National Heathland Conference

18th - 20th September 1996

THE RHINEFIELD HOUSE HOTEL, THE NEW FOREST

CONFERENCE PROCEEDINGS

ENGLISH NATURE

Forest Enterprise

HAMPSHIRE Wildlife TRUST

Hampshire COUNTY COUNCIL

RSPB

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INTRODUCTION

We have welcomed the opportunity to hold the 5th National Heathlands Conference in Hampshire. Hampshire boasts a greater areas of lowland heath than any other county in England and is keen to demonstrate its commitment to the long term conservation of this important habitat.

In preparing our programme we wanted to take advantage, of not just the extensive heathlands of the New Forest, but also to promote the work of the County Council and others towards heathland restoration in the north east of the County. The New Forest may be the largest area of continuous lowland heathland in Europe, but for many heathland managers, heathland regeneration is more akin to the day to day problems that they face and so the conference committee set itself the following key aims:

to demonstrate proven management techniques for achieving effective Heathland management

to indicate reliable avenues for continuing research and development

After three days at the Rhinefield House Hotel, we hope that delegates feel some progress has been made in this direction.

Reports of discussions and workshops sessions are not included within these papers. The Conference Committee devolves responsibility for circulating and promoting the outcome of these to English Nature and look forward to seeing recommendations printed in relevant journals.

Much has been gained simply by having members of the organising committee sitting round the table together working towards a common goal. We have all been impressed by the great range of experience and resources that are brought together by the five organisations who have been part of the Conference team. This conference however would not have been possible without the financial backing of English Nature and the organisational skills of Global Conferences. We are particularly grateful to them for their valued support.

We hope that you have enjoyed your visit to Hampshire.

Alison Field

on behalf of the conference committee:
Hampshire County Council, The Forestry Commission, English Nature, RSPB and the Hampshire Wildlife Trust

The Biodiversity Action Plan and Heathland Conservation

Earl Howe,

Parliamentary Under-Secretary of State for Defence

Good morning, ladies and gentlemen. If I could at this juncture explain my responsibilities. Each Government Department has a Minister with specific responsibilities for environmental matters. As Under Secretary of State for Defence, I hold that portfolio for the MOD. However, on this occasion I am representing the Government as a whole. It is a pleasure to be addressing you on the subject of the Government's commitment to the conservation of lowland heathland. This commitment will be delivered through the Biodiversity Action Plan.

Let me start by recapping on the process by which the Government has developed this plan. In June 1992, John Major and over 150 Heads of State or Government signed the Convention on Biological Diversity at Rio de Janeiro. The Convention was seen as essential to halt the worldwide loss of animal and plant species and genetic resources. The way to implement this was for each country to take responsibility for saving and enhancing biodiversity within its borders and by drawing up national plans and programmes. The conservation of biodiversity is in a very real sense a test of the principle of sustainability.

The Government demonstrated its commitment to the Convention within 18 months by publishing a detailed analysis of the United Kingdom's biodiversity and a number of broad objectives known as the 59 steps which committed the Government to action. Many of you will no doubt have seen the report entitled Biodiversity: The UK Action Plan which was published in January 1994.

The Biodiversity Action Plan and Heathland Conservation

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The Government then set up a Biodiversity Action Plan Steering Group involving senior individuals from non-governmental organisations, conservation agencies, academic institutions, local government and government departments. The Group was asked to produce a range of costed targets for key species and habitats, to improve the accessibility and coordination of data and to make recommendations on public awareness and involvement. The UK Biodiversity Steering Group's report - Meeting the Rio Challenge - was published in December 1995. The Steering Group's report encourages the Government to undertake a comprehensive programme of work to protect our most endangered species and enhance our most important habitats. As the Government's Response to the UK Steering Group's Report on Biodiversity, published in May of this year, makes clear, this is a challenge that the Government wholeheartedly welcomes. However, the Government has stressed that it is the responsibility of all sections of society to ensure the conservation of the UK's biodiversity. The emphasis is therefore on effective partnership working.

The Steering Group's report proposed 116 Species Action Plans and 14 Costed Habitat Action Plans and that a further series of plans be prepared over the next 3 years. A further 286 Species Action Plans and 24 Costed Habitat Action Plans will be produced by 1999.

The approach that the Government endorsed in its response to the Steering Group's reports is based on the principle of partnership in implementing the Biodiversity Action Plan. Each of the 14 Costed Habitat Action Plans that have been produced so far have been assigned a Lead Agency, responsible

for stimulating and overseeing the implementation of the plans. In the case of lowland heathland, English Nature is the Lead Agency and my Department will be represented on the project team.

In the case of the 116 Species Action Plans which have been produced, 'Contact Points' have been identified who are responsible for overseeing the implementation of the Plans. In addition to Contact Points, it is envisaged that for each species there will be one or more 'Champions', in the form of organisations carrying out, or funding conservation work which contributes to the implementation of the action plan for that species. These 'Champions' will collectively deliver the targets in the action plans through work programmes agreed with Contact Points. A Champion could be an agency, a non-governmental organisation or a private company.

In the case of the lowland heathland Costed Habitat Action Plan there are ambitious but realistic targets for the maintenance and restoration of heathland. The targets are to maintain, and improve by management, all existing lowland heathland (58,000 ha in the UK) and to encourage the re-establishment by the year 2005 of a further 6,000 ha of lowland heathland. This represents an attempt to re-create approximately 10% of the existing lowland heathland resource. The achievement of this target will make a substantial contribution to reversing the historical effects of the fragmentation of formerly extensive tracts of lowland heathland into relatively small and isolated sites.

The Biodiversity Action Plan and Heathland Conservation

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The Costed Habitat Action Plan for lowland heathland also sets out the specific actions that will be required to meet the targets. This involves work in the areas of policy and legislation, site safeguarding and management, the provision of advice, international liaison and future research and monitoring.

My own department makes a considerable contribution to the conservation of lowland heathland as Colonel James Baker, our Conservation Officer, will describe later. The Ministry of Defence owns one of the finest estates for wildlife and our actions are not restricted to heathland, for instance we are putting much effort into the management of the extensive chalk grassland of the Salisbury Plain Training Area and into the preparation of conservation management plans for all our Natura 200 sites and Sites of Special Specific Interest.

However, heathlands are a key part of the MOD estate since:

- we own 60% of the remaining dry heathland in Southern England;
- we are closely associated with the Heathland Projects in Surrey, Hampshire and Berkshire;
- we have funded a secondee from English Nature to help prepare conservation management plans for our heathlands in the Aldershot area;
- we are involved in English Nature's Species Recovery Programme through work with the Herpetological Conservation Trust and others;

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- and my predecessor launched the Nottinghamshire Heathland Strategy.

As part of Government, MOD endorses the aims of the Biodiversity Action Plans and commits itself to playing its part with others to achieve its targets, within the usual military constraints.

However, the Government cannot, single-handed, halt the loss of plants and animals or implement the Biodiversity Action Plan. I therefore invite all of you here, whether you represent non-governmental organisations, countryside agencies, academic bodies and institutions, local government or business and industry to join us in taking up the exciting challenge which we face.

I know that many of you are already making a major contribution towards the achievement of the heathland targets in the Biodiversity Action Plan and I would like to conclude by assuring you of the Government's commitment to the important shared task that lies before us.

The Ministry of Defence's Commitment to it's Heathland Heritage

Col J H Baker, The Ministry of Defence Conservation Officer

Good morning ladies and gentlemen. I am delighted to have been invited here today to speak to you about the Ministry of Defence's commitment to its heathland heritage.

As Earl Howe has already stated, the MOD owns or occupies approximately 60% of the remaining dry heath in Southern England. In fact we have important heathland sites distributed from East Anglia up to Nottinghamshire and down to Cornwall. The reason for this extensive holding is that heathland is not only a superb natural habitat, it is also a perfect habitat for certain types of military training. Many of these heathland sites have been under our management for decades and as a result they have been largely preserved from some of the major factors responsible for this habitat's dramatic decline; For example, intensive agriculture and urban development. For this reason and given the fact that many of our heathland sites are of a considerable size, and have avoided the fragmentation leading to a decline in biodiversity that has occurred elsewhere, the areas in MOD's ownership have now become important strongholds for many heathland species.

The Ministry of Defence has long been aware of its responsibilities towards habitat conservation. Many of you will know that it is our policy to establish conservation advisory groups at sites where we have a major conservation interest. These groups assist us in recording and monitoring the diversity and quality of the species and habitats, in order to facilitate sympathetic land management. In fact, the first of these groups to be established, back in 1974, was on a fine heathland site which forms part of the Longmoor District

The Ministry of Defence's Commitment to it's Heathland Heritage

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Training Area, in Hampshire. Due to the dedication of our army of conservation volunteers and our own land agents this site remains one of the premier heathland sites to such an extent that it is now thought to be the last remaining site in England to contain, naturally, all 12 of the native British reptiles and amphibians. The quality of the habitat within this training area was also recently recognised with a Forestry Authority Centres of Excellence Award.

We have approximately 25 MOD conservation groups working on sites which have a major heathland interest. We are thus a major player in the field. However, we do call on the assistance of other organisations with an interest in heathland management. Within the conservation groups, and out in the field, you will find, for example, representatives from the Surrey, Hampshire and Berkshire Heathland projects, members of the Herpetological Conservation Trust and officers from the RSPB, all of whom we must thank for sharing their knowledge and expertise with us. Many other organisations are also represented. We believe that this breadth of wisdom and understanding, held within our network of conservation groups, will remain the core of our effort to maintain and enhance our existing heathland sites.

However, that aside, as we look towards the new millennium, the MOD realises that, in this and other areas, our concerted conservation efforts must continue to move forward. To this end we have developed and set in motion several new initiatives.

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We are currently going through a programme of producing Conservation Management Plans for all our SSSIs, SPAs and SACs. These plans are being led by our own land agents, but are produced in consultation with our conservation advisory groups and the statutory conservation agencies. It is our aim to complete the remainder of these plans for our Natura 2000 sites by 1998 and the others well before the end of the century. These plans will draw upon the relevant Biodiversity Action Plans for both habitats and species and will aid in the direction and targeting of both routine management and specific projects. Since we have such a concentration of heathland sites within our own DEO South region (Surrey, Berkshire, Hampshire, etc.) we have recently provided funding for a member of English Nature, kindly seconded from that organisation, specifically to prepare these plans in conjunction with the Defence Land Agent. The first of these heathland plans has already been drafted and the aim is to use this as a generic plan for producing the remainder by April 1997. Where appropriate, these plans will become part of wider Integrated Land Management Plans.

