professional studies areas.

Tasmania

Max Walsh
(Tasmanian C.A.E.)

The preparation of teachers able to effect an environmental emphasis in their teaching is not a discernible feature of the pre-service training courses in Tasmania at the present time. Student teachers at both University and C.A.E. encounter the bio-physical or socio-economic aspects of the environment only if they pursue studies in areas which consider these factors, e.g. science, geography, etc. Of course, not all science subjects contain any directly relevant topics for a student teacher who may wish to assume a role as an environmental educator. Other subjects may make token reference to an environmental topic, but there is certainly no overall framework to any teacher preparation course which aims to produce "environmentally educated" persons (see E.E.P. Newsletter No.3, Oct.1978 for a discussion of these terms).

The thrust of the K-6 science program in Tasmania centres on the child and the child's environment, the exploration of these surroundings and the gathering of experience. Programs in the secondary school do not clearly illustrate any conscious decisions made at the system level regarding the importance of E.E. The broad goals of schooling do not refer to environmental education in any specific way.

Consequently, un-coordinated activity usually ensues in the various subject disciplines, activity often initiated by one committed individual operating alone. Should the teacher-training institutions be involved in encouraging schools to adopt a more positive approach to environmental education?

Schools traditionally expect new recruits to be competent with the subjects, topics and approaches which are currently existing within any system. The training institutions are criticised if teachers are not produced with this market in mind. Thus, the initial change must come at the system (i.e. school, state and/or national) level. Only then will teacher preparation courses respond to the change.

Geelong - Deakin University

A Semester Unit, J.Henry

The School of Education at Deakin University offers students taking the B.A.(Education) degree an opportunity to become involved in environmental education. Environmental Education is an optional unit in the degree program for final year students.

The Unit has been developed by a Course Team approach over the past two years. The Course Team members have teaching and academic backgrounds in science, social studies and physical education, thus building in an interdisciplinary style to the unit.

The Course Team after much initial discussion decided to base the content and activities of the unit upon the following definition of environmental education. Environmental education is defined as the study of the problem-solving nature of man's interactions with his environment. Man's interactions with the environment at any point in time are a sample of many possible alternative exploitation options. Environmental education is concerned about the processes which determine the final decision for a particular exploitation form. This definition of environmental education logically leads to a course of study that is issues-based. Environmental issues arise when conflicting proposals for action (or form of exploitation) are canvassed by their proponents for general support. Environmental issues involve the examination of alternative exploitation options plus the process of reaching a decision on a course of action.

The unit is divided into two interrelated components. One component focuses upon curriculum issues relevant to teaching in the integrated area of environmental education. This component is referred to as the curriculum development component. The other component is committed to developing the student teacher as an environmentalist. This personal development component aims to increase the student's environmental knowledge, to provide student teachers with the opportunity of acquiring the skills for collecting environmental information, for collating and organising this information into a form that aids the comparison between alternative actions. An assumption by the Course Team members is that this personal development in knowledge, skills, attitudes and values will be best achieved by direct involvement in an environmental issue. Thus groups of students conduct a detailed study of local environmental issues. These student groups are supported by inquiry strategies for collecting background data, specific exploitation data and information on the decision-making processes associated with the exploitation

under study. The students are further supported by self-instructional packages called "learning centres" which provide general theoretical background.

The curriculum development component is also underpinned by the assumption that environmental education should be issues-based. Again students are provided with a number of curriculum guidelines, each supported by a theoretical rationale, and representative teaching strategies by which the guideline may be manifested. Each guideline, together with rationale and sample strategies, is embodied in a separate curriculum learning centre. Students are required to apply the curriculum development guidelines in preparing an environmental education program suitable for the grade and locality of their most recent School Experience Round. In this way the notion of issues-based and school-based environmental education curriculum design is fostered.

Throughout the unit, students are required to participate in half-day excursions and overnight and weekend camps. These outings place an emphasis on developing the students' competence in out-of-classroom teaching. Organisational aspects of these outings are related to the personal development and curriculum development components described above.

The environmental education unit is proving to be a very attractive option for Deakin's pre-service teachers.



ORGANISATIONS AND ENVIRONMENTAL EDUCATION



AUSTRALIAN PAPER MANUFACTURERS LIMITED

Australian Paper Manufacturers Ltd. has a sustained program for producing educational aids to assist primarily in the understanding of the process of paper making and secondly, to show how this is integrated with society's environmental aims. The latter aspect has not come as an aftermath of popular environmental concern, but as a major renewable resource user (principally wood, waste-paper, water and energy), sound resources management and use are basic to the Company's continued viability.

Environment protection is one aspect of resource management.

