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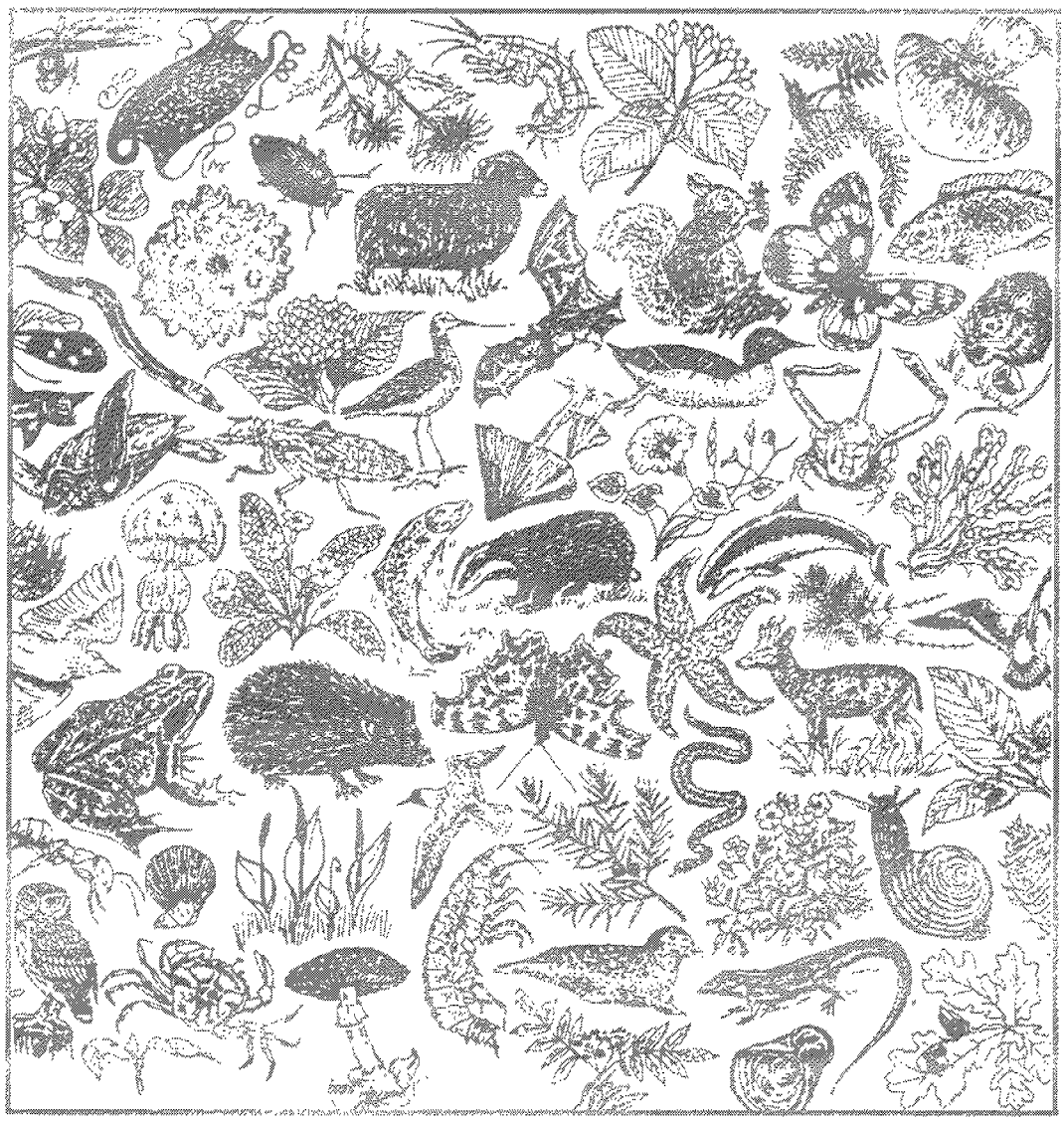

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Agriculture & Natural Areas
A Discussion Paper

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Agriculture and Natural Areas - A Discussion Paper

Executive Summary

1. The purpose of this discussion paper is to:

   a. At a general level stimulate and inform debate on the principles that should underlie our approach to defining objectives for the wider countryside within the Natural Areas framework and on the kind of agricultural policy best adapted to deliver such objectives.

   b. At a more specific level provide guidance on the definition of issues and objectives in Natural Area core profiles of relevance to agricultural policy and practice in a way that enables these issues and objectives to be articulated with policy delivery mechanisms.

