

Journal of the Institution of Environmental Sciences

Vol 9 No 3 ● May/June 2000

Editor: Richard Dix ● Assistant Editor: Derek Hall

Established 1971 ● ISSN: 0966 8411



ENVIRONMENTAL NEWS

The cost of climate change – UK report is a world first

Strengthening coastal and river flood defences to withstand climate changes could cost £1.2 billion over the next half century for England and Wales, a preliminary report commissioned by the Department of the Environment, Transport and the Regions (DETR) has revealed.

Priority areas – water resources, flood protection, building and infrastructure, habitats and species and planning – most likely to be affected by climate change in the UK over the next 30-50 years and some of the potential costs of tackling those effects were identified for the first time by the study.

Environment Minister, Michael Meacher, was presented with the findings of Environmental Resources Management's report, *Potential UK adaptation strategies for climate change* and a summary of the DETR's three-year UK Climate Change Impacts Programme at a seminar on adapting to climate change.

Mr Meacher said work on adapting to climate change was at an early stage throughout the world but that the UK was as far ahead as anywhere. He cited four areas where the Government had already taken action:

- required water companies to submit 25-year water resource plans that take climate change into account;
- incorporated estimates of sea level rise into guidance on project appraisal for sea defences since 1989;
- begun work on a best practice guide for those involved in land use planning;
- commissioned Environmental Resources Management (ERM) to assess priority areas for adapting to climate change in the UK

He said: 'I believe the ERM study to be the first of its kind in the world and the findings are being launched to stimulate a frank and wide-ranging debate on its conclusions.'

The report includes a cost benefit analysis of the five priority areas to estimate both the costs of

adapting to climate change and the costs if no action is taken. In summary:

- **Water resources** – cheaper to reduce demand e.g. more efficient domestic appliances, water meters, recycling and changes in behaviour than increase supply e.g. building more reservoirs, bulk transfer schemes and desalination plants
- **Flooding** – more cost effective to improve flood defences than incur flood damage. Costs of providing current protection levels of flood protection around England and Wales could increase by three or four times from £120 million per annum to £400-600 million per annum (or £1.2 billion over 50 years);
- **Building and infrastructure** – more cost effective to design new buildings and infrastructure, such as the electricity supply network, to withstand climate changes than strengthen current assets. This could add 1 to 5 per cent to current construction costs.

Mr Meacher said: 'The most pressing areas are those with long planning horizons such as river and

IN THIS ISSUE

| | |
|---|-----|
| £21 million to clean up contaminated land | p2 |
| PCBs to be phased out | p3 |
| Air quality strategy | p5 |
| Education for sustainability | p8 |
| Business challenged on the environment | p12 |
| The future of light rail | p13 |

coastal defence, transport networks and buildings.

'Implications of climate change and sea level rise in vulnerable sites is easy to imagine but there will also be subtle effects, such as changing manufacturing processes in response to warmer temperatures and water shortages.'

Mr Meacher urged business and industry to build climate change into their decision making and not to be taken by surprise, in order to exploit new opportunities and keep ahead of the competition.

The UK Climate Change Impacts Programme (UKCIP), which concluded 'climate change will have to become part of the currency of every decision-maker, not just the experts', revealed:

- The need to plan on longer time horizons than ever before and to factor 'climate change headroom' into decision-making;
- Vulnerable areas include:
 - The Mersey, Ribble and Arun Estuaries;
 - Low-lying land: Gwent Levels, Somerset Levels, Morecambe Bay, north Kent coastline;
 - Ports: Heysham Harbour and Dover;
 - Transport links around the Dawlish and west Cumbrian coasts;
- UK landscapes and its wildlife could change forever in the following areas:
 - The Hampshire Downs, South Downs, New Forest, Welsh Uplands, the Lake District and Cairngorms were identified as vulnerable.
 - Birds and flowers such as the Snowdon lily and dipper, snow-bunting and arctic alpine species could disappear;

- Some birds, such as the kingfisher and nightingales, and butterflies, such as the adonis blue, speckled wood and comma, as well as some lowland orchids could benefit from climate changes.

The Government established the UK Climate Change Impacts Programme (UKCIP) in 1997. In that time, around 40 private and public sector organisations funded studies, representatives from more than 400 bodies were interviewed and more than 12,000 copies of study reports distributed. Four regional studies (Scotland, Wales, North West and North East England) have been completed and a further eight will be produced. For further details about UKCIP contact the UK Climate Impacts Programme, Union House, 12-16 St Michael Street, Oxford, OX1 2DU. Tel: 01865 432076; Fax: 01865 432077; Email: enquiries@ukcip.org.uk

The Government commissioned ERM to review the impacts of climate change, look at possible adaptation strategies and define priority responses to climate change, in consultation with a wide variety of stakeholders. The costs are preliminary values only. More definitive values will become available with more detailed study, better data and better climate change predictions. Climate change effects are inherently uncertain and hence so are the cost calculations.

The figure of £1.2 billion is a preliminary estimate (based on present values) of the extra costs of strengthening coastal and river flood defences in England and Wales to adapt to climate change over a 50 year period. The total investment needed for flood and coastal defences, both to maintain current standards of defence and taking climate change into account, could reach £400-600 million per year.

Individual events such as severe storms in France, flooding in Mozambique and droughts in India cannot be directly linked to man-made climate change but there is mounting evidence that our climate is already changing:

- 1999 was the joint warmest year
- 1990s warmest decade on record
- wetter winters
- drier summers
- spring arriving earlier

Cutting greenhouse gas emissions is the primary goal in tackling climate change and the UK leads the world in meeting its 12.5 per cent international Kyoto Protocol target, as outlined in the Draft UK Climate Change programme launched in March 2000. But concentrations of greenhouse gases already in the atmosphere mean further climate change is unavoidable and adaptation strategies must be considered.

Copies of both documents, in full and summary form are available, by quoting the appropriate product codes from Linda Derry, Two-Ten Communications, Wharfside House, Unit 760, Thorp Arch Industrial estate, Wetherby, Yorkshire, LS23 7EL.

- *Potential UK Adaptation Strategies – Summary Report* (Product code: 99DPL013)
- *Potential UK Adaptation Strategies – Technical Report* (Product code: 99DPL014)
- *Climate Change: Assessing the Impacts – Identifying Responses: Highlights of the First Three Years of the UK Climate Impacts Programme* (Product code: OOEP0282)
- *Climate Change: Assessing the Impacts – Identifying the Responses: The First Three Years of the UK Climate Impacts Programme* (Product code: OODPL001).

Mullin announces £21 million for contaminated land cleanup

Details of this year's funding support for work by local authorities and the Environment Agency on cleaning up contaminated land have been announced. £21 million has been made available for 2000-01, and the first allocations are to 40 local authorities and the Environment Agency.

In a written answer to a

Parliamentary Question, Environment Minister Chris Mullin said: 'The new contaminated land regime (under Part IIA of the Environmental Protection Act 1990 – inserted by section 57 of the Environment Act 1995) came into force in England on 1 April 2000. The Contaminated Land Supplementary Credit Approval (SCA) programme will

continue to provide support to English local authorities to deal with contamination. The SCA programme will assist these local authorities in dealing with sites for which they are responsible, that are deemed to be 'contaminated land' under Part IIA. £21 million has been made available under this programme for 2000-01.

'The SCA programme has provided valued support to English local authorities in dealing with contaminated land and, in later years, provided additional grant-in-aid to the Environment Agency. Under the new regime the grant will be available to the Agency in respect of their new duties for contaminated sites that are designated "Special Site" under Part IIA.

