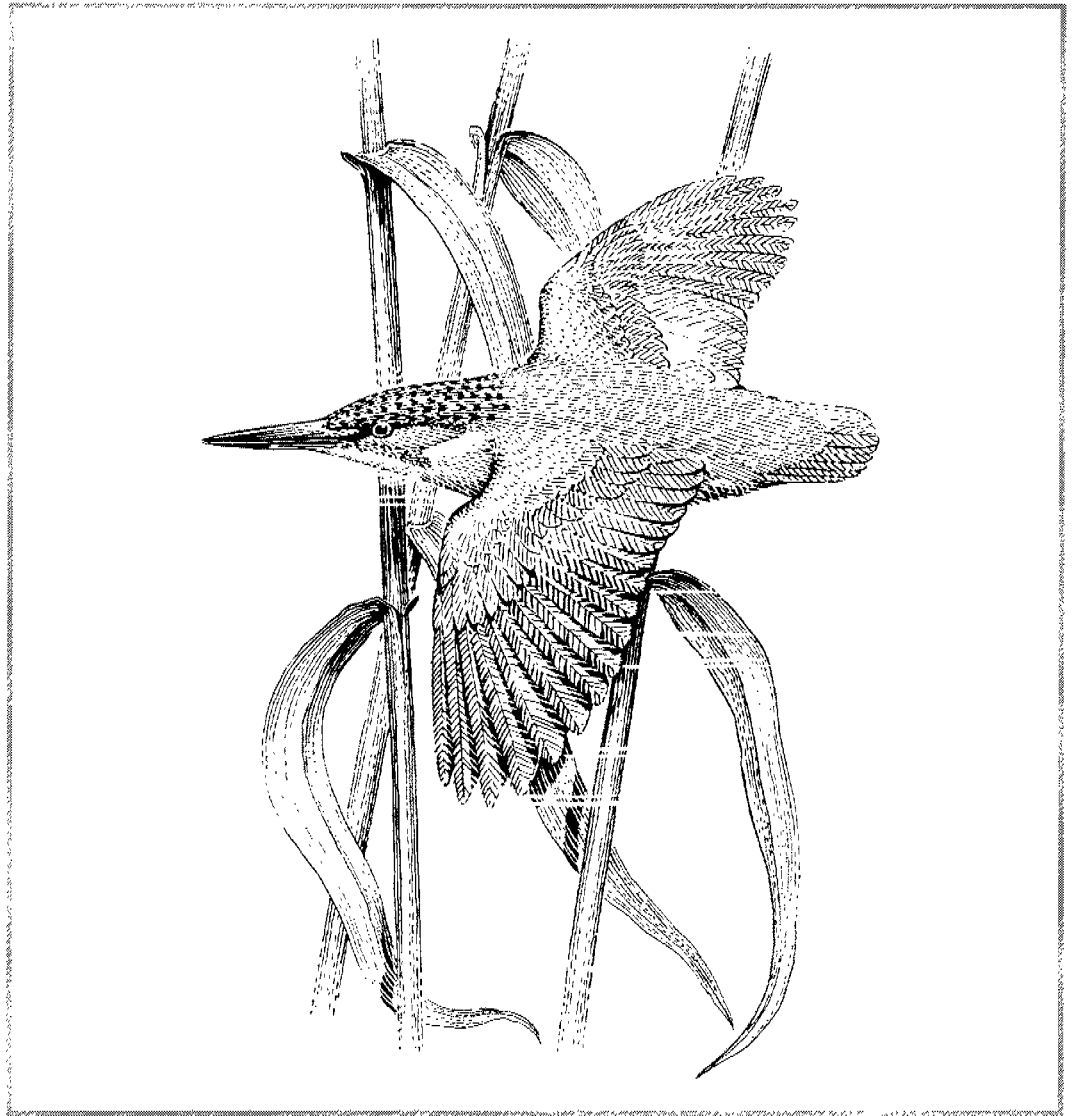


The potential contribution of
the mineral extraction industries
to the UK Biodiversity Action Plan

