
THE GLOBAL FORUM

for Environmental Education



**Global Network of
Teachers and Students**

volume 4 number 2, January 1994

The Global Forum for Environmental Education is the official publication of **Caretakers of the Environment International**. The International Board consists of president Arjen Wals, Netherlands; vice-president: Ana Aranda, Spain; secretary: Joke Wals, Netherlands; treasurer: Ed Radatz, USA; director/networking Fatima Matos Almeida, Portugal; director/communications: Isabel Abrams, USA; 1993 conference board representative: Rick Gilbert, Canada; 1994 conference board representative, Raymond Jowett, Scotland.

Colofon

This magazine has been printed by the Department of Town Management of the city of The Hague, The Netherlands.

Layout: apocare

Frontpage: Neighborhood beautification in India

The Global Forum for Environmental Education is a publication of Caretakers of the Environment International. The Forum is to be published four times a year. Contributions, articles, drawings, cartoons, pictures are actively solicited and suggestions are most welcome and invited. Any of the above or inquiries should be sent to:

**The Global Forum for
Environmental Education
c/o CEVNO
Nassauplein 8
1815 GM Alkmaar, The Netherlands**

Duplication of this magazine is allowed, provided it is properly referenced.

Chief editor: Jan Apotheker, Netherlands,

Secretary: Joke Wals, Netherlands,

Editor: Arjen Wals, Netherlands,

Translator: Amalia Bosch Benitez, Spain

Copy editor: Anne Gutenkunst, United States

Editorial Board:

Frits Gravenbergh, Netherlands, editor

Raymond Jowett, Scotland, editor

Walter Leal Filho, Brazil, editor

Chris Leibner, USA, editor

Kathryn Graves, Canada, editor

Subscription Information: Subscriptions should be paid in Dutch guilders only by International Money Order/Mandat International or Eurocheque.

Individuals: Dfl 15,-

Schools: Dfl 30,- (4 copies)

Library/Institutions: Dfl 60,-

Participants in the annual international Caretakers of the Environment Conferences automatically receive The Forum by paying their registration fee.

Colofón

Esta revista ha sido editada por el Ayuntamiento de la Haya, Países Bajos.

Composición: apocare

Página delante: Scena de Truro

El Foro Global de Educación Ambiental es una publicación de Caretakers of the Environment International. El Foro será una publicación cuatrimestral. Estamos abiertos a todo tipo de contribuciones, artículos, y fotos, dibujos, invitándoles encarecidamente a que nos hagan sugerencias. Si desean información o participar en cualquiera de las posibilidades arriba mencionadas, deberán dirigirse a:

**The Global Forum for
Environmental Education
c/o CEVNO
Nassauplein 8
1815 GM Alkmaar, Países Bajos**

Se permite la reproducción de la revista. Agradeceríamos, sin embargo, que se hiciera referencia, en todo caso, a la revista.

Redactor jefe: Jan Apotheker, Países Bajos,

Secretaria: Joke Wals, Países Bajos,

Editor: Arjen Wals, EEUU, Países Bajos,

Traducción: Amalia Bosch Benitez, España

Junta Editorial:

Frits Gravenbergh, Países Bajos, editor

Raymond Jowett, Escocia, editor

Walter Leal Filho, Brasil, editor

Chris Leibner, EEUU, editor.

Kathryn Graves, Canada, editor

Información suscripción: pague la cuota de suscripción en florines holandeses sólo, en Eurocheques o en giro postal internacional.

Persona individual: Dfl. 15,-

Escuelas (cuatro copias): Dfl. 30,-

Bibliotecas/instituciones: Dfl. 60,-

Los participantes de las conferencias anuales reciben "The Forum" el primer año, junto con la cuota de inscripción

Published with support of:

**The European Community, Brussels, Belgium
Townmanagement -The Hague-The Netherlands**

Publicado con el apoyo de:

**El Comunidad Europea-Bruselas-Bélgica
El Ayuntamiento de la Haya, Países Bajos.**

**1994 conference address :Raymond Jovett, Assistant Head Teacher,Dyce Academy
Riverview Drive,
Dyce Aberdeen, AB 2 0NF Scotland**

Editorial.

1994 has just started, and we would like to wish you all the best for 1994. We hope you will be able to join us for the 1994 conference in Aberdeen in Scotland. If you have not yet registered it is now the time to do so. If you are not going we wish you a very sustainable development of your environmental education plans.

The conference in Aberdeen promises to be just as exiting as all the previous conferences. In this issue you will see some impressions from the Truro conference, assembled by Kathryn Graves. It gives you some idea of what these conferences offer in terms of idea building atmosphere etc. The conference in Aberdeen will have its own atmosphere, and create its own enthusiasm. The main purpose of the conference will be to support each other to learn from each other to exchange ideas to exchange our cultural background, and to learn and understand something about the Scottish background and environmental problems. We wish Raymond Jovett and the others all success with their conference.

We can tell from the reactions we receive from different countries that Caretakers of the Environment International is developing itself. National branches are being established in several countries. In other countries they flourish, as in India, (see back page) the USA, or in Ireland, where it is being set up at the moment. The national branches are important for Caretakers, because they are a means by which schools in a given country can set up a network to exchange ideas. It has been proven in many places, that the most efficient way to set up environmental education in schools is to bring a number of schools together in a network, and have them work together, exchange ideas, stimulate each other, comment on each other programs, exchange pupils, exchange results, set up common goals and action etc. One of the main functions of Caretakers is the means to set up a network, formulate common goals and objectives, gain grants and support from the government and industry. The international network gives the necessary background and standing to the national organizations, and gives support in the way of ideas, stimulation through the international conference and the Global Forum.

The Global Forum for Environmental Education is the means to communicate to each other and exchange information about successful environmental education programs. It helps others to gain insight in their own situation, gives them ideas to overcome problems and most of all stimulates you, the author of such an article, to formulate your own ideas, and take steps forward with your own programs.