'Authorities with on-going contractual commitments for projects funded in previous years have already received notification that support will continue to be available this year. I have agreed the programme for new projects to start this year and my Department has written today to the successful authorities and to the Environment Agency notifying them of the financial allocations which are being made.

'The Department will discuss the other bids with the authorities concerned and expects to make some further allocations. It will also decide new bids when they are received.'

The Supplementary Credit Approval

programme gives financial support to English local authorities and waste disposal authorities to tackle problems of gas or leachate from closed landfill sites and with other forms of land contamination. Funds are also made available under the programme to support work by the Environment Agency to deal with water pollution caused by contaminated land.

The SCA programme will be closely tied to requirements of the new contaminated land regime (under Part IIA of the Environmental Protection Act 1990 – inserted by section 57 of the Environment Act 1995) which came into force in England on 1 April 2000

Support is available for English local authorities to assist them in carrying out their statutory functions under the new Part IIA regime and to meet their own legal obligations to investigate and remediate sites for which they are themselves responsible. This may also apply where under Part IIA the costs, or part costs, of remediation fall to the local authority via 'Orphan Linkages' i.e.

where an appropriate person cannot be found and in 'Hardship' cases. The Environment Agency will also receive grant-in-aid assistance in respect of contaminated land that is designated as a 'Special Site' where costs fall to the Agency.

But support under this programme cannot be given for projects eligible for other funding, for example from Regional Development Agencies. Nor can it be given where the site is to be developed, because in these cases the costs of dealing with the contamination should be considered as part of the costs of development.

Priority is given to sites where preliminary sampling or site investigation indicates a greater risk to human health or the environment.

Enquiries about the programme should be made to Contaminated Land and Liabilities Branch, Department of the Environment, Transport and the Regions, Zone 3/B3, Ashdown House, 123 Victoria Street, London SW1E 6DE.

PCBs to be phased out

New measures to phase out and dispose of harmful chemicals affecting sea mammals, including seals, otters and dolphins, as well as polar bears have been announced by Environment Minister Michael Meacher.

PCBs (polychlorinated biphenyls) are recognised as a threat to the environment due to their toxic qualities and tendency to bioaccumulate up the foodchain. Increasingly high levels can appear in the body fats of fish, birds and mammals and are linked with harmful effects in such animals.

The new regulations will ensure that PCBs are phased out and disposed of safely. They will reduce future releases of PCBs and lower their overall levels in the environment. The use of PCBs in the UK has been progressively restricted since the 1970s, with their supply and use in new plant and equipment banned in 1986. Equipment containing a small amount of PCBs below agreed EU limits is exempted, until it reaches the end of its useful life, including domestic appliances and lighting.

The regulations deal with remaining PCBs in equipment (such as transformers and capacitors) and apply to England and Wales. Following the registration of

contaminated equipment, the regulations require the safe disposal of PCBs and associated equipment by the end of this year. The Environment Agency will enforce the regulations, and oversee the registration, charging and monitoring of equipment containing PCBs.

The Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 provide for the phasing out and destruction of identifiable PCBs and certain other, specified, PCB substitutes, along with associated equipment. The Regulations give effect to EC Directive 96/59 in relation to the registration, decontamination and disposal of PCBs, as well as the preparation of inventories, labelling and monitoring. Similar regulations are being introduced for Scotland and Northern Ireland.

The Directive sets a target date of 2010 for the phasing out and disposal of identifiable PCBs, subject to certain specified derogations. These derogations are reflected in the regulations. There is also provision for special time limited directions, subject to the approval of the Environment Agency and Secretary of State, where major

replacement programmes are already underway.

Copies of the Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 (SI 2000 No. 1043) are available from The Stationery Office and the DETR website: www.environment.detr.gov.uk/marine/pcb/index.htm

In another written answer, Mr Meacher said: 'The Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 were laid before Parliament today.

'They require holders of PCB contaminated equipment to register with the Environment Agency, and subject to certain, specific exemptions, for PCBs and associated equipment to be disposed of by the end of December this year. The agency will also have responsibilities in relation to monitoring and enforcement.

'The regulations will have the effect of curtailing release of PCBs, and so lowering their concentrations in the environment, including in relation to sea mammals, in which PCBs have been found in significant quantities.'

A new beginning

Sir Robert May

What happens to our world and to us in the future depends on the actions we take now. As a new century dawns, our greatest challenge remains to ensure any increase in global productivity is achieved in a sustainable and environmentally friendly way.

We really do live in special time in the history of life on Earth. A time when human activities have come to rival the scale and scope of the natural processes which built, and which maintain, the biosphere.

It is tempting to discount such dramatic claims which have often been heard around millennia or other years with lots of zeros. But consider this. Today humans take for their use somewhere between a quarter and a half of all plant material that grows on earth each year. From the tropical rain forests, across the grain fields of America, Europe and Asia, to the arctic tundra fully half all the atoms of nitrogen and of phosphorus, that are annually fixed in new plants come from human intervention in the form of fertilisers rather than natural cycles. In the sea, we take 10 per cent of all its annual production, and more like 30 per cent in rich areas of nutrient upwelling. This broad pattern underlies today's collapse of fishery after fishery.

Many aspects of human life have, however, improved during the 20th century. In the 1950s, average life expectancy at birth, around the globe, was 46 years. Today it is 64. Over the same period, the average difference in longevity between the developed and developing world shrank from 26 years to 12.

Partly as a result of such global changes in average health, human numbers have shown unprecedented growth. The world population of six billion at the turn of the century represents a fourfold increase over the century, and a 60 per cent increase over just the past 35 years. Yet global food production has doubled during this same 35 years. There is thus 25 per cent more food per person today than 35 years ago. Today's lamentable problems of malnourishment and even famine in many parts of the world are problems of distribution – deep and enduring problems – not of food production as such.

The Green Revolution that has doubled food supplies has, however, had environmental costs. The doubling was achieved with an increase of only 10-20 per cent of additional arable land. But herbicides, pesticides, fertilisers and other inputs have much more than doubled. Nitrogen from fertilisers, in particular, has increased roughly seven times, and is beginning to poison many rivers and water tables.

The Green Revolution has carried us a long way toward realising the ages-old aim of agriculture,

which is efficiently to grow crops which only humans eat, not losing productivity to weeds ('plants in the wrong place') or insect and other pests, Good news for us. Bad news for the diverse populations of invertebrates, birds, and other creatures that share the countryside with us. The outcome, around the world, is an ever more Silent Spring. Documented extinctions of bird and mammal species over the past century or so are at a rate one thousand times faster than the rates seen, on average, over the half billion year sweep of the fossil record. The various causes are habitat destruction, unsustainably excessive harvesting and other exploitation, adverse impacts by introduced alien species, or combinations of all three.

Peering uncertainly into the future, estimates of extinction rates suggest a further tenfold increase over the coming centuries. This puts us squarely on the tip of the breaking of a sixth great wave of extinction, fully comparable with the Big Five in the fossil record, such as that which extinguished the dinosaurs.

So what kind of world awaits our children's children? The extent to which biodiversity will diminish depends on the actions we take now. We currently spend about \$6 billion annually on nature reserves and other protected areas, which cover about 6 per cent of the world's land area. Ramping this up to 10 per cent, with proper protection and management, and with appropriate and sustainable compensation for local people, would cost around \$30 billion each year. More important, and more costly, it is estimated that current agriculture could be made more environmentally friendly, without loss of productivity, for an annual cost of around \$300 billion. These are big numbers, but only around 1 per cent of global GDP. Although these conventional calculations of GDP take no account of them, the services delivered to us by natural ecosystems are of similar magnitude. An investment of 1 per cent to preserve such services looks like good value to me.

