Land Use Policy Group

The GB statutory conservation, countryside and environment agencies

New Wildwoods in Britain:

The potential for developing new landscape-scale native woodlands

R.Worrell, S. N. Pryor, A. Scott, G.F. Peterken, K. Taylor, R. Knightbridge and N. Brown.

LUPG report
June 2002

ENGLISH NATURE | The Countryside Agency | Cyngor Cefn Gwlad Cymru Countryside Council for Wales | Environment Agency | Scottish Natural Heritage | Joint Nature Conservation Committee

The Land Use Policy Group

The Land Use Policy Group (LUPG) of the GB statutory conservation, countryside and environment agencies comprises the Countryside Agency, Countryside Council for Wales, English Nature, Environment Agency, Joint Nature Conservation Committee and Scottish Natural Heritage.

The LUPG aims to advise on policy matters of common concern related to agriculture, woodlands and other rural land uses. It seeks to improve understanding of the pros and cons of policy mechanisms related to land use, particularly farming and forestry; to develop a common view of desirable reforms to existing policies; and to promote these views.

The Countryside Agency

The Countryside Agency (CA) is the statutory body working to conserve and enhance England's countryside, to spread social and economic opportunity for the people who live there and to help everyone to enjoy the countryside and share in this priceless national asset. The CA seeks to achieve these goals by influencing those whose decisions affect the countryside using its expertise, research findings and by spreading good practice. It also implements specific programmes of work reflecting the priorities set by Parliament, the Government and the Agency Board. http://www.countryside.gov.uk.

Countryside Council for Wales

Countryside Council for Wales (CCW) is the Government's statutory adviser on sustaining natural beauty, wildlife and the opportunities for outdoor enjoyment throughout Wales and its inshore waters. With English Nature and Scottish Natural Heritage, CCW delivers its statutory responsibilities for Great Britain as a whole, and internationally, through the Joint Nature Conservation Committee. http://www.ccw.gov.uk

English Nature

English Nature (EN) is the Government Agency that champions the conservation of wildlife and geology throughout England. It does this by: advising Government, other agencies, communities and individuals; regulating activities affecting the special nature conservation sites in England; helping others to manage land for nature conservation and advocating nature conservation for all and biodiversity as a key test of sustainable development. http://www.english-nature.org.uk

Scottish Natural Heritage

Scottish Natural Heritage (SNH) is a government body established to secure conservation and enhancement of Scotland's unique and valued natural heritage – the wildlife, habitats and landscapes that have evolved in Scotland through long partnership between people and nature. SNH advises on policies and promotes projects that aim to improve the natural heritage and support its sustainable use. Our aim is to help people to enjoy Scotland's natural heritage responsibly, understand it more fully and use it wisely so it can be sustained for future generations. http://www.snh.org.uk

The Environment Agency

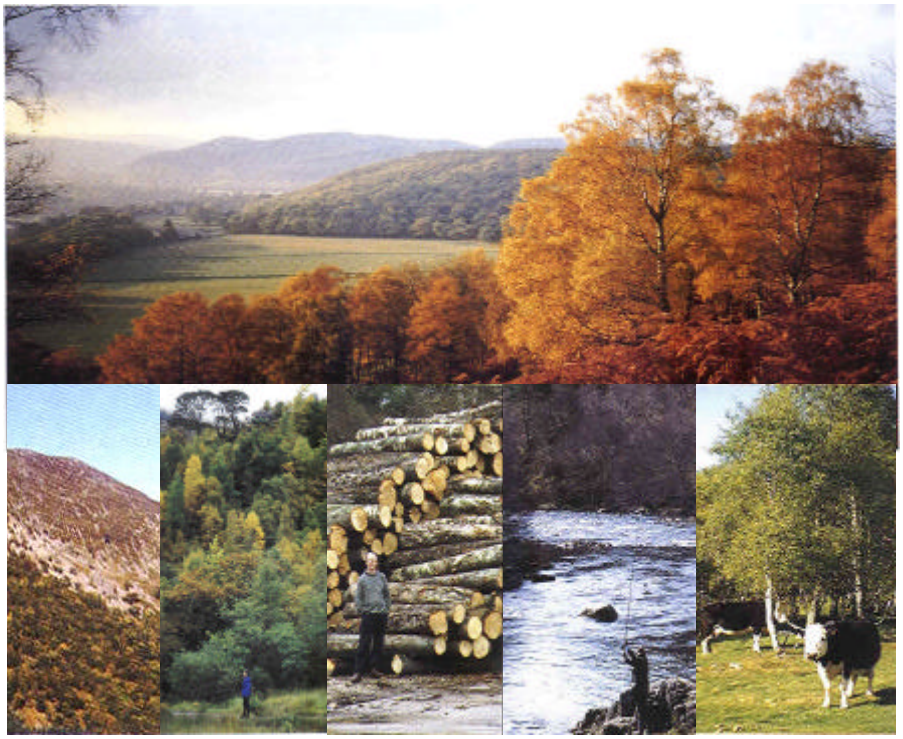
The Environment Agency (EA) is the leading public organisation for protecting and improving the environment in England and Wales. We achieve this by regulating industry, maintaining flood defences and water resources, and improving wildlife habitats, in addition to our many other activities. We also monitor the environment, and make the information that we collect widely available. http://www.environment-agency.gov.uk

Joint Nature Conservation Committee

The Joint Nature Conservation Committee (JNCC) is the forum through which the three country conservation agencies – CCW, EN and SNH - deliver their statutory responsibilities for Great Britain as a whole, and internationally. These responsibilities contribute to sustaining and enriching biological diversity, enhancing geological features and sustaining natural systems. As well as a source of advice and knowledge for the public, JNCC is the Government's wildlife adviser, providing guidance on the development of policies for, or affecting, nature conservation in GB or internationally. http://www.jncc.gov.uk

Disclaimer

This report was produced by the authors on behalf of the Land Use Policy Group (LUPG). The views expressed within the report are those of the contractors and do not necessarily reflect the views of the agencies within LUPG.



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Woodland Policy Group

The Woodland Policy Group is one of two sub-groups of the Land Use Policy Group (LUPG), which focuses on woodland, forestry and tree-related policy issues. The parallel group is the Rural Affairs Group (RAG), which deals primarily with agricultural issues, particularly CAP reform. These groups comprise staff from the agencies who form LUPG. Current membership of WPG is:

Dr Keith Kirby	English Nature	Chairman
Rob Green	Countryside Agency	
Hilary Miller	Countryside Council for Wales	
Rob Robinson	Environment Agency	
Bob Davidson	Environment and Heritage Service	
Ben Vickers	English Nature	
Alan Hampson	Scottish Natural Heritage	

New Wildwoods: Preface

The Woodland Policy Group commissioned this report to explore the potential for creating extensive areas of native woodland which might in some respects eventually form a modern equivalent of the original 'wildwood'. We wished to explore the opportunities for these areas be the focus for delivering socio-economic as well as biodiversity benefits, and to stimulate debate on this topic. We held 3 regional seminars to encourage a wide range of organisations to participate in the development of the concept and we are grateful to those who attended and made useful contributions to the project. The production of this report is not the final stage of the work, so any comments on the ideas presented in the report are welcome. We will be taking forward some of the ideas presented in this report in a variety of ways.

The project was advised by a Steering Group consisting of Woodland Policy Group members and the following people who kindly gave their time and ideas, for which we are grateful:

Nick Atkinson, Dartmoor National Park / Sarah Meneer, Exmoor National Park
Sarah Pringle, Countryside Agency (North East England)
Alistair Johnson, Forestry Commission

We would also like to thank Rick Worrell for his role in co-ordinating the consultant's team, and all other members of the team for their hard work in turning the groups' original ideas into the proposals presented in this report.

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EXECUTIVE SUMMARY

Comment: Why is there no specific reference to New Wildwoods in the first sentence. I would envisage the concept being ntroduced with a tight definition. As I read it at present I get confused about just what it is we were supposed todo|!!!!!!!!!!

This report presents ideas for establishing "New Wildwoods", which are conceived of as extensive mosaics of native woodland and other types of land, including agricultural land, where the component of woodland is far higher than is usual in Britain (say 30-70% woodland). Models for this include areas like the New Forest, the Forest of Dean and the Cairngorms Forest. The specific aims of the project described in this report were to:

- Evaluate the benefits and impacts of such wooded landscapes and the opportunities and constraints arising from the current land use and policy context;
- Describe potential project types and possible locations;
- Outline a process for implementing these woodlands by partnership working between the countryside agencies and other organisations.

This was achieved via a three-stage process:

1. a critical assessment of the concept using literature and contacts with key organisations.
2. a programme of three regional seminars involving detailed discussions with stakeholders.
3. analysis of the potential viability of such projects at a number of locations.

Rationale: the initiative is intended to: a) augment current activity in native woodland creation, which tends to be small scale and dispersed; and b) to complement forest habitat network and woodland "defragmentation" projects by providing future "core forest areas" and; c) create new mixes of land uses and rural enterprises in these areas. The concept is proposed as a contribution to several government policy initiatives, notably integrated rural development (see opportunities and constraints, below).

Concept: The main principles are to: design and manage woodland together with open land as one landscape-scale unit; to accommodate a range of possible management styles (with low intervention management in "core" areas, grading to more intensive management in "peripheral" areas); and to ensure that the woodland element integrates with, and contributes to, other types of neighbouring land. New Wildwoods can be developed on a range of types of sites in both the uplands and the lowlands. The main criteria for selecting locations are to target those areas where: owners, communities and organisations have shown interest in native woodland expansion; existing land use is not very diverse and/or is economically marginal; there is some existing semi-natural woodland to build on; there is the likelihood that recreation, tourism and "quality of life" benefits could be developed by the local communities; and there are no fundamental constraints on expansion of tree cover.

Benefits and impacts: Native woodlands have roles in all the main land uses and are relevant to a wide range of stakeholders including foresters, farmers, local communities, water and fisheries industries, sporting interests and conservation organisations. Major potential beneficiaries are in the tourism and recreation sectors, as visitors are attracted to unusual, diverse and attractive landscapes. There is potential for rural communities to benefit by engaging in the establishment and management of woodlands and eventually in the tourism-related activity which they generate. The forestry industry would benefit by activity in woodland establishment and management; though there may be losses in softwood timber production where plantations are converted to native species. There may be an overall loss of agricultural production (though generally from areas which are already very marginal in terms of agricultural output), but there is also potential for farmers to benefit, especially those who engage in farm woodland management and contracting and in recreational provision. There are important benefits and impacts on the water industry and this is a key unresolved topic. P arts of "New Wildwoods" could be a contribution towards the development of new areas of wild land, referred to as "rewilding" by some groups within the nature conservation movement. New Wildwoods are distinctive in terms of their large extent; the creation

of a mosaic of woodland and unwooded land. This can give them a specific identity which can be an advantage in promoting the area for funding priorities and, as time progresses, for recreation and tourism.

Opportunities and constraints: The main opportunities and constraints influencing the development of native forests were explored. Increased use of native species in new woodland appears to be a long-term fundamental shift rather than a passing fashion. The concept of New Wildwoods fits in well with several important trends including the increasing profile of integrated rural development and the growing importance of provision of services as an economic driver, compared with production of commodities. It contributes to several government land use policies including: integrated rural development, farm diversification in the aftermath of the foot and mouth disease outbreak, woodland habitat action plans and catchment management. However there are several serious constraints including: the current capacity of farmers to engage in the uncertain agricultural climate; sensitivities surrounding new woodland development in water catchments; common land; the current structure and levels of agricultural and forestry subsidies; the long term nature of the concept and the large investment of resources before benefits are achieved.

Comment: I feel we need to list the main constraints to the development of new wildwoods. These are important and need to be explicit in the exec summary
- Lack of finance
- Uncertainty with respect to the future of agriculture /CAP
- Problems centring around common land
- Political sensitivities surrounding new woodland development in water catchments
- The long term nature of the concept with significant investment of time and resources before benefits are achieved, particularly with respect to rural development and timber production outcomes
- The political sensitivities of local communities
- The top down nature of the concept

Current experience: Current experience of woodland establishment was reviewed and an account is given of the progress of different types of native woodland scheme (planted new native woodland, natural regeneration schemes, native species plantations, natural colonisation schemes, restoration of plantations on ancient woodland sites, wood pasture schemes, agroforestry and native species rural development forestry schemes). Progress has been far more rapid in Scotland (8000 ha of native species planted annually) than in England and Wales and the factors driving this are discussed. Progress in England and Wales has centred on national parks but even here only relatively small areas of woodlands are involved.

Projects: The following regions were explored for possible locations in "outline case studies": Lake District (Ennerdale), Pennines, Lowland Southern England (New Forest, Sussex Weald, Rockingham Forest, Bardney Forest, a whole farm scheme in Dorset), the Cambrian Mountains and Southern Scotland. In addition, outlines are given of a wild land project in Holland (Oostvaardersplassen) and the Canadian "Model Forest" approach. These studies highlight some key issues, including the existence of major sensitivities in many upland areas; the need for ongoing community participation; the conversion of conifer plantations; sensitivities of expanding woodland on water catchments and on some Pennine moorlands; the importance of building on existing woodland where possible; and the potential of wood pasture as a land use.

The following issues could usefully be progressed using New Wildwoods demonstration projects which might include:
- Landscape-scale establishment of native woodland across multiple ownerships.
- Farm extensification / diversification using native woodland and trees.
- Large scale conversion of forestry plantations to native forest.
- Establishment of tree cover by natural colonisation techniques.
- Integration with freshwater/water industry interests including floodplain woodland.
- Native woodland rural development forestry.

Roles of countryside agencies: A strategy for implementing New Wildwoods is outlined based around the countryside agencies: a) creating conditions for projects to be initiated by land holders and; b) developing capacity to support projects over a long time period. Their implementation will require: partnership working among a wider range of organisations; promotion and consultation; use of some novel approaches to land holding (strategic land purchase, land swaps, leases) and development of suitable incentives (e.g. challenge funds aimed at syndicates of owners).

CRYNODEB GWEITHREDOL

Mae'r adroddiad hwn yn cyflwyno syniadau ar gyfer sefydlu "Coed Gwyllt Newydd", sef brithweithiau eang o goetiroedd brodorol a mathau eraill o dir, gan gynnwys tir amaeth, lle mae'r elfen o goetir yn llawer uwch nag sy'n arferol ym Mhrydain (30-70% o goetir dyweder). Mae patrymau tebyg i'w gweld mewn ardaloedd megis y Fforest Newydd, Fforest y Ddena a Cairngorm Forest. Nodau penodol y prosiect a ddisgrifir yn yr adroddiad hwn oedd:

- Arfarnu manteision ac effeithiau tirweddau coediog o'r fath a'r cyfleoedd a'r cyfyngiadau sy'n codi o'r defnydd tir a'r cyd-destun polisi presennol;
- Disgrifio mathau posibl o brosiectau a lleoliadau posibl;
- Amlinellu proses ar gyfer gweithredu'r coetiroedd hyn drwy weithio mewn partneriaeth rhwng asiantaethau cefn gwlad a sefydliadau eraill.

Cyflawnwyd hyn drwy gyfrwng proses tri-cham:

1. asesiad beirniadol o'r cysyniad trwy ddefnyddio llenyddiaeth a chysylltiadau â sefydliadau allweddol.
2. rhaglen o dair seminar ranbarthol lle cafwyd trafodaethau manwl â budd-ddeiliaid.
3. dadansoddiad o hyfywedd posibl prosiectau o'r fath mewn nifer o leoliadau.

Rhesymeg: bwriedir y fenter i: a) cynyddu gweithgarwch presennol mewn creu coetiroedd brodorol, sy'n tueddu i fod ar raddfa fechan a gwasgaredig; a b) cyfannu rhwydweithiau cynefinoedd fforestydd a phrosiectau "dad-ddarnio" coetiroedd drwy ddarparu "ardaloedd fforestydd craidd" yn y dyfodol a; c) chreu cymysgeddau newydd o ddefnyddiau tir a mentrau gwledig yn yr ardaloedd hyn. Cynigir y cysyniad fel cyfraniad at nifer o fentrau polisi'r llywodraeth yn yr ardaloedd hyn yn enwedig ddatblygu gwledig integredig (gweler cyfleoedd a chyfyngiadau, isod).

Y Cysyniad: Y prif egwyddorion yw: dylunio a rheoli coetir ynghyd â thir agored fel un uned dirwedd; defnyddio ystod o ddulliau rheoli posibl (gyda rheolaeth ymyrraeth isel mewn ardaloedd "craidd", gan newid yn raddol i reolaeth fwy "dwys" mewn ardaloedd "ffiniol"); a sicrhau bod yr elfen goetir yn integreiddio i fathau eraill o dir cyfagos, ac yn cyfrannu atynt. Gellir datblygu Coed Gwyllt Newydd ar wahanol fathau o safleoedd yn yr ucheldiroedd ac yn yr iseldiroedd. Y prif feini prawf ar gyfer dethol lleoliadau yw targedu'r ardaloedd hynny lle: mae perchnogion, cymunedau a mudiadau wedi dangos diddordeb mewn ehangu coetiroedd brodorol; nad yw'r defnydd presennol o dir yn amrywiol iawn a/neu lle mae'n economaidd ymylol; mae peth coetir lled-naturiol yn bod eisoes i adeiladu arno; mae'n debyg y gellid datblygu adloniant, twristiaeth a buddiannau "ansawdd bywyd" gan y cymunedau lleol; ac nad oes cyfyngiadau sylfaenol ar ehangu coed gorchudd.