We urge you to send in your papers, and most of all student material to be printed in the Global Forum of Environmental Education. If you are visiting the conference anyway, this is a way to get your article printed in the issue that will appear around or just prior to the conference.

We, the editors, wish you much pleasure with this issue of the Global Forum of Environmental Education

Jan Apotheker, chief editor.

Editorial.

1994 acaba de empezar y aprovechamos la ocasión para desearles todo lo mejor para 1994.

A lo mejor pueden participar con nosotros en la conferencia de 1994 en Aberdeen, Escocia. Si aun no se han inscrito, háganlo sin falta.

Si no van acudir les deseamos que sus planes de estudio de educación ambiental tengan un desarrollo sostenible. La conferencia de Aberdeen promete ser igual de interesante que las anteriores. En este numero encontrarán algunas impresiones sobre la conferencia de Truro convocado por Kathryn Graves. Nos da una noción del clima favorable a nuevas ideas que ofrecen estas conferencias. La de Aberdeen tendra un sello y un entusiasmo propios. Nos ayudará a aprender unos de otros, a intercambiar ideas y opiniones, a compartir diferentes culturas y aprender y comprender todo lo escocés y los problemas ambientales de la zona. Desde aquí deseamos mucho éxito a Raymond Jovett y a los demás en esta conferencia.

Tenemos noticias de que Caretakers of the Environment International está creciendo por sí solo en los diferentes países. Se establecen secciones nacionales en muchos países. En otros países florecen, como ocurre en La India (véase contraportada), en EE.UU o en Irlanda, donde está empezando. Estas secciones nacionales son importantes para Caretakers porque son la forma de que las escuelas puedan crear sus redes para intercambiar opiniones. La experiencia en otras partes ha demostrado que la forma más eficaz de iniciar la educación ambiental en las escuelas consiste en reunir a unas cuantas escuelas en una red y hacer que trabajen juntas, discutan sus opiniones, se estimulen mutuamente, comenten sus programas respectivos, se intercambien alumnos, resultados, establezcan objetivos y actividades comunes etc... Una de las principales funciones de Caretakers es, precisamente, la de crear una red, formular objetivos y metas comunes, conseguir fondos y apoyo del gobierno y de la industria. La red internacional brinda el apoyo necesario a las organizaciones nacionales y abre vías a la difusión de ideas, a través de la conferencia internacional y Global Forum.

La revista Global Forum for Environmental Education es el vehículo de comunicación de aquellos proyectos ambientales que hayan tenido éxito. Ayuda a otros a tener perspectiva de su propia situación, sugiere cómo superar problemas pero, sobre todo, les estimula a ustedes, autores de este tipo de artículos, para formular sus ideas y avanzar en sus proyectos. Les instamos desde aquí a que nos envíen sus trabajos pero que sea, sobre todo, material de los alumnos para que lo publiquemos en la revista Global Forum de Educación Ambiental. Si participan de todos modos en la conferencia, también es una vía para que se edite en el número que aparecerá justo antes de la conferencia.

Nosotros, los editores, os deseamos que disfrutéis la lectura de este número de Global Forum.

Jan Apotheker, Redactor Jefe.

The Waddensee

by

Jan Apotheker

Praedinius Gymnasium

Turfsingel 82

9711 VX Groningen

The Netherlands

The threats to the Waddensea area are described. Among these are recreational activities, military activities, industry etc. A project was conducted to make students and the recreational users of the area aware of these problems. This was done by having the students produce a booklet, which was then donated to organizations, that are involved in the recreational use of the area. The project was part of an international ECO-Tourism Project, sponsored by the EC.

Abstract: Se describen los problemas que amenazan el Wattenmeer. Entre otros figuran las actividades recreacionales, las actividades militares, la industria etc... Se llevó a cabo un proyecto para concienciar a los estudiantes y turistas de la zona. Los alumnos confeccionaron un folleto que repartieron entre las organizaciones que están implicadas en el uso recreativo de la zona. Este proyecto formaba parte de un programa internacional de Ecoturismo, patrocinado por la CE.

Introduction

The Wadden sea is an area stretching from Den Helder in Holland to Esbjerg in Denmark.

It is an area that is flooded and dries up twice a day. That is what makes it so special.

It contains large mud flats and sandy areas, next to streams and sea arms. It is one of the most changing areas. Pieces of sand move continually from one place to another.

It is one of the most interesting nature areas in the world. It is considered to be the breeding chamber of the North Sea, the place where a lot of fish is born and grows up before it migrates towards the North Sea. It is also an important region for shrimp, cockles and mussels.

Most of the shrimp caught in Holland is caught in the Waddensee. With the closing of the sea-arms in Zeeland, most of the mussels were transferred to the Wadden Sea. Also for seals the Waddensee is important. It gives them a place to rest and breed, even though the population has diminished rapidly the last ten years.

Protection

The Waddensee is protected by the convention of Ramsar. It is designated as a Wetland area. Apart from that the state of the Netherlands has imposed restrictions on the use of the Waddensee, industry around the Waddensee etc. The three countries bordering on the Waddensee have made a declaration on the Waddensee, in which they agree to protect the environment to some extent.

Recreation

Recreation in the Wadden Sea has three main parts. The beaches on the Wadden islands attract beach tourism, the water attracts boating, and the mud flats attract a special kind of tourism, mud flat walking.

The number of tourists in Holland is not exceptionally high. Mainly because there is not all that much accommodation available for them, depending somewhat on the island. Another reason is that the islands can only be reached by boat. Still there is pressure on the environment and on some occasions the area is fairly saturated with tourists. This causes concern, even though the situation is not yet bad enough to make measures necessary.

Boating

Boating is primarily sailing, from a few harbors, and mainly in the western part of the Wadden Sea. Here also things tend to get somewhat busy, as the tide is something to be reckoned with in this area. The tide sets up quite a current, and especially sailing is only possible with the tide behind you. This almost means sailing in line from one place to another.

Boats that sail in the eastern part have the opportunity to let themselves fall dry on the sand. On the following tide they sail on. Canals for boating generally fill up with sand very fast, and a lot of work is necessary to keep them in depth.