Over the next century, our children's children will live in a world of ten billion people. How will they be fed? The Green Revolution, underpinned by massive and unsustainable inputs of fossil fuel energy, already shows signs of diminishing gains. We could not feed today 15 global population with yesterday's agriculture, and I think we cannot feed tomorrow's population with today's.

What we need is a Doubly Green Revolution, where further gains in productivity are achieved in a sustainable and environmentally friendly way. Here I believe, looking beyond current concerns, that new techniques of genetic manipulation offer us a two edged sword, that can be used wisely or unwisely. GM methods are essentially tools for achieving in a more precise, focused and rapid way the kinds of modifications of crops that plant breeding has always given us. But we will get what we aim at. If we seek further intensification of agriculture, a further ratcheting up in


the spirit of the Green Revolution, we may feed tomorrow's world, but it will be a biologically impoverished world, and I doubt its sustainability. If, on the other hand, we use our increasing understanding of the molecular machinery of life, along with other cultural changes, to produce an agriculture that works with the grain of nature – rather than using fossil fuel subsidies to wrench nature to our crops – then I hope can achieve a Doubly Green Revolution.

What role may WWF play in achieving these goals? Both on a national and international stage, WWF has been one of the first and the foremost to recognise the current and impending threats to biological diversity. The panda logo is the world's most widely recognised symbol for conservation concerns, and behind the symbol is a distinguished record of effective action on many fronts.

This being acknowledged, I would observe that WWF has mainly worked with the grain of public concerns in choosing its targets for conservation action. This has meant, by and large, a focus on large mammals – 'charismatic megafauna'. Although understandable and effective in engaging the wider public, these targets are not necessarily those that would be chosen in an analytic quest to preserve the maximum amount of Earth's evolutionary history, as written in the genetic richness and variability within today's living species. Our emotions relate most easily to the larger mammals and most colourful birds, but the smaller invertebrates and the diverse plant kingdom are more important for the functioning of many

ecosystems, and also carry more of the record of how life evolved on our planet. The justification that by saving charismatic megafauna we necessarily save large areas of habitat, and thence a host of less emotionally resonant invertebrates and plants, does not survive close examination: such studies as exist suggest that 'hot spots' for birds are uncorrelated with 'hot spots' for particular plant and insect groups.

In the same general way, I have argued above that we should be wary of emotional prejudices against new methods of genetically modifying our crops, but rather should ask how we can use these advances in knowledge to shape a more sustainable world.

In summary, I believe that in the century that has just ended, WWF has been wonderfully successful in its appeal and in its actions, but to an agenda set largely from the heart. The challenge of the next century is to treasure these strengths, but to combine them with analytic approaches that ask questions – often cold and difficult questions – about which actions will, in the long run, be most effective in sustaining as much as possible of the biological riches we are heirs to. This melding of heart and head will, I think, pose tough challenges and choices. It is not an easy recipe for a new beginning to the new Millennium, but who better than WWF again to lead the way? 

■ *Robert M. May is Chief Scientific Adviser to the UK Government and Head of its Office of Science and Technology.*

This article is a summary of the WWF-UK Annual Address which he delivered on 7 December 1999.

The Air Quality Strategy – an evolving process

N. K. Woodfield, C. I. Beattie and J. W. S. Longhurst

The Local Air Quality Management Framework

Local Air Quality Management (LAQM) in the UK has been implemented through the 1997 National Air Quality Strategy (NAQS) (DoE, 1997). The originator of the strategy was the Environment Act 1995 (HM Government, 1995), and the NAQS was initiated as an evolutionary document, to undergo regular reviews. The first review of the strategy was in fact a year earlier than first anticipated, and the UK is now underway with the implementation of the various elements of the new strategy *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland* (DETR, 2000).

The focus of the NAQS was the establishment of health based standards for eight specific pollutants, established through the work of a government commissioned Expert Panel on Air Quality Standards (EPAQs). The Air Quality Regulations 1997 (HM Government, 1998) subsequently provided the legal framework for standards and objectives for seven pollutants, excluding ozone from local air quality man-

agement, to be achieved by the end of 2005. Air quality objectives, as set out in the initial UK National Air Quality Strategy, are presented in Table 1 below.

The NAQS and the Government's approach to air quality policy is underpinned by fundamental principles, which include the use of sound science and scientific knowledge, the precautionary principle approach, the polluter pays principle and sustainability principles. These principles have been elaborated on within the reviewed Air Quality Strategy with an emphasis on taking account of a wide range of costs and benefits including those which can't easily be valued in monetary terms (DETR, 2000). The reviews of the strategy are intended to reflect current thinking with respect to developments in European legislation, technological and scientific advances, improved air pollution modelling techniques and an increasing understanding of the socio-economic impacts of the management process.

Commonly known as the Ambient Air Quality Framework Directive, the Ambient Air Quality Assessment and Management Directive (96/62/EC)

Table 1: Air quality objectives as set out in the UK National Air Quality Strategy (DoE, 1997)

| Pollutant | Objective for end of 2005 | Measured as |
|---------------------|---------------------------|--|
| Benzene | 5ppb | Running annual mean |
| 1,3-butadiene | 1ppb | Running annual mean |
| Carbon monoxide | 10ppm | Running 8-hour mean |
| Lead | 0.5µg/m ³ | Annual mean |
| Nitrogen dioxide | 150ppb | 1-hour mean |
| | 21ppb | Annual mean |
| Ozone | 50ppb | Running 8-hour mean (8 exceedances allowed) |
| Particulates (PM10) | 50µg/m ³ | Running 24-hour mean (4 exceedances allowed) |
| Sulphur dioxide | 100ppb | 15-min mean (35 exceedances allowed) |

has underpinned the implementation of the UK National Air Quality Strategy. The Directive established a framework under which the EU agrees limit values for specified pollutants in the form of Daughter Directives. With respect to European legislative developments, the publication of the EU objectives for sulphur dioxide, nitrogen dioxide, PM₁₀ and lead (and proposed limits for benzene and carbon monoxide) have had a direct effect on establishing air quality objectives in the European member states. The EU objectives have varying target dates, with certain target dates at the beginning of 2004 and 2005, whereas the UK NAQS was originally targeted for the end of

2005. The revised Air Quality Strategy has therefore altered the dates for benzene, 1,3-butadiene, carbon monoxide and lead to take account of this. Table 2 summarises the 2000 UK Air Quality Objectives (DETR, 2000).

First phase of air quality review and assessments

The periodic assessment of air quality is the essence of the holistic management process, requiring authorities to identify locations that are currently experiencing exceedances of the air quality objectives, and more importantly to identify locations which are pre-

Table 2: The 2000 UK Air Quality Objectives

| Pollutant | 2000 Objective concentration | Measured as | Date to be achieved |
|------------------|--------------------------------|---------------------------|---------------------|
| Benzene | 16.25 µg/m ³ (5ppb) | Running annual mean | 31 December 2003 |
| 1,3-butadiene | 2.25 µg/m ³ (1ppb) | Running annual mean | 31 December 2003 |
| Carbon monoxide | 11.6 µg/m ³ (10ppm) | Running 8-hour mean | 31 December 2003 |
| Lead | 0.5 µg/m ³ | Annual mean | 31 December 2004 |
| | 0.25 µg/m ³ | Annual mean | 31 December 2008 |
| Nitrogen dioxide | 200 µg/m ³ (105ppb) | 1-hour mean | 31 December 2005 |
| | | (18 exceedances allowed)* | |
| | 40 µg/m ³ (21ppb)* | Annual mean | 31 December 2005 |
| PM ₁₀ | 50 µg/m ³ | 24-hour mean | 31 December 2004 |
| | | (35 exceedances allowed) | |
| | 40 µg/m ³ | Annual mean | 31 December 2004 |
| Sulphur dioxide | 350 µg/m ³ (132ppb) | 1 hour mean | 31 December 2004 |
| | | (3 exceedances allowed) | |
| | 125 µg/m ³ (47ppb) | 24-hour mean | 31 December 2004 |
| | | (3 exceedances allowed) | |
| | 266 µg/m ³ (100ppb) | 15-min mean | 31 December 2005 |
| | | (35 exceedances allowed) | |

* provisional objective only

dicted to experience exceedences in future. Public exposure to such exceedences is the focus of the review and assessment process. Specific sections of the 1995 Environment Act require local government to review air quality through a phased approach and predict future air quality concentrations at identified receptors. Where such predictions, using various modelling and monitoring techniques, indicate potential exceedences, local government is required to designate Air Quality Management Areas (AQMAs) and prepare Air Quality Action Plans (AQAPs) to deliver improved air quality within such areas.