Manteision ac effeithiau: Mae i goetiroedd brodorol swyddogaethau ym mhob prif ddefnydd tir ac maent yn berthnasol i amrywiaeth eang o fudd-ddeiliaid gan gynnwys coedwigwyr, ffermwyr,

cymunedau lleol, diwydiannau dŵr a physgodfeydd, cysylltiadau chwaraeon a mudiadau cadwraeth. Mae'r sawl a allai elwa yn y sectorau twristiaeth ac adloniant oherwydd bod ymwelwyr yn cael eu denu at dirweddau anarferol, amrywiol ac atyniadol. Mae potensial i gymunedau gwledig elwa drwy gyfranogi mewn sefydlu a rheoli coetiroedd ac yn y pen draw yn y gweithgarwch y maent yn ei gynhyrchu ym maes twristiaeth. Byddai'r diwydiant coedwigaeth yn elwa o weithgarwch sefydlu a rheoli coetiroedd; er y gallai fod colledion mewn cynhyrchu coed pren-meddal lle y newidir planhigfeydd i gynnwys rhywogaethau brodorol. Gallai fod colled gyffredinol mewn cynhyrchiant amaethyddol (er yn gyffredinol mewn meysydd sydd eisoes yn dra ymylol o ran allbwn amaethyddol), ond mae potensial i ffermwyr elwa hefyd, yn enwedig y sawl sy'n ymwneud â rheoli coetiroedd fferm a gwaith contract a darpariaeth adloniadol. Mae manteision ac effeithiau pwysig ar gyfer y diwydiant dŵr ac mae hwn yn fater allweddol sydd heb ei ddatrys. Gallai rhannau o "Goed Gwyllt Newydd" fod yn gyfraniad tuag at ddatblygu ardaloedd newydd o dir gwyllt, y cyfeirir ato fel "ailwylltio" gan rai grwpiau o fewn mudiadau cadwraeth natur. Mae Coedwig Gwyllt Newydd yn nodweddiadol o ran eu ehangder mawr; ac o ran creu brithwaith o goetir a thir di-goed. Gall hyn roi cymeriad penodol iddynt a all fod o fantais wrth hyrwyddo'r ardal ar gyfer blaenoriaethau cyllido ac, yn y dyfodol, ar gyfer adloniant a thwristiaeth.

Cyfleoedd a chyfyngiadau: Ymchwiliwyd i'r cyfleoedd a'r cyfyngiadau sydd yn dylanwadu ar ddatblygu fforestydd brodorol.Ymddengys fod defnyddio mwy o rywogaethau brodorol mewn coetiroedd newydd yn symudiad sylfaenol hir-dymor yn hytrach na ffasiwn dros dro. Mae'r cysyniad o Goed Gwyllt Newydd yn gweddu'n dda â sawl tuedd bwysig, gan gynnwys proffil cynyddol o ddatblygiad gwledig integredig ac â phwysigrwydd cynyddol darparu gwasanaethau fel symbylydd economaidd, o gymharu â chynhyrchu nwyddau. Mae'n cyfrannu at sawl polisi defnydd tir ar ran y llywodraeth gan gynnwys: datblygiad gwledig integredig, arallgyfeirio ar ffermydd yn sgil clwy'r traed a'r genau, cynlluniau gweithredu cynefinoedd coetiroedd a rheoli dalgylchoedd. Fodd bynnag mae nifer o gyfyngiadau difrifol gan gynnwys: gallu presennol ffermwyr i gymryd rhan o ystyried yr hinsawdd amaethyddol ansicr; sensitifeddau sy'n ymwneud â datblygiadau coetiroedd newydd mewn dalgylchoedd dŵr; tir cyffredin; strwythurau a lefelau presennol cymorthdaliadau amaeth a choedwigaeth; natur tymor hir y cysyniad a'r buddsoddiad sylweddol mewn adnoddau cyn i'r manteision gael eu cyflawni.

Profiad presennol: Adolygwyd y profiad presennol o sefydlu coetiroedd a rhoddir amlinelliad o gynnydd gwahanol fathau o gynlluniau coetiroedd brodorol (coetiroedd brodorol planedig newydd, cynlluniau adfywio naturiol, planhigfeydd rhywogaethau cynhenid, cynlluniau cytrefu naturiol, adfer planhigfeydd ar safleoedd coetiroedd hynafol, cynlluniau porfeydd coediog, amaeth-goedwigaeth a chynlluniau coetiroedd gwledig o rywogaethau cynhenid). Bu'r cynnydd yn gynt yn yr Alban (8000 o hectarau o rywogaethau cynhenid yn cael eu plannu'n flynyddol) nag yn Lloegr a Chymru a thrafodir y ffactorau sy'n ysgogi hyn. Canolwyd y cynnydd yn Lloegr a Chymru ar barciau cenedlaethol ond hyd yn oed yn yr achosion hyn dim ond arwynebeddau cymharol fychan o goetiroedd sydd o dan sylw.

Prosiectau: Ymchwiliwyd i'r ardaloedd canlynol am leoliadau posibl mewn "astudiaethau achosion amlinellol": Ardal y Llynnoedd (Ennerdale), y Penwynion (Pennines), Iseldiroedd De Lloegr (Y Fforest Newydd, Sussex Weald, Rockingham Forest, Bardney Forest, cynllun fferm gyfan yn Dorset), Mynyddoedd y Cambrian a De'r Alban. Yn ychwanegol, rhoddir disgrifiadau bras o brosiect tir gwyllt yn yr Iseldiroedd (Oostvaardersplassen) a phatrwm o weithredu yng Nghanada "Model Fforest". Mae'r astudiaethau hyn yn hoelio sylw ar rai materion allweddol, gan gynnwys sensitifeddau o bwys mewn sawl ardal ucheldir; yr angen am gyfranogiad parhaus y gymuned; trawsnewid planhigfeydd conwydd; sensitifeddau ehangu coetiroedd ar ddalgylchoedd dŵr ac ar rai gweundiroedd y Penwynion (Pennines); pwysigrwydd adeiladu ar goetir sydd eisoes yn bod lle bo hynny'n bosibl; a photensial porfeydd coetirol fel defnydd tir.

Gellid datblygu'r materion canlynol yn ddefnyddiol trwy ddefnyddio prosiectau enghreifftiol Coedwigoedd Gwyllt Newydd a allai gynnwys:

- Sefydlu coetiroedd brodorol ar raddfa tirwedd ar draws aml-berchnogaethau.
- Ehangu/arallgyfeirio ar ffermydd gan ddefnyddio coetiroedd a choed brodorol.
- Troi planhigfeydd coedwigaeth yn fforestydd brodorol ar raddfa sylweddol.
- Sefydlu gorchudd tir coed drwy dechnegau cytrefu naturiol.
- Integreiddio â buddiannau'r diwydiant dŵr/dŵr croyw yn cynnwys coetiroedd gorlifdir.
- Datblygu coedwigaeth coetiroedd gwledig brodorol.

Swyddogaethau asiantaethau cefn gwlad: Amlinellir strategaeth ar gyfer gweithredu Coed Gwyllt Newydd wedi'i seilio ar asiantaethau cefn gwlad yn a) creu amodau ar gyfer prosiectau i'w cychwyn gan ddeiliaid tir a; b) datblygu'r gallu i gefnogi prosiectau dros gyfnod hir o amser. I'w gweithredu bydd angen: gweithio mewn partneriaeth ymhlith ystod ehangach o fudiadau; hyrwyddo ac ymgynghori; defnyddio rhai agweddau newydd ar ddal tir (pwrcasu tir strategol, cyfnewid tiroedd, prydlesi) a datblygu taliadau anogaeth addas (e.e. herio cyllid a neilltuir ar gyfer cyfuniadau o berchnogion).

1. INTRODUCTION

This report presents ideas for establishing "New Wildwoods", which are conceived of as landscape-scale mosaics of native woodland and other types of land, including agricultural land, where the component of woodland is far higher than is usual in Britain (say 25-70% woodland). Models for this include areas like the New Forest, the Forest of Dean and the Cairngorms Forest. The rationale is ultimately to create new mixes of land uses and rural enterprises in these areas. The concept is proposed as a contribution to the debate about the future of the countryside, especially in light of ongoing changes in the farming and forestry sectors.

The initiative is intended to augment current activity in native woodland creation, which tends to be smaller scale and dispersed and to contribute to development of Forest Habitat Networks. It is not intended to be a prescription to be applied widely across Britain in the way that commercial afforestation was during the 20th century; rather the aim is for a limited number of discreet well–designed projects.

Broadly similar ideas to these have been expressed over the years by a number of different native woodland and nature conservation interests. For example, Reforesting Scotland states that one of its main "visions" is for "large wilderness forests" of between 10,000 and 50,000 ha (Reforesting Scotland undated); and independent conservation campaigners have called for establishment of sizeable "wilderness" areas (Aykroyd 2002, P. Taylor pers.comm.). Indeed some large scale native woodland projects have been initiated in Scotland, notably in Glen Affric, the Cairngorms Forest and at Carrifran in the Southern Scotland; and some extensive areas of moorland in the uplands of England have been the subject of ecological restoration under the banner of "rewilding".

The ideas in this report were originally put forward by the Countryside Agencies' Woodland Policy Group and have been developed by a team of consultants as the "New Wildwoods" project. This project focused on:

- providing a critical assessment of the possible benefits, impacts and opportunities;
- running a series of 3 seminars in 2001 in Newcastle, Newtown and Exeter where the concept, its potential and possible sites were discussed;
- developing a series of outline case studies;
- drawing up proposals for how such projects might be implemented.

This report presents the findings of the project and is structured as follows

1. The concept
2. Benefits and impacts of such woodlands;
3. Opportunities and constraints arising from the current land use and policy context;
4. Key potential project types, possible locations, partners and stakeholders and outline case studies;
5. Process for implementation.

Four main themes are discussed in the report:

- evaluation of the potential of New Wildwoods to contribute to both integrated rural development and conservation;

- the main factors which influence native woodland establishment and the opportunities and constraints currently affecting progress;
- identification of the ways in which the countryside agencies, working in co-operation with other bodies active in native woodland establishment, can most effectively target their support;
- assessment of the possible role of demonstration projects in advancing this idea, these being set up jointly between the countryside agencies, land-holders, rural communities and other organisations.

The report attempts to address the particular benefits and impacts that occur when native woodland forms a large enough component of the landscape for the term "forest" to be used. In such a forest landscape, woodlands, agriculture and other land uses exist as a mosaic (with tree-cover typically > 30% of the area). This is an unusual circumstance in Britain, but where it has been maintained it has a particular unique set of benefits – as areas like the New Forest illustrate.

The report looks critically at the many roles that woodland can play – because such wooded landscapes will only be welcome if they address specific economic, social and environmental needs. Native woodland potentially has important roles in all the major land uses - forestry, farming, water, fisheries management, conservation and sporting – and confers wider benefits to recreation, landscape and tourism. Thus new native woodland can make a useful contribution to rural and community development and to the rural economy. However in some circumstances new woodland can have negative impacts for some stakeholders (e.g. reduced water yields) - and so these also need to be assessed.

Native woodlands are also usually of extremely high ecological value and can be developed as part of conservation areas or "wild land". There has recently been an increasing interest in woodlands created and managed with lower levels of intervention, and with greater emphasis on natural processes and 'wilderness'. This study also explores the extent to which wooded wild land can deliver tangible benefits, especially to recreation and tourism.

Various labels can be attached to the wooded landscapes which this report promotes, each being useful in different contexts and for different stakeholders, 'New Wildwoods', 'New Native Forests', 'Native Forest' and 'Native Forest Landscapes' being the most appealing. Whilst the term New Wildwood is adopted in this report, we recognise that other parties may wish to adopt other terms which they find useful to convey the same concept.

2. THE CONCEPT

The overall focus of this report is the development of New Wildwoods that are essentially large areas of *woodland landscape* with the following main characteristics:

- comprise a network of wooded ground and open space, including productive agricultural land and uncultivated or "wild" land;
- extend eventually to several thousand hectares in which the woodland element comprises relatively large contiguous or interconnected areas;
- dominated by locally native tree and shrub species, but also containing an admixture of introduced tree species;
- close integration between woodland and the surrounding land uses, with woodland conferring benefits on its surroundings;
- deliver a range of economic, social and environmental benefits.

The proportion of woodland in the landscape might be expected to be in the range 25 to 70 percent. For comparison, the New Forest is about 35% woodland and the Cairngorms Forest 25-30% woodland (of land below the 600m treeline).

2.1 DESIGN AND MANAGEMENT

The first main "design principle" of these wooded landscapes is that they accommodate a range of possible management styles; with low intervention management in "core" areas, grading to more intensive management in more "peripheral" areas. This would apply to both the woodland management and management of areas of open ground. So in core areas management would be mainly for environmental benefits and recreation. These core areas would form one of a spectrum of types of "wild land" now being implemented under the banner of "rewilding", mainly in upland England. Low intervention woodlands of this type have been have pioneered in Scotland, by conservation charities (notably Trees for Life and RSPB), the Forest Enterprise and some private landowners. The more peripheral areas would have a more conventional range of productive land with management for timber, grazing and other products; though the mix of activities and enterprises might differ from more conventional farming-dominated landscapes.

The second main design principle is that the wooded landscape should accommodate all of the following:

- large, contiguous forest areas.
- areas of open woodland, pasture woodland and "semi-woodland habitat" such as hedges and scrub.
- mosaics of woodland and open ground, and
- contiguous areas of open land.

Large areas of contiguous native forest can provide many ecological and recreational benefits and are a type of land use/habitat which is under-represented in Britain (Peterken et al.1995). Pasture woodland and semi-woodland habitats reflect our increased appreciation of cultural and ecological values of mixes of trees and open land (Watson 1998, Vera 2000, Quelch 2000). These habitats, which have a long history in Britain, combine many of the benefits of woodland, whilst allowing some grazing by stock, and hence allow some scope for integration with extensive upland farming systems. Mosaics of woodland and open ground provide an appealing landscape with opportunities for integrated management of farmland and woodland frequently found in other parts of northern Europe.

The value of managing woodland together with open land as one landscape scale unit is increasingly appreciated, both in ecological terms (e.g. Woodland Trust 2002) and as part of integrated land management. The principal tool for this in a woodland context is the Forest Habitat Network (FHN) approach, which is based on landscape ecology principles (Peterken et al. 1995, Ratcliffe et al. 1998, Good et al. 2000, Gkaraveli 2001) (see 2.5 below).

The third main design principle is that the woodland element integrates with, and contributes to, other types of neighbouring land. Examples of the potential beneficial roles of woodland in other land uses include:

- strategically placed shelterbelts/woods for exposed fields
- farm woodlands designed to provide a ready source of timber materials
- woods providing over-wintering areas for stock
- riparian woodlands for improving fisheries habitat
- woods for cover for sporting
- native woodlands as a matrix for conifer plantations
- woodlands as a medium for recreation
- woodland screens for infrastructure.

The last design principle is that the development of woodland should avoid as far as possible adverse impacts on existing values of the land, i.e. the presence of woodland should not compromise adjoining farming or other land uses, or damage habitats or archaeological features, exacerbate water quality or yield problems, etc.

2.2 LOCATIONS

These wooded landscapes could potentially be developed on a range of types of sites in both the uplands and the lowlands. The challenge is to determine which types of site would provide greatest net benefits from a substantial increase in woodland cover. In both the upland and lowlands, the factors which point to an area being suitable are:

- where owners, communities and organisations have show some interest in native woodland restoration or expansion. This is particularly the case where one or two owners might be interested in initiating a large “core area” of native woodland, in the way Forest Enterprise, the conservation NGO’s, and some private owners (notably in Highland Scotland) have begun to do in recent years.

- where existing land use is limited in diversity, both economically and ecologically. Examples might include many upland pastures, lowland arable or large areas of conifer plantation.
- where existing land use is economically marginal e.g. poorer areas of upland grazing or low yielding conifer.
- where there is some existing semi-natural woodland to build on. This is particularly important for conservation benefits and there is an appealing logic to producing a wooded landscape by expanding existing native woodland. However this is not *essential*, and locations can be envisaged where such wooded landscapes could be created with very little existing native woodland (e.g. the Carifran "Wildwood" project in Southern Scotland). Indeed many locations, particularly in upland Britain above the level of enclosure, lack substantial areas of existing semi-natural woodland.
- where recreation, tourism and "quality of life" benefits could be developed and would be welcomed by the local communities.
- where there are *no* fundamental constraints on expansion of tree cover on ecological grounds, because of archaeological features or water quality or yield issues etc.
- where land is in the ownership and management of conservation organisations or other landowners sympathetic to the development of New Wildwoods.

2.3 EVOLUTION OF PROJECTS

Large-scale projects that attempt to promote large-scale land use change across multiple ownerships are far easier to envisage "on paper" than they are to implement. If progress is to be made, some basic conditions need to be fulfilled:

- they contribute to government policy priorities i.e. they solve identifiable rural problems;
- their benefits come to be accepted by land holders, communities and supporting agencies;
- the general economic and social climate does not fundamentally impede progress;
- the incentives available are sufficient to drive the necessary land use change;
- agencies are prepared and able to support the concept over an extended time period;
- there is a will to try out novel mechanisms and approaches.

These issues are topics in the following chapters of this report.

2.3.1 Speed of development

Projects to generate a wooded landscape might evolve in several ways. One important aspect is whether they might develop relatively slowly by modest areas of woodland coalescing over an extended period; or, alternatively, whether the process should be "kick started" by creating a large woodland area(s) over a shorter time scale, to which further woodland is then added. Both these approaches are possible, but the option of kick starting with a major initiative is appealing, if only to provide rapid experience of how such areas might be developed and what benefits and impacts they have. The option of slower incremental approach seems most appropriate where the landscape is being developed by expanding areas of existing semi-natural woodland – and indeed such initiatives are starting to be implemented in various parts of the country using the Forest Habitat Network or defragmentation approach (Peterken et al. 1995).

2.3.2 Options for community-led development

Another key aspect is how such projects might be initiated; whether they are generated by local communities and local organisations from the "bottom-up", or by agencies from the "top-down", or a combination of the two. Thinking and practice on woodland projects of this type have shifted fundamentally in the last 10 years away top-down approaches, as the potential and successes of community-led approaches have become increasingly apparent (e.g. Border Forest Trust in Scotland) (McPhillimy 2000). There is reason to expect that bottom-up approaches could be successful for New Wildwoods, though this would need to incorporate engagement of large land-owners in order to develop large core areas.

2.4 WHAT TYPES OF LAND USE WOULD BE INCLUDED

Figure 2.1 shows the range of land uses and habitats described in terms of their degree of woodland cover and naturalness (or the converse, intensiveness of management). The full range of semi natural habitats from woodland to bog and heathland would be appropriate for the "core areas "of New Wildwoods; as would a range of types of woodland from wood-pasture to planted woodland. Conifer plantation would be acceptable but only as minority component. In "peripheral areas" all the major land uses/habitats would be acceptable, including more intensively managed ones, such as conifer plantation and arable land – though the various types of native woodland would still be a significant element in the landscape. For explanation of some of the woodland terms in figure 2.1, see section 5.2.