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No 279

The potential contribution of the mineral extraction industries to the UK Biodiversity Action Plan

A report prepared for
English Nature
Quarry Products Association
Silica and Moulding Sands Association

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EXECUTIVE SUMMARY

This study shows that the minerals industries have a significant part to play in implementing the UK Biodiversity Action Plan, particularly because mineral companies have substantial land holdings which sustain habitats and species of nature conservation value, and the ability to create new habitats. The industries have the capability to be significant partners in Action Plans for priority habitats and species and in Local Biodiversity Action Plans (BAPs). A series of case examples examined for this study shows that many companies are already involved at the site level in a variety of actions.

The UK Biodiversity Action Plan, and the structures set up to implement it, represent a substantial investment of Government commitment. Contributing to biodiversity is increasingly likely to become a measure of good industrial citizenship, as well as being material to minerals industries' interests through legislation and planning policy. This is an opportunity much more than a risk. The emphasis on partnership and communication, strategically and locally, will help industries to demonstrate the potential benefits that can be associated with mineral working. Contributions from the industries can potentially fit comfortably into the wider environmental context of sustainable development, Natural Areas (recognising that landscape, sense of place and other issues must also be considered alongside biodiversity), and other current initiatives for nature conservation.

The main focus of the UK BAP is on protecting and enhancing the chances of scarce and threatened habitats and species. The minerals industries can contribute to the Action Plans being prepared for priority cases and to the Local BAPs which take these forward at the local level. Compared with previous efforts to assist nature conservation, the UK BAP brings a more focused approach with targets and priorities. Mineral companies may well be able to adjust their actions to match new priorities. Some of the opportunities are procedural – through partnerships, engagement in the planning system, and through environmental management systems, for example – but there are equally many practical steps that can be taken on land under the control of mineral companies.

Companies should programme the carrying out of an audit of all their land, incorporating a baseline study and a review of the management of all land for biodiversity purposes. This should be followed by planned implementation of improved methods of land management, together with arrangements for monitoring and review. It should cover land that will never be worked, land yet to be worked, land in excavation and restored land. There is considerable scope to fit practical measures to the wider interests of the locality. The study offers a series of avenues worth exploring and provides practical information about the kinds of habitats and species that minerals industries are most likely to be able to assist in different circumstances. Advice is given on who to contact for further information, and many actions suggested for mineral companies, industries strategically, and who to work with in partnership.

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About this Research Report

This work was commissioned and funded by English Nature, The Quarry Products Association and the Silica and Moulding Sands Association. The project forms part of the actions arising from the Statement of Intent between the three organisations, signed in and effective from July 1998. In particular, it contributes to our aim of working together to ensure the land and operations of the mineral industry are managed more effectively for nature conservation.

The project was steered by members of the *Minerals and nature conservation Forum*, the Quarry Products Association - English Nature - Silica & Moulding Sands Association body that manages the implementation of the Statement of Intent. Final editing of the research to produce this ENRR was co-ordinated by Dr. Tom Moat, English Nature, chair of the Minerals and nature conservation Forum and lead EN officer for this project.

This report reflects the independent opinions of Green Balance, AERC, and the operators involved in providing case study reports. It does not necessarily reflect the opinions of the commissioning bodies.

I INTRODUCTION

1 The Brief

Green Balance and Applied Environmental Research Centre Ltd were commissioned in September 1997 to prepare a report for English Nature and the minerals industry in England to provide guidance on Biodiversity Action Plans. The report would principally:

- explain the full context and rationale for action on biodiversity, including the relevance of wider sustainable development principles and the place of Natural Areas, the UK Biodiversity Action Plan and Local Biodiversity Action Plans;
- explore the areas of the UK Biodiversity Action Plan of potential relevance to the minerals industry, with suggestions, and specify the potential benefits to the industry of participating in the BAP process;
- present a range of examples and best practice cases, using sites and organisations which may already make a contribution to the UK BAP;
- recommend targets and proposed actions for the minerals industry and English Nature, including timescales, partnerships and the responsibilities of the industry; and
- provide a list of references and lead contacts for Biodiversity Action Plans.