2. In addressing a. above this paper suggests that there is a need for an integrated, whole countryside approach to Natural Areas that embodies 'strong' sustainability. This means that there is a need to develop conservation objectives for the **whole** of each Natural Area and to develop agricultural policy models most appropriate to the delivery of such objectives. This process should involve the definition of 'desired future conditions' for each Natural Area. 'Desired future conditions' are likely to be defined , in the majority of cases, on the basis of historical precedent and upon the use of current nature conservation resources. This should not exclude, however, the use of 'creative conservation'.

3. In addressing b. above, there is a need for the Natural Areas programme to be grounded in a structured analysis of generic issues. A generic issues approach is needed to avoid the pitfalls of environmental 'symptom management', the approach which dominates current environmental and agri-environmental policy. Necessary as such discrete action programmes and measures may be as 'fire-fighting' measures, symptom management epitomises a non-holistic and 'disintegrated' approach to nature conservation. Action plans for habitats and species need, wherever possible, to be delivered within the context of an integrated scheme flowing from appropriate agri-environment policy mechanisms.

4. A key consideration will be the configuration of such agri-environment policy mechanisms. They need to have sufficient flexibility and 'depth' to enable them to address local differences and local (and site specific) priorities for habitats and species. They also need to be sufficiently broad, however, to achieve policy reach necessary to secure the conservation of the wider fabric of the countryside. ESAs and Countryside Stewardship provide examples of these differing approaches - their respective merits need to be combined and the schemes expanded in scope and scale. Securing the appropriate policy framework also requires an articulation of the micro and the macro - EN's spatial strategies should be employed in this way to advocate and secure change in the broader policy framework for which Local Teams will need to define objectives appropriate to their Natural Areas.

5. In understanding generic issues and defining objectives for Natural Areas it is useful to employ a framework that defines the structural characteristics of habitats and species in terms of agricultural practices in order that articulation can be achieved

with policy delivery mechanisms. This affords a spatial and temporal framework for conceptualising how a Natural Area 'vision' might be turned into a reality.

6. The structure defined in 5 above enables us to assess the feasibility of, and constraints surrounding the delivery of Natural Area objectives in terms of policy delivery. These considerations necessitate a staged programme to secure sustainability (short, medium and longer term). In the short term both priority and feasibility dictate that, in general, semi-natural 'infield' habitats (particularly in 'peripheral' situations) will be primary targets for action. In the medium term the lowlands may see more ambitious programmes to reduce fragmentation and to enhance populations of characteristic farmland species through pilot Prime Biodiversity Areas (new ESAs) and wider use of Countryside Stewardship and other agri-environment schemes. The uplands could witness a progressive 'greening' of livestock regimes founded upon environmentally determined stocking levels (rendering a separate suite of ELMS largely redundant). Over the longer term at a time when, if as predicted, output-related commodity support has been substantially abandoned, EN should be pressing for the replacement of the CAP with a Rural Sustainability Policy structured around Natural Areas. This policy, through a process of 'Green Recoupling' would make available to land managers the means to secure conservation objectives in return for the provision of environmental services.

7. CAP reform presents risks as well as opportunities. The likely scenario is the progressive elimination of production-linked support - while this will remove public incentives to undertake environmentally damaging activities it will leave the market, in the absence of intervention, to determine land use decisions. The results are likely to be mixed but on balance the environmental consequences will probably be negative. Particular casualties are likely to smaller farms and those where semi-natural habitats are 'integral' to the farm system, as in much of the uplands. Some of these negative impacts (such as farm abandonment or amalgamation) will be mitigated through an expanded agri-environment programme (green recoupling). Under the prevailing model of radical decoupling, however, there are real concerns as to whether the scope and scale of a future agri-environment programme will match the need for widespread retention of 'joint economies' (of agricultural products and environmental services) upon which the nature conservation resource depends. The translation of Natural Area 'visions' into reality will depend crucially upon the future configuration of agricultural policy.