2.5 FOREST HABITAT NETWORKS

New Wildwoods should be designed using the Forest Habitat Network concept (Peterken et al. 1995, Good et al. 2000). The Forest Habitat Network approach attempts to steer the location of new woodland in a way which:

- establishes a large "Core Forest Areas" of woodland (i.e. major nodes in the forest habitat network, with at least 30% of the land covered by well-distributed forest);
- maximises the connectivity of the woodlands by use of 'corridors' and 'stepping stones' of woodland;
- limits fragmentation of farmland and open ground habitats;
- woodland is placed on the types of land most suited to it.

The benefits of this approach include:

- enabling the development of large Core Forest Areas with many benefits in terms of nature conservation, landscape, recreation and practicalities of management.
- maintaining complementary large tracts of open habitats.
- ensuring that the landscape has scope to evolve (by using the historic woodland pattern as a base) and only changes by radical redesign where this is appropriate.
- facilitating ecological development of new woodland by maximising opportunities for slow-colonising woodland species to become established.

Forest Habitat Networks build on a base of existing woodland, i.e. the process starts with some assessment of the amount and pattern of existing woodland. In most locations where New Wildwoods might be developed there would be some existing woodland to build on, but there are also regions and landforms that are poor in native woodland (e.g. some lowland areas of England, the uplands above the level of enclosure). In such areas Forest Habitat Network principles would still apply to the creation of new woodland, so as to ensure maximum connectivity of the new areas of woodland. Management of existing and new woodland should be co-ordinated at a catchment scale. In particular, there is a need to plan now for the development of a balanced age-class distribution in the whole of the enlarged woodland area.

Thus, the New Wildwoods concept is clearly complementary to the "defragmentation" or "Forest Habitat Network" projects that are taking shape in various parts of the country. A crucial aspect of New Wildwoods would be the development of new Core Forest Areas; something which is unlikely to arise simply out of defragmentation projects. Circumstances can be envisaged where New Wildwoods may grow out of defragmentation projects; or alternatively, they may inspire the development of defragmentation projects in areas identified for New Wildwoods.

2.6 CONTRIBUTION TO WILD LAND AND REWILDING

New wildwoods would be a contribution to developing new areas of "wild land", and furthering what is called "rewilding" by some groups within the nature conservation movement. There is currently a debate taking place about the merits of wild land in a British context and how more might be established www.geog.leeds.ac.uk/conferences /wildbritain/index.html). This builds on ideas of the special values of wild land developed elsewhere in the world where genuine wilderness areas still exist, notably the US.

Rewilding is largely synonymous with ecological or habitat restoration and would usually involve the partial or total withdrawal of agriculture or forestry. Groups like Trees for Life and the John Muir Trust have generated considerable support for reforestation of extensive areas with native woodland (e.g. Glen Affric) and have successfully promoted the concept of wilderness in Scotland. A notable international example of a project which aims to recreate "wilderness" is the Oostvaardersplassen, a 5,600 ha reserve developed on polder land claimed from the sea in the 1960s in Holland, in which large herbivores play a leading role (Kampf 2000). The aim is to allow nature to take it course and allow large herbivores to fulfil their original, natural role. This has demonstrated that wild populations of large herbivores can sustain themselves naturally in large reserves, and that semi-wilderness reserves can have public support, though fundamental issues continue to be debated (e.g. animal welfare).

The aim of recreating extensive areas of wild land on land that has been so fundamentally altered and which has traditionally supported agricultural communities is a contentious issue. Even in the Scottish Highlands, where some large areas of land have been largely devoid of people since the clearances in the 18th and19th centuries, there is considerable hostility to the idea of wilderness areas amongst social campaigners, who would prefer to see repopulation and

rural development. The key issue here is to develop the wild nature of areas in ways which successfully engages local communities and provide some social and economic benefits i.e. something of a merging of the wildness and rural development ideals. Some progress has been made in this in recent years, notably on some of the properties managed by John Muir Trust in Scotland.

2.7 INTEGRATED LAND MANAGEMENT

There is increasing acceptance of the need for the different elements of land use to be managed in an integrated fashion, so as to maximise beneficial effects of one land use on another. Manifestations of this include:

- Recent and proposed changes in government support for farming through the use of whole-farm plans, agri-environment schemes etc.;
- Plans for catchment management to be introduced as part of the European Water Directive;
- Use of indicative forestry strategies, forest frameworks and forest habitat networks.

The New Wildwoods approach adopts the principles of integrated land management, by being explicitly multi-functional; focussing on developments at a range of scales from landscape/catchment to site level; and by setting out to integrate native woodland with other land uses and habitats.

3. BENEFITS AND IMPACTS

There are three main issues relating to the benefits and impacts of New Wildwoods:

1. How native woodlands fit in with general trends in society. This provides an insight into how widely they might be accepted, how long they are likely to remain popular and how they might fit in with political developments.
2. The specific benefits and impacts associated with them, seen from the point of view of the main stakeholders. This provides insights particularly into how to involve rural communities in developing native woodlands.
3. How those benefits and impacts manifest themselves when large scale woodland landscapes are created, which include a mix of woodland and unwooded land.

Points 2 and 3 are hampered by a lack of information, largely because research in this area has generally been targeted at conifer forests.

3.1 GENERAL SOCIAL TRENDS

Increased use of native species in new woodland appears to be a long term fundamental shift rather than a passing fashion. This is partly because native woodland fits in well with several important trends:

- **increasing support for integrated rural development**: native woodland provides a range of benefits/services for range of rural stakeholders; they are suitable for low input/low output management achievable for many rural land holders without specialist equipment; and they potentially supply local scale markets (including high value products e.g. turnery timber, forest mushrooms as well as traditional lower value products e.g. firewood).
- **provision of services** is increasing in importance as a major economic driver, compared with production of commodities. Native woodland provides high quality environmental, landscape and recreational services.
- **increasing emphasis on quality of life**: native woodland reflects (post-modern) values in society such as: raised environmental awareness, increased value of attractive landscapes, greater value being placed on naturalness and a slowly increasing disenchantment with traditional industrial/technical approaches to land use.

These trends are supported by the fact that society is now becoming affluent enough to be able to afford forms of land use which do not necessarily maximise the production of material products, but focus on wider range of goods and services. Many of these wider outputs underpin increased quality of life (e.g. landscape, recreation, conservation) and, importantly, have substantial service industries associated with them (e.g. tourism).

In conclusion, just as conifer afforestation reflected the importance attached by society to commodity production and wealth creation in post-war Britain, native woodlands reflect post-modern attitudes to quality of life and environmentally sensitive approaches towards rural enterprise.

3.2 STAKEHOLDERS, BENEFITS AND IMPACTS

This section considers the benefits and impacts of native woodland in general, and then goes on to consider the particular attributes of New Wildwoods. The past 15 years have demonstrated that there is an increasing array of stakeholders interested in native woodland as a part of integrated rural development. The main stakeholders in native woodland establishment are:

Foresters: Native woodlands have rapidly been increasing their role in forestry. Targeted grants have been successful in establishing new native woodlands and have initiated considerable activity in restoring existing woodland (see chapter 5). Whilst they have so far been established mainly for environmental benefits, there are also signs of increasing interest in managing some of them for quality timber and other economic benefits.
Private estate owners: These have been active in establishing large areas of native woodland in Scotland with conservation and sporting as the main intended benefits.
Farmers: Some farmers see benefit in native woodlands as farm woodland.
Conservation organisations: These have become a major force in purchasing woodland, or acquiring land for the establishment of native woodlands, occasionally on a large scale.
Sporting interests: These often favour native or mixed woodland as cover for game.
Local communities: Whilst local communities will engage with all types of forest, the vast majority of communities voice strong support for increasing the role of native species in their woodlands.
Freshwater fisheries: These have become increasingly involved with restoration of riparian woodland to improve fisheries habitat and water quality.
Water industries: Water companies and authorities usually have extensive areas of woodland on their catchments, particularly in upland areas.
Recreation and tourism: Native woodland shares all the well-documented advantages of other types of woodland for recreation (appealing setting, tranquillity, large visitor carrying capacity, robustness, wildlife viewing opportunities, use of roading for access) but brings with it special sense of naturalness and "cultural fit".

It is widely accepted that native woodlands provide high levels of environmental benefit, due to their natural features and diversity, but that the economic and social benefits of native woodlands have traditionally been overlooked and undervalued (Worrell and Callander, 1996, Bell Ingram, 1998, Countryside Commission, 1998, English Nature 2002).

Table 3.1 gives an overview of main benefits and impacts of New Wildwoods for the rural stakeholders and highlights the following features:

- Major potential beneficiaries are in the tourism and recreation sectors, as visitors are attracted to new, diverse and attractive landscape with considerable potential for recreation activities (Scott, 1999).
- The forestry industry will benefit by activity in woodland establishment and management. The potential for timber production is contingent on the type of land and the style of management, ranging from losses in timber (where high quality conifer plantations are converted to native woodland) to significant gains (where arable land is converted to broadleaf woodland managed for timber).

- There will be a loss of agricultural production, but there is also potential for farmers to benefit, dependent upon the degree to which farmers choose to engage in woodland management and contracting and future recreational provision.
- The impacts on the water industry is a key unresolved topic, with potential gains (especially where conifer plantations are converted to native woodland), but some losses in water yields where pasture/moorland is planted.
- There is the potential for rural communities to benefit by engaging in the establishment and management of woodlands and eventually in the tourism related and rural development activity which they generate.

Many of the benefits outlined above will take a long time to establish because the large areas envisaged are only likely to be converted to woodland by successive recruitment of pieces of land over an extended time period. However, it is possible that core areas might be established fairly quickly where large owners decide to opt for this.

3.3 SPECIAL FEATURES OF NEW WILDWOODS

Features of New Wildwoods which give them distinctive attributes are:

- their large extent;
- the juxtaposition of woodland and unwooded land as a mosaic, with woodland as the matrix;
- the range of potential management styles.

Their large extent gives them a distinctive *identity*. This is an advantage in promoting the area for funding priorities and, as time progresses, for marketing the location for recreation and tourism (in the way that areas like the New Forest do). It also provides a sense of cohesiveness to those engaged in management and hence increases the likelihood of coordinated management and planning.

The juxtaposition of woodland and unwooded land in patterns, that are unusual in Britain, lays the foundation for the appeal of the area for both visitors and residents. Importantly, it provides opportunities for integrating woodland with other land uses, especially farming, fieldsports and freshwater fisheries. In a diversified, integrated landscape of this type, there is the potential for the total sum of benefits from all the various land uses and related activities, to exceed those under a more monocultural system.

The range of potential management styles means that this is not a unified prescription, but that management can react to different circumstances. This should prevent some of the pitfalls associated with the widespread prescriptive approaches of much upland conifer afforestation and industrial scale farming.

Table 3.1 Benefits and impacts of New Wildwoods for the main land uses

BENEFITS	ADVERSE IMPACTS
Recreation and tourism	
Improved recreational opportunities (walking, cycling, horse riding wildlife viewing)	Some increased negative impacts due to inappropriate acc visitors e.g. car dependency .
Increased visitor numbers and related activity and employment in tourist service sector	Some loss of long distance views and views of open grou
Increased options for specialist tourist related enterprises (e.g."woodland safaris", "fungal forays")	
Diversified and therefore generally more attractive landscape. Large forest areas with unusual and appealing landscapes which help to draw visitors.	Landscape impacts of car parks
Farming	
Increased opportunities for diversification by farmers into woodland management and contracting.	Farming output and employment reduced, with further in economies of scale
Improved shelter for farmland	Increased pressure from deer, foxes, crows, pigeons etc o
Locally available timber/timber products for farm use	
Forestry	
Increased timber outputs and employment – the amount dependant on the type of management	Losses in timber volume out turn where conifer forests ar woodland, which will have different economic consequer softwood timber price level for the stands involved
Non-timber woodland products	
Increased non -timber outputs and related employment (e.g. woodland mushroom collection, seed collection)	

BENEFITS	ADVERSE IMPACTS
Sport shooting	
Generally improved shooting/sporting options in woodland/open ground matrix	Negative impacts possible if heather moorland converted (e.g. reduced grouse numbers)
Possibilities to encourage unusual game birds by habitat creation (e.g. black cock)	
Freshwater fisheries	
Improved freshwater fisheries habitat as riparian woodlands are likely to be a major target for restoration in both core and peripheral areas	
Improved fisheries habitat if conifer plantation converted to native woodland	
Water supply industries	
Conversion of conifer woodland to native woodland can increase water yields and quality, particularly if the excessive drainage associated with conifer plantations is mitigated.	Reduced water yields compared with pasture
Native woodland can be an alternative to stock rearing thus reducing problems of Cryptosporidium	Potentially more trees in rivers during flood events (bridg
May reduce impact of some types of flooding and be a suitable land use for floodplains	
Conservation	
Core forest areas with genuine interior forest habitat suitable for interior woodland species (notably birds such as nuthatch, capercaillie etc.)	Potential losses if open ground habitats converted unnece or become fragmented
Good woodland connectivity and hence quicker establishment of rich woodland habitats	
Residents and local communities	
Diversified employment opportunities, especially in tourism sector	Reduced employment in agricultural sector
Opportunities for engagement in woodland ownership and management	Potentially increased house prices Community politics and resistance to change
Improved local environment	
Potentially increased house prices	

3.4 WHAT RURAL POLICY PROBLEMS DO NEW WILDWOODS CONTRIBUTE TO SOLVING ?

New Wildwoods can help contribute to the following rural issues:

- **Diversification of farming**: They would give a considerable boost to farm woodlands and could encourage farmers/farming families to take up contracting or part time employment in woodland management. They would potentially be good mechanisms for allowing farmers to take full advantage of future environmental and rural development payments.
- **Diversification of rural enterprises and rural disadvantage**. They would provide significant opportunities for expanding tourist and recreation related enterprises. They would contribute to strengthening woodland contracting and eventually hardwood timber production. Experience in areas such as the New Forest show that tourist related income can be very substantial.
- **Integrated rural development**: They are a good vehicle for promoting integrated rural development, as they have roles in all the major land uses and potentially involve so many rural stakeholders.
- **Expansion of woodland cover:** they contribute to government aims on the expansion of woodland cover and, in particular, the expansion of native woodland cover which is highlighted in the country Forestry Strategies.
- **Catchment management:** The "whole landscape" approach of New Wildwoods lends itself well to catchment management, which is a key part of the Water framework directive.
- **Biodiversity:** They would contribute to many government woodland biodiversity targets.

Chapter 4 provides more detail of these policy implications, together with opportunities and constraints for establishment of New Wildwoods posed by the current policy context.

4. THE POLICY CONTEXT: OPPORTUNITIES AND CONSTRAINTS

This part of the report summarises the major factors that affect the feasibility of creating new native woodlands, with special focus on New Wildwoods. This includes the following types of information:

- The policy context;
- The likely level of support from the different land use sectors, politicians, local people and the wider public;
- The technical factors that will either favour or deter native woodland creation, including locations where new native woodland would not be likely or desirable
- Specific opportunities especially in terms of land types and organisations.

The factors have been grouped as follows:

- Agriculture
- Nature conservation policy
- Forestry policy & the timber industry
- Carbon sequestration
- Soil & water conservation
- Ecological factors
- Landscape & cultural heritage
- Recreation & tourism
- Rural development
- Community participation

4.1 AGRICULTURE

Opportunities

- Changes in the rural economy, and the impact of global economic trends, may make more land potentially available for native woodland expansion, especially that which is already marginal in production terms.
- Foot and mouth disease has forced many individual farmers, particularly in upland areas, to rethink their future, and has also under-mined confidence in livestock sector more widely.
- Farmers facing declining incomes are motivated to explore other enterprises which complement their agricultural activities.
- The long-term trend in agricultural support, away from production payments and towards provision of environmental benefits and support for rural development, will tend to favour woodland creation.
- This is reinforced by trends in the land market showing increasing purchases of farmland by 'amenity' owners who also show greater willingness to create woodland. The forecast concentration of farm enterprises into larger units may also increase the amount of woodland creation, as it is currently the larger farms that are most likely to set aside land to woodland.
- Negative perceptions of agriculture are reinforcing the exodus of farmer's successors from the countryside, which leads to land ownership change and thereby creates opportunities for purchase by non-farming interests.

Obstacles

- The sharp decline in agricultural incomes leaves little scope or enthusiasm for investment in non-income producing enterprises such as woodland. It also forces farmers to seek short-term solutions.
- The move to area rather than headage payments reinforces the need for upland livestock farmers to maintain maximum grazing area.
- EU enlargement, and the scope for major afforestation on surplus land in accession countries, may jeopardise future support for conversion to woodland in the UK.
- Negative perceptions of the 'wildwood' approach – based on dislike of “abandonment” of land and reversion to woodland and scrub- may make it unpopular with farmers and other rural interests.
- The complex regulatory environment associated with woodland creation is off-putting to both farmers and others unfamiliar with forestry.
- Recent BSE and foot and mouth epidemics may hamper any moves to extensive grazing regimes associated with native forest creation.
- Lack of assistance and advice specifically focused on the integration of agriculture and forestry.
- Lack of sufficient incentives to allow farmers and landowners to participate in woodland development

4.2 CONSERVATION POLICIES

Opportunities

- There is widespread policy commitment across a large number of agencies and organisations for the creation of native woodland, and this is underpinned by broad public support and high appeal.
- There is increasing focus on conservation at a whole farm or landscape scale, with closer integration of woodland support measures with the management of other habitats. The 'forest habitat network' and 'defragmentation' concepts have gained widespread support, and conservation agencies are increasingly focusing on the wider countryside rather than just protected sites.
- Woodland managed primarily for conservation can also contribute to rural land use and enterprises such as water supply, fisheries habitat restoration, shooting, recreation, tourism etc. This fits with the increasing emphasis on rural development in the policies of conservation agencies.
- There is a developing interest in establishing a series of minimum intervention woodland reserves, and some secondary woods could be part of this.