The report is applicable to the minerals industry as a whole, but is primarily aimed at the quarry-based industries. It will be used as the basis for the preparation in due course of a user-friendly, practical manual for the industry, English Nature staff, local authorities and local communities.

2 Background

In July 1998, English Nature, the Quarry Products Association and the Silica and Moulding Sands Association signed a Statement of Intent, an agreement to work more closely to maximise the opportunities and benefits that good nature conservation practice can provide for the natural environment and for the industry. As part of the actions agreed underpinning the Statement of Intent, research on the potential of the industry to contribute to biodiversity action in England was agreed. This report forms the basis of this joint action. The emphasis on communication, joint action and partnership approaches in the SoI fits well with the type of actions recommended in the Government's Biodiversity Action Plan.

Biodiversity: The UK Action Plan provided the UK response to the 1992 Rio summit in relation to biodiversity. It signalled a new target-led approach to nature conservation, at

national, regional and local levels. Practical action on the ground remains central to promoting the welfare of species and habitats. The minerals industries have long been involved in this sphere, contributing to nature conservation on their land holdings, particularly through site restoration which incorporates semi-natural habitats. Many mineral sites are designated as SSSIs or as locally important wildlife sites for their nature conservation importance. The industry is therefore already contributing to biodiversity action. The challenge of the UK Biodiversity Action Plan, and the report of its Steering Group, is to consider how this effort can be adjusted, guided or re-focused by the new target-led approach to conservation.

3 Content of the report

Part II shows that biodiversity is an important focus for action on nature conservation. It explains the place of biodiversity action in the wider context of nature conservation, sustainable development and related interests. The importance of biodiversity to the minerals industry is explained. European and domestic legislation provides a framework for biodiversity, and it is clear from Government policy initiatives that considerable weight is to be attached to the issue.

Part III examines the range of potential opportunities for the minerals industries to play a part in the UK and Local Action Plans. The report considers the mechanisms for this, particularly the species and habitats most likely to interact with mineral working activities, the preparation and implementation of Local Biodiversity Action Plans, the role of partnerships, the town and country planning system, and practical work which companies can undertake at different phases in the use of their land holdings. It concludes with a review of how to monitor achievements towards biodiversity and assess the effectiveness of actions taken. Suggestions are made on how action for biodiversity in the minerals industry can provide an increasingly positive contribution to enhancing nature conservation, whilst continuing to include avoidance and mitigation of damage. Participation in the biodiversity process is shown to be important as well as the achievements.

Part IV provides a series of 17 case examples from individual mineral sites, illustrating specific aspects of practical works and procedures which can benefit biodiversity. This desk exercise uses information kindly provided by mineral companies, though external validation of it has been beyond the resources for this study.

The report concludes in Part V with a set of recommended targets and proposed actions for the minerals industry as a whole, individual mineral companies and English Nature. These are distilled into a table of actions drawn from the experience of the case examples and the results of the analysis in Part III.

A strongly practical dimension is added to the report in the first two Appendices. These provide extensive advice on species and habitats identified in the UK Biodiversity Action Plan which the minerals industry is well placed to assist in varying circumstances, whether

on unworked land, during mineral working or through the design of restoration. Additional Appendices give further background information, first on the recent history of biodiversity action in England and the structures established to promote it (including in the voluntary sector), and, second, on the progress to date with every Local Biodiversity Action Plan in Britain. A glossary of useful terms is also appended.

II CONTEXT AND RATIONALE

1 Biodiversity: the case for action

The pursuit of a more environmentally sustainable lifestyle is now a central theme of Government decisions to which the minerals industries, like everyone else, will wish to adapt. Nurturing a high quality environment for future generations as well as the present one is not simply an added benefit associated with development but a means of shaping the way in which we live. Biodiversity is a vital building block of this sustainable approach to development and one which the minerals industries are particularly well placed to assist.