Mudwalking

Mudwalking happens on the low tide, when large parts have fallen dry. With special guides groups of about 50 people set out from Pieterburen and return a few hours later. It is hard to describe the attraction of mudwalking. One of them is that you actually go knee deep through the mud at places. After you pass that you walk on the sandy parts, sometimes you cross a stream, with water coming to your chest. This makes it adventurous. The appeal comes from the vastness of the area, which makes you feel small, and impresses the value of nature. It is possible to walk from the main coast to the islands. This gives the mudwalking an extra dimension.

The disturbance caused by mudwalking de-

penda a bit on the time and the size of the group. They tend to disturb feeding birds and seals.

Industry.

There is only some industry on the Wadden Sea coast. Mainly concentrated in the eastern part, in Delfzijl and the Eemshaven and in Germany in Emden. (I am mainly speaking about the Dutch part). This attracts some shipping to the Waddensea, directed at the ports of Delfzijl, Eemshaven and Emden. Shipping for Hamburg and Bremen uses a corridor about 80 miles north of the Waddensea islands. In Lauwersmeer and Harlingen fishingboat facilities have been made, where the fishing boats can land there catch and refurbish for a new trip.

Gas/oil drilling

Gas drilling takes only place on the island of Ameland, in one location. There are plans however to start further exploration of gasfields directly beneath the Waddensea within the next five years. Some of the gas won on the Northsea is transported by pipeline through the Waddensea area.

The threats to the Waddensea.

Threats are posed on the Waddensea from a number of sources.

Agriculture

First of all from agriculture. In Friesland and Groningen agriculture is very important. Most of the extra water flowing in the mainland is issued on the Waddensea. Because of the agricultural use of the land it contains a number of substances. Phosphate and nitrate from fertilizers, which causes eutrophication and excessive algae in the water. Phosphate and nitrate are also drained from the waste water plants onto the Wadden sea. Agriculture also causes pollution by the use of pesticides, that flow of the land into the surface water.

Main rivers and industry

Most pollution however comes from the Rhine, the Meuse, the Schelde, the Ems and last but not least from the Thames. The flow-system in the North Sea tends to deposit the pollution from these rivers especially in the Wadden sea area. This pollution consists of a lot of different components, ranging from heavy metals to PCB's. Especially the PCB's have had a devastating effect on the seals in the Wadden. Because of the concentration of the PCB's in the food chain of the seals, they suffered most. One of the problems is the synergistic effect the pollutions have upon each other. The fauna in the Waddensea is weakened because of all the pollution, and only a little bit higher concentration of one substance, which in itself would only have a little effect now has a devastating effect on the life in the area.

Gas-exploration

Another major threat for the area is the possibility of gas winning in the region. Up to now a moratorium was accepted by the companies that have concessions to drill in the Wadden Sea not to exploit the gas, but pressure has been mounted on the government to allow the winning of gas. Discussion is still going on, but it looks as if the companies will win. The government gave concessions to the companies quite some time ago, without major restrictions. They were given at a moment in which the effects of the exploration were hardly known, and people and government were not as environmentally conscious as they are now. Still the companies feel that this is a good time to start the exploration.

Military installations.

There are some major military installations in the Waddensea. Two of these are situated in Holland, and cause disruption of the quietness of the mud flats. On Vlieland there is a shooting range for aeroplanes, and near Lauwersoog there is a shooting range for tanks, that extends into the Wadden Sea area.

About half of the island of Vlieland is filled with old tanks, concrete bunkers and so on, to give the planes something to shoot at. They fly in at low altitude, fire, draw up, receive radioed information on their accuracy, and return for another round. Apart from the area itself, the routes to Vlieland are also disturbed by low flying aircraft. The shooting range for tanks is situated near Lauwersoog in a nature reserve. It is an area filled with sand, in which the tanks can shoot. The area extends into the waddensea, where some of the shells land, and end up in the water.

The project.

When the European Commission Tourism Directorate first publicized its tender for Eco-tourism projects it called for three elements to be concluded in the project :

- a. Local groups adopt in spirit areas with important plants or fossils or wintering birds..
- b. adoptive parents together with interested bodies in the area scrutinize present use, sensitivity of the environment and tourism potential. They then produce activities which allow the tourist to enjoy and discover more about the environment, its value and hence become more aware and caring.
- c. Environment guides are then to be drawn out of the pool of local people involved in this project to facilitate in the cativities and help design more in the context of an overall plan for the area. Obviously wew do not only have environmental protection, tourist satisfaction and sensitisation in mind but also job creation. In this context a more formal environmental guide training course should develop.

With this in mind we tried to set up our project. An important factor in this was that I, and the other project leaders (total of 4) are teachers at a secondary school in Groningen. The school has participated in Coastwatch Europe for several years now, and focused on the Waddensea area. We felt it would be a good idea to have some sort of follow up on the Coastwatch Activity.

The project offered us a golden opportunity to set this up. What we planned was to give the pupils more or less a better idea of what sort of threats there are for the Waddensea, also to show them what a unique area it is, and finally to show the tourists, visiting the area a better idea of the background of the area together with an explanation of the threats to the area.

We did the following. We gave the students from the third grade, aged 14 to 16, during their chemistry class information about pollution. We showed them a video prepared by the "Werkgroep Noordzee", a non governmental organization, concerning themselves with the pollution of the North Sea. The video was prepared for a conference of Rhine Ministers that was held in Holland two years ago.

The video describes what sort of pollution gets into the rivers Rhine, Meuse, and Schelde, and goes on to describe what happens when these rivers issue into the North Sea. It shows that a lot of the pollution ends up in the Waddensea. The film goes on to explain what the consequences are. The "werkgroep Noordzee" has also published a booklet that also contains this information in a abbreviated form.