Obstacles

- In some areas there is concern that there has been too much policy emphasis on woodland creation – especially by planting - at the expense of woodland management and the protection of non-woodland habitats.
- Current incentive regimes provide inadequate support (or even disincentives) to the operations that might be associated with the creation of wildwoods (e.g. extensive grazing, removal of conifers, and use of native rather than non-native broadleaves).
- Strict wilderness and minimum intervention techniques may not be easy concepts to incorporate into the conservation agencies' rural development agendas.

4.3 FORESTRY

Opportunities

- The use of native species has already become the norm for new broadleaved woodland, and creating new native woodland is a major aim of all three country forestry strategies.
- There is a major opportunity to create new native woodland at the end of the first rotation of unsuccessful conifer plantations, particularly those which are very high, steep or inaccessible.
- The increasing interest in restoration of plantations on ancient woodland sites, some of which are on relatively good quality soils, provides an opportunity to grow high quality hardwood timber.
- There is increasing emphasis on the use of natural regeneration in forestry in general, and the current need to save on establishment expenditure is increasing the appeal of this approach.
- The recent drastic downturn in the economic performance of conifer forestry narrows the gap between broadleaves and conifers in terms of financial performance.
- An incipient revival in markets for native hardwoods based on high value / low volume processing using local mobile sawmills is taking place, albeit involving small timber volumes.

Obstacles

- Creating new native woodland on farmland requires very high levels of public funding, even on poor quality land in the uplands.
- The fact that New Native Woodland Challenge in England and Wales was only able to generate very few schemes larger than 50 hectares suggests that under current policies opportunities for extensive woodland may be rare.
- Government support for woodland expansion may be decreasing in favour of improving the management of existing woodlands.
- There is still a strong perception in the forestry industry that native woodlands are only for conservation and need not be taken seriously for timber production. The New Wildwoods concept will reinforce this and may undermine progress made in Scotland to overturn this view.
- Harvesting timber from native woodland created on high, steep and inaccessible land – even if it is of high quality - may not be viable, making such woodland virtually unproductive.
- There is still some residual pressure to restock upland conifer forests even if they are of questionable economic viability and have adverse environmental impacts.
- The abundance of lower value derelict woodland in upland areas is viewed by some foresters by as evidence that all broadleaf woodland is of low productive value and uneconomic status.
- Controlling woodland creation and restocking using near-natural techniques over prolonged periods will require considerable flexibility in grant schemes and it will not be easy for the Forestry Commission to control.

4.4 CARBON SEQUESTRATION

Opportunities

- Recent re-invigoration of government commitment to combating global warming.
- Irrespective of policy, high emission companies will be interested in some woodland creation as a green flagship offsetting activity
- Native woodlands are probably only a slightly smaller equilibrium store than conifer plantations, particularly on low fertility sites.
- Native woodland managed under low intensity or non-intervention may accumulate two or more times the carbon store of managed woodland or plantations. Existing estimates for such woodland may be substantial under-estimates.
- Current embryonic trading regimes suggest that the carbon store associated with new native woodland could have a value in the order of £500 – 1000 / ha.

Obstacles

- Government is not currently supportive of achieving targets through offsetting forest sequestration, and inter-governmental agreement on the subject is proving very difficult to achieve.
- Forest creation on peat or peaty-gley soils may prove to be a net source due to oxidation of drying peat, thereby ruling out some of the wilder areas of the uplands.

4.5 WATER AND SOIL CONSERVATION

Water – Opportunities

- Forests can reduce peak stream flows and hence flooding risk, and there is an opportunity in the headwaters of rivers with high risks of flooding e.g. the Severn & Wye.
- Floodplain forests are a robust land use and could have a role in buffering river flows upstream of settlements.
- Forests can increase infiltration and hence aquifer recharge in pervious geology.
- Replacing conifer plantations with native woodland would increase water yields and quality.
- It appears that deciduous woodland may play a major buffering role to mitigate the impact of acidified rainfall. It may also play a role in absorbing other atmospheric pollutants, such as lead.
- Restoring broadleaf riparian woodland is increasingly seen as a key tool in freshwater habitat improvement.
- Converting agricultural land to woodland will reduce inputs of fertilisers and other chemicals to negligible levels, and prevention of inputs is cheaper than removal of excessive N.
- Where woodland replaces dairy farming or intensive livestock units there is a significant reduction in phosphate eutrophication and reduced risk of point source pollution.

Water – Obstacles

- Forests can reduce summer flow rates and water yield for water supplies.
- The impact of native woodland on water quality – particularly pH - is not well understood

Soil – Opportunities

- Native woodland – and pine, oak and beech in particular - may result in acidification of soils, but this is almost always likely to be less than for any conifers they replace.
- Native woodland will result in negligible soil compaction compared with agriculture and plantation forestry.
- Erosion rates are likely to be negligible under well designed native woodland, reducing secondary impacts on aquatic wildlife from high turbidity.
- Some of the land uses subject to highest erosion rates are in upland areas: leys or intensive sheep grazing, on steep sites, with impervious parent material, and in high rainfall areas. Marginal arable land on steep slopes in such areas will also be very vulnerable.
- Reduction of peak flows and erosion may be considerably cheaper than engineering solutions to high sediment loads.

Soil – Obstacles

- Shading of riparian vegetation may lead to streamside erosion.
- The economic cost of soil erosion under agricultural systems may be (or at least be perceived as zero since it is so long term) negligible so there is no net financial gain from conversion to woodland.

4.6 ECOLOGICAL FACTORS

Opportunities

- Woodland is the natural vegetation of most of Britain, which helps to make it one of the most diverse communities, the most valuable and one of the more straightforward to re-create.
- In virtually all intensively managed agricultural landscapes, woodland will have a greater biodiversity value than the existing land use.
- Extensive woods have several ecological advantages over smaller woods: a) they provide niches for 'interior' species; b) their populations are likely to be more resilient; c) they can more readily accommodate patches of non-woodland habitat; d) they suffer less impacts from adjoining land, and thus need less buffering; e) some reliance on natural disturbance regimes is more easily accommodated.
- There are specific opportunities in the upland zone to create two lost woodland types: tree-line forests and floodplain woodlands. Buffering and enlarging the Atlantic oakwoods, which are rare in a European context, would be a particularly desirable role for new native woodland in the uplands.

Obstacles

- Secondary woodlands are normally dominated by ubiquitous and mobile species, and will take centuries to develop the diversity and richness of ancient woodland.
- Many non-woodland habitats in the uplands are more valuable for biodiversity than new secondary woodland, and even if such woodland is located to avoid these areas, it may still have indirect impacts on adjoining non-woodland habitats.
- We do not adequately understand colonisation processes and landscape ecology which means that planning and design of new woodlands may involve considerable guesswork.
- The use of natural colonisation is unpredictable, and there is a risk that unfavourable structures and composition will appear, including dominance by invasive exotic species.

4.7 LANDSCAPE & CULTURAL HERITAGE

Opportunities

- Many landscapes in upland Britain are severely depleted of native woodland, and could be enhanced by carefully located woodland creation. There may be some scope for developing areas of 'new landscapes', which may reflect historic wooded landscapes.
- Native woodland could play a major role in diversifying or replacing high-impact conifer plantations.
- There are some upland landscapes affected by intensive farming or past industrial activity where woodland creation could play a major role in environmental regeneration.
- Native woodland would usually result in less impact on the archaeological field evidence than conifer plantation.
- Britain has very few wild areas and extensive new wildwoods could be a key component of such new landscapes.

Obstacles

- Change in any landscape, and particularly those that are cherished, will be resisted by some people, and rapid change resisted by many. Our most attractive landscapes are concentrated in the uplands.
- In a country with such a long history of cultivation and low forest cover, woodlands will almost always need to be subsidiary to the farmed landscape. Large new areas of wild woodland will usually appear as 'new' and intrusive elements.
- Even native woodland obscures archaeological remains, and many of the best preserved sites are in the uplands. Furthermore, unmanaged woodland where natural processes such as windblow and regeneration might be frequent, are likely to do more damage to remains than broadleaved plantations subject to conventional management and harvesting.

4.8 TOURISM & RECREATION

Opportunities

- Rural tourism is major economic activity, with nearly 1500 million visits to the countryside per annum, contributing some £7.6 m to the economy. The recent foot and mouth epidemic has brought home to the public and politicians the importance of this industry to rural communities and, in particular, the number of jobs associated with it.
- There are around 350 million day visits to woodland per annum., and this is one of the cheapest leisure activities (average spend of £3.15 per visit).
- Native woodland in a landscape is generally assumed to have broad public appeal and provide for virtually the full range of woodland-based recreational pursuits.
- Large areas of wildwoods could provide analmost unique 'wilderness' experience that would be much sought after by many outdoor enthusiasts in Britain.
- Woodland has a high carrying capacity for visitor use, particularly for informal recreation activities.
- Links in with the current legislative framework granting increased access to areas of open country in England and Wales (CROW act).

Obstacles

- There is inadequate information on consumer preferences with respect to woodland types for recreational purposes.
- Until recently there has been comparatively limited government policy support or recognition for rural tourism. It is a fragmented industry, in which woodlands play an incidental role.
- Most rural recreation, particularly in the uplands, depends on car access and this will have negative impacts.
- The low average spend per woodland visit is a limiting factor in terms of its contribution to the rural economy.
- Woodland is not classed as open country under the CROW legislation in England and Wales

4.9 RURAL DEVELOPMENT

Opportunities

- Many remote rural communities are undergoing change and decline, as some traditional jobs vanish, and services (shops, health) become more distant. This focuses attention on potential new opportunities of which rural development forestry is one.
- Valuing and promoting local resources and local distinctiveness, including native woodlands, can begin to underpin both direct local jobs and attract businesses to the area.
- The countryside is moving from being simply a centre of production to being more significant as a centre of consumption. The demand for rural recreation and tourism is large and continuing to grow.
- There is a clear move towards rural development based on service enterprises, usually small businesses, many of which build on the high quality rural environment.
- New native woodland could contribute significantly to enhancing and diversifying this environment. New Wildwoods, in particular, could complement existing recreation and tourism enterprises.
- There is a clear move towards community-led development schemes. Native woodland offers opportunities for community stakeholders, with the potential for economic, social and environmental benefits.
- A high level of community engagement unlocks the wide range of knowledge and skills normally found in the resident population. It also ensures the continuation projects once the funding agencies have moved their attention elsewhere.

Obstacles

- The lack of consistent support by the national agencies.
- Direct employment associated with woodland creation is modest.
- Discourse that promotes New Wildwoods for conservation, dismissing rural development potential
- In the case of new woodlands, it may take several decades before they reach their full potential.
- There may be a limited capacity amongst present rural communities to develop 'eco-tourism' enterprises, including ICT skills, entrepreneurial experience, knowledge of environmental land management.
- Limited access to capital for investment and competition for limited funds.
- Some new businesses, as well as the woodlands which they use, are likely to be initiated by in-comers, which could be viewed negatively by some people in traditional rural communities.
- Wilderness and scrub regeneration are closely associated in peoples minds with land abandonment and rural depopulation - the very antithesis of rural regeneration.

4.10 COMMUNITY PARTICIPATION

Opportunities

- Communities are realising that if they want to get certain things done they are going to have to do it themselves. This is true of health, education, transport and local amenities as well as woodlands.
- Consultation has been a modest part of forest management for many years, and in recent years foresters have approached this in a more proactive and participative manner.
- There is some positive experience of participative planning through village appraisal, Planning for Real and design statements.
- There is great potential for involving local schools and incorporating woodland creation into the curriculum.
- Initiatives such as *Community Forests* and *Woodlands on Your Doorstep* have shown how substantial community input to planning and implementation can be achieved.
- There is considerable interest, and some positive experience, in communities engaging more directly in woodland management, as a means of generating local employment and wealth.
- The timber certification process requires some modest community consultation.
- Government and charitable funding bodies require evidence of community benefits as part of their requirements for funding.

Obstacles

- New Wildwood development is a top down (expert driven) concept
- Native forest and wildwoods, in particular, are long-term projects, and maintaining commitment may be a major problem.
- Participative planning of villages has shown that the process can be frustrating and ineffective due to: apathy, persistent conflict, lack of information, and manipulation by outside organisations or professionals.
- Community based forest management initiatives are seldom straightforward.
- The low intensity techniques appropriate for strict wildwoods are not well understood, and hence may be difficult for communities to implement; their unpredictability may also limit their acceptability.
- Public support for woodland creation may initially be much lower than anticipated – as demonstrated by Tir Coed – particularly given the neglected state of the existing resource.

4.11 CONCLUSIONS

The key issues arising out of the policy context can be summarised as follows:

1. Whilst recent changes in agriculture strengthen the case for diversification and may lead to some transfer of land out of agriculture, substantial involvement of farmers in New Wildwoods will only arise if appropriate support is forthcoming as a result of fundamental reform of the CAP.

2. Acquisition of agricultural land by owners interested in New Wildwoods appears to be a crucial element in establishing projects.

3. New Wildwoods is a challenging concept for the forestry industry and persuasion of politicians will be needed before the forestry interests are likely to act. The most immediate scope for engaging politicians appears to be in Wales.

4. Conversion of plantations to native woodlands is potentially an important element in creating New Wildwoods, but at present this is largely confined to work on plantations on ancient woodland sites (PAWS). Widespread conversion of other plantations is currently not favoured by the FE or private forestry interests, except in a very few locations.

5. New Wildwoods fits in very well as a long term component of Forest Habitat Network (defragmentation) projects by providing new "Core Forest Areas".

6. Carbon sequestration policies are not likely to deliver significant new woodland areas and do not favour New Wildwoods over other types of woodland.

7. Recent trends in favour of integrating grazing into woodland management are helpful for developing New Wildwoods (though animal health/welfare issues need to be resolved).

8. The different opportunities and obstacles for New Wildwoods in relation to the water industry is a key unresolved issue. Significant benefits are possible when conifer plantations are converted to broadleaves.

9. Recent trends towards partnership working among agencies and different land use sectors favour the development of New Wildwoods. However policies for, and experience of, co-operative management of landscape mosaics are still rudimentary.

10. Rural communities are usually positively inclined towards native woodland – but development of large scale projects will appear threatening and "top down" to many rural stakeholders. Current policy and support mechanisms appear to be inadequate to engage local communities in the type of large scale project envisaged under New Wildwoods.

5. PRACTICAL EXPERIENCE IN NATIVE WOODLAND ESTABLISHMENT

A review of practical experience was carried out by contacting:

- Forestry Commission in England, Scotland and Wales for general information on trends in uptake of native woodland schemes;
- National Parks in England and Wales for information on progress in the Parks;
- Some woodland organisations involved with specific Native Woodland Schemes.

The level of information available was far higher in Scotland than in England and Wales reflecting greater activity, over a longer time period, in native woodlands in Scotland.

5.1 PROGRESS IN NATIVE WOODLAND ESTABLISHMENT

5.1.1 Scotland

Scotland has the greatest number and widest range of native woodland schemes, though it should be noted that most of this progress has been in the Highlands with relatively little activity in Central or Southern Scotland. Some substantial areas of contiguous native forest have been created by a combination of restoration and new planting/regeneration, notably Cairngorms Forest and in the Beauly Catchment (including Glen Affric).

The area of native woodland established annually in Scotland during the 5 years from 1993-1998 has averaged about 8000 ha and has constituted a little over 50% of the total area of new woodland and restocking (see table 5.1).

Table 5.1 Average areas of native trees planted in Scotland 1993-1998 (MacKenzie 1999)

	Area of native species (ha)	*Total area (ha)*	*Percentage native species*
Broadleaves	5,300	7,460	71%
Conifer	2,560	7,360	35%
TOTAL	7,860	14, 820	53%

Of the recent woodland establishment in Scotland, 40-50% has been by natural regeneration rather than planting. However the proportion of natural regeneration is far lower in the lowlands (about 10%); and for native conifer (Scots pine), the proportion established by natural regeneration has diminished from 60% in 1994 to 15% in 1998 (MacKenzie 1999).

Comment:

An outline assessment of the frequency of the different types of native woodland project, subdivided by type of landholder is given in table 5.2

The most frequent types of native woodland scheme are :

- *new native woodlands* planted on unwooded land by private owners. These are popular largely because the grants sometimes more than covered the costs of establishment and a cash surplus can sometimes be generated.
- *expansion of existing woodland* by estate owners, farmers, FE, and NGO's / charities. This has been popular because of grant support (but see section 5.2.1 below for problems with WGS 3). More recently the BAP process together with availability European money has maintained momentum.

Table 5.2 An overview of the frequency of some native woodland types in Scotland

	PROJECT TYPE			
OWNERSHIP	*NATURAL REGENERATION SCHEMES*	*NATURAL COLONISATION*	*RESTORATION OF PAWS*	*PLANTING OF NEW NATIVE WOODLAND*
PRIVATE ESTATE	Frequent in uplands especially in Scotland	None	Rare	Very frequent. especially in Scotland
FARMER	Frequent in uplands	None	None	Occasional
LOCAL COMMUNITY	Rare	None	None	Rare
GOVERNMENT	Frequent FE, SNH biggest contributors	Rare	Frequent. FE are the biggest contributor	Rare (FE)
NGO/CHARITY	Occasional, but some big areas involved	Rare	Rare	Occasional

From an ecological viewpoint, there has been a degree of over-emphasis on planting, to the extent that a large increase in native woodland has occurred, but many semi-natural woodland remnants remain unprotected and some are degrading.

Native species plantations of broadleaves (where the emphasis is on timber) are fairly common, established mainly for amenity and conservation. These are relatively

popular with farmers, estate owners but the FE has also established small areas. Distinguishing these from *bona fide* new native woodlands is somewhat arbitrary (and may not often matter), but they often also have a significant element of non-native species (sycamore, beech, larch). Only a very small minority have been established at close enough spacing (2500 stems /ha or more) to produce quality timber.

Restoration of PAWS has been carried out extensively by the Forest Enterprise, partly with the aim of meeting their BAP commitments. However, progress in the private sector is much slower because of the lack of clear incentives or regulations. Much of the progress has been with Scots pine, but attention has more recently been turned to broadleaved woodland types.