It is perhaps a little ironic that, as we look ahead to a new Millennium, we are also looking to the past for more efficient methods of managing our heaths. We are all well aware of the problems and expense involved with the maintenance of heathland using mechanical methods. In response to this the MOD has been involved with experimental grazing projects at a number of sites, the latest of which is at Farnborough, on the Eelmoor Marsh SSSI. This project came about after various stages of manual clearance on the site, when the Hampshire Heathlands Project Officer suggested the introduction of cattle grazing in the spring and summer. After a short period of time it was

thought that horses could also be used to provide lighter, background grazing, all year round. This was agreed by the site management but what breed should be used? A hardy native species would have been the usual choice but no, there are now five Przewalski's horses grazing the area. This unique project, carried out in conjunction with Marwell Zoological Park, meant that the behaviour of these rare Mongolian horses could be studied in the semi-wild while the site was benefiting from their grazing. It is hoped that captive bred horses of this species, upon a successful completion of the study, can be released into their native habitat when conditions are right.

Many other projects are being undertaken, including, for example, the conservation of Slender Cotton Grass (*Eriophorum gracile*) in its most important UK site, on a military firing range. But I digress from the subject of grazing...

It is well documented that grazing is one of the best heathland management techniques for the maintenance of areas cleared of pine and scrub invasion. As I have already stated, several of our sites have started trial grazing experiments to investigate how we can incorporate this technique into our training area management. However, it must be remembered that these are training areas, many of them involving the firing of live ammunition and we do not have the luxury of owning nature reserves and managing them single mindedly to this end. Instead, we have the challenging task of successfully combining efficient and effective military training with the need for responsible habitat management. For example, training requirements will dictate a need for a certain amount of tree cover, and the use of particular

ammunition means that fire prevention is always of the utmost importance. We believe, however, that the strong communication links we have already established in this field through the medium of conservation groups and the conservation management plans that are currently being prepared we can continue to improve on the management of our heaths.

Turning to the specific prescriptions of the Lowland Heathland Action Plan, the MOD is encouraged to agree targets for heathland management, with the statutory conservation agencies, for all its heathland sites. From all I have already stated about our programme of management plan production, I believe you will agree that we are well on the way to reaching the target, set out in the action plan, for the year 2000. In addition, many of these plans will look at the possibilities for recreating and restoring areas of heathland. This has already been put into practice at various sites including Longmoor District Training Area (Hampshire/Surrey), Bovington and Lulworth (Dorset), and in Nottinghamshire. Where full re-establishment is not a possibility, the potential for creating heathland corridors is being examined, to link up neighbouring blocks of existing heath.

The MOD will continue to take its role as a heathland custodian seriously and, in addition to the physical management of our areas, we will encourage our conservation groups to monitor regularly the quality of the habitats and the key species. We realise that the national co-ordination of information that is gathered through regular monitoring is equally important for the improved overall understanding of the ecosystem. In this context, we will make information readily available to other organisations involved in

The Ministry of Defence's Commitment to it's Heathland Heritage

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heathland management. Although the raising of the public's awareness about the state of the UK's heathlands is not a responsibility of the MOD, we have featured several heathland walks within our new Walks on MOD Land leaflet and we have been involved in several events during National Heathland Week. Articles on heathland management have appeared from time to time in our annual conservation magazine, Sanctuary. Copies of the 1996 edition are available, for those who have not already received them.

So to summarise, the MOD has an important and challenging role to play in the maintenance and enhancement of the UK's heathland resource, one that I believe we can realistically achieve. However we must never lose sight of the fact that the MOD must still place the defence of the realm and the UK's military training needs as its top priorities.

I have focused this talk, as requested, on heathland matters. But we must not lose sight of the fact that heathland, though of great importance, constitutes only one of our portfolio of habitats. If and when these events occur, the MOD estate would feature at the National Chalk Grassland Conference, the National Coastal Conference, the National Limestone Pavement Conference, the Breckland Forum..., not to mention the National Stone Curlew Council, etc, etc! I could go on for ever, since the Earl of Cranbrook (Chairman of English Nature) has often said that MOD-owned land, taken as a whole, constitutes the finest estate for wildlife in any one ownership in the United Kingdom. It is our aim to ensure that this statement will remain true in the future.

Countryside Stewardship Scheme

Chris Yankiewicz ARICS, MAFF/ADAS Statutory

Background

In 1990, Government invited the Countryside Commission to develop a new approach to managing and recreating valued landscapes. As a result, the Countryside Stewardship scheme was launched in June 1991, in liaison with English Nature(EN), English Heritage (EH) and the Ministry of Agriculture, Fisheries & Food (MAFF).

In April 1996, following a review of agri-environmental schemes, MAFF took over the responsibility for the administration of the scheme with technical support being provided by Statutory ADAS. The scheme was expanded and new options were added in line with commitments in the Rural White Paper.

Aims of the scheme

The scheme seeks to improve and conserve landscapes, wildlife habitats, history and archaeology, and to provide opportunities for people to enjoy the countryside. It is open to anyone who can enter a 10 year agreement; farmers, tenant farmers, landowners, voluntary bodies and local authorities.

Countryside Stewardship targets the following English landscapes:

- chalk and limestone grassland;
- lowland heath;
- waterside;
- coast;

Countryside Stewardship Scheme

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- upland;
- historic features, including designed parkland and old orchards;
- old meadows and pasture;
- community forests and countryside around towns;
- traditional field boundaries;
- traditional buildings;
- arable field margins.

Annual payments are made to support continued and enhanced management of existing areas of interest or to restore and re-create them. Payments are also made for the provision of new public access. In addition, there is payment for are a wide range of capital works, e.g. scrub clearance, bracken control and fencing.

The scheme is discretionary and selective and has a limited budget, thus only applications offering positive change and value for money will be accepted. Payment for each agreement depends on the measures included.

National, regional and county priorities are identified by MAFF, in consultation with the statutory conservation agencies (EN, EH, CC) and local environmental, farming and amenity organisations, and objectives for each area are given in county targeting statements.

Countryside Stewardship Scheme

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Countryside Stewardship recognises that lowland heaths are ancient landscapes created and shaped by human activity. They are important for dwarf shrubs and other wildlife, often providing a last refuge for rare species, such as the woodlark, the silver studded blue and the sand lizard. Heaths are also very much valued for their tradition of customary access and for a feeling of wilderness that is quite unique in lowland England.

Objectives for heathland

Heathland today has largely been lost or fragmented. The management they need is often not part of modern farming and heaths that are not grazed may become scrubbed over and eventually return to woodland. When considering an application for Countryside Stewardship for heathland, MAFF are looking for:

- grazing management that produces and maintains an appropriate balance of heathland vegetation and heathland restoration, for example by scrub and bracken removal;
- re-creation of heath on cultivated or forestry land on suitable soil, particularly where this will link fragmented heaths;
- conservation of important archaeological and historic remains, particularly in preventing damage from scrub and tree roots and by removing sites from conservation;
- opportunities for people to enjoy and understand heaths, for example by creating nature trails or facilitating school visits.

Countryside Stewardship Scheme

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Heathland management is subject to many local variations and, because of this special nature, all agreements for heaths are based on a 10-year management plan for the site. Plans reflect the individual nature of the heath, taking into account practical management considerations, local tradition and the interests of people and wildlife. The overall aim is to achieve and sustain a balanced age structure and distribution of open heathland, trees and shrubs, and to conserve and encourage any rare species present.

Payments

Two levels of annual payment are made to existing heath. A base payment of £20 per hectare is made on all areas for work to prevent a decline in the heath, for example rotational cutting. An additional payment of £30 per hectare is made where more comprehensive management is needed, for example by regular grazing.

Re-creating heath commands a payment of £275 per hectare but is usually only appropriate on light, infertile soils with low organic matter content, or on acid soils where residual fertility is low. Heathland re-creation will be most successful on land that adjoins existing, good quality heath.

A supplementary payment is also available for up to 5 years, for additional measures needed to help regenerate heathland vegetation. Work usually includes:

Countryside Stewardship Scheme

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- clearing deep bracken litter;
- light cultivation in the first year, to reach the mineral soil in order to encourage the germination of heather seeds. This may be needed on existing heath where decomposing litter has created a layer of organic matter deeper than 20–50mm.
- spreading heather cuttings bearing ripe seed. Cutting and spreading should take place in October and November and, as a guide, should be at a rate of 6-10 tonnes per hectare.
- measures to control invasive species and arable weeds without inhibiting heather seedlings;
- reducing soil fertility on land previously in arable cultivation or ley grassland.

The supplement may be extended to 10 years where shepherding is needed for grazing.

There is also a wide range of capital payments available, and the most likely items to be considered for heathland are:

- scrub clearance - £100–500 per hectare, depending on density and percentage ground cover, plus a follow-up treatment supplement at £40 per hectare;
- scrub control - £40 per hectare;
- mechanical bracken control - £50 per hectare;
- chemical bracken control - £100 per hectare;
- fencing - £0.80–1.20 per metre;

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- bridle gate - £100;
- timber stile - £30;
- professional help for the production of a management plan - £300;
- professional help for the preparation of an application - £100.

Achievements to date

The first five years of operation of the scheme have resulted in 5,284 Countryside Stewardship agreements nationally, covering an area of 92,585 hectares. The budget for this year is £17.25M.

A total of 327 agreements are within the lowland heath option and these cover an area of 6,031 hectares, which comprises the management of 5,596 hectares of existing heath and the re-creation of a further 535 hectares. Total payments are £7.9M for annual management, plus a further £7.1M for capital work.

MAFF are currently processing 2500 new applications, of which 1800 are likely to be offered agreements.

Pan European View on Heathland Conservation

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Introduction

To present for an audience in the United Kingdom a pan-European view on heathlands is a rather ambitious enterprise. Therefore, we full-heartedly agreed with the organizers to invite a spokesman, representing a small group of experts, which as you know are by definition persons who come from far away. Being associated with the International Working Group on European Heathlands, I could be in touch with my colleagues elsewhere. I am glad that this paper reflects our combined efforts.

We will focus on one hand on historical and ecological differences between heathlands in Europe, but on the other hand indicate similarities when it comes to management of lowland heathlands in Europe. Most of the examples we give are based on information from Dutch heathlands and heathlands in the United Kingdom and Denmark, but I am confident that Prof. Kaland, by adding his experience from Norway, will make up for some of the geographic shortcomings in our presentation.

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Lowland heath

I focus to lowland heathlands with *Calluna vulgaris* heath. This may be defined as heath, where the rejuvenation of heather is mainly from seedlings, whereas in upland heathlands, such as in Scotland, but probably still in Dartmoor, climatic conditions are more humid, allowing vegetative propagation of *Calluna*. In both uplands and lowlands where fire is used for management, the aim is to burn off the above-ground biomass but leave the roots intact to re-sprout. If the roots are killed then seedling regeneration depends on the geographic-climatically position. It is more certain in the uplands because it is wetter with more organic soils. In the lowlands, on mineral soils which are very dry, seedling regeneration is very haphazard and fails in many years because it is too dry in the summer. It is shown that also a prescribed fire in lowlands in Holland removes most of the litter (L) and humus (F+H layer) accumulated on the soil (Figure 1). The amount of organic matter burned in a heathland depends on how much is available (Figure 2). It is not sure, whether these results can be extrapolated. At least in the U.K., the opinion is that it is unusual that humus is removed when burning for management. Anyway it seems that in upland heaths humus layers are too wet and only the standing biomass is burned (Hobbs & Gimingham 1984). In many lowland heath (Holland, Belgium, Germany) turf stripping was also common practice, and rejuvenation here is entirely from seedlings (Diemont 1996).