A broadsheet published by the Company has gone through several editions and is in constant demand from primary and secondary schools. It is supplemented by the booklet "Paper", and brochures referring to the specific processes carried on at each of the manufacturing mills.

Audio-visual film strips are available for various aspects, such as packaging, forestry and paper making. These strips are usually shown by an appropriate Company officer, who is in a position to elaborate and/or answer questions as they arise.



The Environment Centre (N.S.W.) Pty. Limited

399 PITT ST. SYDNEY, NSW 2000
TELEPHONE (02) 231 5386 TELEX AA 74041

The Environment Centre of N.S.W. was originally set up as a service and resource centre available for use by any individual or group concerned about conservation, ecology and the environment. Today, the Centre continues to function in this capacity and is a vital source of information for anyone who cares to make use of it.

The Centre houses a comprehensive environmental reference library containing periodicals, newspaper clipping service, books, magazines, reports, environmental impact statements and so on. This reference library is open daily from Monday to Friday between 9.00 and 5.00 p.m. and sometimes is held open later if the need arises. The Centre also houses a large notice board containing posters and notices of current and coming environmental events such as environmental discussions, film evenings, fairs, low energy and alternate energy displays, etc., together with a yearly calendar board which can immediately be referred to for meetings and happenings in the coming months.

We also have a large free literature stand containing leaflets and literature of an environmental nature together with a bookshop covering a wide range of environmental topics. We also distribute as much free written information on as many topics and environmental activities as possible to various other community outlets such as mobile information centres and libraries.

Many groups which are of a voluntary nature operate from within the Centre's premises, which means we are in touch with their activities and can assist with enquiries when necessary about these groups and their work. Such groups as Project Jonah (the "Save the Whale" people), the Bicycle Institute of N.S.W., the National Parks Association of N.S.W., the Federation of Bushwalking Clubs, Greenpeace Australia (the "Save the Seals" group), Ecology Action, the South West Tasmania Committee (N.S.W. Branch), the Wildlife Preservation Society, etc. use the Centre extensively.

We are also in touch with other environmental bodies, centres and government departments, and are happy to answer as best we can any environmental question put to us by any member of the community. Whilst we are not always able to give an immediate solution or offer advice on a particular problem or query, we do endeavour to follow up and report back to the enquirer as soon as possible with either advice of alternate enquiry areas.

All these forms of environmental education must first warrant an interest or concern from the public and then the necessary drive from the public to do something about it - whether it be a 'phone enquiry, a letter, a visit to our Centre or other outlet. It is up to the individual to want to commence or extend his or her knowledge on some aspect of environmental education.

And so we believe a need exists for the Centre to extend an additional service, that of education which requires an extension from us to the public. Unfortunately, so many people are not even aware of the problems that our present everyday way of life may be having on our delicate ecosystem, or of the alternatives or energy saving practices that can be adopted. Therefore, education to simply foster awareness of our environment, its limitations and its needs, must be created. The Environment Centre presently functions with a staff of one full-time and one part-time worker, with the assistance, too, of volunteer helpers. The needs of our Centre and, indeed, every environmental organisation, are enormous in the environmental education field and yet we can do so little of what seems so vital.



Currently CDC has responsibility for three projects in E.E., two of which are a direct result of CDC's Study Group on Environmental Education, whose report was published in July 1977.

Annette Greenall - Coordinator



1. The Environmental Education Project

is CDC's major project funded for two years to support the development of position and discussion papers, case studies, and student materials to assist individual teachers and schools in formulating policies and programs in environmental education, and to support the implementation of environmental education in schools through a number of disciplines. To date CDC has funded 47 projects and publication of these should begin about August 1979. The latest to be funded include:

: Technology and the Environment	Yr	Eng.
- an historical record	10,11	Hist.
: Environmental Dance/Drama	Yr 5-8	Drama
: Puppetry in E.E.	Yr K-6	
: The Junior Ranger Program	Yr 7-10	All
: A Solar Conservatory House	Yr 11-12	Tech.St. Home Ec.

2. Investigating the National Estate

A multi-media kit of materials on Australia's heritage, the National Estate, is now ready to be trialled in certain Australian Schools.

As the materials are basically inter-disciplinary, it is hoped that the trial process will indicate a variety of ways in which this kit can be used by teachers and students within subject oriented curricula. The project officer, Ms. Helen Simmelhaig, will be visiting the trial schools during March and April, where, through observation of student activities and discussion with teachers and students, information will be collected as to the overall quality and value of these resource materials. Desirable modifications will then be made and a teacher's handbook prepared prior to publication later in 1979.