Biodiversity: The UK Action Plan is the major statement of Government commitment to promoting biodiversity. It sets out a strategy for protecting and assisting wildlife, focusing on the species and habitats most at risk of loss and decline. A wide range of initiatives and ideas for practical action have emerged to give effect to this Action Plan, underpinned by legislation and policy on wildlife conservation which spans the international to the very local scales. Nature conservation interests are therefore as unavoidable by the minerals industries as much as they are an opportunity.

The minerals industries will wish to position their own contributions to the UK Biodiversity Action Plan within a framework of sustainable development and current thinking on wildlife conservation. The greatest benefits for wildlife and for their standing in this sector will be secured if actions taken are consistent with a range of environmental objectives. This does not mean that an extra set of rules is being imposed on industry, or further costs to bear or more interested parties to engage. It does mean that an appreciation is necessary of wider principles and objectives in conservation.

This part of the report aims to outline this context. Each section opens with a concise summary of the issues involved, which are then explained in more detail. There are substantial bodies of work under each heading, so selected references are included for further information. Brief mention is made of the likely implications for the minerals industries. As the information is of a background nature and mostly factual, no conclusions are drawn.

Emerging thinking and best practice in nature conservation under each heading has evolved over the years and therefore many of the concepts and practical implications will be familiar to the minerals industries. There are many new labels to encapsulate the recast nature conservation objectives, and there are new ideas to which to respond, but the intention is to build on what has been done in the past rather than replace it. The key recent changes have arisen in the more strategic way in which nature conservation issues are approached and in the introduction of more targets. The effect has been to place greater weight on the whole environment rather than to focus mainly on specific sites for conservation. Nature conservation is now part of the bloodstream of decision-making which affects the minerals

industries, not a topic to parcel up as a discrete entity.

2 Sustainable development

Sustainable development aims to reconcile high standards of living for all with the permanent protection and enhancement of the environment as a whole. This includes conserving natural resources such as wildlife and mineral wealth, and conducting activities in such a way that they minimise impacts on the world around us or make a positive contribution to it. The practical steps for tackling the issues are very wide-ranging. Assisting the implementation of the UK Biodiversity Action Plan is one means by which the minerals industries can play a distinct and positive part in the quest for environmental sustainability.

The now-familiar concept of sustainable development is a way of thinking about how we meet our own needs now without undermining the interests of the those who follow us. There are self-evidently many trends in our current patterns of resource use and impacts on the natural world which cannot carry on indefinitely, and equally there are steps we can take now to reduce or reverse the risk of long-term damage to the world around us. Decisions about how far or how fast we should make these changes reflect our knowledge and appreciation of them and our cultural attitudes. Information can inform this process, but decisions on what is or is not acceptable in sustainability terms are matters of judgement more than scientific fact.

The considerable public interest in these matters, across the globe, has resulted in collective action to tackle them. Action in the UK was catalysed by the report of the **World Commission on Environment and Development *Our Common Future* in 1987** and invigorated by the **UN Conference on Environment and Development (the Earth Summit) in Rio de Janeiro in 1992**. There were four main products of the summit:

- **Agenda 21**, an action programme for sustainable development which emphasised the need for all sectors of society to take part in achieving sustainable development;
- the **Climate Change Convention**, which seeks to combat global warming by reducing 'greenhouse gas' emissions;
- the **Biodiversity Convention**, the main agreement on how to protect the world's natural wealth of species and habitats, and
- a **statement of principles** for the management, conservation and sustainable development of the world's forests).

The four Rio products formed the basis for an extensive response by the UK Government in 1994. Central to the response package was ***Sustainable Development: The UK Strategy***, which set out principles, issues and a strategy for action to involve not only government but all parts of society. The package was a landmark in the process of incorporating sustainable development concepts into Government policies which affect everyday life across the board. This process has been pursued since 1989, with the town and country planning system

particularly seen as a vehicle for reconciling the competing claims of environment and development. Planning Policy Guidance notes and Minerals Planning Guidance notes now address sustainable development, building on the fresh thinking set out in *The UK Strategy*, where chapter 18 is devoted entirely to minerals.