Comment:

There are only a few examples of *natural colonisation* (e.g. Creag Meagaidh, Crannach) and these are often combined with more conventional natural regeneration schemes.

Comment:

Restoration of *wood pasture* has become the focus of attention very recently and there are a few examples of work beginning on this (e.g. Glen Finglas). The only examples of agroforestry are still at an experimental stage run by research agencies (Hislop and Claridge 2000).

Native species *rural development forestry schemes* are relatively rare (McPhillimy 2000). Most larger RDF projects concern diversifying conifer plantation. Some smaller projects have a high content of native species (often the reason for communities being attracted to them). The main types of scheme main are:

- restoring and expanding existing semi-natural woodland (e.g. Sunart)
- establishing new woodland by planting (e.g. Tyndrum).

There are several examples of expansion of woodland being undertaken with the long term aim of providing better *integration with other land uses (farming, fisheries, water supply)*. Native species farm woodlands are usually based around providing shelter for stock and fencing off areas that are uneconomic to farm or are dangerous for stock. Restoration of *riparian woodland* with the co-operation of riparian owners has been an important area of progress in more lowland areas (e.g. Tweed Foundation). Whilst the area of expansion has been small, the ecological benefits can be very substantial (Parrott and MacKenzie, 2000). Some water authorities have been active in restoring and expanding native woodland (e.g. Loch Katrine)

The factors which have contributed to the greater uptake of native woodland schemes in the Scottish Highlands are shown in box 5.1

Box 5.1 Factors contributing to the greater uptake of native woodland schemes in the Scottish Highlands

Land availability and control

- Land holding units are large which makes large woodland schemes more feasible.
- Availability of large area of very poor quality land, with low opportunity costs.
- The existence of large traditional estates, with a history of forest management, where owners exercise sole control over land use decisions.

The woodland resource

- Many sizeable native woodland remnants exist, which act as inspiration for those involved in native woodland restoration.

Historical/cultural

- High public awareness of the concept of a "lost" ancient *Caledonian* (pine) forest.
- The existence of Scots pine woodland which is attractive, identifiably *Scottish* and known to the general public. Scots pine is also a species acceptable to foresters/forest owners because it is a conifer and has timber production potential.
- The pace of commercial afforestation was particularly high in the Highlands in the 1980's, leading to a backlash amongst NGO's and other interested individuals, who then promoted native woodlands as a alternative and a corrective.

5.1.2 England and Wales

In England and Wales the picture is of widely scattered small schemes. There are only a handful of examples of larger native woodland schemes measured in hundreds of hectares (some Woodland Trust schemes are on this scale, though they often include a significant component of exotic species). Most are new planting or restoration of plantations and only a minority involve extension of existing native woodland by natural regeneration. As most schemes extend only to 10's of hectares, they only make very modest contributions habitat networks - unless adjacent woodland and plantations are brought within the same regime.

Much of the progress appear to be in National Parks, following concordats between the National Park authorities and the Forestry Commission aimed at joint promotion of native woodland schemes. The New Native Woodlands in National Parks Challenge Fund under WGS was launched in 1998, and ran for 3 – 4 years. Competitive bids were invited each year, judged in January, and the results are given in table 5.3 below. The scoring system favoured the use of natural regeneration. The success of the Challenge is currently subject to an internal review by Fred Currie, (FC, England National Office). Reports from individual National Parks in England are as follows:

- In the *Lake District NP*, 18 schemes have been initiated covering 405.2 ha, of which 13 schemes cover more than 10 ha, and the largest is 65 ha. Of these, 8 are extensions of, or links between, existing woodland or plantations; and 6 have a significant natural regeneration element. One scheme aims to restore an extensive (40 ha) area of wood-pasture.

- *North York Moors* 17 schemes have been initiated covering a total of 176.8 ha, and 5 additional sites totalling 35 ha are pending. Of these 22, 6 cover more than 10 ha, 8 are extensions of existing woodland or plantations, and 7 have a significant natural regeneration element.

- In *Northumberland* some large schemes of 50-70 ha have been initiated, but very recently, and their long-term management has not been decided.

- There are several recent schemes of 1-20 ha in the *Dartmoor and Exmoor National Parks* (some under the National Park Challenge Scheme) and most involving extending of existing woodland.

In Wales, although the average area of schemes under the New Native Woodlands Challenge was small (11 ha), the scheme was considered a success by the FC. The final round in Wales in January 2000 included so many good schemes that they allocated grants over 2 successive years. The cost per hectare is high - £2869/ha – excluding any FWPS annual payments which some schemes would have attracted.

By far the largest schemes approved, involved the planting of around 200 ha in the Black Mountains (Brecon Beacons NP), but this subsequently had to be withdrawn. This was an innovative scheme involving planting of common grazing land, and some of the incentive payments were being used to lease the commoners grazing rights for 999 years. It is an interesting example of community participation in that this scheme failed due to just a handful of commoners sustaining their objection. This is significant given that common land comprises a significant percentage of the upland land resource in Wales; and some 9% of the total land area of Wales (Naturenet 2002). Over 40% of area of the Brecon Beacons National Park is registered as common land.

Comment:

The future of New Native Woodland in Wales will depend on the outcome of the Forest Strategy process. The FC (Peter Garson, pers. comm., Alister Jones pers. comm.) have concluded that, whilst Challenge funding has the advantage of being able to tailor payments to individual schemes, it is not ideal as mechanism for promoting native woodlands for the following reasons:

- it does not provide the time for working up larger schemes, particularly those involving co-operation between adjoining owners, or high levels of community participation or need an EIA;
- the high front-end loading of the funding is not well matched to a protracted and low-intensity establishment regime;
- the high levels of grant may have been attracting owners without a long term commitment to woodland creation.

FC Wales see restocking as a greater opportunity for native woodland creation – partly due to the much lower levels of incentives required. This would obviate the need for the payment of large sums of public funding both in the creation new native woodland and in trying to restock plantations of moderate productive potential. Much of the grant aid is necessary to promote the conversion of land out of agriculture; focusing on land that is already forest will thus mean grants only need to defray direct

costs. The same argument applies to targeting grants to land owned by conservation bodies who do not need the incentive to convert out of agricultural usage.

Table 5.3 Approvals for the New Native Woodland in National Parks WGS Challenge in Wales.

Round	*Number of schemes approved*	*Total area approved*	*Largest scheme*	*Total FC funding*
1st Jan 1998	8	215ha	20 ha Penmaen Uchaf	£588k
2nd Jan 1999	18	142ha	24 ha Gelli Ddolen	£434k
3rd Jan 2000	13	145ha	48 ha Mynedd y Garnedd	£395k
4th 2001	17	122ha	44ha Hafod y Llan (NT Snowdon estate)	£369k
TOTAL	56	624 ha		£1.79m

5.2 PRACTICAL EXPERIENCE

The following sections give an account of practical experience, including examples for the following types of native woodland scheme:

1. **Natural Regeneration Schemes**: Expansion and restoration of existing woodland by natural regeneration.
2. **Natural Colonisation Schemes**: Natural colonisation of largely unwooded land from relatively distant seed sources. These usually incorporate large elements of open space
3. **New Native Woodland Schemes**: Planting of unwooded land to establish woodland which mimics semi-natural woodland.
4. **Native Species Plantations** : Establishment of plantations of site-local trees (usually with an emphasis on timber producing species).
5. **Restoration of conifer plantation**: establishment of native woodlands on "Plantations on Ancient Woodland Sites" and other (non-ancient) sites by planting or natural regeneration.
6. **Wood Pasture Schemes**: Restoration of site-local native trees at wide spacings (by natural regeneration or planting) managed for grazing and conservation
7. **Native Species Agro-forestry**: Establishment of site-local native trees at wide spacings by planting managed mainly for grazing and timber production.

5.2.1 Natural regeneration schemes

Practical experience

Difficulties in predicting outcome: The outcome is difficult to predict including: stocking densities, species composition and timing/progress of regeneration. This is off-putting for some owners and agents.

Regeneration failure: Some site types are extremely resistant t o colonisation by trees, especially fertile site types, grazed grass swards (especially if improved) and bracken. Small seeded tree species are most liable to failure, especially birch.

Availability of adjacent land: Many woodlands in England and Wales and in lowland areas of Scotland are surrounded by relatively valuable farming land where the large opportunity costs makes expansion by natural regeneration unattractive.

Grant support: WGS 3 introduced discretionary payments for the establishment works. This means that owners carry a significant up-front capital outlay which is off-putting for some. This is a factor in reduced uptake during recent years in Scotland. Potential to secure large grants can attract owners with little interest in native woodland, with an increased risk of failure (reported by FC Wales). Large schemes can be difficult to fit into the annual cycle of Challenge Funds.

Ownership issues: substantial progress has been made as a result of change in ownership to conservation bodies and by FE adopting ambitious targets on its holdings

Deer fencing and bird strike: the use of deer fencing, which leads to death of woodland grouse is controversial in some areas (esp. Deeside, Scotland) – though this is far less important in England and Wales.

Deer control by extensive culling: This has been shown to be effective in some areas but has not been taken up by the private sector.

Useful examples

Creag Meagaidh, Inverness-shire, ownership SNH: Extensive natural regeneration of scattered woodland of downy birch (mainly) with some rowan and a little alder and eared willow. Work began in 1988. The site is acid grassland and heather at elevations of 200-650 m. Grazing control is by culling of red deer with little use of fencing. Good records and subject of several research studies.

Abernethy, Strathspey, ownership RSPB: Extensive natural regeneration of Scots pine and downy birch woodland together with restoration of existing pinewoods and wooded bogs. The site is largely heather dominated at elevations of 200-600m. Grazing control largely by culling rather than fencing. Good records and subject of several research studies.

5.2.2 Natural colonisation

Practical experience

Successful species: The following species seem to be able to colonise over large distances: Scots pine (seed transport over snow pack is a factor); rowan (dispersal by birds), willow (into disturbed ground), birch (primarily on conifer clear felled areas). Other bird dispersed species will appear at lower densities on some sites including bird cherry and hawthorn.

Site type: As with natural regeneration, fertile site types tend to be more resistant to natural colonisation (Harmer 1999).

Planting future seed sources: The idea of planting seed source for future expansion has been talked about but not put into practice.
Long time horizons: Only owners with special interests in conservation have the long time outlook to find this option attractive.

Useful examples
Creag Meagaidh, Inverness-shire: See 1 above. Some areas of woodland rowan and birch dominated woodland have been established at considerable distance from seed sources. This is mainly rowan established on rocky heather clad slopes with rowan seed dispersed by birds.
Crannach, ***Aberdeenshire,*** ownership Private Trust : Colonisation of Scots pine (and some birch) at high elevation (up to 550 m). Site includes some areas of natural regeneration and planting with minimal cultivation.

5.2.3 New Native Woodlands and Native Species Plantations

Practical experience
Establishment: Establishment by planting is relatively straightforward and this approach is usually of lower risk than natural regeneration. However, input into post planting care of woodlands has often been less than satisfactory, with subsequent problems of poor survival and early growth.
Genetic issues: Local origin planting stock is preferred, but this is not always available. Use of non-local (including continental origin) stock has led to some plants being used which are poorly adapted to site conditions and liable to failure. Local origin plant supply has increased steadily in Scotland and has started to become more widely available in Wales. There is still little local origin material available in England. Some professionals in forestry and the nursery trade (notably in England) are reluctant to accept the importance of choosing appropriate local or regional origin planting material.
Matching species to site: Knowledge among owners and agent of the site requirements of native species, is still somewhat rudimentary. Hence sometimes inappropriate species are used.
Grant issues: Potential to secure large grants has been a major driver of large schemes in Scotland, though grant availability can also attract owners with little interest in native woodland. However, net losses in grant income for farmers have been a considerable dis-incentive.
Unpopularity of large schemes: Schemes of several hundred hectares have sometimes been unpopular with local communities (and the Forestry Commission are often unenthusiastic) and have sometimes had to be scaled down.

Useful examples: New Native Woodlands
Rum, Western Isles, ownership SNH: Planting of a wide variety of species (including using exotics as pioneers) on very infertile/exposed sites starting in the 1958 (Wormell 1968). Some of these are now closed canopy woodland including oakwood on the western shores. which are now acquiring associated woodland species (Wormell 1977).
Atholl Estates, Perthshire, ownership Atholl Estates Trust*:* Planting of birch dominated woodland (W17/W18), with a range of other species according to micro site (including some Scots pine). Three major schemes within 20 miles of each other.

Sites are acid grassland and heather moorland between 250 and 550 m. EIA's provide good basic pre-planting data.
Cashell, Forest for One Thousand Years, Argyll: Planting of a variety of species on an oak /ash type site. Established using mounding giving good establishment but a somewhat "plantation-like" appearance.
Carifran, Borders, ownership community initiative: Well publicised project to restore original-natural native woodland in south Scotland. Land purchase funds gathered from members and many diverse sources. Some controversy over scheme and its relationship with the local community (adverse publicity over removal of feral goats).
Bonar Bridge, Ross-shire, private owner*:* Scheme engendered opposition from local communities due to its inappropriate scale and had to be reduced in size with community input.
Forest Farms, Strath Cuillinach, ownership private trust: The first big scheme received adverse publicity due to causing major reduction in farming and associated employment, and because of use of ploughing.
Ingleborough NNR, Yorkshire: planting of birch and ash dominated woodland, mainly on a small scale, but including South House Moor where "rewilding" is being carried out over an area of 150 ha. Trees now 5-6 years old (but planted trees damaged by voles).

Useful examples: Native species plantations
Bolfracks estate, Perthshire, ownership private estate*:* Plantations of silver birch, ash and alder with some other tree and shrub species (including sycamore). Site was previously improved grazing at elevations from 150 to 350 m. Cultivation by agricultural plough and stocking 2500 per ha. An outstanding example of successful establishment of broadleaf trees. (note: land "resumed" by landlord).
Pontbren Project, Llanfair Caereinion, ***Powys***, ownership several farmers: planting of shelterbelts, hedgerow restoration and planting of small woodlands on 3 neighbouring farms, with plans to expand to larger woodland areas and more farms. Supported by Coed Cymru and Tir Coed and designated as a demonstration project.

5.2.4 Restoration of conifer plantations to native woodland

Most progress has been made in restoration of plantations on ancient woodland sites (PAWS), targeting those areas where most native woodland remnants remain, and where restoration will therefore bring the greatest benefits. The option of converting other types of conifer forests, especially those which are uneconomic to restock, either to native woodland or mixed species woodland, is also being considered.

Practical experience
Choice of sites: Sites are prioritised according to factors such as the extent of remaining native woodland cover, existence of woodland ground flora and connectivity. Some conifer blocks have high amenity and conservation value (e.g. for red squirrel) and many are on good sites and are valuable for timber.
Tree regeneration: Regeneration is often birch dominated, irrespective of the woodland type being restored.
Private sector: Little progress in restoration of PAWS has yet been made by the private sector (other than conservation charities) as there are few incentives other than certification.

Useful examples:
Dalavich Oakwoods, Argyll, ownership FE: early example of removal of conifers from oak woodland.
Sunart Oakwoods, Inverness-shire, ownership FE: All the oakwood PAWS in Sunart are being restored to native woodland (approximately 500 ha) (see Peterken and Worrell 2001).
Glen Garry Pinewoods, Inverness-shire, ownership FE. Large areas of pinewood PAWS have been restored.
Coed Felin Rhyd, Gwynedd, ownership Woodland Trust**.** Restoration of underplanted oakwood by the Woodland Trust.
Newball Wood, Lincolnshire: Restoration of mixed broadleaved woodland by FE.

5.2.5 Wood pasture

Recognition of wood pasture / pasture woodlands as a land use and a habitat is recent and practical experience of management is very limited. They are clearly of very high cultural, landscape and biodiversity value (e.g. Quelch 2000).

Practical experience
- There have been difficulties in distinguishing wood pasture from grazed woodland during survey and the extent of the resource is currently unknown.
- A range of grazing regimes can be envisaged, but few have been tested. A balanced seasonal (late summer) grazing regime with organic farm livestock, mainly cattle, is currently recommended.
- Some timber harvesting and usage is anticipated.
- Expansion is possible by planting including "no fence" planting systems or by protection of natural regeneration.
- If maintenance of cultural landscapes was a priority some pollarding work would be beneficial

Useful examples:
Glen Finglas, Central Region, ownership Woodland Trust: Restoration of wood pasture dominated by downy birch, alder, hazel and rowan. Area is managed by controlled grazing. A farm manager is employed.

5.2.6 Agro-forestry

"Silvopastoral" systems which combine grazing of permanent pasture or rye grass swards with high value timber trees are appropriate for the uplands (Hislop and Claridge 2000). A national network experiment exists with a 6 co-ordinated trials in Scotland, Wales, SW England and Northern Ireland.

Practical experience
- Native tree species included in trials to date are ash, wild cherry and Scots pine, though oak and hazel have also been suggested. There has been a strong emphasis on sycamore, poplars and larch.
- Conventional farming expertise in grass sward management can readily be applied to agroforestry systems.
- Levels of pasture/ livestock production in deciduous systems can be expected to be maintained at comparable levels to open pasture for 10-15 years if tree

densities are 100-400 trees per hectare. After this livestock carrying capacity will diminish with time probably by the order of 10-25%.
- Overall levels of profitability appear to be similar for agroforestry and conventional pasture.
- Farmers are uninformed about the potential benefits of agroforestry systems.
- There are some biodiversity gains compared with open pasture.

Useful examples:
North Wyke, Devon: Includes ash planted at 100 and 400 stems per hectare.
Bronydd Mawr, S Wales: Includes ash planted at 400 stems per hectare, though performance has been affected by the site not being ideal for ash.

5.2.7 Rural development forestry

Practical experience
Initiation of projects: initiation of projects is often in response to a perceived threat.
Levels of community involvement: Different levels of community involvement can usefully be recognised using "Arnsteins Ladder" concept (see table 5.4 below).
Organisation of communities: Community groups often organise themselves as companies, limited by guarantee, with charitable status (to allow them to channel funding).
Access to funding: fundraising has been difficult. Main funding organisations in Scotland have been: Millennium Forest for Scotland Trust, Rural Challenge Fund, Highlands and Islands Enterprise Land Unit, Forestry Commission.