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Heathland areas

In the past, lowland heathlands in Europe covered at least a few million hectares, but due to conversion of heathlands into forest plantations and arable land, the area strongly declined (Figure 3). Not all heathland areas have been accounted for in the statistics, but at least 300,000 ha of heathland are left. Figures provided in the table below, should be considered as proximate figures even for the countries included. For instance, figures in Germany do not yet account for heathlands in Brandenburg, former East Germany which may add another 40,000 hectares of heathlands in Germany (Beutler 1993). The question how much heath is in Ireland, Norway and Sweden is difficult as there is a transition to mire communities. Likewise in Portugal and Spain there is a transition to Mediterranean shrub communities.

	nineteenth century	twentieth century
United Kingdom	145,000[1)]	58,000
The Netherlands	800,000	40,000
Belgium	163,000	13,000
SW France	200,000	65,000
Germany	1,000,000	4,000
Denmark	658,000	70,364
Sweden	300,000	93,000

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Table 1.Preliminary estimate of areas of lowland heath in countries for which data are available for both the nineteenth century and the twentieth century (compiled from references in Wynde 1993, UK Biodiversity Action Plan, Graebner 1904, de Blust pers. comm.; Emsholm 1991) 1) Scotland not included.

Although at present the decrease of heathlands is considered as a loss to society, the conversion of heathlands to plantation forest and arable land was considered as an achievement in the past. Even now, where heathlands are protected and conversion of heathlands is forbidden by law in most countries, the area of heathlands is still decreasing due to spontaneous changes into woodland and grassland. For instance, in Dorset scrub and woody vegetation increased by 15 percent between 1978 and 1987. In Holland, 30 percent of the 60,000 ha protected heathlands still present around 1960 have changed in woodland and at least 25 percent of the 40,000 ha left have changed in grassland. Similar developments are going on in Denmark.

Changes in heathland

As the law in many countries prohibit active conversion of heathlands, and methods to maintain heathlands are well known, the question rises why heathlands are still disappearing, changing in woodland and grassland?

The main reason is lack of management. If the management rotation cycle for burning is 15 years in Holland or 20 years in Dorset, then some 5 to 6 % of all heathlands should be burned each year.

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In Dorset in 1978, 1071 ha were burnt but this declined to 451 ha in 1987. It is noted that much of this "management" is due to accidental fires instead of prescribed burning. Management by fire is almost non-existent still, largely because of the objections from herpetologists. In Holland prescribed burning is also nearly non existent, because of the risks involved (especially in small heathlands), management planning problems, and environmental objections.

The rotation period in case of mowing is probably shorter, about 10 year and in this case annually 10 % of the heathland surface must be mowed. In the case of turf stripping with a management rotation period of 30 years (Diemont 1996; Webb, unpublished) at least 3 to 4 % of the heathland should be managed, whereas at present in Holland less than 1% is subjected to turf stripping (300-400 ha annually). The overall management intensity in Jutland, Denmark is not known. Cutting heather is the most common management at present. But in Randbøl Hede (800 ha) the overall management intensity is probably less than 2 % (Degn, unpublished).

The data above are rather anecdotic and should be improved. However, it is clear that management is the key factor. This is also shown by the fact that heathlands, where proper management has been performed there is no intrusion of woodland or encroachment of grasses (Diemont 1996).

Management is not the whole story. Increased atmospheric nitrogen deposition may affect heathlands and increase the need to intensify the management rotation (Heil & Diemont 1983). The mechanism might be that at

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higher nutrient levels dwarf shrubs are outcompeted by grasses as was shown for *Erica tetralix*, which is outcompeted by *Molinia caerulea* (Aerts & Berendse 1988), but for *Calluna* it has been shown that its increase of productivity becomes even higher then grasses (Aerts 1990). In the latter case, however it has been indicated that another mechanism is operating. At higher levels of nutrients a higher productivity of *Calluna* induces a lower life span, inducing an early replacement of *Calluna* by grasses in the absence of intensified management.

Whether an increased nitrogen input, increases the productivity and consequently shortens the life span of *Calluna,* depends on the soil in a heathland. Phosphorus is the growth limiting factor (Chapman et al. 1989a,b) in Dorset heathlands and this result suggest that increased nitrogen levels will not affect the growth of species on phosphorus-poor soils. Indeed, the effect of higher loads of atmospheric nitrogen on the growth of *Calluna* is so far only be demonstrated for brown podzolic soils on loamy sands in Holland. On the other hand for podzols, phosphorus seems to limit growth and no response of nitrogen was found in fertilizer experiments (Diemont 1996).

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Management in the past

Most of the heathlands in the lowlands are on quartz sands, with a distinct podzol soil profile, which is also present in places were the forest was never removed. This suggests that it is not the use as a heathlands but the quartz sandy soil texture is the major cause of podzolisation. However, *Calluna* dominated heathland is not restricted to quartz sandy soils, as heath also occurs on loamy sands i.e. brown acidic soils, peat soils and is even found on calcareous substrates.

It should be noted that historic farming systems have been quite different. In N.W.Germany, the Netherlands and Belgium, heathlands were part of what has been one of the most intensive agricultural systems in terms of labour input, where farmers used more than 50 percent of their time to collect heather and the raw humus layer near the surface of the mineral soil, which were spread on the floor of the sheds in which livestock were kept at night and this absorbed the manure. The mixture of manure and so called "plaggen" fermented in the sheds and were removed after several month, reworked outside the shed and spread on the arable land. Over time, this turf manuring raised the level of the fields, because of the accumulation of the sandy parts in this manure. These raised arable lands are known as *Plaggen* soils, with an anthropogenic layer of 40 to 80 thick. Over 300,000 ha of black **Plaggen** soils, reflect the use of organic materials and sand from heathlands. Another 200,000 ha are brown **Plaggen** soils, the anthropogenic layer here was derived from meadows.

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In other more oceanic parts of Europe such as for instance Jutland in Denmark, heathlands were not like in Holland common fields, but part of a farm of some 500 ha. Turf stripping was done for many purposes and cutting heather was also a practice for among others firewood, bedding and cattle-fodder in winter (Degn, pers.comm.), but only 0.5 ha/year was used out of nearly 500 ha of heathland used for rough grazing.

In England, because of the distribution of soils most of the heathland areas were rather small compared with the North-European plain, so it was never far to better pastures. The heaths were used for rough grazing, mostly cattle and probably few sheep. (All the sheep went on the chalk grasslands on the downs). There were also ponies (small horses) called heath-croppers on most of the southern heaths, each heath area with its own breed. New Forest and Exmoor are about the only places where they remain. Heath vegetation was cut, gorse (Ulex) cut for fuel heather also for fuel, bedding and for thatching. Bracken cut for bedding and minerals. Heather turf (sods) and peat were cut for fuel very extensively. There was probably little need to burn with all this activity, but fires did occur. Burning became probably more common from the late 18 century as the other uses declined and the farmers attempted to maintain the grazing, i.e. the early bite. But there was nothing like the plaggen system (Webb 1986).

One may ask whether these differences in management and use in the past have not affected the vegetation in a heathland? In general, all heathland management -including grazing- has some similar effects. All management burning, grazing and turf stripping, tends to open up the soil. Moreover all

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management drains nutrients from a heathlands. Also grazing causes a drain of nutrients from the heathlands to a shed (were animals are kept to collect the manure). If the animals stay also during the night in a heathland, there is still a net export of nutrient towards preferred places in a heath, were animals stay during the night. This is an important issue now studied by Jan Bokdam in Wageningen.

Differences between these methods are reflected mainly in the management rotation period. So, especially mowing, burning and turf cutting can be seen as interventions which only differ in quantity of nutrient removal and are at least with respect to *Calluna* interchangeable, although the rotation periods differ.

Effect of climatic conditions on the management rotation period

The performance of *Calluna* in heathlands depends not only on management (lower growth rates and thus a longer life span after turf cutting as compared to burning), but also on the climatic conditions. There is some evidence that a more suitable climate is reflected in less need for management, It goes without saying that this is true for natural heaths on exposed cliffs. However, there are also differences between managed lowland heaths. On podzols which are subjected to burning in Dorset, growth rates of *Calluna* are higher compared to the North of Holland, which again have a relatively higher growth rate compared to heathlands in the South of Holland (Figure 4). These differences are probably due to the climate i.e. differences in net precipitation and air humidity. In Dorset, periodic droughts are less frequent and also damage in heathlands by the heather beetle are less than in Holland. The lower stress

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levels under more optimal conditions for *Calluna* in Dorset suggest that under similar edaphic and management conditions the life span of *Calluna* is longer in Dorset than in Dutch heathlands. This may imply that the management rotation period in heathland in oceanic regions might be longer compared to continental heathlands under similar edaphic conditions and management conditions (Diemont 1996). The life span of *Calluna* in the coastal heathlands in Jutland is probably twice as long as on the better soils on so-called "hill-islands", which depend on edaphic conditions, but probably this effect is also confounded with climatic conditions.

Pan-European! research towards the effect of climatic and edaphic conditions and the required management intensity of heathlands might be rewarding.

Multifunctional objectives

Although many heathlands are protected and are not allowed to be converted, there is evidence that conservation of heathlands for biodiversity/habitat reasons is not sufficient to convince policy makers and they should be taken seriously. Of course, we are aware we are aware of a habitat directive of the EU as well as agreements on biodiversity, which express political interest. Still, politicians have their reasons why annual costs to maintain a hectare of green in town can cost 10,000 $ U.S., whereas the money available for a hectare of heathlands is less than 25 $ U.S per annum.

A Pan European View on Heathland Conservation

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Heathlands, however, should not be any longer just regarded as second hand nature i.e. "semi-natural" landscapes, which are only conserved for biodiversity. Heathlands are cultural landscapes, which have been part in Holland, Belgium and parts of Germany the most labour-intensive forms of agriculture in Europe in the past. Heathlands should also be valued for its archeological and historical value, recreation potential and potential to provide clean ground water. Most important is that people, and I am one of them, see the landscape as their home. But then they must be able to recognize the heathland landscape as what it is: not a nature reserve but a cultural landscape, where extensive heathlands are still present and which is farmed again. Heathlands should again become part of the farm and indeed heathlands are again used by farmers to graze cattle and sheep and also the use of stripped biomass to improve the organic matter and productivity of arable land is now on its way in Holland, where farming in future will not single focused on food production, but also nature, history, landscape, water conservation, recreation and environment. May be utopia? At least it is my view that conservation of heathland should not be a single functional activity, with a mono-focus on nature values. To maintain and restore heathland conservation should become a be a multifunctional activity.