The principles of sustainable development, which are still emerging, have a direct bearing on our wildlife resources. As English Nature's 1993 *Position statement on sustainable development* states: "*The natural environment can only support human life, health and well-being if its own resources are healthy and if it can continue to assimilate wastes and support a wealth of native biodiversity – our heritage of natural features, wild plants and animals and their natural communities. Nature conservation policy seeks to sustain and enrich the UK's native biodiversity for the benefit of people and wildlife. Its success reflects an environment in good health, which in turn indicates progress towards sustainable development.*"

Sustainable development principles also apply to minerals, and to many other resources on which mineral working bears, such as energy use, water use, trees and landscapes. In the case of aggregate minerals, the sustainable supply of some of these affected assets can be just as important as the sustainable supply of the mineral resource itself.

The Government has set out the objectives for sustainable development to be applied to minerals planning in the following terms (MPG 1, 1996, *General Considerations and the Development Plan System*, paragraph 35):

- “(i) to conserve minerals as far as possible, whilst ensuring an adequate supply to meet needs;*
- (ii) to ensure that the environmental impacts caused by mineral operations and the transport of minerals are kept, as far as possible, to an acceptable minimum;*
- (iii) to minimise production of waste and to encourage efficient use of materials, including appropriate use of high quality materials, and recycling of wastes;*
- (iv) to encourage sensitive working, restoration and aftercare practices so as to preserve or enhance the overall quality of the environment;*
- (v) to protect areas of designated landscape or nature conservation value from development, other than in exceptional circumstances and where it has been demonstrated that development is in the public interest; and*
- (vi) to prevent the unnecessary sterilisation of mineral resources”.*

Further detail in *The UK Strategy* shows that these objectives can have significant implications for future planning. For example:

- *“The marginal environmental cost of meeting increased demand for minerals is likely to rise over the longer term; the Government believes that ways of minimising future demand will need to be considered” (paragraph 18.10);*

- “The long term objective should be to seek ways of meeting society’s needs whilst using less primary material, by employing alternative materials, technologies, and patterns of design” (paragraph 8.12); and
- actions are expected to be taken not only by the minerals industry and its regulators (local planning authorities and central Government), but by landowners, conservation bodies and industries which use minerals (paragraph 18.26).

A systematic approach to identifying and promoting environmental sustainability whether for minerals, wildlife or more generally, depends on:

- knowing the state of and trends in the environment at present;
- judgements about the natural resources and environmental qualities which should be passed on in future, the importance which should be attached to each of them, and their ability to accommodate change;
- estimating the cumulative effect of all current and anticipated developments and changes together on the environmental qualities of interest.

A selection of techniques and ideas continues to emerge to help decide how much development should take place and where in response to these points. The techniques which in our view are currently most likely to help tackle the issues are the following:

- ‘State of the environment reports’. These indicate the quality of the environment, which can be monitored over time to show trends. The answers to these questions can determine what kinds of policies or management are needed to secure these benefits for the future.
- ‘Environmental capacity’. This helps us to decide on the limits to acceptable change in the environment – thresholds in environmental qualities below which (ideally) further adverse change will not be permitted. Environmental capacity can be viewed as a way of clarifying what matters to us all and as a route for seeking a more sustainable future, rather than as a fixed quantum of potential for future development, or as a permanent limit to future change, or as a derivative of processes in the natural world. It is not a clear ‘answer’ to conflicting pressures over the use of land. A recent interesting means of identifying the capacity of the environment to accommodate change has been developed for the Countryside Commission, English Nature, English Heritage and the Environment Agency in *What matters and why: environmental capital – a new approach* (CAG Consultants and Land Use Consultants [1997]). This asks:
 - what are the different benefits which a place or feature provides for people?

- how important is each of these, to whom and for what reasons?
- what, if anything, could replace or substitute for each of these benefits?
- on current trends of change, do we expect to have enough of each of them?

The answers to these questions can determine what kinds of policies or management are needed to secure these benefits for the future.