Useful examples
Treslaig, Inverness-shire: 66 ha of broadleaf woodland (mostly ASNW). Owned by local community and run by Achnaphubuil Crofters Woodland Trust. Main aim is to restore woodlands, rather than expand them.
Tyndrum, Argyll: Planting of native woodland on 90 ha of burnt conifer plantation (long term lease by FE). Project run by Tyndrum Community Woodland Group.
Cree Valley, Galloway: Management of several woodlands with agreement of owners with long term aim of restoring and linking broad-leaved native woodland remnants.
Sunart, Inverness-shire: Restoration of Atlantic oakwood including removal of conifers form 500 ha of FE PAWS and restoration/expansion of oakwoods. The partnership is informal and unconstituted, but supported by Sunart Project (interagency initiative).
Black Mountains, South Wales: Unsuccessful attempt to establish woodlands on common grazing, which requires 100% buy-in by all commoners. This was blocked by a small minority.

An overview of some of the ways in which communities are involved in different native woodland schemes is given in table 5.4.

5.2.8 Integration with farming

Native woodland establishment on farms needs to achieve integration with the farming enterprise and yield positive benefits, including income generation. Understanding and respecting the viewpoints of farmers is key.

Practical experience

Income generation and grants: farmers are reluctant to support woodlands if they interfere with income generation (especially in the current climate); though this can be less important for a minority of wealthy (often immediate pre-retirement) farmers. Targeting woodlands to parts of farms which might be uneconomic to farm (wet areas, gullies) is one approach, though these may already be valuable open habitats. Schemes such as LEAP which offered compensatory annual payments for fencing out stock were fairly successful in restoring existing woodland. ESA schemes have been successful in promoting small scale restoration and planting schemes. Some farmers have been attracted to woodland planting following experience with selling or milling timber. The recent development of the Welsh Angle range of furniture products by Coed Cymru has helped enhance the potential of native woodland in such respects.

Table 5.4 Examples of some types of community involvement in native woodland schemes in Scotland

		TYPE OF COMMUNITY INVOLVEMENT			
OWNER-SHIP		Community informed	Community consulted	Community as partner	Community controls and owns
	Community				Treslaig
	Estate owner	Atholl Estates		Sunart	
	Farmer/Crofter			Sunart	Assynt
	Charitable	RSPB Abernethy	WT Glen Finglas		
	Government	FE Glen Affric SAC Kirkton	SNH Creag Meaghaidh	Tyndrum SNH/FE Sunart	

Objectives mainly environmental

Scale of schemes: schemes established by farmers tend to be small scale, established in areas which make most sense to farmers but which might not contribute best to ecological objectives (e.g. to Forest Habitat Networks).

Understanding of issues; there is increased awareness of the value of native woodland, what is required to restore it and the potential importance of controlled grazing.

Liaison with farmers: farmers are resistant to advice "foisted" upon them, especially by advisors who might not understand farming or come from conservation organisations, or who proselytise using unrealistic mes sages about the benefits of

native woodland. Practical demonstration, involving peers in the farming community, has often proved the best approach.

Useful examples
Kirkton Glen (Central Region): A demonstration scheme by Scottish Agricultural College designed to establish substantial areas of woodland by planting for future use as summer shelter and grazing for upland sheep (wintering is on low ground).
Pontbren Project, Llanfair Caereinion (see 5.2.3 above)

5.2.9 Integration with sporting

Future sporting potential is often cited as a primary objective for woodlands by estate owners and some farmers. Many owners are receptive to messages about establishing cover for game birds and deer for future sporting.

Practical experience
Improved game habitat: Restoration of upland native woodland in Scotland has often had cover for game, especially deer, black cock and capercaillie as a key objective. There is increasing evidence that populations of game species respond fairly quickly to habitat restoration.
Non-native shrub species: Woods designed for pheasant cover traditionally have non-native tree and shrub species for hedges. Whilst their use can be reduced by replacing them with native species, conservationists need to adopt a flexible attitude to this issue.

Comment:

Useful examples
Glen Truim, Inverness-shire: Restoration of upland birch woodland with sporting as the main objective.
Bolfracks Estate, Perthshire: Planting of Caledonian pine woodland with a view to restoration of black cock habitat.

5.2.10 Integration with riparian and freshwater interests

Considerable practical progress has been made in restoration of riparian woodlands with a view to improving fisheries habitat (e.g. Parrott and Mackenzie 2000). Farm stock can cause some public health hazards on water supply catchments, and so there is a move by water authorities to reduce grazing, which may provide opportunities for woodland establishment. However, some water companies are concerned that planting will reduce water yields, especially in the light of predictions of increased summer drought due to climate change. They are therefore unwilling to consider woodland expansion in water catchments.

Practical experience
Costs of restoration: Fencing costs for riparian strips can be very high and upland terrain can make for difficult fencing.
Role of riparian owners: Difficult to persuade some riparian owners and fisheries boards that the benefits justify the effort.
Public health/ Water supply: Stock farming and other causes of diffuse pollution are causing water companies to reassess existing land uses on water catchments.

Best examples:
River Tweed, Borders Region. Extensive protection of river banks from over grazing and tree planting/regeneration. Supported by European grants. Ownership: private, work initiated and carried out by Tweed Foundation.
Loch Katrine, Central Region: Extensive restoration and planting of native woodland in the catchment of the water supply for Glasgow.

6. PROJECTS: POSSIBLE LOCATIONS AND PRACTICAL ISSUES

Feedback from the seminars suggested that we looked in the following regions for possible locations for future New Wildwoods projects: The Lake District, The Pennines, Lowland Southern England, The Cambrian mountains of Mid Wales and Southern Scotland (see appendix 1). Regions that were considered *unsuitable* included:

- Highland Scotland because plenty is already happening here and a shift had taken place to promoting the socio-economic benefits of native woodlands and most of the native woodland constituency were trying avoid undue emphasis on wildness etc.
- Regions where substantial woodland initiatives were already taking place with a different focus to New Wildwoods i.e. Central Scotland and the community and national forests in England
- Regions with particular environmental and cultural sensitivities e.g. the Moors of SW England.

In each of the broad regions where New Wildwoods were considered potentially appropriate, we attempted to provide a basic description of the characteristics which might influence their development. This information comprised:

1. Description of area including ecology, current land use, and any socio-economic aspects.
2. Institutional aspects: ownership, current initiatives and relevant projects
3. Potential for developing New Wildwood projects including priorities for action and potential partners.

For existing projects an account of the "vision" for the future development of the area was included.

Land use and ecological information proved far easier to access than socio-economic and institutional information. Somewhat contrary to expectations, there were very few examples of ongoing projects which fitted well with the New Wildwoods approach - thought the main example encountered – Ennerdale – was very useful. Hence most of the descriptions are essentially speculative, giving an assessment of the potential for future development. *It should be stressed that these descriptions do not constitute specific proposals on the part of the consultants or the Countryside Agencies to develop projects at these locations, but are included simply as indications of future possibilities*.

6.1 THE LAKE DISTRICT: NATIONAL TRUST AND FORESTRY COMMISSION ENNERDALE PROJECT

This project provides a good model for Wildwoods both in terms of the general philosophy of what is being proposed and the structures being developed to implement it. A major aim is to increase the wild nature of the area, to use this as an asset and to

integrated wild land with existing land uses; i.e. it is an integrated rural management project (or catchment management) rather than being specifically a native woodland or rewilding project. Substantial parts of the existing conifer forest is to be converted to native woodland, but extensive areas of conifers are to be retained.

6.1.1 Description of area

Ennerdale is a rugged valley in the Western Lake District drained by the River Liza and including Ennerdale Water (see fig 6.1). The upper part of the valley is historically unpopulated. The higher slopes are used for grazing for fell sheep, while the lower slopes and valley bottom is dominated by commercial forestry. There is an area of semi-natural ancient oak woodlands on the north facing "Side" near the lake. The lower valley is farmland with an attractive sprinkling of small woodlands and mature hedgerows.

The original native woodland cover was forests of oak, alder, birch and hazel which and was important as hunting grounds and later for generations of charcoal burners and iron smiths. Through the 19th and 20th centuries the valley was an important water supply and the level of the lake was raised. Commercial forestry began in 1927 and transformed the nature of the valley.

Ennerdale is distinctive for its sense of wildness due to the grandeur of the fells, the remoteness from public roads and habitation, the presence of a forest that is big enough to get lost in and the wild nature of the river Liza. However there are also features which spoil these special characteristics:

- close cropped and suppressed vegetation on the fell;
- stark boundaries between the forest and fell;
- fences and signs which restrict the sense of openness;
- the large blocks of closely planted spruce and areas of recently felled forest;
- a variety of man-made features.

The valley is also a place of work for people through farming, forestry, water supply, tourism and recreation as well as conservation-focussed land management; the latter three becoming more dominant over the past forty years.

6.1.2 Institutional aspects

The land ownership pattern is remarkably simple in the upper valley with NT and FC owning the fells, NT owning a small area of oak woodland and FE the lower forest land. This gives potential for managing the valley as a single unit, with landowners sharing long term objectives. NT, in partnership with FE, United Utilities (who own the lake), local farmers and local community groups, is planning management on a whole-landscape basis, treating the land as a single unit.

The Ennerdale project developed from discussions with Forest Enterprise about the potential for the upper part of the Ennerdale valley to develop as a 'wild valley', with a greater reliance by land managers on natural processes to shape the landscape and

ecology of the area. The following aspects of the policy agenda are being considered in the planning process for Ennerdale:

- The post F&M rural recovery agenda in Cumbria
- The national and EC 'agricultural reform' agenda
- The 'future of the Lake District' agenda of the Trust and other organisations
- NPA concerns over tourism development and relations with West Cumbria
- Growing interest in 're-wilding' schemes and potential benefits e.g. tourism
- Support for community involvement schemes.

The planning approach (being implemented during 2001) involves:

1. Agreeing a National Trust vision for Ennerdale (including non-negotiable principles).
2. Developing a partnership involving the key stakeholders (including the local community and West Cumbria).
3. Assessing the short term land management requirements and the medium term landscape and nature conservation implications (10 – 50 years) of the new approach.
4. Assessing the short and medium term economic and business implications.
5. Encouraging partners to develop ideas about the social, educational and recreational opportunities which this initiative might produce.

The partnership basis of planning and management is intended to become a key feature of the project. The partnership is likely to work at 3 levels:

- **Land owners, managers and local businesses**. Each organisation will retain its own priorities and so negotiation will often be required.
- **Organisational stakeholders**. Land owners and managers, the NPA, EN, EA, FOLD, Copeland BC, Parish Council, RA and probably others will be involved in reviewing change in the valley, guiding operational decisions.
- **Community level.** The North West Development Agency have provisionally agreed to fund a scoping study into the economic potential of this approach.

6.1.3 Management aims

Management is aimed at finding ways of enhancing its unique qualities of wildness and remoteness while still creating opportunities for generating income. Management will be less prescriptive, allowing ecosystem change. It is seen as a catchment management project, rather than 'rewilding'; and is 'future orientated' rather than reinstating the past. It will permit sub-optimal solutions, and is large enough to absorb these.

The intention is to:

- increase reliance on natural processes in management;
- maintain the place of meat, timber and water as important products, but to reduce their dominance in comparison with environmental, social and spiritual values;
- continue to have managed grazing on the fell but this will be done with the aim of maximising nature conservation interest and the landscape value of the valley;
- continue farming on the inbye and intake land in the valley with a continued focus on nature conservation, diversification and local marketing of produce;

- continue to be forest management and timber extraction but this will become geared towards supplying local needs and done so as to encourage a more natural and diverse forest, including grazing animals;
- where possible, develop greater interaction between the forest and the fell, with less rigid boundaries and a wider transition zone; harsh physical boundaries and other intrusive features will be removed;
- Ennerdale lake will continue to be used for water extraction but the area of natural lakeshore margins will be increased, the habitat of becks and spawning grounds around the lake improved and more natural hydrological processes encouraged to occur around the lake, resulting in more natural wetland areas;
- maximise the social benefit of the valley through recreation and education but without allowing these activities to impinge on the 'wild significance' of the area.

The result will be a more natural landscape, a more diverse and robust environment and a major enhancement of the sense of wildness and remoteness. The nature and level of human activity in Ennerdale will be an important factor in this new landscape. The aim is to provide support for land management, new opportunities for 'wild nature' tourism, new local markets and perhaps local processing of meat and wool and alternative 'added value' uses for wood. All this might generate income but will also give local people a 'stake' in their environment. Less tangible, but as important will be the social and educational benefits from recreation in such a unique valley.

This project is by nature developmental and will evolve as external circumstances and the internal agenda of its partners change over time. There will be no fixed or end point to the land management objectives.

Plans for conifer plantations

Forest Enterprise is envisaging that the forest will be split into 3 interlinked zones:
1. Valley bottom / riparian zone: conifers will be felled and not restocked. Here natural regeneration of mainly native species will be encouraged with future management being minimum intervention.
2. Low and mid valley slopes: continuation of conventional forest management though with riparian corridors linked to the valley floor.
3. Upper slopes and upper forest edge: medium term removal of forest fence to allow grazing in the forest upper margins – though hopefully with sheep stocking levels which allow some regeneration of native broadleaves.

6.2 UPLAND WALES: THE CAMBRIAN MOUNTAINS

There is an ongoing debate in Wales regarding the future direction of forestry with the aim of diversifying away from undue reliance on spruce plantations. One of the visions which has been articulated by Tir Coed and others is for a large near-natural forest (see Box 6.1). The Twyi- Elan Valley has been discussed as a possible location for such a forest, building on a commitment on the part of the Forest Enterprise to convert a

substantial area of North Tywi forest to broadleaves. Another location which has been subject to scrutiny is the Rynogydd in North Wales (Peter Taylor pers. comm.). At the same time, organisations such as Coed Cymru have been working with farmers and other landowners to develop the rural development potential of native woodland. These and other development suggest that parts of upland Wales would be highly suitable for a New Wildwoods project.

Box 6.1 Vision of a New Wildwood for Wales (supplied by Tir Coed)

People are divorced from their landscape history. Woodland was the original vegetation encountered by human beings after the last Ice Age 10,000 years ago. Rarely can you now walk for more than 10 minutes through woodland of the sort which once clothed the landscape, without being aware of its insignificant extent. There is a story of human management to be told, from the early pine-birch forests, through the warmer "Atlantic period" with lime, alder and elm, to the forests of oak, birch and hazel, present when Celtic civilisation arose.

New extensive native woodland would provide niches for "interior forest species, allow survival of more stable wildlife populations, accommodate patches of non-woodland habitat and allow development of natural disturbance regimes.

There are large areas of upland Wales where existing land use is largely uneconomic, with marginal agriculture operating on poor Molinia grassland of low nature conservation value. Many of the National Assembly spruce forests are also uneconomic.

A New Wildwood for Upland Wales would:

- be a large, near-natural 'Atlantic' woodland;
- include a substantial core area with interior forest habitat;
- provide recreational and educational benefits, as well as environmental gains.
- possibly extend to reintroductions of lost species, especially those that might prosper under climatic warming, e.g., small-leaved lime.
- use agriculturally marginal land, currently under *Molinia* or poor spruce plantations.
- recognise sensitivities relating to current land use: avoiding places where trees should not be planted; awareness of consequences for water yield etc.
- lead to public financial gains by ultimately reducing public subsidies levels associated with current land uses.

6.2.1 Description of area

The Cambrian Mountains comprise a rolling plateau, dissected by headwaters of several major rivers. The landscape can be broadly divided into: an extensive upland area lying above the limit of enclosures associated with lowland farms; steep valley sides; and fertile valley floors. On the upland plateau, the predominant vegetation types are acid grassland, heath and blanket bog, plus conifer plantations. The valley slopes are occupied by a mosaic of *Festuca*/A*grostis* grassland, heather, *Molinia* flushes, gorse, bracken, oak woodlands and conifer plantations. The lowlands areas are enclosed and are largely improved grassland, though limited areas of lowland marsh and unimproved grassland survive.

Native woodland covers less than 5% of land area and has been fragmented into discrete, isolated woods. These are strongly associated with steep valley slopes and therefore generally occur between better pasture on the lower ground and sub-montane pasture above. Most native woodland is dominated by birch-oak and oak-hazel and much of this takes the form of pure sessile oak stands grown out from coppices. Native woodlands in gulleys and lower slopes have a slightly more diverse composition, being mainly ash-elm and alder-ash; but the extent of these is strictly limited. There is also a high density of hedges, and individual trees on field boundaries and along watercourses. Most farmland trees are oak or ash, with alder beside watercourses. The upland plateau is virtually devoid of native woodland, though a few sallows persist by watercourses, and outlying fragments of oak-birch-rowan survive on rocky ground around the fringes

Extensive tracts of the uplands have been planted with conifers. In some district (e.g., Tywi headwaters) conifer plantations occupy about half the ground on the plateau and adjacent flanks. The conifer plantations are almost wholly devoid of native broadleaves, but a few rowan birch and sallow have become established. However the native broadleaved component is beginning to increase, especially along watercourses and plantation margins, but remains extremely limited in the moorland plantations.

Current land use is dominated by sheep farming, mainly on relatively small-owner occupied farms. There are also considerable areas of common grazing land, which present difficulties for woodland projects. Whilst some farmers have begun to engage in farm woodland expansion, there is a general lack of enthusiasm among farmers for major woodland expansion. However, much of the land on the upland plateau is *Molinia* grassland and heath of relatively low value for farming which would make a potentially suitable target for woodland expansion.

A proportion of the conifer plantations on poorer upland sites are relatively low yielding, with considerable haulage distances to public road and thus in the current economic climate are highly marginal. These are potentially suitable for contributing to New Wildwoods by conversion to native species.

Large areas of land in the river headwaters are important water supply catchments and this poses a potentially serious constraint to woodland expansion as the water industry considers that new woodland leads to reduced water yields and lower water quality by

increasing scavenging of pollutants. Some of these issues can be overcome by catchment-scale analysis of the likely impacts of native tree planting, which are less serious that for conifers (Tom Nisbet pers. comm.).