Of course, my view is not a pan-European view, even not a Dutch view, but nevertheless a view which may add to a necessary discussion on how to keep heathlands alive.

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In the first place heathlands should be seen as (part of) a cultural landscape, with a multifunctional objective, and not longer as a semi-natural ecosystem, which is mono-functional in its objective, i.e. biodiversity. It is also our view that heathlands should get back their (former) agricultural function agricultural production. Without re-introducing the farmer as a heathland manager no large areas of heathland will be left in the long term.

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Figure 1. Losses of organic matter including biomass and humus (L,F,H) after prescribed burning in Holland (Diemont 1996).

Figure 2. Losses of organic matter in prescribed fires as a function of available biomass and organic matter (Diemont 1996)

Figure 3. A tentative comparison of the area of heathlands around 1800 and 1950 (Diemont unpublished)

Figure 4. Primary productivity and net rainfall (Diemont 1996)

Introduction - Tour of the New Forest

Alison Field, Forestry Commission

Neil Hill, English Nature

Importance of the Forest Heathlands - English Nature

Here in the New Forest people are rather tired of hearing the superlatives that apply to the New Forest but I am afraid there is no getting away from it. It is the largest unit of continuous lowland heath in Europe! But it is not just this that makes it special. The heathland is set in a matrix of other semi-natural habitats which are also special: pasture woodland, valley mires and unimproved grassland, the nearest thing in southern, lowland England to 'wild' countryside. The combination of these habitats cannot be found anywhere else in Western Europe. And, above all this whole area is extensively grazed in a manner which has persisted for centuries into the modern era.

The larger part of the Forest is Crown Land, managed by the Forestry Commission and there are several private owners including 800ha managed by the National Trust. Management on these adjacent commons is often limited to the grazing by commoners stock but recently English Nature have developed a Wildlife Enhancement Scheme to encourage the private owners to carry out further positive management.

The commoners' animals are predominantly cattle and ponies, with smaller numbers of sheep and donkeys. Four species of deer also forage on the Open Forest.

The heathland here in the Forest is mainly humid heath, a category sometimes referred to as transitional between dry and wet heath. It is dominated by heather *Calluna vulgaris*, with varying amounts of cross-leaved

Introduction - Tour of the New Forest

Cont'd

heath *Erica tetralix* and purple moor-grass, *Molinia caerulea.* The humid heath is periodically burnt and in its early stages it is dominated by grasses, *Molinia* in particular, which are exploited by the grazing animals. The *Erica* species flourish as they are ungrazed and the *Calluna* returns to dominance in a few years, the time depending upon the intensity of the grazing.

Dry heath, where cross-leaved heath is absent and bell heather *Erica cinerea*, becomes more frequent is more limited in distribution. The *Calluna* dominated dry heath is susceptible to bracken invasion and burning is not recommended. Where the dry heath has abundant grasses present it is also incorporated within the burning programme.

Gorse is a frequent component of much of the heathland and, unless the grazing pressure is very high, it is essential to manage it to retain it in a healthy and vigorous state. The gorse is valued by commoners and conservationists alike. The commoners value it for winter feed for the ponies and for the shelter it provides. To the conservationist it is habitat for many species of invertebrate and, in combination with the heather, ideal habitat for Dartford warblers.

The wet heath usually occurs between the drier heath and the valley mires. With constant grazing the ever-present *Molinia* is kept in check and the close-cropped sward is often species-rich including many lichens and mosses.

Introduction - Tour of the New Forest

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The suite of valley mires is also unmatched in the rest of Western Europe with around 90 separate mires and seepage-step mires. They are often species-rich and again *Molinia*, particularly after burning, is kept short by the stock. It is not just the grazing which has helped to maintain their quality but the undeveloped and unimproved catchments have helped to buffer them from pollutants affecting other sites. Unfortunately some damage has occurred through drainage carried within the last 150 years but today the importance of the mires, not only for nature conservation, but for the commoners' animals is recognised. The mires not only produce an 'early bite' before the grass starts to grow but in our increasingly dry summers, when the grasses are often droughted, the mires continue to provide food. Restoration work on these mires is now a priority.

There is approximately 2000ha of grassland ranging from dry acid communities to more neutral areas adjacent to settlements and along streams. They tend to be very closely grazed but this encourages unusual, if not unique communities. Many of them are species-rich while others can be poor in a numbers of species but include abundant chamomile, *Chamaemelum nobile*, which is nationally scarce and declining elsewhere.

Even the grasslands which were ploughed and cropped during the 1939 - 45 war and those which have subsequently been semi-improved are slowly reverting to more interesting communities, often with heather invading from nearby stands. The grasslands and heathland are often so closely linked that it is difficult to know if one is on 'grassy heath' or 'healthy grass'. The boundaries of these communities can shift depending upon the local grazing

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pressure, lower grazing pressure favouring heather and higher grazing pressure favouring the grasses and herbs.

Bracken is common throughout the Forest and appears to be following the worldwide trend of increasing. The Wild Gladiolus *Gladilous illyricus,* only occurs in Britain in the New Forest, and it is only found within bracken stands. Usually grazing is the key to maintaining the interest of The New Forest. It controls the most competitive species providing the necessary open swards, and bare ground for the more specialised plants to flourish.

Management of New Forest Heathlands - Forestry Commission

The New Forest remains a landscape trapped in time by the traditions that sustain it.

The Forestry Commission spends just over half a million pounds each year managing the Heathlands of the New Forest. All programmes are agreed following lengthy discussions and sites visits, it is the culmination of wide ranging views and interests. Nearly 70% of our budget is used to maintain the area of forest grazings. Some 20% is devoted to maintenance of access generally for Commoner's but increasingly to protect the forest from damage as a result of "people pressure". Far too little of our budget is channelled into Heathland and Valley Mire restoration works. A matter which we are discussing at present with English Nature and the Commoners.

Introduction - Tour of the New Forest

Cont'd

An annual commitment of half a million pounds, can be partially offset by revenue from the New Forest campsites, but profits from camping are still insufficient to cover all costs of Heathland management. The annual management cost per ha is estimated at just under £40, much of this constitutes a direct grant from National Forestry Commission budgets.

To carry out our programmes we have:

2 full-time Foremen

10 Man years worth of input from our skilled work force

Many of the men who work for us are Commoners who take leave, as necessary, to care for their animals. They are often from families who have supported generations of Commoning. It is because of this more than anything else that we, the Forestry Commission, are in a position to maintain the ecological status of this valuable habitat.

In addition to a highly motivated skilled labour force, the Operations team is well supplied with machinery and equipment to carry out its programmes and has its own workshops in Lyndhurst.

This third table aims to describe "a year in the life of New Forest Heathland Management". It shows the range of programmes we run, their seasonality and the way in which they fit together. Throughout the Summer months we spend time with both Commoners and English Nature preparing our proposals for the coming year. Programmes, proposals and techniques are

all discussed before being submitted to a wider New Forest audience for consultation in the Autumn. Today the detail of various operations will be discussed on site, I will concentrate on those operations which will not form part of the tour.

Each year our priority is to achieve an agreed programme of controlled burning. The Crown set up programmes of controlled burning in response to pressure from Commoners around 1870. Most burning takes place in the early Spring as the ground dries out following the worst of the Winter rains. It tends to be concentrated into a 6 week period from late February to the end of March and our ability to complete work is heavily dependent on having calm, dry, weather in the early Spring. We aim to treat Heather on a 25 year cycle and gorse on a 12 year cycle. Dave Morris and Richard Stride will explain the management of these programmes later. The cutting programme refers to cutting of firebreaks, traces round proposed burns and the treatment of specific areas where there would be difficulty in controlling the fires or risks of unacceptable damage to wildlife. We also cut and baled some heather two years ago and are now able to use the heather bales for maintenance of forest tracks.

To turn to other vegetation management work, the cutting and burning of Scots pine and Birch which is largely self explanatory. Programmes are discretionary according to the visual impact of groups of trees in the landscape. The aim of programmes is to control the spread of seedlings onto surrounding heath. Wherever possible young seedling pine encroachment is included in the controlled burning programme rather resorting solely to the

use of clearing saws. Any mature stands of Pine which are proposed for felling are incorporated into the general timber harvesting operations and have usually been sold as a standing sale to contractors.

There are over 50 fertile streamside lawns across the forest. They provide some of the most nutritious grazing on the forest, especially in early Spring, but are subject to recolonisation by "scrub vegetation" if not regularly maintained. Progress may be slow, but we are targeting key forest lawns of value for Commoner's grazing to implement long term rotational programmes of maintenance. This involves a mix of hand drainage and cutting of trees and shrubs and burning all material which cannot be sold for firewood or pulpwood.

Rhododendron is a common problem throughout southern England and we suffer like others. Our reliance on manual treatments has hampered progress, but the more recent application of Round-up to control re-growth has helped. We welcome your advice on how to reduce operational costs and improve results.

Each July/August we employ a team of students on contract, to walk the forest and pull ragwort before it sets seed. A noxious weed whose presence is of considerable concern to those with animals on the forest, we are pleased to see how year on year this problem is now diminishing.

Annual contracts are awarded for the cutting of Holly in the pre-Christmas rush, partly as an inherited tradition. The introduction of contract agreements

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has been made in an attempt to prevent the inevitable pilfering that would otherwise occur from those families who have traded in holly for years.

Our holly pollarding programme has been of perhaps greater interest, this being primarily to provide back up feeding for ponies in Winter months. About 24 sites across the forest are treated each year. Each site is fairly large and visited 2/3 times a year. The younger, more vigorous stems (15 - 25 cms girth) are selected and cut at around shoulder height. Foliage is left spread on the ground for ponies to feed off, and any cordwood is subsequently cut and stacked for sale as firewood. Regeneration has been generally successful and animals have welcomed the extra food. We are now looking to develop programmes to include coppicing of stools and to target areas where holly is shading out bark which is valued as lichen habitat.

Bracken treatments will be discussed on site in detail. This includes swiping, spraying and forage harvesting programmes for production of bracken compost. Rhona Pitman has been working closely with us over the last 5 years to carry out a series of bracken composting trials. With support from the Efford Horticultural Research station near Lymington, she has given valued advice on treatment methods to improve the consistency of compost and remove the presence of carcinogens arising from spores. Having developed a reliable compost and generated adequate local markets for it, we have recently been looking at the relative costs of the various bracken treatments that we undertake. Giles Drake Brockman from the Forestry Commission's Technical Development Branch has been studying the

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efficiency of our operations and ways in which we might combine treatments on different sites to improve our rotational control of bracken.

You will see evidence of our track maintenance programme throughout your visit today. Richard Stride runs the programme for us and we have a small two man team who generally survey, design and build a whole range of different structures.

Heathland regeneration: We are having difficulty in regenerating old gorse breaks in the North of the forest. Simple harrowing and ground disturbance are effective but recovery is slow despite fencing. Any advice would be welcomed.