- 'Demand management'. This is the stable-mate of environmental capacity: whilst environmental capacity may identify the scope for the supply of new development, demand management addresses the demand side of the equation. The UK Biodiversity Action Plan comments: *"Managing the demand for natural resources is one of the fundamental measures through which society can move towards a more sustainable way of life. When considering developments affecting biodiversity, an important option for central and local government and its regulatory agencies is to consider whether the demand for the activity or product should be limited through pricing or regulatory measures. A coherent framework of incentives, charges and fiscal measures can help to influence consumer behaviour together with public information and awareness campaigns"* (paragraph 6.9).
- The 'precautionary principle'. This recognises the risk element in actions taken or not taken. It reflects a preference to err on the side of caution and avoid actions which could have significantly damaging environmental effects, even if we cannot be precise about those effects in advance. The 1990 White Paper *This Common Inheritance* said of this: *"Where there are significant risks of damage to the environment, the Government will be prepared to take precautionary action to limit the use of potentially dangerous materials or the spread of potentially dangerous pollutants, even where scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it"*. The UK Biodiversity Action Plan adds to this the more specific commitment that *"where the available evidence suggests that there is a significant chance of damage to our biodiversity heritage occurring, conservation measures are appropriate even in the absence of conclusive scientific evidence that damage will occur"* (paragraph 6.8).
- 'Strategic environmental assessment'. This considers the effects of plans and policies (rather than just individual developments) on the environment, so that the overall effects and interactions of different proposals can be addressed together rather than in isolation, and sound options selected.

This is clearly a substantial 'sustainability' agenda which can bear on the future of the minerals industries. Action will be called for on many fronts, but the contribution which mineral working can make to implementing the UK Biodiversity Action Plan has a distinct place in this wider scheme:

- the Biodiversity Convention is one of the four key outputs from the Earth Summit,

to which the minerals industry can contribute;

- promoting biodiversity is fully consistent with the Government's sustainability objectives for minerals – (ii) on minimising environmental impacts, (v) on protecting designated nature conservation areas, and especially (iv) “to encourage sensitive working, restoration and aftercare practices so as to preserve or enhance the overall quality of the environment”; and
- by positively enhancing wildlife, the capacity of the environment to absorb mineral working can be raised in this respect.

3 Biodiversity

Biodiversity is the variety of all life forms around us. The inter-relations between different species and between species and habitats are vital for the food chain and provide valuable services to mankind. Particularly in view of our limited understanding of the processes, we interfere with them at long term risk to ourselves. Moral and aesthetic arguments add to the practical, social and economic ones for promoting biodiversity.

Biodiversity (biological diversity) is the variety of all life forms around us. It encompasses the whole range of mammals, birds, reptiles, amphibians, fish, insects, plants, fungi and micro-organisms such as bacteria and viruses, and the ecosystems in which they reside. Active conservation of biodiversity gives priority to retaining and enhancing habitats and species, particularly those at greatest risk of loss.

Three levels of biodiversity are relevant to the approach adopted in the Biodiversity Convention at Rio in 1992:

- diversity between and within ecosystems and habitats;
- diversity of species;
- genetic variation within individual species.

The minerals industries in the UK may well be able to contribute at each level.

There are important linkages between species and habitats: “*Changing a habitat will often affect the diversity of species contained within it, and conversely a change in the number and assemblage of species may affect the nature of a habitat. A crucial test of the ‘health’ of a local environment is reflected in the wildlife community appropriate to the area or habitat. If the rate of change or loss is markedly greater than ordinary evolutionary processes would imply, this could indicate a systematic problem to which we should pay serious attention*” (Biodiversity: The UK Action Plan, 1994, paragraph 1.12).

The reasons why biodiversity matters revolve primarily around the inter-dependence of species as the basis for the stability of life on earth. The same report states: “*Biodiversity should be maintained because future practical needs and values are unpredictable and our*

understanding of ecosystems is insufficient to be certain of the impact of removing any component. Genetic diversity provides the variability within which a species can adapt to changing conditions. The less diverse environmental systems are, the less likely it is that gene pools and reservoirs, indeed genetic variability of all kinds, will be available to substitute for others that are depleted. Furthermore, if the effective population size falls below a certain level, the species is likely to die out. Diverse environmental systems normally enhance the resilience to cope with ecological stress and perturbations, such as climate change” (paragraph 1.14).