Some land is owner and/or managed by nature conservation organisations to conserve blanket bog and ground nesting birds. With sensitive planning many such sites could be incorporated into a woodland mosaic by linking woodland along watercourses and avoiding areas of greatest nature conservation value.

6.2.2 Institutional issues

Land ownership patterns have the following characteristics:

- there are very few large private estates.
- many farms are small and owner occupied.
- the National Assembly for Wales has significant land holdings, many of them placed at the disposal of the Forestry Commissioners.
- the Ministry of Defence has several substantial holdings.
- the Water Utilities have significant landholdings in the vicinity of some major reservoirs supplying cities in England.
- there are considerable tracts of common land.

The main organisations potentially able to influence or contribute to the development of New Wildwoods are:

- National Assembly for Wales: The woodland strategy process "Woodlands for Wales" has highlighted the conversion of conifer plantations to other types of woodland as an element of future policy.
- Forestry Commission: FC Wales is in favour of the expansion of native woodland in Wales.
- Forest Enterprise conversion of conifer plantations: Conversion of low value conifer plantations has been proposed and has begun, with some substantial areas being envisaged a few locations (e.g. 750 ha at North Tywi)
- Tir Coed: This is an agency-supported woodland initiative, one of the aims of which is to promote the establishment of a large area of native forest.
- Coed Cymru: this has concentrated on improving the management and utilisation of native woodlands and has demonstrated the potential for greater integration of native woodland with farming enterprises.
- National Trust and Woodland Trust have been active in promoting and carrying out expansion of native woodland

6.2.3 Priorities for Action

Conversion of forestry plantations

Conversion of FE conifer plantations offers the greatest potential for the development of a core New Wildwood. The main the attractions of concentrating on this approach are:

- gaining the necessary political support appears to be feasible thorough the National Assembly;
- plantations are already in appropriate ownership;
- plantations are often on suitable sites;
- most stakeholders would regard this as a net gain; especially those interests which view further woodland expansion as potentially problematic (i.e. farmers and water industry);
- it avoids the vagaries and political sensitivities involved with establishment of woodland on open ground. This would minimise protracted negotiations with landowners that has beset community forests, for example.
- it has some ecological advantages as some woodland species will be present in plantations and hence will colonise new native woodland areas.

It is possible that several core areas of converted FE plantation could be strategically located throughout Wales and could influence other organisations to participate as time goes by. Plantations could be identified and the management necessary to set in motion conversion to native species would be established by revising the design plan / 5 year plan at a suitable time. North Twyi is potentially attractive (see figure 6.2), as plans to convert this to birch dominated woodland are already drawn up by the FE, but other options also exist. Tywi/Elan area has the disadvantage that much of the surrounding land is a particularly important water catchment. It should be noted that the FE cannot commit itself to large scale plantation conversion without first getting appropriate support and clearance for what would be a substantial policy change.

Expansion on agricultural land
There two types of agricultural land which have the greatest potential for New Wildwoods are:

- upland grazing land the plateau consisting of Molinia and acid grassland and heath. This is abundant and of relatively low agricultural value, and suitable for upland woodland;
- land around the incised headwaters and on steep valley flanks. This is ecologically attractive because many woodland species plant species are present in rocky ground and streamsides, and the resulting woodland will be more diverse than on other ground.

Process
The best options for progress would appear to be for a Tir Coed, with a small group of other partners, to:

1. Try to secure agreement with landowners in the Twyi/Elan catchment that a project be initiated here
2. To set in motion a process which identifies another potential site elsewhere in Wales, which could either act as a reserve location should problems arise in Twyi/Elan, or could be developed as a smaller scale parallel demonstration site.

Key partners to initiate the process appear to be FE and FC/FE, Woodland Trust and possible National Trust.

Once locations have been agreed, an "objective 1" model could be applied which would operate by encouraging the formation of partnerships with agreed management objectives over large areas of land (i.e. 1000 ha plus). This would delineate the land to be converted to woodland and that to remain as gazing, plus any existing plantation which could become opened up for gazing / winter shelter. The process could be driven by "challenge fund" type approach which as well as involving the larger partnership, could be extended to other farms in the "peripheral zone". This general approach would encourage a bottom up process. It also circumvents costs of negotiation with individual farmers, and co-operation among farmers is more likely with this approach. It could also allow common land to be used if it was with the agreement of all rightholders and for the "benefit of the neighbourhood".

Smaller areas of woodland could be developed as farm woodlands and as part of Forest Habitat Network / Woodland Defragmentation projects. There is a strong case for including a substantial element of wood-pasturage with cattle alongside more conventional woodland.

6.3 THE PENNINES

6.3.1 Description of area

Tree cover in the Pennines is lower than any other upland region of Britain. For example in the Yorkshire Dales the current proportion of area under woodland is 2% for all types of woodland and 1% for native woodland. Throughout the Pennines most woodland remnants are ash, oak and birch woodlands of 1-2 ha or less, most remaining in cloughs and gills. Only very few woodlands over 50 ha exist.

The area can be split into 3 main zones with contrasting characteristics, which give rise to different constraints and opportunities, i.e.

Southern Pennines: This is the area northwards from the Peak District to the southern boundary of the Yorkshire Dales. Several discrete areas of upland plateau moorlands are separated by substantial valleys with a high proportion of urban land and the remainder in agriculture. There is no tradition of extensive woodland of any sort. The open moorlands are highly valuable both scenically and for conservation of heathland and ground nesting birds, with a high proportion being designated as SPA's and SAC's and being of European importance.

Eastern Yorkshire Dales: Extensive upland plateau dissected by lower stretches of the dales. The moors are intensively managed for grouse by traditional landowners. There is very little woodland and grouse moor management presents a serious constraint to woodland expansion. These moors are also often designated as SPA's and SAC's. On lower land farming and cultural landscape issues (landscape of small walled fields etc) tend to be constraints for large areas of woodland expansion.

Western Yorkshire Dales and Northern Pennines: Large areas of grass-dominated upland with the headwaters of major river systems. The main land use is sheep rearing, with far less grouse moors, which potentially presents rather fewer constraints for woodland expansion. There is also something of a tradition of forest planting with several large blocks of conifer, some of which are non-economic and may make targets for conversion to native woodland. Some farmers have started to take an interest in woodland planting including a few larger schemes (50-100ha). Some new landowners coming in have more progressive attitudes. However, there are still many constraints, including the fact that 20-25% of the unenclosed land is common grazing and some of the blanket bog areas are designated as SSSI's.

6.3.2 Institutional issues

There is a long tradition of open moorland and farmland management and an almost total lack of engagement in woodland expansion. Only in very recent years has the option of expanding woodland cover begun to be actively promoted. This has been mainly in the form of defragmentation initiatives (with urban forestry also a feature in the southern Pennines). The main aim is to restore, expand and link up clough and gill woodlands, sometimes taking in small area of in-bye land (improved or semi-improved grazing). However the targets for these initiatives are still very modest with most schemes being in the 1-5 ha bracket, and schemes of 20 ha being described as "large". Even HAP targets of 50-100 ha for "natural areas" set by FE English Native Woodlands Partnership are seen as a challenge.

Substantial expansion of woodland onto moorlands is generally regarded as undesirable by conservation interests, though attitudes have recently shown signs of shifting to accommodate the idea of mosaics of woodland and open habitat, at least on the edges of some moors.

This new interest in (mainly) native woodland has given rise to a number of initiatives and woodland strategy statements, e.g. Yorkshire Dales Woodland Forum, West Yorks Community Forest (called the White Rose Forest), Yorwoods, Bowland Forest defragmentation study. These involve the countryside agencies and local authorities, sometimes augmented with landowners and forestry companies. The major stumbling block towards significant progress in planting is the inadequate level of incentives; the 50% funding currently available is not enough to motivate landowners, particularly in the current farming climate.

6.3.3 Potential areas for New Wildwoods

The only regions with potential for New Wildwoods appear to be the Western Yorkshire Dales and the northern Pennines. Here potential exists to:

- Identify areas of conifer forest to convert to native woodland;
- Promote the idea of larger native woodland schemes amongst farmers;
- Engage conservation charities in acquiring land for native woodland restoration;

- Engage existing conservation landowners in woodland expansion.

Two areas were suggested as possible components of New Wildwoods:

1. **The western end of Wensleydale** (i.e. Langstrothdale, Gardale, Littondale see fig 6.3): Here several large forestry blocks exist, some of which may make targets for conversion to native woodland. Surrounding land use is generally low quality sheep grazing and there may be potential for engaging farmers in woodland expansion or for conservation charities to carry out targeted land acquisition.

2. Geltsdale in the extreme NW of the Pennines (see fig 6.4): Here the current land use/habitat is grazing land with some riparian woodland and areas of very high value alder/downy birch pasture woodland. There are also areas of blanket bog including the substantial Geltsdale SSSI. There are some estate conifer plantations currently being felled and being put back to woodland with sizeable component of native species. Owners include farmers, RSPB and a local estate. The general aim is to restore and augment wood pasture with linked woodlands up the upper catchment of the River Gelt. One farmer, working with advice from EN and others, has established 115 ha native woodland with plans for a further 100 ha and there are potential options for woodland planting of about 100 ha elsewhere in area. RSPB are interested in establishing grazed scrub woodland with a view to creating habitat for black grouse.

6.3.4 Priorities for action

The best approach appears to be to engage key individuals from English Nature and the FC, sympathetic larger landowners and the farming communities in exploring options. The idea could be promoted among conservation and forestry interests in terms of creating a Core Forest Area for a potential Forest Habitat Network, to augment developing woodland network resulting from defragmentation activities. The general approach might be similar to Wales, with a large conifer block(s) being sought as a primary focus, augmented by planting on adjacent upland pastures, restoration/expansion of gill woodlands and planting of farm woodlands on lower slopes. Geltsdale is rather isolated from the rest other potential areas in the Pennines, but it could make a very useful demonstration site.

6.4 SOUTH SCOTLAND

South Scotland has the lowest proportion of land under native woodland in Scotland (about 2%, of which 1% is semi-natural woodland). In contrast to the Pennines, there is a substantial area of conifer woodland, both FE and privately owned (12% of land area). Upland areas are dominated by grassland, with extensive areas of *Molinia* in the west, and there are extensive areas of heather moorland in the east and over granite in Galloway (see figs 6.5 and 6.6). In some regions there is currently so much conifer woodland that significant expansion of broadleaved woodland might be contentious. Some of the heather moorland areas, especially in Galloway, are of high conservation value.

The region is split between the Borders region in the East and Dumfries and Galloway region in the west. Initiatives include:

- **Borders Forest Trust**: one of the oldest community woodland initiatives which has a good track record in acquiring and managing woodland, working in partnership with other agencies and promoting woodlands in general.
- **Southern Upland Partnership**: a multi-agency initiative that promotes rural development across both the regions.
- **Several woodland initiatives** aimed at restoring, extending and linking woodlands using Forest Habitat Network principles e.g. Clyde Valley Project, Cree Valley Project.

Borders Forest Trust and Southern Uplands partnership, together with FC and SNH are drawing up plans to develop a woodlands network in Borders region. Currently there is no equivalent initiative planned for Dumfries and Galloway. There appears to be potential for New Wildwoods projects within Southern Scotland, which could be developed as a Core Forest Area(s) to complement an emerging Forest Habitat Network.. Concentrating initially on the Borders would have the advantage of having a suitable initiative already in place (Borders Forest Trust), which has the necessary expertise and contacts and already manages some useful sites (e.g. Ettrick, Carifran). Dumfries and Galloway offers particular scope for conversion of FE plantations, especially with a view to enhancing tourism, for example in the Galloway Forest Park.

The best way forward would appear to be by engaging Borders Forest Trust, Southern Uplands Partnership and the FC and FE. Substantial progress on the part of the FC and FE would only be possible if policy changed to favour extensive native woodland in Southern Scotland.

6.5 LOWLAND SOUTHERN ENGLAND

The main characteristics of lowland England which influence the development of new wildwoods are:

- the small proportion of land area which is currently woodland and the advanced fragmentation of woodland and other semi-natural habitats;
- the prevalence of high output, intensive agriculture, which is associated with high prices and large opportunity costs for land;
- the relatively high density of human populations in some areas;
- a basic awareness amongst the population of the historic significance of woodland and a recent revival of interest in the creation of large scale woodland through the national and community forest programmes.

6.5.1 Description of area

Ancient woodland has been reduced to 2.6% of the land and fragmented into 22,000 separate woods (counting only those of 2 ha or more), the great majority of which are less

than 20ha. Very few ancient woods greater than 500 ha have survived; most counties have an ancient woodland cover below 5%; and some 40% of ancient woodland has been transformed into plantations, many dominated by conifers. Unwooded semi-natural habitats have been reduced to small fragments, and most streams and small rivers have been engineered into 'canals' with little riparian woodland. However there are some areas where significant areas of semi-natural woodland exist; Surrey and Sussex for example are amongst the most heavily wooded areas in Britain.

The scale of conifer afforestation is far smaller than that found in the uplands and tends to be concentrated into certain districts, notably Breckland, Sandlings, Dorset heaths and parts of the South Downs. Outside the main concentrations, plantations tend to be small (10-200 ha) and are isolated by intervening agricultural land.

Three types of location can be distinguished in terms of their potential for New Wildwoods. These are listed in order of decreasing woodland cover and therefore of increasing effort required to develop a New Wildwood:

1. ***Well wooded areas with semi-natural habitats***
   Examples: Surrey, Sussex, Hampshire

These are areas with a high level of existing broadleaved woodland and semi-natural habitat, including ancient semi-natural woodland (see fig 6.7). These woodlands are augmented by considerable areas of conifer plantation, as the conditions that led to survival of ancient woodland (usually poorer soils) also made them suitable for conifer afforestation. The woodlands form a mosaic with open semi-natural habitats including heath, grassland and mire, though interspersed with considerable tracts of agricultural land. The proportion of the landscape which is woodland is typically 20-35%, about half of which might be ancient.

In many of these areas agricultural land is not of the highest quality, with three-quarters of the agricultural land in the SE Region classed as Grade 3 (compared with 63% for England as a whole). A significant fraction is not intensively used and much has been in 'set-aside' and horse pasturage. The proximity of London and the coast, coupled with highly attractive landscapes, means that there is a highly competitive market for 'amenity' land. Also, a substantial area of the South Downs is to be designated as a national park (expected to be around 2004) and this will influence the region's development.

Settlement density varies from low (e.g. New Forest) to high (e.g. Sussex Weald). Such areas are often particularly picturesque and have relatively well developed tourism infrastructure.

2. ***Clusters of ancient woodland set in a matrix of arable farmland, supplemented by recent plantations.***
   Examples: Rockingham Forest, Northants, Bardney, Lincolnshire, Sherwood Forest, Nottinghamshire

These areas comprise substantial yet isolated woods in a matrix of predominantly arable farmland with a low density of hedges and trees (see fig. 6.8). Many of the semi-natural woods were converted to conifer plantations in the 20th century; though significant areas are now being restored to semi-natural woodland. There has been considerable planting of new conifer woodlands, usually on the poorer soils (sand or heavy clays), mostly under management by FE, including restoration of old quarry sites (e.g. at Rockingham). The proportion of the landscape which is woodland is typically 5-15%, about half of which might be ancient.

These areas are typically dominated by rotations of combinable crops (e.g. winter wheat, barley and oilseeds – plus set aside) but with some root crops (potatoes and sugar beet) on the better soils. Such farming systems, when operated at sufficient scale, have maintained a relatively high level of profitability. Mixed farming is not uncommon in Leicestershire and Northamptonshire.

Mainly scattered villages with very small populations and a few small towns. Limited awareness of woodlands and only modest tourist activity.

3. Areas with little or no existing woodland
Examples: locally throughout southern England and the midlands, including floodplains

In these areas land use is almost wholly arable agriculture, leaving almost no woodland or other semi-natural habitats (see fig 6.9). Woodland is usually restricted to small secondary woods. New woodland is usually isolated from other woodland, such that colonisation by woodland species will require long-distance movement or deliberate translocation.

These areas are often on the good, productive soils and capable of supporting a wide range of arable crops, though a proportion of the most flood prone land is often reserved as grazing. Some areas (e.g. Vale of Evesham, Wye Valley around Hereford) contain some of the country's best land.

Lowland floodplains are generally not densely settled, except for areas of modern suburban expansion. However their immediate surroundings tend to have denser than average populations including larger towns.

6.5.2 Institutional issues

Lowland England differs from many parts of the uplands in that woodlands are a traditional part of the landscape and there is a basic awareness of the historical significance of woodland (if only in the form of Robin Hood, Hardy's novels etc). There are also very well-known examples of appealing extensive forest such as Epping Forest or the New Forest. In addition, lowland Britain did not share the same negative

experiences of widespread expansion of conifer plantations in the 20th century. These factors contribute to making significant woodland expansion a far less contentious issue than in many parts of the uplands; as illustrated by progress in development of the Community Forests and the National Forest.

A further important contrast with the uplands is that a considerable proportion of the rural population do not derive their income from the land (most notably in the commuter and "stockbroker" belts around major cities) and are likely to view the New Wildwoods concept more favourably than their upland counterparts.

Countering this is the dominance of arable agriculture and intensive livestock systems, with their relatively high profitability, high land prices and consequent high opportunity costs of conversion to woodland. Areas of poorer land exist (e.g. on sands, thin chalk and poorer clays) in southern counties and here land prices can be lower where the amenity interest is absent.

Land ownership includes large traditional mixed estates, a high proportion of owner occupied farms, and large areas of the best farmland owned by agri-business and financial institutions. None of these are particularly appealing targets for New Wildwoods. The National Trust is significant land owner, including some extensive woodlands (as at Ashridge in the Chilterns) and Woodland Trust has recently become a major player, including woodland establishment. The FE is important, including some large areas under single management such as the New Forest. The Ministry of Defence own substantial areas of land and are not averse to woodland planting where it does not conflict with military training or nature conservation objectives. As has been the case with the National Forest, finding substantial land areas in close proximity, where land owners would be sympathetic to New Wildwoods presents a considerable challenge.