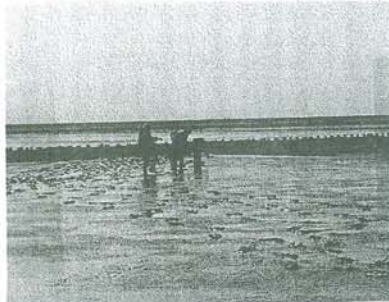
After the students have seen the video we have a classroom discussion about the problems, in which points are taken and discussed. We then give them the following instructionsheet, containing information about subject, layout, guidelines etc.

The students then had to get material read it and so on. They had about six periods to do this. They then handed in there work on two pages A4 (210 mm by 290 mm, a paper format generally used in Holland). These were gathered by the teachers, and then a choice was made.

Aristoteles is the nature society of the school, that yearly participates in Coastwatch Europe, it is also connected to Caretakers of the Environment International, and participates in GREEN. They also organize a number of activities, such as bird walks, visits to special gardens etc. They finally made the choice of material for the booklet.

They had another important task. The first seven

pages of the booklet are filled with descriptions of organisms that people will encounter when they visit the Waddensea. They range from organisms that can be found in the bottom, to shells and birds. We added this information so



that visitors to the area would receive more knowledge about the environment they visit, and that way become more aware of the value of the Waddensea area.

When we had all the material together we sent it to the provincial government of Groningen, that had agreed to print the booklet for us.

When the booklet was finished it was presented to Mr J.van Dijk, deputy for the environment, and Mr N.Bakker and Mr H.Dijkstra, representatives of the mudwalking societies.

The mudwalking societies organize the walks on the mudflats, and provide the guides. They also train the guides before they are actually admitted as guides on the Waddensea.

We thought that by making the booklet and by presenting the booklet to the mudwalking societies we would be able to reach the individual tourist, that is going on a mudwalk. We presented the societies each with a fair number of booklets, and told they could get more if they wanted them. We also asked them to distribute the booklet to interested people.

This way we were able to meet most of the requirements set in the contract of the E.C. What we would also like to do however is to set up a module that can be used during the training of the guides, that focuses on the environmental problems of the Waddensea, and especially on the problems caused by tourism.

Discussion

About 126 students participated in the project. We have 5 third grade groups in our school, each containing about 25 pupils. Each group was divided in subgroups of about 3 to 7 students, that each chose a subject.

The material they gathered came from newspapers, publications of environmental groups, from the government, from libraries etc. Sometimes people were interviewed. Others found even other sources of information.

The level of information was fairly high, and accurate. The pupils were able to give a clear account of the problems they were describing, and were also able to discuss the points we asked them to. The pages chosen were chosen apart from the text they contained especially because of the artwork and layout. That way we were able to produce an attractive booklet.

The title - Let the Waddenzee Live - was made by one of the pupils. She also designed the front



Frontpage of the booklet.

page.

We consider ourselves lucky that we were able to interest the provincial government, in such a way that they not only agreed to receive the first issue of the booklet, but also agreed to print it for us.

We feel that we succeeded in doing a number of things. First of all we raised the awareness of our pupils towards the area. We have the idea that they are more concerned than they were before the writing of the booklet. We raised their knowledge of the problems that arise around the Waddensea. By taking them out to the mudflats as a reward for being placed in the booklet we also showed a part of the pupils what the actual value of the shallows is. The other students will visit the mudflats on some later time during their

schoolcareer as part of the biology course, and will then experience the mudflats.

Apart from the direct reading of the booklet, which will influence people that visit the area, we also had some influence on the local community. Mainly by the presscoverage that we received. Some of the newspapers printed a small report on the booklet. The local (Groningen) radio station carried news of our booklet, on the day of the presentation. The regional radiostation (radio Noord) had a whole program devoted to our booklet, which took 30 minutes of radiotime.

The mudwalking societies are as a rule aware of the problems that influence the Waddensea.

The guidework is generally voluntary, and as far as it is not it does not pay very well. One of the societies is working full time on a commercial basis, the other is generally part time during weekends.

The local government has set down regulations about the training of the guides. It has also set down a number of rules about mudwalking, mainly safety precautions, but also to diminish the disturbance caused by mudwalking. One of them is the maximum size of the groups, 50 persons, with two guides.

The societies generally cater to a special group of tourists. A group that you could describe as already having an interest in nature. That is one of the reasons we hope they can be reached by this booklet.

As a follow up we would like to design a module for the course used to train the guides. It would be a two hour introduction into some of the threats to the Waddensea as an ecosystem. Part of that would be their own impact on the environment. Especially on the birds in the area.

We encountered only a few difficulties during the project. These mainly concerned the finding of the time necessary for the preparation of the project, and the support of the students during the project. We used the financial support mainly towards this end, making the time free of one of the teachers, and one of the teacher assistants.

We think the project can easily be repeated. We will repeat the project in a different way next year. We will have the students prepare a calendar this time. On one side they of the paper we will let them design a page with artwork themed around the month and about a subject like the ones mentioned in the handout, on the other side of the paper they can write a text about the subject they chose. We will try to sell the calendar when printed to cover the cost. Once a program like this is set up and worked once it is easy to repeat. Variations are also easily introduced.

Training for sustained development

A report of a cross border environmental project in Ireland,

by

Clarke Houston,
Willow Cottage,
Riverside,
Antrim,
Northern Ireland, BT42 4BL

Abstract: The author describes a project, that crosses the border between Ireland and Northern Ireland. It involves cultural exchange, and a common project concerning the pollution of the coast. The project is carried out by discussion between for example fishermen and the students, or by directly monitoring the pollution. The aim is to involve the students, and change their attitudes.

Abstracta: El autor describe un proyecto que traspasa la frontera entre Irlanda del Norte e Irlanda. Fomenta el intercambio cultural y los proyectos comunes sobre la contaminación de la costa. El proyecto se llevó a cabo discutiendo, por ejemplo con los pescadores y los alumnos, y vigilando directamente la contaminación. El objetivo es que los alumnos se comprometan y cambien sus actitudes.

Three years ago my school which is Ballee Community High School first became involved in our seashore project. We are still involved and will be for the foreseeable future. The project is an OECD project and is jointly administered by the Department of Education in the Republic of Ireland and the Department of Education for Northern Ireland.