Organisms interact with each other and their surroundings. This is central to the food chain, upon which all life depends. In addition, there are economic arguments for promoting biodiversity (where species can be made into products that can be bought and sold), since depletion will affect the global exchange economy. Biodiversity can have value through its contribution to tourism, watershed protection, water filtration, prevention of soil erosion, providing a gene pool of wild relatives to reinforce cultivated species. Moral and aesthetic arguments also feature strongly in case for biodiversity.

The UK Round Table on Sustainable Development has prepared a report *‘Business and Biodiversity - A UK Business Guide for Understanding and Integrating Nature Conservation and Biodiversity into Environmental Management Systems* (1997). This provides background information additional to that provided here, but it can be noted that it does provide a useful rationale for why biodiversity conservation should matter to business. Key points for the mineral industry include:

- biodiversity ‘services’ us in ways that we could not replace - for example, flood control
- your company’s relationships with regulators, customers and communities can be improved if you engage with biodiversity management and involvement.
- staff get satisfaction and enthusiasm from being involved with their local environment
- bad press or reproaches following any ‘incident’ will be less for a company that has a record of active involvement
- many habitats and species are protected under international and national law
- locations of protected habitats and species can seriously affect planning applications and development proposals
- if you focus narrowly on basic compliance (for example, discharge consents, emissions), you may still not be enhancing local ecologies

It also notes possible consequences of a poor environmental record:

- prosecution and fines
- restricted expansion or development
- loss of raw materials or products
- third party claims for damages

- damage to your reputation and the so-called 'license to operate'
- loss of market share
- bad press
- poor morale amongst staff and recruitment problems

4 Biodiversity: the UK Action Plan

Biodiversity: The UK Action Plan (1994) responded to the Rio Biodiversity Convention with a major commitment to promoting biodiversity. The Plan included a new presentation of current nature conservation policies relevant to biodiversity and '59 steps' to bring about real improvements.

Article 6 of the Biodiversity Convention agreed in Rio de Janeiro in 1992 requires signatories to develop national strategies for the conservation of biological diversity and the sustainable use of biological resources. *Biodiversity: The UK Action Plan* was the Government's response in 1994. Its strategic approach is set out as follows:

Overall Goal

To conserve and enhance biological diversity within the UK and to contribute to the conservation of global diversity through all appropriate mechanisms.

Underlying principles

1. Where biological resources are used, such use should be sustainable.
2. Wise use should be ensured for non-renewable resources.
3. The conservation of biodiversity requires the care and involvement of individuals and communities as well as Government processes.
4. Conservation of biodiversity should be an integral part of Government programmes, policy and action.
5. Conservation practice and policy should be based upon a sound knowledge base.
6. The precautionary principle should guide decisions.

Objectives for conserving biodiversity

1. To conserve and where practicable to enhance:
 - (a) the overall populations and natural ranges of native species and the quality and range of wildlife habitats and ecosystems;
 - (b) internationally important and threatened species, habitats and ecosystems;
 - (c) species, habitats and natural and managed ecosystems that are typical of local areas;
 - (d) the biodiversity of natural and semi-natural habitats where this has been diminished over recent past decades.
2. To increase public awareness of, and involvement in, conserving

biodiversity.

3. To contribute to the conservation of biodiversity on a European and global scale.

The Action Plan noted that *“If we continue to pollute the atmosphere, contaminate land and water, and degrade our ecosystems by, for example, destroying forests, wetlands and marine environments, then the planet will suffer accordingly. The totality of the problem is addressed by the Sustainable Development Strategy, but the healthy and harmonious functioning of all the organisms which constitute ‘life’ is the concern of the Biodiversity Convention, and hence of this Plan”* (paragraph 1.16).