In order to assist local authorities in implementing the NAQS, guidance was issued by central Government in the form of four general guidance documents and four technical guidance documents. Revised guidance accompanied the revision of the Air Quality Strategy and air quality objectives, and authorities were provided with complete revisions of all general LAQM guidance and technical guidance. Part of the amendments included a revision to the review and assessment timescale. The deadline for completing the first phase review and assessment process was extended to June 2000, from the original December 1999 deadline, and a four month period between June 2000 and October 2000 is now scheduled for consulting on the findings of the scientific assessment process and the actual declaration AQMAs. Air quality action plans are to be developed following declaration, and must be secured and implemented within 12-18 months of designation. A second phase of review and assessment has also been brought forward to December 2003 from a later date of December 2005 in order to reflect upon the changes to the target dates of a number of the objectives.

Effective communication and collaboration

The focus of the LAQM process is action at the local level, facilitated by local government across the UK. This requires working in close collaboration with stakeholders, the public and neighbouring authorities to ensure successful implementation of the air quality objectives. This is not only true of external collaboration between those responsible for pollutant emissions, their abatement or regulation, such as the Highways Agency, Environment Agency (or in the case of Scotland the Scottish Environmental Protection Agency, SEPA) or industry. Instead, the need to address the requirements of the strategy across different departments within an individual authority is of particular importance.

Environmental Health Officers are therefore beginning to work much more closely and innovatively with their transport planning, land-use planning and economic development colleagues. Effective communication and dialogue becomes particularly important between local authority departments with the development of a local authority action plan. Where the emission sources impacting upon the objectives are located within the authority area, transport and land-use planners have an important role in ensuring that

the necessary policy options and measures available under the responsibility of the council are used effectively to address the air quality exceedences.

Designating Air Quality Management Areas – science or politics?

The process of actually designating AQMAs is reliant first and foremost upon a robust scientific assessment. However, the determination and ultimate identification of an AQMA boundary is not an exact science, and local authorities must decide where an AQMA boundary is to be effectively drawn. A firm line to represent areas of exceedence is considered necessary, particularly in planning terms, to clearly identify the area for which action is required. However, local authorities may ultimately choose to illustrate zones or bandings where predicted pollutant concentrations are likely to comply, likely to exceed or indeed not comply with the air quality objectives. There is no maximum spatial extent of an AQMA, although an area of predicted exceedence should be fully encompassed within the designated area. Equally, a single residential property can constitute an AQMA.

Consistency in the approach to designating and declaring AQMAs across the UK is a potential difficulty in the implementation of the air quality strategy, and will require consideration of the approaches taken by neighbouring authorities as to how to designate areas. The potential political intervention in the designation process within some authorities will no doubt affect any such consistency, and local authorities must seek to justify their decisions to designate, with reasoned and reasonable arguments.

The majority of AQMAs are likely to be declared in urban hotspots experiencing traffic congestion and possibly along major trunk road corridors. As yet, only a small handful of authorities have declared AQMAs in the UK, including Westminster City Council, who took the decision to officially declare their whole authority an AQMA. The number of authorities set to declare will no doubt rise over the next few months, as the October deadline moves ever closer.

Action for AQMAs – Air Quality Action Plans

Following the conclusion of the initial review and assessment phase, and the subsequent designation of an AQMA, local authorities are required to prepare an action plan to identify how the local authority is to achieve air quality objectives in the designated area. The action plan is intended to outline potential measures in pursuit of delivering the air quality objective, and any such plans must reflect the fact that air quality in AQMAs is likely to be influenced by sources external to the local authority boundary.

Local authorities are in fact encouraged to consider implementing an air quality action plan irrespective of the likelihood of achieving the air quality objectives. This is consistent with a longer term perspective than that of the current first phase review and assessment process, and is also consistent with strategic


land-use planning time scales, which are only effective over time periods of at least ten years. For cleaner air in the long term, it is imperative that the land use planning regime considers air quality impacts. The sensitive planning of land-use developments and transport networks, with carefully considered initiatives, will assist with reducing potential pollutant exceedences to below levels which necessitate the designation of an AQMA. There is, in conjunction with transport planning and land use planning measures, a need for economic development considerations to be addressed in the formulation of an action plan, as the economic vitality and versatility of a region or locality will influence its ability to implement certain initiatives and proposals. There is also a role for sustainable planning in the formulation of an action plan, with sustainable principles being at the very core of air quality management practice.

The cost effectiveness of any proposal or solution in delivering the objectives specified within the air quality action plan is an important consideration. This requires a clear understanding of the relative contributions to the AQO exceedences within the AQMA, so as to proportionate the necessary responsibility for developing solutions between the industrial, transport and other sectors effectively. Apportionment is of paramount importance before dialogue between the various stakeholders is undertaken, and the cost effectiveness of potential solutions must take into account local circumstances.

Action planning is very much an evolutionary process. Changing local circumstances cause air quality to change over time, and so local authorities must

periodically review their action plan so as to ensure the most appropriate actions are undertaken to reflect local circumstances.

In conclusion

Air quality management in the UK illustrates the importance of effective communication, collaboration, consultation and planning function integration both within local government and between external stakeholders. The use of sound science to underpin the decision-making process is an essential component of the process, which has now reached a point where solutions to air quality problems are the next step. The challenge now unfolding is to ensure that air quality objectives are achieved as the extent of local action required becomes apparent to locally elected politicians and their electorate. 

References

- HM Government (1995). *Environment Act 1995* Chapter 25 (Part IV). London HMSO, 1995.
- Department of the Environment (DoE), the Scottish Office and the Welsh Office (1997). *The United Kingdom National Air Quality Strategy*. CM3587. The Stationery Office Ltd, London. March 1997.
- DETR in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland (2001). *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. Working Together for Clean Air*. CM4548. The Stationery Office, London.

ENVIRONMENTAL EDUCATION

This section of the Journal is in response to the growth of news, information and activities which underpin the Education Committee of the IES.

Special prominence is given to student activities and projects, national and international initiatives, campus developments and research in order to capture the diversity, wealth and vitality of modern

environmental education.

Readers are invited to send articles and letters to:

- **Derek Blair, School of the Environment, University of Sunderland. Benedict Building, Sunderland SR2 7BW.**
- **Tel: 0191 515 2737.**
- **Fax: 0191 515 2741.**
- **E-mail: derek.blair@sunderland.ac.uk**

Environmental education for sustainability, 2000-02

Planning for Earth Summit 2002, ten years after Rio, is underway.

The Earth Summit in 1992 and the translation of Agenda 21 by national governments into policies and local authorities around the world gave a

tremendous spur to environmental education which had struggled to win academic and political respectability, especially outside, but even inside universities and colleges throughout the 1970s and 80s. Curricula in formal and

non-formal education programmes were quickly adapted to capture the new catchy in-phrase: sustainable development.