The trial kit consists of two booklets which explain the concept of the National Estate and the problems and processes involved in its conservation. These booklets contain such things as, information, student activity exercises, overhead projector transparencies, student readings and source material. Also, there are: a set of 41 slides with a taped commentary and three sets of student/teacher work cards, each set relating to a specific area - aesthetics, geography/environmental studies, and history. The work cards are self-contained and could be used individually, in a group work situation, or to form the basis of a class lesson when used by the teacher.

Copies of the kit will be sent to each state Department of Education Curriculum Branch for evaluation and comment by curriculum consultants.

If you would like any further information about the kit or the trial, please contact
H. Simmelhaig, CDC, P.O. Box 632 MANUKA 2603.

3. Environmental Education Resources Project

This project began in 1975 with funding from U.E.H.C.D. to develop materials on four aspects of the national estate:

- : The Built Environment (based on the port of Adelaide);
- : The Fragile Environment (based on the coastal sand dunes);

- : Aboriginals and the Environment (based on coastal aboriginals);
- : Decision-making and the Environment (based on the Adelaide Parklands).

The units have been prepared for lower to middle secondary level students. They consist of a student book for each unit plus a slide set and poster/aerial photograph for the Adelaide Parklands unit, and a sand-dune game for the Fragile Environment unit. They will be trialled in South Australia and other states during Term 2, 1979.

If you would like further details, please contact A. Greenall, CDC, P.O. Box 632 MANUKA 2603.

RESOURCES

ONE BOOK - TWO VIEWS.

I recently had the refreshing experience of reading Annette Greenall's "Environmental Education Teachers Handbook" (Longman-Cheshire, Melbourne, 1978, \$5.95). I was so pleased to be able to enjoy such a readable and practical book written by an Australian for Australian conditions. The book uses mainly Australian materials as resources, but even where non-Australian curriculum materials are suggested they are readily available to teachers.

Although parts of the book have a science bias, as an English/History teacher I found even these more technical parts to be quite comprehensible and the suggestions easy to implement.

Of particular relevance to me were the chapters on Social Components of the Environment, the Urban Environment, the Rural Environment and Field Studies. Here in Canberra we are fortunate to have the urban-rural interface so close at hand and the ideas in these chapters are most useful. The emphasis of the book on the local area has helped me sway other people to stay near their schools rather than head off into the hills for their environmental studies.

For the first time I am starting to understand what environmental education really is and how to go about organising some programs. The chapter on resources has inspired me to start collecting materials and set up a resource corner too.

I strongly recommend the book to all teachers.

* * * * *

What should teachers expect in subject handbooks? What is the point of publishing such books? Your answer to these questions will, in part, determine your reaction to Annette Greenall's "Environmental Education Teachers Handbook".

If you believe teachers handbooks should be a source of activities suitable for use with the class "tomorrow morning", this book will not suit. There are many sensible suggestions for appropriate topics and locations for environmental work, but they will usually need to be turned into teaching activities for each class. If you believe teachers' handbooks are commentaries for teachers on a set of curriculum materials, you will be disappointed; but if you are looking for a guide to help you select from among published materials, the check-list of packages and single volumes on pp.139-144 could simplify your searching, if you see environmental education categorised into biological, physical, social, urban, rural and field studies, but not if you are looking for a check-list of materials suitable for topics concerned with energy flow, pollution, resource use, population trends, and other specific man-environment interactions. It could also be frustrating to try and track down some of the sources in the check-list - only titles are given here and in most places in the text. If you

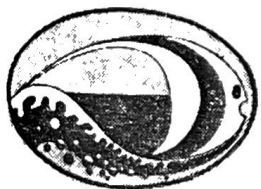
believe that handbooks, especially those that are designed for teachers involved in areas that cross traditional subject boundaries, should provoke thought about the rationale for such teaching, your satisfaction will depend upon how much background you have - whether you are already aware of the problematic areas or whether you are a beginner. If the former, you may be provoked by the relatively superficial (6 pages of text) answer to the question "What is environmental education?" If the latter, you may, at best, be stimulated to resolve the conflict between the reiterated statements to the effect that "environmental education cannot be given satisfactorily as part of only one discipline and therefore a holistic or multidisciplinary approach with its broader outlook on the environment is desirable", and the structure of the book with its sections on biological, physical and social components of the environment.

Even in the chapters on rural and urban environments, where one would most expect to find suggestions for methods of ensuring that the insights of many disciplines illuminate an environmental issue, the same organisational approach is used. Concrete examples are lacking, despite the comment that "once a study of any topic develops in detail, the overlap between the (biological, physical and social) factors emerges and emphasises the need for an interdisciplinary approach".