In hot, dry Summers, wildfires are a real worry. Last year, we had over 100 incidents of fires on the forest, but lost barely 30 hectares. An October fire amounted to little more than a "good Burn" as with some rain conditions had become ideal, but 15 hectares lost at the end of August caused serious damage. We will be visiting the site of one of the worst fires in the last 20 years today and will be explaining the treatments carried out to recover the Heathland vegetation.

I dread the mention of drainage as it is the subject of frequent, heated debate on the forest. Representatives of all views are here today. The restoration of valley mires is the subject of a joint programme being developed jointly with English Nature. Today, in addition to seeing some of the gabion work that has been done, we will be putting the finishing touches

Introduction - Tour of the New Forest

Cont'd

to the first phase in returning Duckhole bog from Pine plantation to valley mire.....More later.

There is one obvious omission to our current programme, it is an area of work that the Verderers in particular, are keen to see developed and it is the development and implementation of a strategy to recover forest damage due to sheer "people" pressure. £20,000 spent building tracks to reduce damage from horse riders is barely a starting point. With the joint support of our recreation team this will be a key objective over the next 12 months.

Our objective today is to share with you as much information as possible, to discuss methods and techniques in detail and to receive the wisdom of your varied experiences. Our task is daunting, a common phrase in the office is "But there is just so much to do".....

We look forward to your comments.

Perhaps I could take a moment to introduce the team:

Arthur Barlow	Deputy Surveyor
Dick Mihalop	District Forester covering Heathlands
Dave Morris)	
Richard Stride)	Foremen for the Open Forest work
Martin Noble)	
Mike Clarke)	Head Keepers
Giles Drake Brockman	Technical Development Branch
Rhona Pitman	Bracken specialist

Alison Field , Forest Operations Manager, Forestry Commission

STOP - BEHIND RHINEFIELD HOUSE

OPEN FOREST VEGETATION MANAGEMENT

. . . SOME FACTS

Q. WHY DO THE FORESTRY COMMISSION MANAGE OPEN FOREST VEGETATION ?

There are three reasons ;

1. Under the 1949 Act the Forestry Commission are obliged to keep grazing areas clear of scrub by either cutting or burning.

2. The open forest vegetation actually benefits being cut or burnt as this encourages regeneration.

3. To create fire breaks to protect large areas of vegetation and property.

Q. AT WHAT AGE DO WE TREAT HEATHER AND GORSE?

Heather is cut or burned on roughly a 25 year cycle.

Gorse is cut or burned on roughly a 12 year cycle.

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Q. WHAT SIZE IS THE ANNUAL CUT AND BURN PROGRAMME ?

The average size programme for the last 25 years is 419 Hectares (1,036 acres)

The average size for each site in last season's programme was 4 Hectares (10 acres. This includes both cutting and burning although the burning makes up the main part of the programme.

Q. HOW IS THE PROGRAMME COMPILED AND APPROVED ?

The process of compiling the annual programme starts in late May when Commoners and Forestry Commission Keepers put forward lists of proposed sites for treatment. These sites are surveyed by a field group which includes the Forestry Commission Beat Keeper, a Head Keeper, a member of the Forestry Commission operations team, the Commoners Defence Association representative and one representative from English Nature. After discussion a decision is made on how each site should be treated, if at all. (ie: whether to cut, burn, do both or defer). The site is mapped, measured and proposals are recorded for inclusion in the draft programme. This programme is presented to a Heathland and Grazing Working Group in late August/ early September for amendment and then subsequently to the Open Forest Advisory Committee for their approval. This committee is made up of members from the Forestry Commission, English Nature, the RSPB, MAFF, the

New Forest Committee, Verderers and the Hampshire Wildlife Trust. Once the programme has been fully approved it is ready to commence.

Q. WHEN DOES THE PROGRAMME START AND FINISH ?

The cut and burn programme starts on the first working day of November and finishes on the last working day of March the following year. In certain situations we can apply for a one week extension at the beginning of April. Most of the cutting is carried out in the first part of the season and the burning is normally carried out between January and the end of the season.

Q. HOW DO WE BURN A SITE ?

Before any burning takes place a trace cut is cut round the site to act as a fire break. After this burning can be carried out. A team of 6 men are assigned to the task, 2 using burners and 4 using beaters. Fire fighting equipment is also present on site, either a landrover pulled water bowser or a tractor pulled water tanker. These are only used for back up in the event of the fire needing more control than a man with a beater can achieve.

Prior to starting a burn, the supervisor on site radios in a 6 digit grid reference location and the start time. The completion time is also given

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at the end of the burn and all this information is passed to the Fire Brigade and if necessary the police. In the unlikely event of a fire getting out of control, the fire brigade are called and acting on the information given, can then respond swiftly.

Men with burners set fire to vegetation along the trace line, normally burning into the wind to give a slow controlled burn. The perimeter is burnt to give a good fire break right round the site leaving the middle to burn through safely.

The length of time needed to carry out a controlled burn varies greatly from site to site, this is determined by the ground conditions, the access, the weather conditions, the vegetation and the surrounding area. On a good day 2 teams can burn up to 60 acres between them, but on average they can achieve about 30 acres.

Q. WHAT HAPPENS TO THE SITE AFTER IT HAS BEEN TREATED?

The recovery rate of vegetation varies from site to site, on gorse sites the regrowth flourishes the following season, mainly from ground level. On humid heath the recovery is normally slower, with just a few heather shoots appearing in the first season then a gradual increase over the following years. On wet heath and valley mire sites the recovery rate can be very rapid, with new growth of molinia grass and heather the same season. A lot of this is determined by the depth of the burn into

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the soil, obviously the drier the ground the deeper the burn. Sometimes bracken establishes on the humid and dry heath sites so as back up treatment of herbicide the following season may be needed.

ANNUAL CUT AND BURN ACHIEVEMENTS

YEAR	TOTAL (ha - acres)		YEAR	TOTAL (ha - acres)	
1970-71	372	919	1983-84	393	971
1971-72	426	1052	1984-85	382	944
1972-73	323	798	1985-86	526	1299
1973-74	330	815	1986-87	405	1000
1974-75	350	865	1987-88	481	1188
1975-76	340	840	1988-89	464	1146
1976-77	452	1117	1989-90	447	1104
1977-78	266	657	1990-91	321	793

Cont'd

1978-79	197	486	1991-92	428	1057
1979-80	149	368	1992-93	677	1672
1980-81	540	1334	1993-94	355	877
1981-82	522	1289	1994-95	585	1445
1982-83	343	847	1995-96	411	1016

Mean size of programme

for the last 25 years in acres = **1,036**

acreage for the last 25 years = **25,898**

RHODODENDRON CONTROL

A large proportion of rhododendron on the open forest has encroached from adjoining private land, where it was planted as either an ornamental shrub or cover for game birds.

As an invasive species, rhododendron is one of the hardest to eradicate, not only is it very difficult to cut (nearly always by hand), it is also very persistent in its regrowth from the cut stumps. A strict herbicide treatment programme

Tour of the New Forest

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is carried out on all cleared sites to reduce the possibility of early re-establishment.

We employ two approaches to clearance operations;

With the first method we cut and burn the brash on site, immediately, because the wilted leaves are toxic to ponies if eaten. We then treat each of the cut stumps with herbicide (Roundup). Hopefully this will kill the root system, eradicating the plant in a single operation.

The second method of control involves cutting and burning the brash on site and then leaving the plant for one season to allow regrowth from the cut stump. The next stage is to spray the regrowth with herbicide (Roundup) in the following season. The application rate is 8 litres/ha with Mixture B (which aids penetration into the foliage) and 10 litres/ha without, 2 litres of product to 13 litres of water to every 15 litre capacity knapsack. A stock fence is normally erected around larger areas to keep out the livestock, though small individual bushes are left unfenced as the animals tend to ignore these.

The cost of treating a hectare varies greatly depending on the conditions of each site, but records show that on average we expect to spend about £5,000-6,000 per ha. This includes hand cutting, heaping and burning, fencing and then treating the stumps or regrowth with herbicide.

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SCOTS PINE AND BIRCH CONTROL

Both scots pine and silver birch are covered by the 1949 Act which states that the Forestry Commission are obliged to clear areas of the open forest of invasive scrub. Both these species require constant management as their encroachment onto the open forest is quite prolific.

SCOTS PINE

Scots pine encroachment is readily controlled by felling and burning of brash. Seedling pine areas are identified and agreed during the early Summer field visits to discuss "cut and burn" proposals. Once areas are approved they are put forward into an annual programme. Trees are felled and the brash is heaped by hand or by tractor and burnt. Any marketable timber is sold. The work is carried out by both FC staff and contractors. Last year we cleared 1,614 acres of seedling pine.

Mature Scots pine areas are also selected during field visits. Areas are mapped, timber is measured and proposals presented for wider consultation. Once the sites have been agreed they are generally sold standing to timber contractors. After felling all brash and lop and top is heaped and burnt. Last year we cleared 100 acres (40ha) of mature pine on a range of sites.

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SILVER BIRCH

Silver birch is more of a problem to clear from the heathland, because unlike Scots pine it readily grows back from the cut stump. Back up treatment with a herbicide (Roundup) is nearly always necessary. As with Scots pine, areas are put forward to a programme and once agreed can be either cleared by FC staff or a contractor. Felled timber is generally sold for firewood or pulp and all brash is heaped and burnt on site. Last year we cleared an area of 35 acres (14ha).

CONTROL OF BRACKEN

BRACKEN FORAGE HARVESTING

We treat, on average, 60ha a year on about 15 sites throughout the forest, the main criteria for selecting a site is the presence of bracken over grass. The machine set-up comprises a tractor pulled single chop forage harvester and an inline 11m3 capacity trailer. We have two of these units in operation throughout the season which starts at the end of August and usually lasts two weeks. On average we forage harvest 2,900m3 per year. The cost of the operation is £130/ha. £3.00/m3.

The forage harvested bracken is transported to a central site where it is heaped for composting. For the composting to be successful the bracken heap has to reach temperatures of 60 degrees centigrade and above. This can be assisted by turning the heap, normally 2 or 3 times a year. It is

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important to maintain this level of composting as this eradicates any trace of carcinogens that may be present in the bracken, especially in the spores.

Trials were carried out in 1992 and 1993 by the Forestry Commission with the invaluable aid of Dr. Rhona Pitman, an independent scientist. Various trials were set up to try and establish the best method of composting, these included adding nitrates, phosphates, chopping smaller and just leaving in one heap. Within the confines of cost and resources we opted for the method we employ at present.

Sales of the composted bracken are doing well with most of the product going to local nurseries and garden centres, there is also a good market from the general public.

The compost is ideal for ericaceous species such as heathers, rhododendrons, azaleas and acers. It can be used as a soil conditioner, potting medium or as a top dressing on flower beds.

BRACKEN CONTROL BY HERBICIDE

Mean area treated per season = 60 ha on about 15 sites.

Mean cost per hectare to treat = £120.00

Mean cost for annual programme = £7,200

Chemical used = ASULAM (Asulox product name)

Tour of the New Forest

Cont'd

Asulam is a post emergence translocated herbicide which passes through the foliage to the rhizomes. Treatment does not effect current years growth but retards or ceases growth in the following season.