Sustainable development fuelled a new generation of educational publica-

tions, conferences, committees and panels and infiltrated government, company and statutory bodies, accommodating the new politically popular concept, for whatever reason. To some critics, however, sustainable development was merely a slogan, diluting and diverting attention from more traditional foci of environmental education. They fear that the scope of Education for Sustainability is too grandiose and woolly for schools, colleges and universities, given the obvious difficulties government, industry and society have in operationalising sustainability. They wonder: is the prominence and primacy of 'the environment' in education not threatened with being submerged and diluted in a sea of socio-political issues?

Paradoxically, the boost in environmental education from sustainability occurred at a time when the popularity of environmental science/studies had begun to wane in FHE and when the environmental content of the National Curriculum in schools was being reduced. Current calls for citizenship in young people's education interestingly accord with the ideals of sustainable development which embraces the social, economic and environmental responsibilities of society and individuals.

The problem of tackling this dilemma of current environmental education and of converting concepts and policies into practice and working example is 'the most fundamental challenge concerning environmental educators today,' according to Justin Dillon, Director of the International Education Unit at Kings College, London who is coordinating a week long seminar in the

British Council's International Networking Events in March 2001. One of its intended outcomes: to have developed a deeper theoretical understanding of environmental education may not inspire radical and creative solutions to the problem. Maybe its participants will arrive at a new fudge solution: environmental education for sustainability. However, at a full cost of £1750 per person and with only 30 places available, the discussions are bound to be rather exclusive.

At the time of writing, UNED-UK/South Bank University seek to attract a wider and larger set of stakeholders to their June conference in London in their review of environmental education as articulated in Chapter 36 of Agenda 21 and of the potential of Education for Sustainability in the lead up to the 2002 Earth Summit. Words such as 'development,' 'poverty', 'youth', 'values', 'LA 21', 'ethics' and 'cultural' again dominate the conference agenda and reflect the current emphases. More traditional and scientific environmental education terms such as biodiversity, climate change, pollution, wastes are rare or non-existent. Surely, it is important that the basic roots and principles of environmentalism are not forgotten as we embrace the concept of sustainability so enthusiastically.

Another recent UK conference acknowledged that reviewing the successes and failures of environmental education, however defined, is important, but that the emphasis now, leading up to 2002 should be on looking forward. A strength of the South Bank conference is the involvement of so many

different stakeholders in the debate. There is a danger that reports from national and local governments tend to be self-congratulatory in terms of their formal achievements, and a danger for articulate educationalists to promote certain fashions. Both may under-acknowledge the role of others, for example professional institutions, environmental scientists and NGOs. NGOs have contributed massively to environmental education locally and globally since Rio and are doing much to implement local sustainability and Local Agenda 21. Networks of NGOs like, for example, ANPED in Europe, are anxious that Earth Summit 2002 does recognise the achievements and potential of environmental education and education for sustainability. Perhaps that is when environmental education for sustainability may emerge.

Derek Blair

Sources

International Networking Events

The British Council
1 Beaumont Place, Oxford OX1 2PJ
Tel +44 (0) 1865 316636. Email: network.events@britishcouncil.org

UNED-UK Conference on Education for Sustainable Development

South Bank University,
London June 16th 2000
Web: <http://www.oneworld.org/uned-uk/education/index.htm>
ANPED, The Northern Alliance for Sustainability, PO Box 59030, Amsterdam, Netherlands
Tel: +31-20-4751742. Email: anped@anped.antenna.nl
Web: www.antenna.nl/anped/

News from Cyprus

Environmental education aims to make the public aware of local, regional and national problems and the importance of protecting the environment. In Cyprus environmental education is in its developmental stage and people are not very sensitive to environmental problems unless they affect their health.

For example, inhabitants of Ergates, a small village outside Nicosia, barricaded roads leading to their village in protest at emissions from the foundry nearby. Last autumn in Limassol parents were refusing to let children go to school because they were worried about another polluting industrial enterprise.

Public reaction to media coverage of environmental problems in Troodos (abandoned asbestos mines) and the overflowing landfill site in Ayia Marinouda has led directly to Government intervention.

Environmental information still represents a very small percentage of the total amount of information offered by the media. The Cyprus Broadcasting Corporation has a weekly programme on environmental matters and a private radio company has an hour long broadcast on science and the environment.

Recently the Government has established an annual Week of the Environ-

ment to raise environmental awareness, concentrating on re-forestation, on saving drinking water and proper disposal of rubbish. In secondary schools, environmental information is very general because the amount of time devoted to it is so small. No wonder, then, that recycling programmes for paper and glass are only carried out on a small scale by the Government.

Over 1.5 million tourists come to Cyprus every year and our challenge is to keep our island in a good environmental state.

Yiannis V. Violaris
yviolaris@surrey.ac.uk

Enhancing your career prospects

Bridging the gap

Many young people, after having spent long periods on the unemployment register, find there are few opportunities to 'get their foot in the door' and increase their chances of full-time employment. This is especially the case in the field of environmental management, where employers very often require evidence of 'hands on' experience before considering applications. There has long been a need to provide a means of bridging this gap, and in so doing giving people the necessary skills and experience and, in many cases, the motivation and confidence required to succeed in securing employment.

The School of Environmental Management at Farnborough College of Technology, in conjunction with the charitable trust Operation New World has for a number of years successfully run a three month part-time course in Environmental Management, aimed at getting participants off the dole and into worthwhile jobs.

Open to unemployed people between 18 and 25, it offers a unique no-cost professional development programme (now a validated EDEXCEL BTEC qualification) combining college-based study with a strong vocational focus. Five modules are offered, covering sub-

'The knowledge and inspiration that I gained from both the course and field trip to Holy Island will stay with me always and have been invaluable in helping me find a worthwhile job'

Jessica Easter 1998

'The course and field trip have given me a sense of direction I lacked before... having people around me with similar interests fired my enthusiasm. The future is looking much brighter...'

Graham Loewenthal 1997

'Above all, it was meeting like-minded people and realising that there was hope after all and I wasn't the only one...'

Isobel Girvan 1997

jects such as Skills for Study and Communication, Environmental Conservation and Monitoring, Personal Development and Environmental Science.

The emphasis is on practical experience and students are given every opportunity to develop their taught skills in the field.

The link with Operation New World enables the students to spend two weeks

at the end of the course practising their skills on an environmental expedition. Previous expeditions have visited Hungary, Holy Island in Scotland, La Gomera and Fuerteventura in the Canary Islands and Gotska Sandon in the Baltic Sea. A wide range of ecological surveys, experiments and practical conservation work are carried out, often of real value to local conservation bodies. Operation New World also funds a residential outdoor activity weekend which includes group problem solving tasks, orienteering, survival skills and first aid.

The course has had considerable success in equipping and motivating young people to find employment, especially in the environmental field, or to follow full-time higher education environmental programmes. An overall success rate of over 85 per cent finding jobs or entering full-time education within six months is testament to its success. The college plans to increase the number of courses in the next academic year from two to three, giving more people the opportunity to participate in this much-needed and worthwhile venture.

■ *For further information contact:*
Tim Jenkins,
Farnborough College of Technology,
Tel: 01252 407221.

CHES discussions

In parallel with an interest in and co-operation with the Benchmarking Panel for Earth Sciences and Environmental Studies in Universities (which incidentally contains three Institution members!) the IES has been engaged in a series of discussions with the Committee of Heads of Environmental Sciences (CHES). The purpose of the discussions is to identify common ground in the assessment of environmental courses and a way of bringing together the two elements of educational discipline and of professional discipline.