The major weakness of the book is the lack of specificity of approach that would make the studies guided by it "environmental" in terms of either of the definitions suggested in chapter one; unfortunately the very specificity of the suggestions for activities in each of the component areas can only tend to mislead or confuse, for it is difficult to reconcile them with the interdisciplinary base that is urged in each chapter. Even in the critical first example which gives a list of topics from six subject areas to illustrate how "pollution" can enter each, there is no concrete advice on ensuring a synthesis.

I believe that the book has been too ambitious - and has fallen between the stools of showing how each subject can contribute to environmental education (for there are numerous suggested starting ideas for teachers) and pressing an integrated multidisciplinary approach. The book contains a large number of ideas for building environmental education into school programs, but it gives little concrete help with the mortar required to meet the objectives espoused.

REFLECTIONS



a newsletter from the Great Barrier Reef Marine Park Authority, free from P.O. Box 1379, G.P.O. Townsville, 4810, Queensland. The Authority was formed in 1976, but as yet no Marine Park has been declared.

MAGAZINES

E.E.Report is the monthly journal of the Centre for Environmental Education Inc. in Washington, U.S.A. It claims "Grassroots to Global coverage of funds, projects, materials and trends in environmental education".

The 16-page journal often deals in a theme treatment, has two or three illustrated special features of interest to both teachers and public educators, provides news on projects, lists recently produced films, books and field manuals and publishes a workshop calendar.

Subscription rates are \$25 US per year. Write to Centre for Environmental Education Inc., 2100 M.St. N.W., Washington, D.C. 20037.

Nature Study is the 18-page quarterly journal of the American Nature Study Society, sub-titled "a Journal of Environmental Education and Interpretation".

It contains two or three feature articles and several activity descriptions each issue. It also includes each year a copy of the Kansas School Naturalist - a field guide series for secondary students. Subscription is through membership of the Society, at \$8 US and the address is c/- Crayton Jackson, Rt.5 Box 764, Morehead, Kentucky, 40351.

Taraxacum is the quarterly journal of the International Youth Federation for Environmental Studies and Conservation. This is a publication of young people under the age of 28 and reflects their enthusiasm for conservation field work. It has many feature articles in its 20 pages and despite its European base and dominance deals with youth action news from other world regions. A theme treatment is often taken. The journal includes course dates and current contacts. IYF's permanent office is at Klostermöllevej 48, DK-8660 Skanderborg, Denmark.

Owl is a Canadian magazine for children, produced by the Young Naturalists Foundation in Toronto, and is a colourful, exciting, 32 page monthly for primary level. It is a clever mixture of natural history, social studies, geography, physical science and language activities served up in a palatable graphic form. Dr. Zed, for example, is a mad scientist, who suggests all sorts of intriguing but simple science experiments. Cartoon stories and children's contributions are included. Subscriptions are \$6 Canadian for 10 issues and the address is Young Naturalist Foundation, 59 Front Street East, Toronto, M5E 1B3, Canada.

Ranger Rick's nature magazine is published by the National Wildlife Federation of U.S.A. for primary level children. Like Owl, it concentrates on a high quality graphic presentation, especially in its use of photographs. The magazine includes adventure stories, puzzles, special features on animals and letters from children, in its 48 pages. It centres around the cartoon character of Rick the Raccoon and all his forest friends. Magazines are distributed monthly to Club members only. Enquiries should be to Ranger Rick, 1412 16th Street, N.W. Washington, D.C. 20036.



Such stickers were given to Tbilisi delegates, I didn't want to spoil your fun by translating them.

THE TEN COMMANDMENTS - FOR TODAY'S ENVIRONMENTALIST

Rt. Rev. Hugh Montefiore

1. I am the Lord your God. You shall have no other gods but me.
2. You shall not make for yourselves idols or graven images, such as progress or affluence or technology. You shall not bow down to them nor worship them. For I visit the sins of the fathers upon the children for many generations of those who do this.
3. You shall not take the name of the Lord your God in vain by honouring Him with your lip, and disobeying his laws of nature; for the Lord holds each man accountable for the way in which he treats his world.
4. Remember that you keep one day in the week holy. Six days you may work or have leisure but unless you seek renewal from me on the seventh day you will be bored stiff in the new age which you are bringing upon yourselves.
5. Honour your father and mother in many ways, particularly by caring for them when they grow old and feel unwanted.
6. You shall do no murder, particularly to posterity, by nuclear fall-out or by catastrophic disturbance to the balance of nature.
7. You shall not commit sexual sin, especially through genetic engineering or by unnatural means of reproduction.
8. You shall not steal the inheritance of posterity.
9. You shall not bear false witness against posterity by pretending that they can put right the wrong that you have done to them.
10. You shall not covet an ever-increasing standard of living.