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1. Introduction

English Nature has been developing the concept of Natural Areas since 1993. Natural Areas are biogeographical zones which reflect the geological foundation, the natural systems and processes and the wildlife in different parts of England, and provide a framework for setting objectives for nature conservation. The identification of Natural Areas has been based upon agricultural treatises, landscape accounts and county floras. The ideal Natural Area should be a discrete geographical area, encapsulating unique features, be easily recognised by and acceptable to the relevant organisations and parts of the community for whom it should generate a feeling of identity. A Natural Area thus combines natural and cultural characteristics. Indeed, the great majority of its characteristic features is irreducibly semi-natural in character, being the result of centuries or millennia of human action upon a pre-given ecological resource.

EN is currently producing 'profiles' for each Natural Area which describe the key nature conservation features, identify the key issues affecting these and set objectives. The UK Biodiversity Action Plan which sets targets for species and habitats will be delivered through the Natural Areas approach. In parallel EN is collaborating with the Countryside Commission on production of a joint map of England which reflects the natural and cultural dimensions of the landscape. This map will be used as a framework to help EN and the Countryside Commission deliver their objectives, both local and national, using the Natural Areas approach and the Countryside Character Programme respectively.

The development of the Natural Areas approach can be seen as part of a sea change in attitudes to nature conservation. It is now increasingly realised that special sites cannot retain their interest independently of the changes that take place in the surrounding countryside. EN must move beyond the boundaries of SSSIs to return poorly managed habitats to optimal condition, restore lost habitats and create new ones. Agricultural policy and practice remain key factors in the continuing loss and decline of habitats and species, particularly in the wider countryside. By the same token, the removal of current agricultural policy constraints and the adoption of positive measures will be key to achieving the majority of Natural Area objectives.

Against this background, the purpose of this report is to:

a. Stimulate and inform debate about the principles which should underlie our approach to defining Natural Area objectives and about the kind of agricultural policy which should deliver such objectives.

b. Provide guidance on the identification of issues and definition of objectives in Natural Area core profiles of relevance to agricultural policy and practice in a way that enables these to be articulated with policy delivery mechanisms.

2. Agriculture and Natural Areas

A large proportion of the most valued habitats and landscapes in England and therefore of the identifying characteristics of Natural Areas, has arisen from agricultural management of the natural environment over a period of hundreds or thousands of years. Much of the biodiversity resource of Natural Areas depends for its survival upon the continuation of traditional, low intensity or mixed farming practices. Farming practices of this type have moulded the very character of Natural Areas.

Since the Second World War (and particularly since Britain's accession to the EEC and its participation in the CAP) this situation has changed quite dramatically. This period has witnessed *inter alia* steep declines in the area of semi-natural habitat and in the numbers of characteristic farmland species. Far from sustaining the biodiversity and landscape resource as before, agriculture has now become a central factor in its loss and decline. Many of the features which make Natural Areas distinct are being eroded - these features survive **despite** agricultural practices, not **because** of them. The stock of 'natural capital' which previous generations of farmers and land users built up and nurtured is now being used unsustainably, either destroyed outright or subject to a slower process of degradation. The end result of this process will be to replace diversity with uniformity.

These adverse effects on nature conservation can be attributed in general to processes of agricultural intensification and specialisation stimulated and supported initially by domestic post-war policy and subsequently by the CAP. This process of agricultural development may be termed 'productivism'. Productivism has been implemented by employing the economic instruments of guaranteed prices, state (EU) regulation of major commodity markets and their insulation from foreign competition. The state (EU) has supplemented such policies by embarking upon modernisation programmes involving investment grants, input subsidies, special credit and fiscal incentives, public agricultural research and its dissemination by extension services. Farmers thus received payment of direct grants for capital investment, chemical inputs and the adoption of new techniques and the share of this direct grant element in agricultural support rose considerably from the 1950s and 60s. This change in the relative weight of price support vis-a-vis capital and input subsidies, reinforced by a policy of maintaining guaranteed price increases below cost increases, meant that higher net farm income could be obtained effectively only by innovation and productivity growth. This also acted as an incentive to cut costs through releasing labour/enlarging holdings and to borrow money for land purchase and capital projects. **The environmental impacts of such productivist policies can be enumerated as a sequence of key indicators or generic issues (see Annex 1).**

As a general rule, biodiversity has been pushed to the margins of modern, agro-chemical agriculture (except where physical constraints prohibit this, as in the uplands) where it now subsists usually as a residual resource peripheral to most farming systems. Over much of the lowlands, for example, semi-natural habitats survive typically as fragments within an otherwise intensively farmed landscape. Even 'common' species characteristic of more productive farmland have exhibited alarming declines over the last two - three decades. Freshwater habitats continue to suffer loss and decline through nutrient pollution and water abstraction from intensive agriculture. In the uplands, habitat deterioration rather than outright loss has been the norm, the result most frequently of ecological overgrazing by livestock.