These discussions culminated in a presentation being made by Professor Steve Martin on behalf of the Education Committee to the Annual General Meeting of CHES at Norwich in April. As a result, the CHES Committee have now approved a process to be taken forward jointly to establish a register of

environmental courses and to define the criteria for qualification/entry to the register. This will take place later in the year.

Accredited courses

The past year has seen considerable change in many environmental departments across the country. This has affected a number of the courses accredited by the Institution and it is timely to reflect on these.

The Environmental Science course at Greenwich University was affected by departmental changes some time ago and this was further affected by a physical move of premises. The course itself is undergoing considerable re-structuring and will be due for re-appraisal when the process is completed.

The BA course in Environmental Studies at Lincolnshire and Humberside University (Grimsby campus) has been

subject to staffing reductions and will this summer be relocated to the new Lincoln campus. The present BA degree is being phased out to be replaced by a new programme of modular environmental degrees with re-constituted staffing. They look forward optimistically to a new lease of life in brand new purpose built premises on a larger and lively campus.

The Landscape Ecology course at De Montfort University (Riseholme campus) has also been undergoing staffing problems and has lost its skilled GIS staff to Greenwich! Plans are now afoot to transfer this particular course to Leicester where they would have use of the improved facilities of the Biology Department. They would also be close to the other environmental courses run at Leicester.

RAF

Businesses urged to report their environmental impacts

Presenting the 1999 Association of Chartered Certified Accountants (ACCA) Environmental Reporting Awards, Environment Minister Michael Meacher insisted that real environmental reporting is no longer a PR gimmick. Successful businesses of the future will be resource-efficient, and socially and environmentally responsible.

Pioneers, such as BA, BT, Norsk Hydro, British Gas, BP and Anglian Water, have been reporting for ten years. First reporters last year included Cable and Wireless, Biffa, CGU, RMC Group, Rolls Royce, Boots, the Woolwich, Scottish and Newcastle, and Manchester Airport; and this year companies such as Orange, Allied Domecq, CWS,

Anglo-American, Prudential, Diageo, the Halifax and Corus will produce their first reports.

Meacher warned non-reporting companies that if the voluntary approach did not work fast enough the Government would be forced towards mandatory reporting. He sent a clear message to companies which still do not publish reports – he has his eye on them and will name them publicly in the future.

Mr Meacher also announced the next step in the DETR's programme to help businesses report on environmental performance. Draft guidelines on reporting business waste were being produced for consultation, and consultees would include the top 350 UK businesses,

environmental groups and academics. They aim to help businesses measure, manage and reduce their waste. They will also help businesses set quantitative targets for improvement and report their progress publicly. The waste guidelines will join the guidance already published on getting started on environmental reporting and on reporting greenhouse gas emissions. Both these documents have received positive feedback from business.

Copies of *Environmental Reporting – Getting Started* and *Guidelines for Company Reporting of Greenhouse Gas Emissions* can be obtained on the DETR website at <http://www.environment.detr.gov.uk/envrp/index.htm>

New zoo practice standards launched

Issues of animal welfare, and species conservation in zoos were highlighted in March when Environment Minister Chris Mullin launched updated *Standards of Modern Zoo Practice* at Bristol Zoo.

The standards are designed to safeguard the welfare of animals and the general public in zoos and are used by local authority zoo inspectors. Zoos are licensed by local authorities under the Zoo Licensing Act 1981. Inspectors are required to refer to the Secretary of State's *Standards of Modern Zoo Practice* in making recommendation to local authorities on whether, and if so under what circumstances, to grant a licence. The standards, which were last updated in 1988, have been revised to take account of new ways of keeping animals in captivity and follow an extensive consultation and review by the Zoos Forum, the Government's advisers on all zoo matters. Some of the updates include:

1. The introduction of five welfare principles for zoo animals, based on the 'five freedoms' drawn up by the Farm Animal Welfare Council. These are: provision of food and water, a suitable environment and healthcare, the opportunity to express most normal behaviour, and protection from fear and distress.

2. Encouragement of conservation, education and research – a requirement of the EU Zoos Directive, which has to be transposed into national legislation no later than 9 April 2002.

3. Setting up ethical review processes to assess a zoo's animal husbandry practices in a critical and objective way.

4. Introducing a pre-inspection process – giving the inspector a better understanding of the zoo before visiting the site and reducing the cost of inspections.

5. The inclusion of a 'dangerous animals document', which lists species

according to their ferocity and capacity to do harm. This will advise zoos and inspectors on which animals should be kept separate from visitors, and which, under supervision, may be allowed to come into contact with visitors.

Chairman of the Zoos Forum, Jemima Parry-Jones considered that the new standards were good news for zoos, as conforming to them would help convince sceptics that there was a role for zoos in the 21st century, and that they had a vital part to play in the protection and conservation of both native and non-native species.

Have you moved? Are you moving? Changing jobs?

Remember to let us know promptly with your new address, telephone number, etc. This can avoid loss of communication, wasted postage and unnecessary complications. Write to:

The IES Secretariat,
PO Box 16,
BOURNE, PE10 9FB

Tel & Fax: 01778 394846
E-mail: ies@greenchannel.com

Campaigners challenge business to capitalise on the environment

Business and industry are failing to introduce the environmental protection strategies necessary to achieve sustainable development. Despite growing commitment by companies to improve their environmental performance, only four FTSE 350 companies are aiming to reduce their global warming emissions to 1990 levels by 2010, and only one aims to exceed the level of the global Kyoto agreement of a further 5.2 per cent reduction.

These statistics are revealed by the 4th BiE Index of Corporate Environmental Engagement published in March by Business in the Environment.

The BiE Index covers the global operations of 151 companies including 77 per cent of the FTSE 350 by market capitalisation (a total of £1.1 trillion).

A link is beginning to emerge between companies which score well in the BiE Index and those which have achieved sustainable growth. BiE believes that more companies would benefit from improved performance if more financial incentives were offered and clearer reduction targets set for strategies to protect the environment.

The Index results were presented by Julia Cleverdon, Chief Executive of Business in the Community, at a launch at the British Library in London attended by over 60 Chairmen and Chief Executives of FTSE 350 companies.

The launch was introduced by the Chairman of BiE, Derek Higgs, Chairman of Prudential Portfolio Managers, with contributions from Sir John Browne, Chief Executive, BP Amoco. The keynote address was given by The Rt Hon Michael Meacher MP, Minister of State for the Environment.

Launching the 4th BiE Index, Derek Higgs said: 'What businesses have been doing over the four years in the BiE Index is in many respects impressive and encouraging. One of the main values of the BiE Index is in making business, and the general public, more aware of what can be achieved and how it can be done.'

'But what's been done so far is the easy bit. From now on, it's up to business – and the rest of us personally – to shoulder our fair share of responsibility.

If we don't, it will cost us dear – as at today's date around £300 billion a year, according to UN estimates.'

The five top-scoring companies in the BiE Index are:

- Severn Trent
- BT
- Cable & Wireless
- Woolwich
- Thames Water.

Companies were asked to assess the extent to which they measure, report and set targets across six key areas of environmental impact: energy, transport, global warming emissions, waste and water consumption. Key findings from the survey are:

- The highest-ranked new entrants are Credit Suisse and Fuji Photo Film, out of a total of 40 companies participating for the first time this year;
- The Engineering and Construction industries were the worst respondents in terms of the number of companies participating in the survey;
- The most active sector was Utilities, where all 16 FTSE 350 companies took part;
- The most improved sector is Insurance and Life Assurance, where the number of companies participating has nearly doubled compared with last year. The high level of participation by the Financial Sector is significant because of its influence on the corporate sector as a whole;
- Only one FTSE-listed IT company participated, out of a possible 15. BiE is concerned that the impact of e-commerce on the environment is not being considered, because 'dot.com' companies are perceived to operate on the internet.