There are seven groups of four schools - each group must consist of two schools from the Republic and two from Northern Ireland. The two Northern Ireland schools are from different sections of the education system. One of the Northern Ireland schools must come from the state system (protestant) and the other must be from the voluntary system. These schools are operated by the Roman Catholic Church. Our partner school is Rathmoor Grammar School, a Roman Catholic school from West Belfast.

As you undoubtedly know Northern Ireland is a divided community and for this reason this type of project is fairly unique. As well as focusing on environmental work we have a second aim which is to breakdown barriers between the two polarised groups in Northern Ireland Society. With television the youth of today have a much greater awareness and concern for what we are doing to our environment. This transcends all religious barriers and provides a central, common focus for our students. In the OECD projects we wish to change attitudes not only environmentally but also socially.

Joint parties of our pupils from Ballymena and Belfast travel south of the border to Waterford and there have a 5-day exchange visit with the two Waterford Schools. Normally, since our two schools have different cultural traditions, we try to have introduced the northern students prior

to this exchange visit. While in Waterford we look at coastal pollution in a general way and usually concentrate on one or two specific problems, for example this year we looked at the problems facing the marine fishing and the shell fishing industry in the Waterford area. We also spent a considerable time finding out the problems of the town of Tramore. This is a seaside town with a large seasonal fluctuation in population. The area surrounding Tramore contains one of the largest sea lagoons in Europe and is important internationally as a stop over point for migratory birds. It has an area close to the sea which is used as a landfill site for the local towns. This in itself causes great problems. With the growth in tourism a new sewage pipe is being constructed close by this sea lagoon. The partially treated sewage is to be stored in the pipe and released so that the water coming out of the lagoon on the ebb tide carries it far out to sea. While there, our students studied the life in the lagoon and the saltmarshes and were horrified by the possible consequences of a failure of the computer controlled outlet. It would truly be an environmental nightmare.

There are examples of the kinds of problems with which our students are faced.

Later in the year a joint party from the southern schools, visits us for 5 days. We stay as a party at an outdoor centre. This party usually numbers about 7 pupils. This is when our second aim of bringing the pupils from conflicting cultures is mostly realised. Group activities and social activities are designed and carried out specifically with this in mind. More environmental work is carried out and this year in particular we turned our attention to a debate between wild salmon fishermen and local salmon farmers. A very public debate about salmon farming was going on with accusations being made by both sides.

During the exchange the students investigated these claims - the conclusion that the students came to was that the salmon farm was as environmentally friendly as it could be. For example they investigated cage construction, stocking densities, the food used, the chemicals used as well as the siting of the sea cages.

The other northern school we are teamed up with is Rathmor Grammar School and together we have further developed this project separately from the southern Schools. We now regularly



Testing water samples

monitor beach pollution at 31 different sites along a 100 km coastline which contains the Giants Causeway, a world heritage site.

So far we have been fairly successful in our aims but with substantial curricular changes we are finding increasing demands on our time and resources. So the students were asked to consider how we should proceed in the future and came up with the following ideas:

1. **DIRECT ACTION** - clean the beaches ourselves. This would be an impossible task for only 2 schools. However they decided we should clean the most polluted on an annual basis.
2. **INVOLVE OTHER SCHOOLS** - suggestions were put forward that we invited other schools near the coast to join us and 'adopt' a stretch of coastline to monitor. We have had some success but we will be emphasising this next year with the assistance of the local education authority.
3. **INVOLVE LOCAL AUTHORITIES** - no one government department are totally responsible for our coastline. Neither are the local authorities -

although most have given us great assistance in our beach clean ups.

4. **CHANGE THE ATTITUDE AND PRACTICES OF THE LOCAL PEOPLE** - we have embarked on a programme which will bring this problem to most people's attention - a prolonged publicity campaign using selected pupils artwork. This project is not high profile one, nor is it original or indeed highly scientific, it is a long hard slog to change peoples attitudes and habits. When asked to describe this project to you I was given a theme 'learning/training for sustained development' as the context into which our project best fitted. On reflection about sustained development several points occurred to me.

1. By the involvement of students in the project we are trying, by increasing the students knowledge of the problem, to change their own behaviour. By showing them the true extent and the true dangers of littering their beaches we will stop them from adding to the problem.

2. The pupils, when they are aware of the dangers, will pass on this information to their parents, brothers and sisters, so affecting their attitudes and actions. Several parents have commented on this fact to me during parents meetings.

3. By involving more and more schools in the beach adoption scheme we will gradually spread the message about the dangers to an ever widening audience.

4. By adopting a programme of direct action and cleaning the worst polluted beaches, the students will be leading by example. We hope this will effect change not only in our own students but also among the general public who see this activity going on. We are under no illusion that we will be successful immediately so we must make sure that there is continuity within our own school situation. Normally year 11-12 pupils are involved but increasingly year 10 pupils are being brought in towards the end of the academic year once their external exams are over. Approximately 150 pupils have been involved this year from years 10, 11 and 12.

Although the case of this project is about littering of our beaches and trying to change peoples attitudes to it, our second aim is also catered for by involving pupils of different religions in a programme with a common identifiable aim.

Two particular incidents this year illustrate the changing patterns and problems which we have encountered. Phosphorous flares from an old wartime wreck are regularly being washed up on the beaches. Every pupil has been made aware of this problem, of its dangers and what to do or who to contact should they find any. However a more serious problem has also arisen - a substantial number of dead farm animals have been



Environmental Display in Belfast

found littering the beaches - naturally we wondered why. About 18 months ago the Dept. of Agriculture removed the grant for the disposal of

dead farm animals. The disposal is now the responsibility of the farmer and he has to bear the expenses of each removal. Some unscrupulous farmers are throwing the carcasses into the river. When we hear of this problem we photograph the animal, describe its location and write to the Minister responsible as well as notifying the Environmental Health officer of the local authority.