Bracken sites for treatment are proposed and agreed during the late Spring/early Summer field visits. They generally tend to be areas with bracken over heather. Once compiled, the programme is sent to each beat keeper who undertakes a survey to establish whether nightjars are present on any of the sites or whether other conservation interests are relevant to the site. If nightjars are present then the site is either removed from the programme or the nest site is noted and given a wide clearance zone.

Once the programme has been agreed it is then ready to commence. Spraying normally begins in mid-July and is carried out by 2 units, these are made up of a tractor and rear mounted Controlled Droplet Applicator (CDA) boom sprayer. The reach of the boom when fully extended is 6 metres. Site limitations play a part in the choice of area as the machine needs fairly even ground to run over, it is also impeded by stumps, drains and other vegetation such as gorse bushes and trees.

A successful treatment will eradicate about 90% of the bracken on each site for up to 5 years, thereafter the bracken cover will gradually increase again.

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HEATHLAND REGENERATION TRIALS

This trial is situated on a typical dry heath site and consists of four plots. It was felt that this would be a worthwhile exercise in trying to establish a favourable form of management for dry heaths. There are conflicting points of view on this, one opinion is that the heath should be left to its own devices and naturally degenerate and regenerate, others feel that careful management is needed to maintain a constant cycle of regeneration.

Four plots were put into place each measuring 12 x 20m, they have all received a different treatment these are listed below:

PLOT 1. This is the control plot and has received no treatment.

PLOT 2. This plot was forage harvested in March 1996, thus removing all vegetation cover mechanically.

PLOT 3. This plot was treated with a tractor mounted swipe in March 1996, all vegetation cover was cut into chips and left on site.

PLOT 4. This plot was burnt in March 1996, eradicating most of the vegetation cover but leaving the burnt residues on site.

Cont'd

The plan is now to monitor the plots over several years to see how each one responds to each treatment.

1. CONTROL **2. FORAGE HARVESTED** **3. SWIPED** **4. BURNT**

MIRE RESTORATION

As we know valley mires are extremely fragile habitats, supporting many rare and endangered species of plants and animals. Any change in the delicate balance of site factors, could have a long term damaging effect on many species reliant on the ideal conditions found in the mire system.

About 20-30 years ago some of the mires were drained by the Forestry Commission using large machinery (Priestman) to increase water flow off the forest. Once drains had been dug, water levels in the valley mires began to lower effectively 'drying out' the valley, and changing the habitat. Erosion points rapidly developed at the heads of these drains and began to migrate up the valley, a problem accelerated by Winter rainfall. Large plunge pools were created extending upstream by up to 1 metre/yr.

The problem of erosion is being addressed jointly by English Nature and the Forestry Commission. Some 40 damaged valley mires have been identified for restorative treatments. Damage to a number of sites is minor, but many have a severe erosion problem that needs urgent attention. In the last 2 years

Tour of the New Forest

Cont'd

we have treated 7 sites, the one at Silver stream being the first and possibly the most successful. This was treated in 1994 following an initial site assessment to identify preferred access routes, and requirements for materials, machinery and tools.

A plunge pool was cut to create space for a gabion (box or mattress shaped wire mesh basket). This normally involves squaring up the plunge pool face so the gabion can sit flush to it. After this had been done the pool bed was levelled out using large grade gravel (75mm plus). A gabion was then positioned on the levelled bed and filled with more gravel. The gabion is normally positioned so its top is just a bit higher than the bed level upstream. The channel behind the gabion was then backfilled with gravel to a distance of about 2 metres upstream. This helped to break the force of the flow of water and channel it to the centre line of the stream.

A mattress style gabion was subsequently placed immediately downstream of the box gabion to prevent another erosion point from forming. All other side gullies were then dammed or redirected to reduce the risk of creating further erosion. Turves are then added to the structure to aid the re-establishment of vegetation. After this the site was monitored for any weaknesses so minor changes could be made. The site was visited after any heavy rainfall to check for flood damage, it has remained in tact fairly well.

The cost to do work at Silver stream was £1,092 total, this includes wages, on costs, machinery costs and materials.

Cont'd.

STOP - BUCKHERD FIRE SITE

Date of fire: September 8th 1989

Reported starting time: 13.00 hrs. Brought under control - 19.30 hrs, Fire Brigade left site at 04.00 the following day.

The Forestry Commission kept staff on site until Thursday 14th September, 6 days after start of fire.

AREA BURNT BY FIRE; 77ha (190 acres) comprising of dry heath, humid heath, wet heath and valley mire.

Restoration of the heathland started the following October (1990) using various methods of treatment, these included;

1. Forage harvested heather from a nearby donor site was spread over a part of the site at a rate of three times the area cut, ie: 1 acre cut was spread over 3 acres.

2. Areas of the site were disc harrowed to break up the surface.

3. Areas were disc harrowed and spread with forage harvested heather as in treatment 1.

Tour of the New Forest

Cont'd

4. A small area was covered with Scots pine lop and top, in an attempt to reduce erosion.

Two areas were set aside for monitoring, one of which, was divided into 5 plots each demonstrating a different treatment, these are:

1. Control
2. Foraged heather spread at x3
3. Disc harrowed then foraged heather x3
4. Foraged heather spread at x6
5. Disc harrowed then foraged heather X6

As well as receiving these differing treatments one half of the site was then fenced, effectively splitting each treatment in half. In doing this we could monitor the recovery rates of each treatment with and without grazing pressure.

The site is being monitored by ;

The Faculty of Science and Technology
Dept of Environmental Biology
University College of London dept of Biology

From these trials we could determine the preferred treatment to restore damage following a heath fire at Broomy Plain last summer and we opted for the forage harvested heather x3.

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The operation was carried out within 2 months of the fire and looks promising.

The cost of carrying out this operation worked out to be £670.00/ha, a total cost of £5,487 for an area of 14.5ha.

PLAN OF EXPERIMENTAL PLOT LAYOUT AT THE BUCKHERD FIRE SITE

FENCED	UNFENCED	
1	2	CONTROL
3	4	HEATHER ONLY SPREAD AT X3
5	6	DISC HARROWED THEN HEATHER SPREAD AT X3
7	8	HEATHER ONLY SPREAD AT X6
9	10	DISC HARROWED THEN HEATHER SPREAD AT X6

Cont'd

PLOT SIZES MEASURE 30m X 30m.

NB : The area of the fire at Buckherd would have been greatly reduced if two proposed controlled burns had been carried out during the previous burning season. In doing them a break would have been created leaving an area of about 50 metres in width for the fire to travel south, this would have given the fire fighters a greater chance of getting the fire under control and theoretically containing the fire to about 24ha (60 acres) instead of the actual 77ha (190 acres). This backs up the argument for controlled burning as a form of fire protection.

STOP - MARKWAY INCLOSURE

History

Markway was enclosed in 1960 for the purpose of planting a belt of trees to screen the A35 road from the views across the heathland to the south-east. In fact Markway Inclosure as we know it today also includes the more ancient Ferny Knap Inclosure which was first enclosed in the last century. The ancient boundary banks of this Inclosure are still visible in the north-east corner of Markway Inclosure. Prior to planting the vegetation within the fenced area was burnt off and most of the ground ploughed. The plough furrows can still be seen today throughout most of the Inclosure and

because of the burning the oldest heather can be aged fairly precisely at around 36 years.

Ecological Interest

The topography of the land is amongst the most varied of any of the Forest's timber Inclosures and in the days before planting, the slopes were covered with dry heathland, grading down to mire in the two valleys which intersect the Inclosure. The larger of these valley mires is of particular importance despite being largely planted with conifers as part of the original afforestation. The combination of fencing to exclude grazing and tree planting has permitted Purple Moor Grass *(Molinia caerulea)* to become almost completely dominant over the last 36 years.

The Forestry Commission is in the process of removing virtually all of the trees as the first part of a plan to restore the mire system. The intention then is to fence the area into the surrounding Open Forest and to allow the stock to graze the tussocks of Purple Moor Grass. It is anticipated that this will open up the structure of the vegetation allowing less aggressive plants to find a foothold and to provide greater botanical diversity than at present.

Many typical heathland species of plants and animals can be found within the Inclosure although of course most of them are equally common on the surrounding areas of grazed heath. Birds such as Dartford Warblers *(Sylvia undata)* and Nightjars *(Caprimulgus europaeus)* next here, while invertebrates such as the Mottled Grasshopper (*Myrmeleotettix maculatus)* and the Green

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Tiger Beetle *(Cicindela campeestris)* are common. In the valley mire pools the Raft Spider *(Dolomedes fimbriatus)* is locally common and at the interface between the mire and the wet heath the Bog Bush-Cricket *(Metrioptera brachyptera)* can be found.

However the main interest of the area is for its populations of reptiles. Before the 1960 plantings, the area was well known for reptiles, in particular the Smooth Snake *(Coronella austriaca)* which was relatively common on the south-facing dry heathland slopes, although all six native reptile species occurred there at that time. As the trees grew and the canopy started to close, the reptiles were forced to move to the edges of the compartments to find the sunlight that they need and thus became easier to see. During the 1970s and 80s, this reptile interest was much studied by a variety of students working under Dr Ian Spellerberg of Southampton University and we have a good deal of data about the Smooth Snake from that time.

Sand Lizards

In 1987, following discussions with Dr Keith Corbett of the Herpetological Conservation Trust, it was decided to prepare a number of sites in the New Forest for the reintroduction of the Sand Lizard *(Lacerta agilis)* which had become extinct here by the 1970s. Markway was selected at the first of these because of its particular combination of topography, soil type and exposure of bare sand which is essential for egg laying. Perhaps more importantly though, being in an Inclosure, it was excluded from the cutting and burning regime by means of which the Open Forest areas are managed.

The only immediate management work required was the removal of a number of pine trees which were shading part of the selected site. This was completed by a couple of our Forest Keepers by early in the Spring of 1989 and the first of the Sand Lizards were introduced in September of that year. In all 170 hatchling lizards were released at the site during the period 1989 to 1991. Between 1991 to 1993 more tree clearance work was carried out at a fresh site near the eastern boundary of the Inclosure and during 1993 and 1994 a further 119 lizards were released there. Breeding has been observed each year since 1991 at the first site and the area now supports a viable population of Sand Lizards. Interestingly no signs of breeding have been seen at the second site, despite the provision of extensive areas of open sand for egg laying sites.

The Future

A design plan has been drawn up for the Inclosure which provides for a good deal of open space which, it is expected, in a short time will revert to heathland. The open spaces will be linked by broad strips of heath both to each other and to the open Forest outside to allow the natural dispersal of animal populations.