Derek Higgs concludes: 'We know what it will cost us if the environment is not protected. We know that we need businesses to play a major part in this. We know that most will only do so if the financial markets perceive the link between protecting the environment and the value of investments. This is our aim.'

'The 4th BiE Index identifies a range of environmental issues that are in fact corporate financial risks. I would sum these up as the potential threat to competitiveness from pursuing a strategy

which is not sustainable as regards energy, materials or resources or possible future eco-taxes or legislation. If boardrooms take this on board, they will find both their companies' performance, and our environment, improve still further.'

■ Enquiries to: Elizabeth Forbes, Business in the Environment, Tel: 020 7224 1600.

Business in the Environment is the environmental campaign for Business in the Community. Business in the Community is a unique movement of companies across the UK committed to continually improving their positive impact on society, with a core membership of 650 member companies, including 75 per cent of the FTSE 100. BiE was set up in 1989 at the request of the Prince of Wales.

BiE invited the following companies to participate in the Index:

- FTSE 100
- FTSE mid-250
- The top 25 unlisted UK companies based on turnover identified in Key British Enterprises 1999
- Sector leaders in the Dow Jones Sustainability Group Index
- Business in the Environment's leadership team.

Some companies are included in more than one of the above, but are listed only once in the Group rankings.

The aim of the BiE Index is to inspire companies towards reducing the impact they have on the environment whilst gaining competitive advantage through effective management processes. The survey compares the extent to which companies are engaged on environmental management and, for the first time this year, how they assess and manage their environmental performance in the five key areas of environmental impact. The survey found that:

- The area in which companies are doing least to control environmental impact is transport – although vehicle emissions can account for as much as 24 per cent of the total global warming impact.
- The area where most is being done is energy consumption, with 94 per cent of respondents measuring and many reporting publicly and setting reduction targets.

Light rail future for urban transport?

The recent apparent conversion of John Prescott, the Deputy Prime Minister, to the cause of light rail tram systems for urban areas – a major Government policy shift in only 12 months – has seen confirmation in a report commissioned by the Department of Environment, Transport & the Regions (DETR) and FirstGroup, based on research undertaken into the relative merits of light rail systems, guided bus and bus priority schemes. The report concludes that infrastructure costs for light rail and guided bus are closer than had previously been assumed.

While construction and equipment costs for guided bus can be slightly cheaper, operating costs on a lifetime basis favour the tram against the bus, although the greater loads carried by most light rail vehicles is the decisive factor. Light rail has the perceived disadvantage of high cost inflexibility, but European countries have turned these into advantages by showing commitment and security of route. This in turn generates confidence amongst potential users and encourages investment and economic growth. The study concludes that guided buses have only had a limited impact and bus priority only achieves small gains which are simply insuffi-

cient to make any significant impact on passenger growth.

Reporting John Prescott's apparent damascene conversion to the urban tram, *The Times* quoted the Deputy Prime Minister: 'On the Continent, people have a different view of public transport. In places like Strasbourg, people of all backgrounds will use the tram and would happily go to the opera on one, but we still have a long way to go to persuade people. The important thing is to show that this is a modern, reliable form of transport.'

Addressing the question that snobbery and cultural bias may prevent people from using buses, *The Times* routed out well-heeled passengers regularly using London Transport's number 11 bus in Chelsea for trips to the opera to try to prove the normality of this practice. It neglected to report that while two-thirds of Londoners use public transport for their daily commuter journeys, in provincial areas barely 20 per cent of the population regularly use public transport.

The next major milestone will be the publication of the government's Ten Year Investment Plan to transform Britain's transport. In advance of this, the *Financial Times* has suggested that

£11 billion could be made available for light rail funding over the next ten years. However, schemes currently approved, together with major costed proposals, amount to less than £2 billion. If accurate, such a report suggests there are opportunities to meet the aspirations of more embryonic schemes.

There is also adequate potential to meet the demands of additional London schemes which the Government sees are cheaper than expanding capacity on certain Underground lines.

With Croydon Tramlink carrying fare-paying passengers, and the new London Mayor getting into his stride, the Government believes there is likely to be an unstoppable demand for the provision of similar facilities on other over-crowded corridors in the capital.

The DETR's latest Journey Times Survey, carried out in 1999, shows that bus times are still the slowest of all modes in London. There has been no real improvement since 1993 despite considerable increase in Red Route traffic restrictions specifically intended to speed bus journeys.

■ *The research report (ISBN 095 186206X) is available at £45 plus postage from ETP, 9 South Road, Brighton BN1 6SB.*

IES INFORMATION

New members

The IES is pleased to welcome the following to membership of the Institution:

| | | | |
|------------------|---|-------------------|--|
| Mr T.W.D. Armour | Associate Director Ove Arup & Partners | Miss H. Kelleher | Postgraduate Student Coventry University |
| Mr C. Bell | Proprietor & Environmental Consultant | Mr J.R. Melling | Student Sheffield Hallam University |
| Miss G.C. Blick | Student University of Plymouth | Miss M.J. Simons | Executive Officer DETR |
| Miss T. Dodds | Analyst Ensecon Laboratories | Mr A.G. Stephen | Managing Director Land Drill Geotechnics (UK) Ltd |
| Ms M.D. Dookun | Postgraduate Student Plymouth University | Ms C. Storey | Environmental Assessor & Advisor |
| Mr K.J. Foster | Assistant Consultant Stanger Science & Environment | Mr T.J.E. Taylor | Ecologist Ecological Services Ltd |
| Ms R. Garland | Environmental Scientist/Engineer Arup Consulting Engineers | Miss S.W.S. Tsang | Environmental Consultant Ove Arup & Partners Ltd (HK) |
| Mr J.M. Gibb | Student, University of Plymouth | Mr T.G. Tucker | Technical Sales Co-ordinator Asahi Diamond (UK) Ind. Co. Ltd. |
| Miss H. Haynes | Geo-Environmental Engineer Joynes Pike & Associates | Ms J.C. Whitman | Rural Development Programmes Manager |
| Mr D.M. Hunter | Technical Officer WM & D Regulator Interface | Mr C.W.S. Wong | Student Force for Sustainability Environmental Technician |
| Miss G. Ighodaro | Scientist Air Quality Centre, GMSS Ltd | | Ove Arup & Partners Ltd (HK) |

The Hon. Secretary's news desk...

Editorship

Richard Dix has been our editor for many years, firstly with the IES Newsletter from 1986 and then with the *Environmental Scientist* now in its ninth year.

Having reached the venerable age of 80, Richard is taking a well-earned retirement from his voluntary duties as both Editor of the Journal and Assistant Secretary of the Institution. He is the longest serving officer of the IES and has been a Council member and an Education Committee member since the early 1970's. In his capacity as Assistant Secretary he has also served on the General Purposes Committee for a number of years and has been a regular attendee at all Council and Committee meetings. His is a difficult act to follow and indeed this year we have no Assistant Secretary to take his place.

Our vice-president, Mike Romeril, will be taking over as editor of the Journal after the end of June and we wish him every success with his efforts.

So it only remains to say thank you for all the years of dedication and commitment to the job and 'well done, Richard! And enjoy the rest.'

Professional developments

In the April Journal, I reported on meetings taking place between top representatives of the principal environmental institutions. Agreement in principle has now been reached to proceed with the formation of a new society representative of all environmental institutions and it is hoped that substantial progress will be made with this by the early part of 2001. A series of meetings are planned during the second half of 2000 to develop criteria for membership, aims and objectives, operational procedures and options for chartered status. At present it is proposed that the members of the new body will retain their present identity and autonomy.