These last two examples illustrate that such a project never remains static in its content for too long - circumstances are constantly changing. We feel that we have been successful in our project so far by using a number of strategies.

1. Pupil involvement at all levels - ensuring that the pupils feel that it is their project through involvement in the decision making. Strategies, goals and methodologies are areas where pupil planning is involved.

2. The project enjoys a high profile in school and because of this students genuinely wish to be involved.

However the popularity of the project is in itself creating some problems.

1. Had I to do again I would not have been so ambitious and would have chosen a smaller section of the coastline to monitor.

2. The involvement of large numbers of pupils creates organisational problems within the school.

3. In finding that more and more of my own personal time is being involved and I am aware of the fact that if you disappoint students without a very valid reason then they become disillusioned and the project is lost.

The heart of the project is about sustained development - maintaining the momentum during the 2 year involvement and having the next group of students ready to take over. I feel that it is an important and worthwhile project especially since Northern Ireland is becoming more dependent on tourism. We as a country have few natural resources except the beauty of our countryside and the resilience and friendliness of our people.

From Seloliman environmental education centre, PObox 03, Trawas, Mojokerto 61375, Indonesia.
DID YOU KNOW?

Indonesia is one of the main world centres for biodiversity. Biodiversity can be defined as essentially the variety of life found in the natural world that is an insurance and investment for the future. This implies preservation on three levels - genetic (total number of species within an ecosystem), species (variety that occurs within a species, that gives it the ability to adapt to new conditions) and ecosystems (the variety of communities of different species growing and interacting in a complex interdependent web). Although the island archipelago covers only 1.3% of the Earth's land surface it includes:

- 10% of all the world's flowering plant species
- 12% of all the world's animals
- 16% of all the world's reptile and amphibian species
- 17% of all the world's birds
- 23% or more of the world's birds
- 25% or more of the world's fresh water and marine fishes

Bird in a Cage

To put a bird in a cage is a crime,
For it is not only a bird,
But our souls we confine.

To put a bird in a cage,
Fills us with rage,
Confined, caged, castrated, and condemned
To life a life of let's pretend
Like an animal in a zoo
To nature's true desires untrue.

I can hear the caged bird sing
- while waiters bring High tea -
"Merdeka atau Mati!"

with warm regards,
Peter F. Spalding

Impressions from Truro

By Kathryn Graves

FAREWELL TO NOVA SCOTIA

The sun was setting in the west
The birds were singing on every tree
All nature seemed inclined for a rest
But still there was no rest for me

Chorus

Farewell to Nova Scotia the sea bound
land

Let your mountains dark and dreary be
For when I am far away on the briny
ocean tossed
Will you ever heave a sigh and a wish for
me

I grieve to leave my native land
I grieve to leave my comrades all
And my aged parents whom I love so
well
And the bonnie bonnie lassie that I do
adore

Chorus

The drums they do bent and the wars
do alarm
The captain calls I must obey
So farewell, farewell to Nova Scotia's
charms
For it's early in the morning and I'm far
far away

Chorus

I have three brothers and they are at
rest
Their arms are folded at their breast
But a poor simple sailor just like me
Must be tossed and be driven on the
dark blue sea

Environmental Education approaches must teach people to care through love, belonging, understanding and action

Following are comments on the state of Environmental Education worldwide as polled at the Caretakers of the Environment International Conference and attended by student's and teachers from 16 countries in June 1993.

Of the 120 participants 31 filled out this comment and evaluation sheet in the following manner (numbers in brackets following responses show how many people indicated the response):

Environmental Education is:

Beginning only (3)

Making progress (2)

Progress initiated by the following sources:

Teachers (4)

Students (3)

Volunteer/community NGO (5)

Journalists (2)

Government (2)

Government policy and written curriculum are in place two countries/states. While lack of government overall policy and inter-curricular management was sighted as the blockage in two cases. Two additional evaluations made these related comments:

'Volunteers are shouldering the responsibilities of Environmental Education and they need to know that politicians support what we are doing'.

'Environmental Education is being frustrated by political interests in coping with the recession'.

E.E. needs:

More effective action (5)

more school based action (5)

exchange of ideas (2)

cross-curricular work (2)

more funding and manpower (1)

bursaries (1)

Student's and teacher's thinking about Environmental Education is broadly influenced by the following:

Personal Observation (7)

'Lack of correlation between academia and sustainable behavior'.

'Correlation between government behavior and lack of environmental education'.

'Nationalism v.s. Environmental concerns'.

Natural Resource use

Solutions

Course work, i.e. Biocentric point of view rather than anthropocentric view point (1)

Speakers/Lectures/Movies (2)

Statistics (1)

Media (1)

Caretaker's 'Global Forum' (1)
Dr. David Suzuki's T.V. program (1)
Harmony Foundation's video and literature (1)
Conference field trips and alternatives (2)

As a direct result of attending this conference students and teachers committed to the following Environmental Education initiatives:

Caring for the environment will be ongoing in the following ways:

Set-up caretakers, country-wide, regionally, city-wide, school-wide (7)
Project Development (7)
Raising awareness (6)
Working towards attending next years conference (5)
Support initiatives currently under way (5)
Networking (3)
Environmental Education development (30)
Urban studies (1)
Preservation of Natural Resources i.e. phone monitoring of government agencies (2)
Environmental Workshops for schools and communities (2)
Address the issue of overuse of volunteers (2)
Reflect on the expenditure of time (1)
Goal setting (1)
Student leadership development (1)
Develop a half hour video of the conference for showing on public access television (1)

The preceeding is a compilation of the evaluation undertaken at the conference. The number of responses per comment follow within brackets. Of the 120 delegates who could have completed this evaluation 31 people responded.

Prayer held by Alan Knockwood, a MicMac Indian during the 7th CEI-conference held in Truro, Nova Scotia.

Indian Prayer

Oh Great Spirit,
Whose Voice I bear in the winds
Hear me, for I am young small and weak
I need your strength and wisdom.

I seek strength Oh Great One
Not to be superior to my brothers
But to conquer my greatest enemy,
MYSELF.