In the present context, some of this residual resource (mainly semi-natural 'infield' habitats) receives legal protection and/or conservation management through environmental regulation and/or environmental land management schemes (ELMS). Of the latter, the two main schemes, ESAs and Countryside Stewardship (CS), target respectively large areas of land of particular value and defined habitats, landscapes and other features in the wider countryside. Their main focus has been upon grazed rather than arable land, reflecting the greatest priority attached to the conservation of semi-natural pastoral habitats. However, the majority of the nature conservation resource of Natural Areas remains without adequate safeguard. Most wildlife habitats and characteristic species in the wider countryside continue to decline in extent, quality and numbers (Andrews and Rebane 1994). Moreover, special sites themselves

cannot retain their interest independently of the adverse changes taking place in the surrounding countryside. There is therefore now an urgent need:

a. to enhance the remaining resource of sem-natural habitats (through site buffering, linkage and re-creation); and

b to address the decline in 'common' habitats and species in the wider countryside.

The Natural Areas programme potentially provides a framework within which EN and others can carry forward these objectives.

3. Principles underlying the Natural Areas approach - generic issues and strong sustainability

The currently prevailing model for biodiversity conservation is one in which nature is 'sequestered' on special sites/areas and accorded a minimal role 'outside' and in opposition to mainstream economic activity. Nature conservation is to be pursued , on this 'environmental managerialist' model, on a site-by-site, species-by-species basis and awarded a separate (and usually minimal) budget for a series of discrete conservation activities which are juxtaposed to (and must 'buy off') the 'normal' economic activities of the farmer. The two aspects of this policy, spatial/sectoral 'apartheid' and the demand that environmental goods and services can be secured only 'if the price is right', reflect respectively the privileged position that has been accorded to productivist agriculture in post-war land use planning and the fact that this has been undertaken by 'harnessing private property rights to agricultural expansion' (Marsden et al. 1993). To the extent that environmental conservation has been secured at all, it has been achieved only through the preservation of the 'rights' of farmers to a degree of state support through the extension of their property rights to cover environmental goods.

Increasingly over the last decade or so the sustainability of this 'environmental managerialist' model has been thrown more and more into question by the concern over the future not only of special sites themselves (for island biogeographical and for management reasons) but additionally over the continuing loss of biodiversity in the 'unprotected' wider countryside. Internal and external contradictions besetting the CAP have also begun seriously to challenge the pre-eminence of productivist agriculture in the countryside. In response to such deficiencies and the new opportunities afforded by progressive reform of the CAP, there is now increasing advocacy of an integrated, 'whole' countryside approach which the Natural Areas programme embodies. This approach not only challenges the view that nature can be conserved effectively on an isolated or fragmented basis, whether spatially or in terms of individual species, but also in so doing problematises, implicitly or explicitly, the sustainability of mainstream agricultural activity itself. Thus, if biodiversity loss and decline are the result of generic causes (as identified above) deriving from mainstream economic activity, it follows that biodiversity conservation cannot be satisfied simply, or in the longer term, by enhanced management of a residual resource subsisting at the margins of, and juxtaposed to, those continuing generic sources of decline. Rather, what is required is a change, towards sustainability, in the character of that economic activity itself. This is what is meant by 'strong sustainability'. This means that sustainability is unlikely to be secured through mitigating (buying off) unsustainable agricultural practices, an approach embodied in the prevailing model of voluntary incentive schemes, but will need to be secured by addressing the structural causes of generic impacts, whether state or market-led.

A generic issues analysis, a whole countryside approach and strong sustainability are mutually defining since each derives from, or implies, the other. A whole countryside approach has as its objectives not only the conservation and enhancement of semi-natural habitats existing at the margins of intensive agriculture on special sites and in the wider countryside but, additionally, the transformation of the 'infield' practices of modern farming so that these conserve and enhance not only characteristic biodiversity but also the natural resources of soil, water and atmosphere. In turn, as indicated, a whole countryside approach cannot be built on the basis of managerialist 'symptom management' as at present but rather through addressing generic causes deriving from the unsustainable practices of mainstream farming activity. A whole countryside approach should lie at the core of the Natural Areas programme.