It is felt that the arrangements now being discussed are of significance for the members of all the participating bodies and it is important that they are kept informed of developments and their views canvassed. We would therefore welcome letters from any member who

has an opinion to voice on the broad issues involved albeit we are not as yet able to provide more specific detail of a definite nature.

PP4SD

Professional Practice for Sustainable Development, the research project funded by EAF grant and the WWF which I wrote about briefly in April, has moved into its second year of operation. A generous grant allocation of £36,750 has been made from the EAF and negotiations are in hand to raise the matching funding from the private sector.

Significant progress is being made and the publication of Book1: Building Support within the Profession marks the start of a series of printed booklets. A second publication dealing with the development of cross professional learning opportunities and tools is in preparation for printing this summer. A foundation course has been prepared and received one trial and it is planned to publish this later in the year following further trials and refinement.

Visions of science - photographic competition

If you can take an excellent photograph (or have taken one in the last two years), either in your laboratory, your workplace or even away from work, which shows how science has a positive impact on our lives then you could win yourself

a Kodak DC 290 digital camera, worth £699 or an Advantix T550AF compact camera.

The picture can cover any aspect of science whether it be biology, medicine, physics, chemistry, technology, engineering or mathematics. What matters is that the picture shows science and the positive impact it can have on our lives. Each entry must be accompanied by a 50 word caption explaining the significance of the image.

There are four entry categories which include best professional, amateur, science/healthcare worker and under 25 year old. In each category there will be prizes for the best three entries and two highly commended awards.

If you would like to find out more and get a copy of the entry form, visit the competition website at www.visions-of-science.co.uk, or email visions-of-science@ksaevents.com, or telephone 020 7613 5577.

Note: Novartis and the Daily Telegraph are the organisers of this competition. Kodak has donated the prizes. The Royal Society is endorsing the initiative in science communications.

Entries will be accepted until 31 July. Judging will take place during September, ready for an awards event at the Royal Society, London in late October.

RAF

IES ties

IES ties are available exclusively to members. They are dark blue or dark green polyester with a gold woven IES logo.

ORDER FORM

Please mail me ties. Colour: Blue Green

at £6 per tie including postage (UK only: please add £2 post and packing for overseas orders.)

Membership Number:

I enclose a cheque for £ made payable to 'The Institution of Environmental Sciences'. Please send my ties to:

Name:

Address:

.....

Send orders to: The IES, PO Box 16, BOURNE, PE10 9FB.

Forthcoming events

4-7 September

International Conference

Society for Ecological Restoration,
Liverpool

A conference to share experience and expertise in ecological restoration

Details: SER 2000 Conference Secretariat, c/o SJS Business Services Ltd, PO Box 17, Newton le Willows, Merseyside WA3 2FQ
E-mail: ser2000@netcomuk.co.uk

4-8 September

Monitoring for nature conservation

Plas Tan y Bwlch, Snowdonia National Park Environmental Studies Centre, Wales

A short course to further the knowledge and skills necessary for the effective monitoring of sites of nature conservation interest. £220-440

Details: Dewi Jones, Plas Tan y Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd, LL41 3YU
Tel: 01766 590324. E-mail: plastanybwloch@compuserve.com

14-15 September

Sharing the experience:

sustainable tourism and development in national parks and protected areas in Europe

Plas Tan y Bwlch, Snowdonia National Park Environmental Studies Centre, Wales

Conference. £120

Details: Dewi Jones, Plas Tan y Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd, LL41 3YU
Tel: 01766 590324. E-mail: plastanybwloch@compuserve.com

25-28 September

Local action for biodiversity conservation

Plas Tan y Bwlch, Snowdonia National Park Environmental Studies Centre, Wales

Short Course. £191

Details: Dewi Jones, Plas Tan y Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd, LL41 3YU
Tel: 01766 590324. E-mail: plastanybwloch@compuserve.com

28-30 September 2000

International waste management conference, Trier, Germany

Will examine new methods in waste

management

Details: VKS – ACR

Saarbrücken/Germany,

Fax: +681 9 71 30 109

E-mail e.bluemling@zke-sb.de

3-5 October

The science of air quality monitoring

CRE, Stoke Orchard, Cheltenham

Short course providing an understanding of the methods of air quality monitoring, together with practical demonstrations £675

Details: Katherine Briggs, CRE Group Ltd, Stoke Orchard, Cheltenham, Glos.
Tel: 01242 673361

E-mail: enquiry@cregroup.co.uk

10-12 October & 14-16 November Gaseous and particulate emissions monitoring

CRE, Stoke Orchard, Cheltenham.

3-day courses examining theoretical and practical aspects of atmospheric emission monitoring £675

Details: Katherine Briggs, CRE Group Ltd, Stoke Orchard, Cheltenham, Glos.
Tel: 01242 673361

E-mail: enquiry@cregroup.co.uk



Your reputation could be dead in the water

Organisations invest heavily in developing their reputation - but a single environmental incident can destroy it in minutes. Good management of environmental responsibilities reduces the risk, helps safeguard corporate integrity and often makes a tangible contribution to cost management.

BASEC, a UKAS accredited body, can help with certification to ISO14001 and EMAS. During the assessment process BASEC will assess the client's identification and resolution of problems and risks associated with disposal of hazardous material, and the liabilities arising from spills and contamination of land and groundwater. In addition BASEC puts great emphasis on the evaluation of methods to minimise energy, water and material usage, in order to reduce operational costs.

What price your reputation?

BASEC, 23 Presley Way, Crownhill,
Milton Keynes MK8 0ES.

Tel: 01908 267300 Fax: 01908 267255

e-mail: mail@basec.org.uk web site: www.basec.org.uk



Diary dates 2000

| | | |
|----------------|---------------------|-------|
| 5th July | Education Committee | 10.30 |
| | Council | 13.30 |
| 11th September | GP Committee | 13.00 |
| 1st November | Education Committee | 10.30 |
| | Council | 13.30 |
| | Burntwood Lecture | 18.30 |

Credible ISO14001 certification



BASEC
23 Presley Way • Crownhill
Milton Keynes • MK8 0ES
Tel: 01908 267300
Fax: 01908 267255
Web Site: www.env-basec.org.uk

Occasional papers available now from IES

Waste management

- From waste to woods – planting trees on landfill
- From waste to woods: trees on landfill and their place in landscape
- Enhanced landfill strategy
- Waste minimisation: the long term benefits
- European study on EISs of installations for the treatment and disposal of toxic and dangerous waste
- Mercury fall-out from crematoria

Education and training

- Environmental courses undergo a quality assessment
- Student environmental declaration
- On-line information systems in environmental sciences courses
- Global environmental charter and network for students

Business and industry

- The tourism challenge
- The tourism debate and environmental scientists
- Enjoying environmental science as a career
- The Brent Spar and the best practical environmental option

National and local government

- Transport policy, environmental pressures and the new UK government
- Local Agenda 21 – making it work

Price: £5 per paper including p&p
(£3 per paper for members)

Contributors

The *Environmental Scientist* aims to provide a forum for members' contributions, views, interests, activities and news, as well as topical feature articles. Articles up to 3,000 words should be submitted to the Editor, *Environmental Scientist*, PO Box 16, Bourne, PE10 9FB, three weeks prior to publication in the last week of January, March, May, July, September and November.

Views expressed in the journal are those of the authors and do not necessarily reflect IES views or policy.

Advertising

Advertisements should be submitted to reach the Institution by the 7th of the month of publication.

Rates: £50 (half page); £25 (quarter page); £12.50 (eighth page). Full page adverts at £100 can only be accepted under special circumstances, subject to space being available.