I seek wisdom
The lessons you have hidden in every leaf
and rock
So that I may learn and carry this message
of life and hope to my people.

May my hands respect the many Beautiful
things you have made.
My ears be sharp to hear your Voice
May I always walk in your beauty
And let my eyes ever behold the red and
purple sunsets.

So when life fades like the setting sun
My spirit will come to you without shame.

Environmental Briefs

Earth Care News from India,
Express building, Forjett Hill Road,
Bombay 400026,
INDIA.

Environment education in practice

This is the pledge with which a student is initiated into the **Rajiv Gandhi** Certificate Course in Environment conducted by WWF-Bombay at the Mahim Nature Park - Bombay.

The six-month long certificate course introduces the student to the preliminary stage of environmental consciousness. Held on Saturdays, Sundays and public holidays at the spacious 38 acre

*The soil, the waters
the air, the sun, the sky
We pledge to protect them.*

*Our trees are our temple
our forests are our faith.
We pledge to protect them.*

*Birds are our natural controller of pests,
Wildlife are our natural barometers of
health.
We pledge to protect them.*

*Where the tiger roars, and the koyal sings
That land is best for man to be in.
We pledge to protect them.*

Environmental Briefs

Nature Park, the student interacts closely with nature, feeling and sensing the natural beauty so starkly contrasted from the concrete skyline of the city.

The Nature Park created out of a garbage dump site is unique in composition. It has the Vayu path, Shrishti path, Jal-vihartarang path, Medicinal plants section and central to all this the web of life.

A bird sanctuary is also being developed for the 53 species of birds which visit the site. The park also encompasses the mangroves in the area. The children thus have different types of habitats for study at their disposal.

The day the student enrolls for the course she/he takes to pledge to protect and conserve the environment. The student then plants two saplings. A nature trail around the park and then a stint of work like weeding, cutting grass, stimulates their hunger. Breakfast over and its lecture time. Well known names in the field of conservation and environment education interact with the students.

The afternoon sessions are devoted to project work undertaken in groups of 5 to 6. The projects selected include garbage recycling, natural substitution, soil, plastic, paper, etc. Project work is designed to generate information and enable the student to communicate the information to the community. Camps and field trips also form an integral part of the course.

The Rajiv Gandhi Certificate course in Environment not only gives the student information but also provides a unique opportunity to learn from nature.

For more information contact the address above.



Kitchen garden, preparing soil.

The Environmental Education in the High School

'Proceres' Lima - Peru

By
Maria Trinidad Rodriguez Aguirre,
Jr. 9 de Agosto 351,
Lima 35 - PERU

The High School 'Los Proceres' is located in the district of Surco (south east of Lima). This district is 15 kilometers from Lima centre (capital of Peru).

Due to the high rate of population growth in Lima, the farms of this district were urbanized. One of these new urbanized areas is 'Los Proceres' community where our School is in. I am working here for 14 years. I teach Biology course for the fourth grade in Secondary.

Since 1990, I have tried to implement the Environmental Education with many difficulties, but in 1992 I'm having more success because my colleagues of Religion and Geography courses during their classes encourage our pupils to get a more positive attitude for the Environment. Last year, we conducted the Kitchen garden project in the School. We worked with 44 pupils of the fourth grade, section 'C'. We got a good crop although the water is rationalized in Lima. I've observed in my young pupils responsibility and love to the environment. We improved the farm soil, made proper use of the little amount of water available and got safety products for nutrition (without pesticides).

Project, since August until December 1992.

Environmental Briefs

Environmental education in Latvia, short review. (From "Environmental Status Report 1992. Republic of Latvia". Compiled by R. Ernsteins and V. Seglins. IUCN Cambridge (in print).

By R. Ernsteins, University of Latvia Ecological Centre, 19 Rainis blv., Riga, LV-1586, Latvia

Overcoming the remains of "political contamination" of minds and developing interdisciplinary, issue-oriented and interactive environmental education (EE) is a basis for solving and preventing these complex environmental problems.

A course titled "Nature Studies" is taught to the schoolchildren in classes 1-4. Subsequently, no special or comprehensive environmental education courses are taught. Environmental knowledge and attitude are acquired through courses in biology, geography, chemistry, physics as well as other subjects. Mention should be made of several school subjects rooting in Latvian folklore and handicraft heritage as they could be considered to belong to so called cultural environment education. These are the first attempts at an integrated approach to EE which also includes involving students in different practical out-of-class activities, e.g. gardening and fieldwork, clean-up functions, case studies and issue oriented excursions.

Students at the secondary school level (classes 9-12) have more opportunities to explore environment issues as part of natural science subjects as well as by choosing some specific optional subjects such as "Ecology", "Nature, Man, Society" which have been actively introduced during recent years.

Environmental studies at the tertiary level are more widely represented at different universities and other higher educational institutions of Latvia. Formerly there were only several special or optional subjects within the traditional disciplines at several faculties, but during the last few years many new opportunities for specialization appeared for EE, such as industrial ecology, environmental chemistry and special multidisciplinary courses on Environmental Science and Management. There are also some opportunities to take part in foreign and interna-

tional graduate and specially post-graduate interdisciplinary programs like EPCEM, TEMPUS, Baltic University, Central European University etc.

Parallelly to the training of environmental specialists at the university level, special vocational studies are available to train environmental technicians and technologists, e.g. for forestry, fish-farming etc. Currently, there are also several in-service training courses and programs for environmental specialists working in at regulatory agencies, as well as school teachers.

In the fall of 1991, the Environmental Science Council of Latvia was established as an independent coordination body, composed of lecturers and specialists working in environmental protection, representing most of the higher education and research institutions of natural, social and humanitarian sciences. This interdisciplinary expert body provides counselling and expertise for decision-making on various environmental and resource use issues.

Various types of environmental research work are carried out at the institutes associated with the Academy of Science of Latvia. The Academy is presently experiencing difficulties as part of the transition taking place in the country. There are large number of diverse research institutes and departments at the universities, ministries, Environmental Protection Committee and nature conservation agencies utilizing interdisciplinary methods to deal with environmental issues.