4. The Natural Areas approach and agricultural policy

In what ways can the Natural Areas approach assist in the design of agri-environment policy as a means to address issues facing the nature conservation resource and to set objectives for its safeguard, enhancement and expansion? There seem to be two key concepts which capture the relevance of Natural Areas to these functions - scale and context. Scale is important because Natural Areas provide an appropriate scale at which the character and quality profile of an area may be defined. It is therefore this concept which enables areas to be differentiated from one another and which defines the nature of localism. Such localism means in turn that it is possible to define objectives/prescriptions for nature conservation at the landscape scale which reflect the specific character of an area (the ESA scheme currently does this). The scale of Natural Areas also provides the context within which nature conservation issues/objectives can be addressed. If site specific issues can in many cases only be addressed through a whole countryside approach, then Natural Areas provide the context for objective setting to tackle such issues. In short, Natural Areas provide a meaningful scale of definition of and context through which whole countryside objectives for site-specific and wider countryside may be addressed.

The preparation of Natural Area profiles provides a definition of the quality of the nature conservation resource and therefore of a framework for defining priorities. Broadly, profiles define the nature and distribution of high quality nature conservation resource, ecological objectives in respect of a 'second tier' or 'less special' level and objectives for the enhancement of ecologically degraded areas. In general then, Natural Area profiles will define objectives which seek to:

a. Conserve, enhance and where possible expand remaining areas of high quality semi-natural habitat (including aquatic ecosystems).

b. Conserve, enhance and where possible expand 'second tier' semi-natural habitat.

c. Make the practices of modern farming more congenial to the conservation of characteristic habitats and species in the wider countryside.

d. Prepare targeted programmes for particular rare or threatened species where generic measures alone will not be effective.

Natural Area profiles also identify key issues that affect the quality profile and therefore identify policy objectives for action. Natural Area profiles thus provide a spatio-temporal framework for defining and addressing biodiversity objectives. This means that priorities for action can be defined in space (ie moving from special sites to

the wider countryside a.>c. above) and in time (ie a staged programme of policy change from current agri-environment programme addressing mainly a. above to whole countryside perspective embodied in Rural Sustainability Policy).

Natural Area profiles should provide the framework for the delivery of agri-environment policy in a way which maximises nature conservation benefits. They provide:

a. A description of the character and condition of the nature conservation resource.

b. Identification and prioritisation of issues which agri-environment policy can address.

c. A framework for targeting schemes and resources.

d. Identification of the local character of the nature conservation resource aiding definition of objectives/prescriptions for management delivered usually by generic mechanisms modulated to Natural Area.

e. Setting of meaningful landscape-scale objectives for whole countryside conservation (eg foci for habitat expansion and re-creation).

In summary, Natural Areas provide a means to achieve prioritisation, localism and holism.

Natural Area profiles also afford a framework for the design of agri-environment schemes. Objectives a. and d. above require schemes to deliver exacting requirements usually over and above normal farming practice (this may be described as 'additionality'). Such additionality requires the use either of site-specific nature conservation objectives (the Wildlife Enhancement Scheme is an example) or of more generic objectives which nonetheless have the capacity for modulation to site level (the Countryside Stewardship scheme fits this description). What both these schemes lack, however, (and what will be required if whole countryside objectives of Natural Areas are to be realised) is a mechanism that is able to encompass a discrete biogeographical unit in its entirety (ie Natural Area) and thereby is able to take a coherent view not merely of constituent semi-natural habitats (as in CS) but, more importantly, of the relationship between such habitats and the intervening non-semi-natural habitats which together make up the quality and character of the whole biogeographical unit. The need for such an approach is particularly pertinent in respect of species, such as the Greater Horseshoe Bat, which are dependent upon a variety of habitats throughout the quality profile and which therefore render unviable a policy approach which rigidly dichotomises special sites and the wider countryside. What is required therefore is a mechanism which defines objectives at the landscape scale (ie the whole Natural Area) and which is as a consequence designed to address all objectives for the Natural Area profile, both special site and wider countryside. Such a mechanism will need to combine the ability to conserve the broader fabric of countryside character through a common prescriptive base with an ability to secure additionality on a site-specific basis. The tier structure of the ESA scheme would seem best adapted to deliver the whole countryside objectives of Natural Areas.