Summary

Markway Inclosure was enclosed for timber growing in 1960 although a small part had been previously enclosed in the last century. It contains two mire systems, one of which is currently being returned to its original state by

removal of the planted trees. The enclosure of the land has provided protection of the habitat from the cutting and burning regime by means of which the surrounding Open Forest is managed and as a consequence the sandy heathland slopes within the Inclosure are important for their populations of reptiles. Specialised habitat management work has produced two areas particularly suited to the rare Sand Lizard and a programme of reintroduction has taken place there over the last 7 years.

RESTORATION OF DUCKHOLE BOG

Introduction

There has been an intention to restore the valley mire system in Duckhole bog since the early 90s and initial programmes to gradually remove conifer crops from the area have been implemented. This project aims to complete earlier work and ensure that the integrity of the mire system is restored to grazed open forest over the next five years. Restoration of this valley mire system has been agreed with the Forest Authority, the New Forest Committee panel and other statutory consultees, as part of the forest design plan for Markway Inclosure

Objectives

1. To restore the valley mire system to grazed wetland habitat contiguous with the open forest.

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2. To record and monitor techniques used and confirm their, application to/modification for, other sites on the forest

Description of Site

The bog drains in an easterly direction via a straightened channel and is part of the upper reaches of the Oberwater catchment. The natural vegetation of the site is predominantly mollina tussock grass, conifers (Lodgepole Pine and some Norway spruce in the extreme west) were planted on the site in 1962. Much of the Lodgepole crop has failed and that which remains is of a generally poor quality, but may be capable of sale into stake/pulp markets. The better grown conifers which remain are located either side of the central stream on the drier ground both west and east of the gravel track which bisects the bog. Isolated sallow, birch, holly and other species can be found within the conifer crops. There is a small man made pond located just to the west of the gravel track which is developing a range of wetland habitat and further upstream a small group of sallow and mature Scots pine can be found which are remnants of vegetation which was present prior to Inclosure.

The majority of the surrounding woodland on slopes leading down to the bog, has been thinned within the last twelve months, with the exception of a small area of Scots Pine in sub comp't 734a. There is an extraction ride running right round the bog although much of it is

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screened by a narrow belt of intermittent pine trees. The ride is more clearly defined along the southern boundary of the bog.

Access to Duckhole bog for extraction of timber runs north and south. The bridge over the drainage channel is not suitable for timber extraction. There are good rides and stacking areas within a reasonable distance from the site.

The bog is at present located within the Inclosure fence and is therefore not grazed by ponies.

Discussion

Duckhole bog is located within a Verderers Inclosure. The Forestry Commission are committed to preparing forest design plans for all the Verderers Inclosures and whilst Duckhole bog may not be one of the most important ecological valley mire systems on the forest, the area has been selected as a key candidate for restoration to open forest because it falls within the area currently selected for forest design plans.

There are logistic problems in extracting timber off such a wet site without machinery rutting the underlying peat. There are also risks in setting fire to lop and top without the fires spreading into the peat. A proportion of the tree cover is located on reasonably firm ground but in certain areas extraction will be difficult. The more the lop and top

Tour of the New Forest

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which is removed from site, the more rapid the recolonisataion of mollinia based vegetation. Over the last decade this site has become increasingly important for the conservation of reptiles and there are risks of destroying reptile populations through burning. Indeed recent thinning operations have specifically opened up south facing slopes for the development of reptile habitats.

There are signs of headwood erosion along the drainage channel which drains the site, and a number of the lateral drains contain well established mosses etc. The recently created pond and drainage channel sections which are open to sunlight show an interesting range of aquatic flora.

There are a number of other sites on the forest where similar Heathland restoration programmes are likely to take place in future. This project provides a good opportunity to develop our joint thoughts on the most effective way to return such areas to open forest grazing. We are keen to let the project develop, but not to tackle too great an area or too many activities at any one time.

Phase 1 - of the project comprises the felling and removal of whole trees east of the gravel track, including the outstanding thinning of Scots pine in sub comp't 734a. Whilst the felling and extraction of timber is planned as a contract for July/August 1996, the treatment of lop and top be handled over the Winter if required.

Tour of the New Forest

Cont'd

Phase 2 - entails a continuation of conifer felling and removal to the west of the gravel track, this includes the area of Norway spruce at the far end of the valley. Particular attention will be paid to the retention of a green screen alongside the access/extraction routes and its relative proximity to the existing watercourse. The area of mature sallow and Scots pine will be retained as a specific site feature.

Phase 3 - will concentrate on opening up the area for grazing. The Forestry Commission welcomes advice on the development of grazing, how it is monitored and its effect on site flora. Will there be a need to monitor numbers of animals released onto the site for research purposes before the site is thrown open again?

Phase 4 - This will be a programme to raise bed levels in the drainage channel and prevent further headwood erosion of the main channel. It is currently proposed that rock filled gabions might be placed at the existing "nick" point. There may also be a need to consider a range of other works and the Forestry Commission would welcome the advice to confirm a suitable programme.

New Programmes for Heathland Restoration

Merrick Denton-Thompson, Hampshire County Council

It is with some trepidation that I accepted the kind invitation to appear at this land- mark conference, because I knew that I would be addressing delegates who, on the whole, know a great deal more about heathlands than I. My brief - 'New programmes for heathland restoration' is a little too narrow and I would ask you to accept a slightly broader perspective. Setting the context and looking to the future is the task I have set myself.

Some of what I am going to say will appear very obvious, but it needs to be said all the same, and some of what I say will appear critical and may provoke a response. There is, however, too much at stake for us, collectively, to allow nothing to happen after this conference. For years we have trawled over the problems - the threats from development, the threats from inappropriate management and the threats from the current level of public understanding - are well understood, many sites are being tackled up and down the country in various commendable initiatives. Almost without exception these initiatives have but a fragile hold on the situation.

My paper is in three parts, the first is just good housekeeping to summarise what some of you saw yesterday when you travelled up to the North East of the County to inspect one of the local heathland initiatives. The second part of my paper stands back a little and views the issues we are all grappling with and the third part is to propose a series of resolutions which perhaps sets the scene for Ted Johnson's Workshop session.

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NORTH EAST HAMPSHIRE HEATHLANDS PROJECT

The North East Hants Heathland project is a partnership arrangement that suits our set of circumstances and may not be appropriate elsewhere. About 1500 hectares of heathland remain in North East Hampshire, many as small fragments. 70% has been proposed to be designated as an S.P.A. a further 15% is given SSSI protection and a further 15% remains vulnerable - I will return to this issue later. 58% of heathland in the North East of the County is owned by the Ministry of Defence, 14% is in private ownership, 10% is held by local authorities, 8% by the National Trust and 5% by Forest Enterprise.

The project, revolves around the ingenuity and energy of the project officer - Paul Edgar who is here today. The project was established and funded 6 years ago by a partnership including the County Council, English Nature and the Districts including Basingstoke, East Hampshire, Hart and Rushmoor. It is managed by a Steering Committee made up of the funding partners and others, including the RSPB, the Wildlife Trust, MOD and the National Trust. The annual budget is about £63,000 with the County Council providing £50,000. The budget pays the salary and expenses for the project officer and a small works fund. An annual report is produced giving an account of the year's achievements. However the main output is, as you would expect, action on the ground. If you ask Paul how he spends his time his answers would be something like this; dealing with the public, organising scrub clearance, securing the appropriate fencing, negotiating grazing, checking stock, dealing with owners and negotiating with funding administrators. He has to be a diplomat, contracts manager and stockman every day of his working life.

New Programmes for Heathland Restoration

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The project has achieved in six years the restoration of 300 hectares of heathland and it has secured the ongoing management of 4 sites covering 250 hectares. This has been achieved through Stewardship which may be just attractive enough for annual payments but not sufficiently attractive or flexible enough on the capital grants for scrub clearance and fencing whereas the less secure Wildlife Enhancement Scheme from English Nature, scores well on the capital grants side - long may it continue.

The future of the project will depend on English Nature being able to continue to support the project as it does through the Lowland Heathland Programme which has only one more year to go and we must therefore secure its long term future. Equally important is the County Council's ability through economies of scale to be able to support the project with the loss of 25% of budgets as a result of L.G.R. but it must be said that the project is just 'holding the fort' and there are limits to what we can expect from one individual. Every time I authorise a cheque to rent another herd of cattle I am made only too aware of the desperate need to find a more sustainable strategy.

There is, of course, heathland restoration and management on our own estate, where demonstrating good practice and raising public awareness are central to estate management policies - this work at Yateley Common has been ongoing for the last 10 years or so. The Wildlife Trust, the National Trust and the MOD. run their own programmes.

This approach suits our set of circumstances and there are many other local initiatives that are equally successful - like those run by Surrey, Berkshire, West and East Sussex, each is different for good reason. Some concentrated efforts on one or two key sites, others deal with a fragmented estate. Some are working on their own land whilst others work on other people's land. There is also a variety in the methods used for scrub clearance, fencing and grazing. This conference, as others have in the past, creates the opportunities to learn from each other and take the hard won lessons from others as a fast track into problem solving.

THE CONTEXT

Let us draw back from day to day issues and revisit the context within which all this is happening. I want to start this section with a look back to a subject widely discussed at the last Heathland conference. We need to re-examine the terminology we use at two different levels. Please can we resolve to set up a mechanism today to come to some conclusion on the definition of heathland - we have on the one hand a rather narrow definition which includes Dry, Humid and Wet heaths versus the broader definition including acidic and heather associated landscapes of the valley mire, acid grasslands and gorse - in Hampshire 9,000 hectares if the former definition prevails or 14,000 hectares if the latter is accepted. I am sorry I do not have the national figures with me but I am sure some of you would answer this for us later.

New Programmes for Heathland Restoration

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Staying with terminology we collectively need to give urgent attention to the lack of public understanding, or even awareness, of the issues we are facing today. We will continue to struggle against all odds if we fail to make the relevance of conserving heathlands transparent to the people we serve. One of the elected members spoke to me the other day asking me to justify the investment into heathland restoration when his constituents were more concerned about having a job and being able to walk the streets in safety - for them and their children. I would love to have the courage to ask you all to write down, without conferring, how you would answer that question. Answers there are, the longer the vision the more certain we can be in acting as an advocate for this fragile landscape.

By the way, something that is so obvious to you but it is not necessarily widely understood outside this room, is the simple term - European Lowland Heaths. There are those who think that this term refers to the European examples of lowland heath. It has not crossed their minds that the term refers to a very specific and unique resource; irreplaceable, quite separate and distinctive in the world conservation arena. For my own county the relevance and priority for action immediately comes into focus when we are held responsible for securing 13% of a world resource.

I have heard it said that within English Nature, it is believed that heathland is the most difficult habitat type to gain public support for. My belief is that this is a measure of the failure to communicate the value of heathland to the general public. It is impossible to sell the virtues of heathland once the tree has been felled and the fence is up - you cannot recover from that position.

New Programmes for Heathland Restoration

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Marketing heathland would be a very easy task - if resourced properly and approached in the right way. As the population becomes more and more isolated from national systems and as it becomes more and more paranoid by its vulnerability over food quality, immune bacteria and health in general, the more fertile the market place becomes.