Joint research project and cooperation with various international scientific programs, e.g. UNESCO MAB, Baltic Sea etc. are rapidly growing. Problem-oriented bilateral cooperation is flourishing, particularly with various institutions and state agencies from the Nordic countries. There are joint research projects on the main river basins of Latvia and the Riga Gulf, management planning and risk assessment issues etc.

During the last decade the number of different public and out-of-school environmental activities oriented towards raising public awareness and increasing public participation is still growing as well as the development of issue oriented EE, e.g. energy, health education etc., organized

Environmental Briefs

by the main NGO's, professional and inventors societies, Nature Houses and Culture Fund of Latvia. Mass media (press, radio, TV) is currently paying considerable attention to nature and environmental "hot spot" issues and even creating special programs. There is good cooperation between the mentioned non-governmental institutions and the EE Department at the Environmental Protection Committee and less with the Ministry of Education.

In order to expand environmental education and training there is an urgent need to cope with the following main problems:

1 - Lack of a National Strategy on EE and awareness raising;

2 - Lack of appropriate curriculums, programs, terminology and text-books for the integration of EE into all subjects and levels of education;

3 - An insufficient level of interdisciplinary and interactive pre- and in-service training of environmental, administrative and industry decision-makers, teachers etc.;

4 - Bridging the gap between academics, scientists and NGO's; state, as well as local authorities, and citizens; conservationists and local residents.

National and various international networks on EE facilitate the collection, analyses, storage, translation, popularization as well as the dissemination of much needed resource materials and information.

During the last years considerable work has been done in this field by the University of Latvia Ecological Centre. The Ecological Centre has developed a specialized library on EE, acts as a Clearing House for EE, and offers training programs. The Ecological Centre has also adapted and translated self-designed resource materials - teaching aids, bulletins, proceedings, glossaries and books for formal and non-formal EE at all levels. For the first time, annual environmental reports in Latvian are in preparation - "EE Yearbook '93" and "Environment and Development. Latvia '93". The above mentioned as well as other activities are serving as a real resource base for environmental education.

Development Education: A South African perspective

The majority of South Africans live in poverty either in the rural areas or in settlements close to towns and cities. These marginalised people are underdeveloped having been denied the skills and knowledge, as well as the freedom, to participate in the socio-political and economic life of the country. And in addition most live in areas where environmental degradation is cutting away the natural resource base on which their development (to say nothing of their quality of life) may take place.

In trying to redress these problems various "development" and "environmental education" agencies have sprung up. Although some are engaged in holistic programmes that consider both "development" and "environment" there are many that do not.

In 1993 a Programme for Development and Environmental Education (PROD) was established at the Institute of Natural Resources (INR) at the University of Natal, Pietermaritzburg, South Africa. The purpose of PROD is to encourage and facilitate holistic training or education programmes that seek to empower people for participation in their own development, and which also enable them to participate in the management of primary environmental and health care issues.

Readers of *The Global Forum* who are interested in development and environmental education and who would like to link with the INR should please contact:

Dr. Lynn Hurry: Institute of Natural Resources,
P.O. Box 375, Pietermaritzburg, South Africa
3200. Telephone (0331) 68317, Facsimile (0331)
68891.

Globe



Scope

BOOKS

Pollution stinks, by Arjen Wals. Young adolescents' perceptions of nature and environmental issues with implications for education in urban settings. A main thesis of this book is that it is crucial to build upon the prior experiences and ideas students bring to the classroom. The powerful and often shocking stories as told in this book by the children of Detroit, make a dramatic plea for taking their world into account when designing environmental education that is meaningful to them. Available from **Academic Book Center (ABC)**, P.O.Box 132, 2678 ZJ De Lier, the Netherlands. Price \$ 22,50, excl handling and postage.

Alternative paradigms in Environmental Education Research, Editor, Rick Mrazek, PhD.

The 1990s have seen an increasing number of individuals and organizations engaged in critical discussions on how we view research in environmental education and who is conducting that research. This publication includes views put forward during the 1990 NAAEE (North American Association for Environmental Education) and subsequent sessions that focused on research in Environmental Education. It contains critiques and examples of empirical studies, interpretive studies, and critical approaches to research from across North America, Europe, and Australia.

Price \$ 20,00 for non members, \$ 16,00 for members of NAAEE. For information contact NAAEE, P.O.Box 400, Troy, Ohio 45373, USA.

The Third World Foundation of North America

The Third World Foundation is a non-profit organization established to facilitate the exchange of scientific information, manpower and material between citizens of the third world and those from industrialized nations.

The Third World Foundation plans and implements projects that would assist third world countries in building a strong scientific base that would yield to economic and developmental progress. The Network of Centers for Sustainable Development established in countries of the third world, is a major undertaking which is being coordinated by the Foundation.

The Foundation is committed to responsible development which would ensure an environmentally safe environment for the generations to follow. Professor Cyril Ponnampereuma, Director of Maryland, is the President of the Third World Foundation, also located at the University of Maryland, College Park.

The Foundation had its start in the Third World Academy of Sciences and The Third World Network of Scientific Organizations, founded in Trieste, Italy by Nobel Laureate Abdus Salam. The Foundation is the North American outgrowth of the Third World Network of Scientific Organizations.

Contact: Cyril Ponnampereuma, Third World Foundation of North America, P.O.Box 82, U. of Maryland, College Park, Maryland 20742, USA.

The Indian Assembly of Youth has participated in september 1993 as Caretakers of the Environment India in the Global Forum on Environmental Education for sustainable development. Some 40 countries participated in the conference. The IAY is organizing in December 1993 a national tree planting campaign under the Memorandum of Understanding between Asian Youth Council and UNEP. The inaugural function will be held in New Delhi and they will be adopting secondary schools all over the country. For information contact Ravi Dutt, 16, Northend Complex, R.K.Ashram Marg, New Delhi-110001, India