5. Developing a structure for addressing generic issues and setting objectives

The Natural Areas programme is about maintaining and enhancing those countryside characteristics which make landscapes distinct - it is thus quintessentially about local diversity. However, the generic causes that are currently substituting uniformity for such diversity derive usually from processes rooted in politico-economic forces operating at levels far higher than the individual Natural Area (for example, at the level of the EU and beyond). This paradox generates two key issues in tackling biodiversity decline and in the design of appropriate agri-environment policy mechanisms. The first is the sheer scale of the task of addressing powerful and countervailing politico-economic forces. An understandable reaction here is to shrink from the magnitude of such an effort and to concentrate upon the immediate need to safeguard, via traditional managerialist policies, the highest priority elements of the remaining biodiversity resource. A second is the perceived difficulty or impossibility of securing local or site specific objectives by means of much broader generic 'solutions'.

The appropriate response to the first reaction is that we have little choice other than to address generic causes if we are to achieve, in the longer term, nature conservation objectives both on special sites and in the wider countryside. This, after all, is what the Natural Areas programme is supposedly about. The need for a generic issues approach is not of course to deny the immediate and shorter term need for 'fire-fighting' managerialist policies such as those embodied in English Nature's Species Recovery Programme or in a number of the Biodiversity Action Plans. It is increasingly obvious, however, that biodiversity cannot be conserved sustainably on the basis of its current status or within the present, managerialist, policy context. This is evident across the full profile of the biodiversity resource - the difficulty of securing appropriate management and expansion of semi-natural 'infield' habitats in the typical lowland scenario; the continuing decline of upland semi-natural 'infield' habitats as a result of ecological overgrazing; the continuing decline in quality and extent of semi-natural and freshwater habitats in the wider countryside; and the continuing decline in population and range of the 'common' farmland species of 'artificial infield' habitats and of those species dependent upon the maintenance of habitat diversity (the mosaic of unimproved grassland, copses, hedgerows, arable and improved grassland) at the landscape scale.

With respect to the second reaction, the perceived problem is largely without foundation. It assumes that a focus upon generic solutions implies the definition of nature conservation objectives and prescriptions at a similarly generic level - this is not the case. What the generic approach does imply is the removal of environmentally adverse policy at source (e.g the CAP as a production-linked intervention system) and its substitution by a broad environmentally based policy framework (eg an EU Rural Sustainability Policy) that enables biodiversity conservation to be secured through locally and site-specifically defined objectives. A broad policy framework needs both to remove sources of biodiversity decline, remove constraints upon habitat and species enhancement and expansion, achieve an articulation between biodiversity needs and policy delivery mechanisms and put in place the infrastructure for positive management. In this way, the Natural Areas programme will require linkages to be made between the 'micro-scale' and the 'macro-scale'. Sustainability objectives must realise local objectives - diversity - but can only be fulfilled within a context of a favourable wider policy environment. For English Nature, this means, for example, that our Spatial Strategies should be employed to advocate and secure change in the

broader policy framework for which Local Teams will need to define objectives appropriate to their Natural Areas.

The above discussion highlights the importance of identifying generic issues/causes if the whole countryside objectives of the Natural Areas programme are to be realised and if these are to articulate with, and be realised through, agricultural policy mechanisms By the same token, there is the danger that the Natural Areas programme will fall at the first hurdle if generic issues are not identified or identified incorrectly. The way in which issues are described is very important. It is possible, if there is a lack of consistent decision rules governing the generation of issues, to describe them imprecisely, leading to the mis- or non-identification of causality. A recent report (Hewston and Cooke 1996) exemplifies this - the lack of consistent decision rules embodied in the use of free text and compounded by the uncritical key wording from this text has led to the serious under-representation of agricultural policy in the analysis of issues.

If generic issues and hence solutions are to be identified, a more disciplined and structured approach to issues identification is required - in effect a structured causal analysis of issues. The following sequence of actions is suggested: symptoms traced to generic causes; objectives defined by structural features and requirements of habitats and species as management practices enabling these to be addressed by generic solutions (common generic issues and requirements lie behind the specific characteristics of suites of habitats, for example, chalk grassland, neutral grassland and heathland, and species).