I accept immediately that to many of us such a strategy is not in keeping with our culture. We are the last people to exploit such vulnerability but we must balance our sensitivities with the aggressive stance by other players in the market place. Take for example the failure by Government to confirm SPA status over much of the heathland in the North East of my county. That decision is unacceptable; why was it made? Because of vested interest and because of a cavalier disregard and downright ignorance from within government itself.

Until we are able to quantify the value of heathland in whatever resource is flavour of the month, today cash - tomorrow survival of mankind, we cannot allow the marketplace to determine the future of such habitats.

We need to seek the right advice on a marketing strategy, these are my first thoughts. For little more than the cost of this conference we could commission the production of a film, the bare material of which providing opportunities for both a full length television documentary and an education production for schools. We could launch on the world stage the animals and plants of our heathland, almost all of which remains hidden to 99.9% of the population. In simple terms we need to set out both the utilitarian and the

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moral arguments so neatly referred to by John Gummer when he announced the Country's commitments to Bio-diversity.

The utilitarian characteristics of the genetic pool must be made as transparent as possible to the wider population. We need to quantify the biological make-up of heathland and demonstrate the relative ignorance by the scientific world of its ingredients and latest potential. Captivate the audience by relevance, frighten them by threats and empower them by engaging ownership of the process that secures the reversal of the current trends. Trends which we have regurgitated daily for the last 20 years and trends that have gathered pace for the last 100.

The next part of our strategy requires legislative support to address landuse threats. The register of European Lowland Heaths must provide the basis of national and international protective designations. Yes I accept that much of the remaining heaths are protected but the losses over the last 110 years are unacceptable and the critical capital and irreplaceability of the resource must now determine the way forward. In Hampshire that represents a further 250 hectares needing immediate SSSI and preferably SPA designation. We cannot rely on local designations. Even though I am a passionate supporter of SINCS it is clear from one or two very current decisions by Government inspectors that the inspectorate is failing to keep up to date with the evolution that is going on in Government itself. It is no longer acceptable for English Nature to be restricted to the limits that designation should be confined to representative examples, as opposed to holistic coverage in the circumstances surrounding heathland and certain other habitat types.

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The climate is right with Government slightly shifting ground substantially in the recent response by John Gummer to the U.K. Steering Group's Report on Bio-diversity. I do not make it a habit of applauding Government Ministers but we should make an exception for Gummer - whether it is a person crusade or whether it is becoming enshrined into the very being of Government is of course a critical question but his recent statements on biodiversity and climatic warming are in my view exceptional. They are exceptional because they pre-empt public understanding and will lead, inevitably, to radical changes in human behaviour. These changes will be very uncomfortable and, therefore, politically very sensitive. (Perhaps I should add that it is the man I applaud not his political allegiance).

Having touched on both public awareness, and threats from development we must turn to the next operation of sustainable management. So much of our semi-natural - man influenced, habitat resource, is by its very nature vulnerable to the volatile shifts in technology and economics of agriculture. We surely must accept that the active conservation of heathland will only be achieved by a mixture of measures. The chances of securing a self funding mechanism for management are extremely unlikely within the foreseeable future. It is, of course, irresponsible to secure and spend capital resources on scrub clearance and fencing without having secured at the same time the resources to manage heathland in a sustainable way.

The agricultural lobby in Europe remains strong and will remain so provided we fail to export our so called efficient approach to agriculture. To Europe we must first look. Can we persuade Brussels to accept less favoured Area

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Status thus generating an increase per headage payments for grazing accepting of course that we have little chance of triggering resources under the social fund. The structural impediments to agriculture created by soil type and I suggest urban fringe constraints are just as real as those associated with landform and climate elsewhere in the U.K.

My colleague, Vernon Hazel, has been exploring the opportunities that may have been generated by B.S.E. and by the possible reversal in the decline of traditional and cultural systems of husbandry. The Rare Breed Survival Trust could assist in a strategy that becomes more widespread, that aims to engage public interest at different levels. The interest in traditional breeds, in species, in their origins and their time in history as well as the inevitable green food revolution that B.S.E. must surely stimulate public involvement in managing heathland.

The management of Heathland and other fragile habitats could of course diversify the reasons for local authorities to retain their small-holdings - changing, where the tenancy system allows, the basis on which such land is managed. These are crucial back-up land resources and carry the potential for some exciting new farming partnerships.

But what of commoning, is there not room for either reactivating commoning or inventing some new form that could open up the opportunity for local people to re-connect with husbandry. The end product can vary whether it is a pony for children, or helping to secure the future of rare breeds or for green

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food. These need to be re-visited and trialled before we continue to invest scarce capital resources on conservation measures.

Can we turn the negative aspects of fragmentation into an asset by identifying discrete, self contained parcels to which volunteer groups could relate and take ownership of, if grazing is seen to be unobtainable. Substantial resources could be brought from schools if they adapted a piece of the world reserve. There is, of course, an entire framework for delivering the National Curriculum in a heath.

To sum up we need to:-

- agree on a definition of heathland that we can all sign up to;
- embark on a much more aggressive campaign to engage public commitment to conserving heathland;
- secure SSSI/SAC designation on all remaining heathland;
- prepare programmes of re-creation to reduce the vulnerability of fragmentation;
- press for European and National financial support to grazing;
- explore further mechanisms for self-funding, including:-

  fiscal changes, alternative uses (including education) and voluntary support

The Crown Lands of the New Forest in the 21st Century

Arthur Barlow, Forestry Commission

As the 21st Century draws to a close, the New Forest, a Royal hunting forest created by William nearly a thousand years ago, enters probably its most difficult time.

Man has influenced this unique combination of heath, mire and woodland throughout its history from the early days when its role was to provide fresh meat for the Royal table through a time when the King's navy was built from timber grown in the Inclosures set aside for that purpose to a time when the conservation of the Forest's wildlife and aesthetic character came to the fore.

The Forest has changed due to man's changing demands. When deer became less important as a food source, efforts were made to drastically reduce the population and to establish further Inclosures for the production of timber. In Victorian times pressures of the developing nation affected the Forest just as elsewhere. The London-Weymouth railway swept through the heaths and military exercises became a feature. The Forest golf courses were built, encroachments of this ancient Forest continued nibbling away at the edges of a once extensive tract. As the Nation put two World Wars behind it, a more affluent city dweller with personal transport spread out from the urban smoke to enjoy the countryside. Camping became a popular pastime and in the Forest there were few restrictions on camping or parking your car. In the 1970s the car parks and camp sites were created to protect the Forest from this huge increase in public activity. Demands on this fragile landscape continued apace as the eighties arrived. The Planning Authorities had to tackle a huge demand for houses in SW Hampshire and East Dorset

The Crown Lands of the New Forest in the 21st Century

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and housing estates sprang up right on the Forest boundary. New roads, widening old ones, by-passes, oil and gas pipelines - the needs of man were never ending.

The 1877 New Forest Act of Parliament stated that "care shall be taken to maintain the picturesque character of the woods" showing that the Victorians were alive to the loss of the amenities of the Forest. In the middle of the 20th century a resurgence of environmental concern and worries about conservation of flora and fauna grew here as elsewhere and the Forest was designated a Site of Special Scientific Interest. Later came the Special Protection Area for birds, the designation as a Ramsar or internationally recognised wetland and more recently that of a Special Area of Conservation.

Throughout all the Forest's history the Commoners of the New Forest have grazed their ponies and cattle and as time has gone on society has recognised the intimate relationship between the appearance of the Forest and the active part played by the Commoners in maintaining that character. Further Acts of Parliament were enacted to ensure that both conservation and commoning could exist side by side.

The Forestry Commission succeeded the Office of Woods as the manager of the Crown Lands of the New Forest over seventy years ago. As the manager, as the century draws to a close, the Forestry Commission is

charged with the task (often daunting), of striving to maintain a balance between these aspects of mans life which I have referred to - commoning, conservation, forestry and recreation. The traditional character of this unique Forest is only maintained by the delicate handling of a myriad of issues, demands and interests.

The vast managed lowland heaths of this Forest are protected by Act of Parliament, by the Minister's Mandate (the instruction of the Agriculture Minister on how the Forest will broadly be managed), by the conservation designations monitored by English Nature and by the Forestry Commission's own policies and Management Plan. There is a complex web of consultative procedures to ensure that management decisions concerning these heathlands are taken with all around consensus. Only last year the Verderers, English Nature and the Forestry Commission jointly agreed a Declaration of Intent to ensure a smooth working relationship.

The public however, and the public may be visitor or resident, demand recreational space. Ramblers, riders, orienteers, cyclists, bird watchers, carriage drivers, model boat and aircraft enthusiasts and dog walkers, all want to use the Forest - and why not? There is a potential conflict with other users, with the wish for tranquillity, the wish to protect rare heathland species and the needs of what we must remember is a working Forest, where man earns a living, be it from forestry, agriculture or tourism.

The Crown Lands of the New Forest in the 21st Century

Cont'd

The car is a major force in distributing people throughout the Forest and of course the dispersal policy of the 1970s was designed to do just that. In today's world the role of the car is really of great concern. The Highway Authority has been chairing a Transportation Group to look at the transportation needs and problems that the early years of the 21st Century will have to address. In conjunction with its partners on the Group the Forestry Commission is developing a Recreational Strategy for the Crown Lands that will consider the management and direction of the car together with a charging system aiding a revised distribution policy. The location of the Forests 141 car parks needs to be reviewed in the light of today's ideas about the value and importance of the Open Forest heaths that so often border these car parks. The Transportation Group will need to consider road closures or other measures to protect the inner most sensitive core of the Forest.

More than eight million visitors arrive in the Forest each year and over twenty five million local resident visits are made each year. Where group activities and sporting events seek access to the thousands of hectares of open heathland, the Forestry Commission manages by granting permissions with conditions in order to minimise disruption to the valuable wildlife resource particularly in sensitive areas and at sensitive times of the year. This zoning of activities is essential now and more attention will need to be given to determining quiet or remote areas where human recreational activity can be minimal.

The Crown Lands of the New Forest in the 21st Century

Cont'd

Many recreational users of the Forest take a very responsible attitude to the activity. No one apart from the Commoner has an access by Right. Access is permissive and it is not unreasonable to expect all users to take care of the Forest. Some user groups tend to "fight their corner" and are reluctant to take a wider view. This is of course understandable but the Forestry Commission's task of effectively protecting the New Forest as a whole would be made that much more effective if the user groups could take a positive forward thinking line. It is pleasing to see that those representing cycling are doing just that. These valuable heathlands that we have been discussing this week can only be protected with the co-operation and support of everyone who uses the Forest. As this decade comes to a close the concept of user groups contributing to the management process through partnerships, consultation and including making financial contributions is clearly seen as the way that man's recreational needs can be met whilst still ensuring that the traditional character of the New Forest is maintained. It is essentially the Forestry Commission's responsibility to see that the next generation can enjoy the peace and beauty that is the New Forest.