The Action Plan outlined the variety in the species and habitats found in the UK’s relatively small geographical area. They are subject to threats and problems but equally are nurtured by an array of protection measures. Conservation measures apply, first, within habitats through a system of protected areas and measures to restore biodiversity to the wider countryside. They also apply, second, to plants, animals and micro-organisms through collections, storage and propagation. The Action Plan indicated the measures being taken to conserve and enhance our biodiversity for future generations through sustainable use, through data collection, and through environmental awareness programmes and education.

The bulk of the Action Plan offered a significant redefinition of policies. It then concluded with a substantial work programme known as **“the 59 steps”**. With monitoring and review the process will be dynamic rather than once-only. The emphasis was on conserving those habitats and species most at risk. The package as a whole represented a real scientific and technical challenge, as well as a political challenge to Government departments, local authorities, land owners, businesses and individuals to make a commitment to the principles. Steps of special interest to the minerals industries are discussed in Part III.

The Action Plan proposed to establish a **Steering Group** to develop specific and costed targets for key species and habitats for the years 2000 and 2010, and the techniques and programmes necessary to achieve them.

It is perhaps worth noting that the Biodiversity Action Plan approach, whilst concentrating resources for biodiversity, may result in a loss of emphasis on wider holistic approaches to nature conservation such as integration with geological and landscape conservation.

5 Legislation and Government policy

The promotion of biodiversity by action to assist species and habitats is underpinned by legislation to protect those which are most at risk of loss or decline. Both the Wildlife and Countryside Act and European legislation tackle this. Government policy explains how the law will be interpreted, with planning policy in PPG 9 Nature Conservation being particularly relevant to the minerals industries.

The Wildlife and Countryside Act 1981 not only made provision for the notification and protection of Sites of Special Scientific Interest (SSSIs), but also identified species of birds, animals and plants which are given varying degrees of legal protection within different Schedules, (details in *Wildlife on site*, Cox, [1996]). Every five years these Schedules are reviewed and any amendments or additions are notified. The presence of a protected species is a “material consideration” when a local planning authority is considering a planning application which might, if development is allowed to proceed, result in harm to the species or its habitat. Additionally, the protected status of a species is one of four criteria used in the selection of species for preparation of a Species Action Plan within the UK Biodiversity Action Plan.

In 1992 the European Community Directive on the conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) became European law. This was translated into UK law in 1994 as the Conservation of Natural Habitats &c. Regulations. These regulations provide for protection of habitats and species included in the Annexes of the Directive, and in particular for the designation of Special Areas of Conservation (SACs) for certain habitats and species. These SACs, together with Special Protection Areas designated under the EC Birds Directive, comprise a network of sites of European importance known as Natura 2000. Following designation of SACs there is a requirement by the Directive to ensure both the restoration and maintenance of natural habitats and species of community interest at a favourable conservation status. There are strong constraints on activities which would damage Natura 2000 sites. Listing of habitats or species in Annex I or Annex II of the Habitats Directive is also a criterion used in the selection of Action Plans as part of the UK Biodiversity Strategy.

The legislation is backed up by Government policy. Guidance on how the Government’s policies for nature conservation are to be reflected in land use planning are explained in Planning Policy Guidance note 9 *Nature Conservation* (PPG 9). This was issued by the DoE in 1994 following introduction of the Habitats Regulations. It includes reference to mineral matters, particularly with regard to minerals applications which are likely to significantly affect SPAs, SACs and sites designated under the Ramsar convention. In addition, mineral planning companies are advised to bear in mind opportunities for habitat creation and enhancement even where nature conservation is not the primary end use of a site.

PPG 9 reinforces the Habitats Directive requirement to encourage nature conservation outside designated sites, by encouraging the management of features of the landscape which are of major importance for wild fauna and flora, for example ponds, woods and hedges which may be important for migration and dispersal of species. This too is relevant to the minerals industry as landowners and managers. Opportunities for promoting nature conservation through PPG 9 and the planning system are outlined in *Planning for Wildlife: a practical guide* (Green Balance, 1997).