Thus:

a. Identification of the Key Nature Conservation Features (KNCFs).

b. Identification of the Symptoms (Problems) affecting the KNCFs (eg fragmentation, inappropriate management, pollution).

c. Identification of Generic Issue/Cause (eg conversion of grassland to arable, undergrazing through lack of livestock, nitrate runoff through intensive arable cultivation).

When generic issues have been identified, the next step is to define generic solutions to these issues. Such solutions will involve the **definition of objectives** to address generic causes (ie the structural definition of habitat/species requirements in terms of agricultural management practices) and identification of 'desired future condition' for the Natural Area (spatial/numerical targets for habitat and species recovery). Both will involve definition of policy framework and mechanisms appropriate to these objectives.

Finally, these objectives should be translated into appropriate (generic) policy solutions. This should involve the definition of policy opportunities/constraints, both shorter and longer term, delineating the parameters for action to secure Natural Area objectives.

This structure can be illustrated by the following example:

KNCF = Arable, supporting characteristic wider countryside species e.g brown hare, skylark.

Symptom/problem = Decline in populations of these species.

Generic Cause (known or suspected) = Specialisation of agricultural production leading to loss of pasture-arable mosaics.

Objectives = a. Species requirements defined as agricultural management practice, ie re-creation of arable/pasture mosaics, retention/re-creation of field margin features, shift back to spring-sown cereals with retention of winter stubbles. b. Restoration of population levels to those obtaining prior to present sequence of decline or as defined in Biodiversity Action Plan targets, through the reintroduction of mixed farming practices.

Shorter-term Policy objectives (symptom management) = Optimal use of environmental land management schemes (and expedient use of commodity supply control measures) and their expansion in scope and scale where feasible

Longer-term Policy objectives (addressing generic cause) = Removal of Arable Area Payments Scheme and replacement by environmentally based system of direct payments, incentives and regulation.

(See Annex 2 for the application of this analytical structure to examples of Natural Area core profiles.)

6. Taking forward generic issues analysis and objective setting

In 5. above we identified a structure on which the Natural Areas programme could be built. This structure has five main elements: the first two are relatively unproblematic and have been undertaken as part of the preparation of core profiles. The third and fourth are more problematic and are currently being undertaken in a way which gives some cause for concern. It has been suggested that the majority of environmental symptoms can be traced to generic causes deriving from adverse mainstream policies. If a whole countryside approach is to be turned into a reality then generic causes must be addressed through generic policy solutions.

The focus of this section is upon elements three, four and five *viz.* a discussion of some of the main issues surrounding Natural Area objective setting for agriculturally managed habitats and their associated species and a discussion of how agricultural policy can articulate with, and potentially deliver, such objectives.

In setting Natural Area objectives a key issue will be the definition of 'desired future conditions'. The desired future condition is likely to be a 'vision' for the longer-term future, one which realises EN's goal of whole countryside management This will be the point at which (strong) sustainability has been achieved (cf. Tilzey, forthcoming). Shorter-term objectives will need to be defined that signify 'milestones' on the road to this notional end point, however. The emphasis of these shorter-term 'desired conditions' will tend to be primarily upon the removal of negative impacts upon the priority nature conservation resource and upon a limited series of positive measures delivered through ELMS. Such measures will focus primarily upon special sites but will also need in some measure to address wider countryside issues in so far as these are a requirement of Biodiversity Action Plans for farmland species and habitats. In the longer-term, at a time when these shorter-term priorities have been addressed, it is reasonable to suppose that there will be a shift in emphasis towards securing positive benefits through habitat and species expansion. This will be matched by a shift in

overall emphasis from special sites and their immediate contexts to 'common' habitats and species in the wider countryside.

From the preceding discussion, it should be evident that the task of setting objectives is inextricably bound up with addressing generic issues, that is with addressing farming practice and policy. This being the case, it is important to develop a framework for analysis that **articulates** these two components, the nature conservation resource and the farming practice/policy that governs its status. A first task in the development of such an analytical framework is the definition of 'structural' elements of the nature conservation resource, so that the framework is potentially applicable to all Natural Areas, irrespective of their specific characteristics. Recall that if generic issues are to be addressed it is important to identify the generic or structural elements that make up the profile of the nature conservation resource. EN's concern is to set objectives in relation to KNCFs - these features are broadly encompassed by environmental resources defined as 'Critical Natural Capital' and 'Constant Natural Assets' (cf. Cooke, 1996). Since no particular distinction is drawn between these two (heuristic) components of the environmental resource defined as KNFCs (and may be impossible and counterproductive to draw given, for example the dependence of 'critical' species upon habitats defined as 'constant natural assets'), it is perhaps more helpful to define an agricultural KNFC profile in terms of the following categories:

- Semi-natural 'infield' habitats (all grazed/mown habitats of high nature conservation interest including unenclosed habitats).
- 'Interstitial' habitats (hedges, ponds, ditches, streams).
- Habitats affected indirectly by agriculture (eg river systems, open water bodies).
- 'Artificial' infield habitats (arable and improved grassland).
- Species dependent upon the close juxtaposition of all or some of the above habitats together with non-agricultural habitats (eg woodlands).

(Note, the first three of these categories can be defined as 'sensitive'.)

These five 'structural' elements of a KNCF profile encompass the great majority of the biodiversity resource dependent upon/affected by agricultural practices. They provide a structured means to define generic groupings of habitats (and their associated species), their spatial relationships and agricultural impacts upon these to define objectives for Natural Areas. They also provide the means to assess the character of the policy opportunities and constraints surrounding those objectives. These structural elements enable us to gauge the level of compatibility between habitat/species requirements and the agricultural practices that govern their status. This compatibility must be gauged not only on the basis of agricultural practices themselves but also upon the character of the policy instruments which broadly encourage such practices. In the final analysis, this framework should enable us to define the requirements for, and assess the ease of meeting Natural Area objectives.

From these five structural elements of a KNCF profile it is possible to derive three key principles which will underly Natural Area objective setting by means of manipulation of the nature conservation resource:

a. Maintenance/enhancement of 'sensitive' habitats.

b. Expansion of sensitive habitats through reversion of intensively used land.

c. Diversification/extensification of intensive infield practices.

Through time the focus of objectives is likely to shift in emphasis from a. > c. A problem in developing a 'vision' for c. in particular is that currently we have little idea of what our longer-term objectives might be for the wider countryside and for intensive 'infield' practices. A starting point would obviously be the conservation and enhancement of extant KNCFs in the wider countryside where these are defined as semi-natural habitats, interstitial habitats and characteristic farmland species. Thus a general and reasonable principle underlying the definition of most Natural Area 'visions' for the wider countryside would seem to be the re-creation of biodiversity/landscape to a status approximating that prior to post-war agricultural intensification and specialisation in so far as this is commonly taken to represent the baseline from which the majority of habitat and species loss and decline has occurred. This principle will not satisfy all biodiversity requirements and objectives, however. Woodlands and fenlands, for example, suffered dramatic losses long before this period and appropriate provision needs to be made for their extensive re-creation. Additionally, significant areas of lowland England in particular have been changed so dramatically and so little nature conservation resource of value remains that proposals for new habitats and 'creative conservation' should by no means be excluded.

A key issue in taking forward Natural Area objectives, that is their translation into appropriate policy, is precisely the current problem of a general **lack** of articulation between the nature conservation resource and agricultural practice/policy. This problem is most acute in the lowlands where the bulk of the nature conservation resource is peripheral to farm systems. The problem here is that many farming practices and their policy bases (embodied in processes of intensification and specialisation) do not now 'match' or articulate with the Natural Area characteristics that objectives are seeking to foster. In short, there is frequently a disparity between the practices required to reproduce the defining character of a Natural Area (often a residue from a pre-intensive past) and those of current agricultural land-use. This, of course, is precisely the reason for short-term symptom management in which 'special' provision must be made to secure the nature conservation resource.

We shall now proceed to develop the analytical framework outlined above by examining in some detail Natural Area objectives and policy requirements for the structural elements of KNCFs identified above. This will also represent an assessment of the policy opportunities and constraints surrounding those objectives.

a. **Semi-natural 'Infield' Habitats**

Main habitat types: Chalk and limestone grassland, neutral grassland, acid grassland, fen meadows and mires, grazing marsh, lowland heathland, heather moorland.

Generic issues - Symptoms: Arablisation or improvement; undergrazing or abandonment (including the problem of fragmentation); overgrazing; drainage.

Generic issues - Causes: Intensification; specialisation generated through production linked agricultural subsidy.