There has recently been considerable activity by the FE throughout Lowland Britain in 'deconiferisation' or restoration of ancient woodland. This combined with increasing interest in 'defragmentation' (Forest Habitat Networks) means that some important groundwork in restoring and expanding semi-natural woodland is underway. Moreover, both the Woodland Trust and FE have promoted restoration of non-wooded habitats in association with woodland restoration and have stressed the need for a critical mass of habitat in a particular area and optimising the spatial relationships between habitats at various scales. These approaches dovetail well with New Wildwoods and the next key step would be to select an area to extend these approaches to the scale envisaged under New Wildwoods.

6.5.3 Potential areas for New Wildwoods

Well wooded areas with semi-natural habitats

There is an appealing logic to concentrating the potential development of New Wildwoods in areas with a high proportion of woodland and semi-natural habitats - and

indeed this is the process favoured by Woodland Trust (Woodland Trust 2002). Two areas suggest themselves for this approach: the New Forest and the Sussex Weald.

The New Forest has the following advantages as a site for a New Wildwood:

- It is one of the areas most ecologically similar to a New Wildwood and achieving a large scale natural forest would be far more rapid than in other locations.
- The district is already perceived as 'wild', so developing this theme is likely to receive public support.
- The woodland and inclosures are under unified management (FE/Crown). Some systems for public consultation and involvement are already in place
- It already has an element of extensive woodland pasturage.
- It has a well established recreational and tourism infrastructure.
- Much of both woodland and farmland has relatively little economic significance.
- It is soon (ca. 2004) to become a national park, which should give it an institutional structure capable of delivering a coherent land management plan, of which New Wildwoods could form a part.

Substantial restoration programme is already underway by the FE, including heathland, and mire as well as native woodland. The area would still require considerable changes in management to progress it to a New Wildwood - much of the woodland is still predominantly plantation conifer and considerable work would be required to transform this to woodland dominated by native species The problems of using the New Forest centre mainly on the fact that it has already has strong identity and trying to attach the New Wildwood label to it may not be acceptable. Landscape changes under New Wildwoods would not be as striking as in less wooded areas. Nevertheless, the changes required under New Wildwoods would probably engender considerable controversy by attempting to overturn a long management tradition. Lastly it is questionable how transferable knowledge gained in the New Forest would be to other New Wildwood projects.

The Sussex Weald shares many of the ecological advantages of the New Forest but has no existing "forest identity". The area was the subject of futuristic proposals for turning it into an extensive wilderness by Whitbread and Jenman (1995), working for the Sussex Wildlife Trust. A good nucleus of native old-growth and other semi-natural woodland is already present and secured in conservation ownership. Extensive mosaics of woodland and farmland offer opportunities for development of mixed habitats. Sussex Wildlife Trust are continuing to promote large-scale conservation concepts and have been active in land purchase. It is likely that the area will be included in the South Downs National Park, which might enhance funding options. Wild pigs are already free-living in the region. The area is a good example of a location where a large part of the community is not dependent on the land for income.

The best way forward would appear to be by engaging Woodland Trust, Sussex Wildlife Trust and National Trust, plus the FC and FE.

Large blocks of ancient woodland set in a matrix of arable farmland

Concentrating on locations with blocks of existing woodland achieves two important aims:

- substantial landscape change i.e. create a new landscape
- securing a solid ecological base from which to develop the core area of the New Wildwood.

The two locations which are considered here are Rockingham Forest, Northants and Bardney Forest, Lincs. In both theses areas there are many large woods managed by FE. Restoration of PAWS is underway on a considerable scale and English Nature used Rockingham as a test area for a theoretical exercise in expanding and linking isolated ancient woods. The Rockingham Forest Trust has recently received funding from the Heritage Lottery Fund for a GIS-based survey of forests, historical landscape and other ecological features, that may later lead to action on the ground to restore and expand native woodland.

Large individual woods would allow low intensity management of native woodland largely free of edge effects - a key aspiration for New Wildwoods. However attempting to link these woodland with further substantial woodland would encounter many difficulties in terms of land acquisition. A possible approach might include:

- targeting riparian strips of woodland and other semi-natural habitats linking the individual woods.
- encouraging trusts (e.g. Woodland Trust, Wills trust) to acquire land opportunistically in the area over a long time period.
- a concerted effort on the part of agencies to encourage suitable farm woodlands, ideally with some form of targeted grant.

The best way forward would appear to be by exploring options initially with FC and FE plus partners likely be interested in acquiring land such as Woodland Trust, Wills Woodland and National Trust.

Areas with little or no existing woodland, including river floodplains

The advantages of developing a New Wildwood in areas currently with least woodland cover include:

- potentially achieves the greatest landscape changes.
- it potentially leads to the greatest change in socio-economic aspects, as the current activity is likely to be wholly dominated by agriculture .
- leads to considerable ecological improvements because the ecological status of the land is currently so low.
- it can be presented as something wholly new and innovative for the area.

Disadvantages include:

- there is often little public or institutional perception of the value of woodland in such areas.

- there are no existing businesses involved in woodlands from which other woodland based economic activity might develop.
- none of the institutional groundwork in terms of awareness-raising or the formation of suitable partnerships will have taken place.
- agricultural land values are often high and this may be exacerbated by amenity or "hope value" where there is development potential.
- the ecological authenticity of the woodland will be limited by the lack of a core of existing native woodland.

An alternative approach to creating New Wildwoods in the lowlands is simply to acquire arable farmland opportunistically wherever this comes on the market in substantial areas. This approach has been used by Wills Trust at North Barns in Wiltshire (see below). This would require particularly high financial resources deployed over a very sustained period if progress on the scale envisaged under New Wildwoods could be made. However such an approach would be an essential component of any New Wildwood located in Southern England and the involvement of trusts willing to buy land is clearly important. The idea of using woodland on lowland floodplains has been discussed frequently, but the opinions of hydrologists appears to be split on the question of whether it confers significant benefits over agricultural usage.

Box 6. 1 North Barns (Wills Woodland)

This is an ongoing project to convert of arable farmland on downland to predominantly native woodland. There is no ancient woodland and almost no inherited semi-natural habitats in the area.

- Wills Woodland proposal will establish woodland on 202 ha in large, convoluted blocks, shaped to the rolling topography. The woodlands will comprise 155ha of native broadleaves and 39ha of conifer high forest.
- No part of the new woodland will be more than 350m from farmland. Informal public access will be promoted throughout.
- Application for a Community Woodland Scheme has been made for 50ha, which would provide signage and other benefits for visitors.

6.5.4 Conclusions – Lowland Southern England

1. It would be useful to attempt a New Wildwood in lowland southern England by drawing together the enthusiasm and experience of potential partners.

2. The most appropriate type of location to work would be in the middle of the spectrum in terms of woodland cover and where there are some semi-natural non-wooded habitats i.e. locations with the characteristics of Sussex Weald, Rockingham or Bardney. Examples such as New Forest (high woodland cover) or North Barns (no existing woodland cover) whilst not likely to develop into New Wildwoods, will yield useful experience and information.
3. The key potential partners are Forest Enterprise, local authorities, Woodland Trust, the Wildlife Trusts and National Trust, together with private trusts.
4. The experience of the Community Forest Programme and the National Forest, in terms of project process, land acquisition and woodland expansion, should be incorporated into any further programme.
5. The hydrological benefits and impacts of floodplain forests need to be resolved.
6. New Wildwoods would need to be promoted at a political level.

6.6 OVERVIEW OF POTENTIAL LOCATIONS

Chapter 2 of this report gives a list of criteria on which the selection of areas for new wildwoods might be based. Table 6.1 shows an overview of the sites described in chapter, with these criteria scored for each location on a 4-point scale (table 6.4 below).

Table 6.1 An outline comparison of the characteristics of the case study areas according to the criteria listed in Chapter 2. (S. England 1 = New Forests/Sussex, 2= Rockingham/Bardney, 3= areas with no existing woodland/floodplains - see section 6.5.1)

LOCATION	CRITERION					
	Owner/ community interest	Uniform ecology/ land use	Economic -ally marginal	Semi-natural base	Tourism potential	No constraints on tree cover
Ennerdale	++++	++	+++	++	++++	+++
Cambrian mountains	+++	++++	+++	+	+++	++
N. Pennines	++	++++	+++	+	++	++
S. Scotland	++	++++	+++	+	++	++
S. England 1	++	+	+	+++	++++	+
S. England 2	+	++		++	++	+
S. England 3		+++		+	++	+

This suggests that there is little to choose between the upland examples - Upland Wales, Northern England and Southern Scotland are very similar in terms of these broad criteria; The southern England locations are rather more diverse, with a rather better base of semi-natural woodland than in the uplands, but limited by the economic profitability of the existing agricultural land use.

6.7 PRACTICAL ISSUES ARISING

6.7.1 Existence of major sensitivities in upland areas

In all the upland areas considered, major local and regional sensitivities were evident. These comprised:

- **Farming**: farming was generally believed to feel threatened by large-scale public funded woodland initiatives of this kind. This is due to the likelihood of land coming out of farming, that farmers/farming families would not be able to find a role, and that having such woodland neighbouring the farm would not confer any benefits.
- **Nature conservation**: large areas were designated for heathland/moorland and associated species and were not regarded as suitable sites for woodland expansion. In the Pennines, attitudes amongst agency staff were mainly discouraging and it was clear that they did not envisage large-scale native woodland as an appealing form of habitat/land use.
- **Water industry**: the water companies, particularly in Wales, appeared to be strongly opposed to any kind of expansion of woodland in catchments as this would lead to reduced water yields.
- **Common Land**: The presence of significant areas of common in the uplands of England and Wales poses serious problems in terms of developing New Wildwoods. Getting all commoners to agree is likely to be problematic and issues to do with grants become extremely complex and sensitive.
- **Local communities:** Last century's experience with development of large scale conifer afforestation has proved to be highly contentious. The legacy of this may hinder potential schemes.
- **Role of New Wildwoods** : There did yet appear to be a useful discourse between stakeholders who viewed New Wildwoods as multifunctional resources and those who saw them as essentially conservation orientated.

Trying to find locations that avoid all these sensitivities is clearly impossible. The best strategy is to avoid the most sensitive areas, but accept that at an early stage in any local project, considerable effort will need to be put in to help overcome these sensitivities.

6.7.2 The appeal of converting conifer plantations to initiate new wildwoods in the uplands

In all the upland areas proposed for new wildwoods it was clear that converting existing conifer plantations to native woodland was seen as the most practical and appealing way

of initiating a New Wildwood. This was because it avoided the sensitivities outlined above and indeed was seen a highly positive by most stakeholders. It might be anticipated that forestry interests could offer this as an input, with some expectation of this inspiring other stakeholders to contribute to a project. It should also be noted that this will usually be the method of establishing new native woodland which requires least public investment.

6.7.3 Engagement of major landowners to provide core areas

The best hope of progress lies in an initial partnership with a few major sympathetic landowners who commit to developing core areas. Without these, progress is likely to be small scale and slow and might be better taken forward as "defragmentation" projects. The existence of such land holdings is a key factor in determining where projects might best be initiated. However this does not exclude the possibility of large-scale strategic land purchases in order to initiate a project.

6.7.4 One large New Wildwood or several smaller ones ?

Whilst the logic of aiming for a large New Wildwood in any region is appealing, it is apparent that some people consulted felt that it could be desirable to initiate several rather smaller (i.e. several hundred up to about 1000 ha) projects across a region. In Wales, this the idea was based on using several existing FC plantations, where it was assumed that fairly rapid progress could be made. These could be encouraged under the banner of New Wildwoods, so long as the long term aim of establishing a large "core area" was not compromised.

6.7.5 Slow emergence of existing initiatives and projects

In England and Wales there was a general lack of established projects or initiatives which share major elements with New Wildwoods; the notable exception being the Ennerdale project. Having said that, several initiatives have begun to emerge which have much in common with New Wildwoods i.e. Tir Coed, the ideas for large native forest being formulated by the Forest Enterprise (Rod Leslie pers. comm.) and the Woodland Trust's 'Space for Nature' project . In addition, the various woodland defragmentation projects are laying a useful groundwork into which New Wildwoods might eventually be able to slot in the future. Establishing ties with the organisations involved in these initiatives is a key step.

6.7.6 Importance of existing native woodland

Most practitioners contacted during the course of this project subscribed to the view that building on existing native woodland was the best course of action, and many thought that this should determine the location of possible projects. The strength of this approach is that a larger wood would be generated for a given amount of planting, and the new woodland will be colonised faster by woodland species. Whilst this is clearly desirable, the alternative logic - i.e. that large areas of woodland could be particularly beneficial if developed on upland areas above the level of enclosure or on arable land in the lowlands,

both of which usually lack extensive native woodland cover, is also perfectly tenable. When locations are sought for possible projects, it seems fair to favour areas with existing woodland, but those without existing woodland should clearly not be excluded. In an upland locations it seems likely that Core Areas might well be largely lacking existing woodland (e.g. Cambrian mountains), but that peripheral areas might be designed to incorporate as much existing native woodland as possible. If that was the case, then it seems to make sense in the lowlands to favour locations where the Core Area might include significant areas of existing woodland.

The Woodland Trust (2002) has recently carried out an analysis of the existing pattern of woodland and other habitats with the aim of identifying priority districts for habitat restoration. Their basic assumption is that habitat restoration should be concentrated where there is something to build on, at least to the point where habitats are well-linked throughout the district. The priority districts were identified on the basis of four characteristics, all of which are associated with potential 'new wildwoods': (i) high density of ancient woodland, (ii) high proportion of ancient woodland with semi-natural stands, (iii) significant representation of old-growth stands; and (iv) large core area of semi-natural habitats, including woodland. This approach could be used to contribute to a process for prioritising possible locations for New Wildwoods.

6.7.7 Options for establishing woodland cover

Establishment of woodland cover would use the full range of techniques from planting to natural regeneration and may require use of innovative techniques, including natural colonisation at some distance from seed sources, direct seeding and possibly use of semi-domesticated livestock. Establishment techniques can be split into two broad categories; by natural regeneration/colonisation and by planting. Each of these has advantages and disadvantages and these are outlined below.

Naturally regenerated/colonised woodland - where there is existing semi-natural woodland

Here new woodland could be developed by natural succession in the vicinity of the existing woodland, which would provide both a source of tree seed and a source from which woodland wildlife species could move readily into the new developing woodland. If management inputs were minimised, the course of succession would be unpredictable, though woodland of some kind would be likely to dominate the land within 30-50 years. With more intensive management during the regeneration phase, the composition and structure of the new woodland could be controlled more closely.

Management would require decisions that would affect the kinds of woodland that might develops, including:

a) Which tree species should be accepted ? Should this be only locally native species, or also some naturalised ones ?
b) Should attempts be made to control natural factors such as fire and disease or to accelerate natural processes such as tree and shrub regeneration ?
c) Should attempts be maintained to control herbivores at low densities ?

Options developed under this type of scenario would:

- be closer to the normal understanding of both "native woodland" and 'wildwood' than options involving planting, provided that the main regenerants are not in fact introductions;
- have relatively unpredictable outcomes in terms of the balance between wooded ground and open space habitats and species composition;
- produce closed canopy woodland in a conventional time scale (i.e. a few decades) only within about 100 m of existing woodland, beyond which tree cover would usually diminish rapidly. Hence the area of (closed canopy) woodland that can be created is restricted.
- involve natural colonisation / succession occurring over long time scales and over long distances from existing woodland, given appropriate long term management;
- take decades to develop to a mature condition;
- only be capable of high quality timber production if considerable management intervention took place during the regeneration phase.

Naturally regenerated woodland can be developed where the previous/neighbouring land use was forestry plantation. The most obvious targets here include restoration of plantations on ancient woodland sites (PAWS) and areas of plantation that are economically marginal. The success (and speed) of this technique would be limited by proximity to seed sources.

Lower intervention variants of these options would appeal to conservation owners, and the more intensively managed options have appeal to owners interested in creating productive woodlands.

Planted native woodland: Where there is no existing semi-natural woodland

Woodlands of native species can be created by both planting and direct seeding. The tree and shrub species planted are those that are locally native (e.g. based on NVC woodland types), and the patterns of planting reflect site conditions. Such woodland:

- can be created rapidly and over large areas of either open ground or felled forestry plantation;
- can be closely controlled and therefore predictable in terms of composition, structure and pattern of open space habitats.
- would be even-aged in proportion to the speed of woodland establishment.
- could produce timber if appropriate management was adopted from the outset
- can act as a future seed sources for natural regeneration.

Planted woodland is often seen as "second best" by conservation organisations, especially where natural regeneration is a realistic option. The concept of planted native woodland seems to be acceptable to many owners and the general public not least because of its amenity and conservation value.

In practice, there is no need to make a stark choice between planting and natural regeneration. The latter can be assisted by direct sowing of seeds, as FE have shown with birch in Wales. Another intermediate approach, which offers the best of both choices, would be to plant part of the available ground, then allow the spaces to fill with natural regeneration.

6.7.8 Potential of wood-pasture.

Wood pasture is a land use with considerable potential to contribute to New Wildwoods. This is because of it would be more acceptable to graziers than woodland and has high ecological and landscape value. Furthermore one aspect of New Wildwoods might be the introduction and use of semi-wild herbivores, in which case wood pasture would be the ideal (or inevitable) habitat.

6.7.9 Major need for consultation and dialogue with stakeholders and communities

The era when agencies can develop and implement an idea like New Wildwoods in relative isolation of stakeholders and communities has long passed – particularly when major land use change is envisaged. Indeed, lack of consultation leading to a lack of appreciation of stakeholder views, has led to major difficulties in progressing large woodland initiatives in the past (Penny Edwards pers.comm.). Ongoing consultation and dialogue will be needed at all stages and all levels. This will add considerably to costs and time scales. Key questions will include issues relating to the type and purpose of New Wildwoods i.e. the extent to which they are to be mosaic serving multi-purpose roles or more concentrated on conservation and wilderness. In this context public participation should be seen as an opportunity rather than a threat.

6.7.10 Timescales

Timescales involved with implementing a New Wildwoods project and developing its benefits will be particularly long. Further, in ecological terms, whilst we may be able to get trees on the ground quickly, growth on sub-montane ground is likely to be slow, large trees and dead wood volumes will take a century or so to build up to anything approaching natural levels, and colonisation by woodland species will be just as slow. There is clearly a need to set up an organisational background that can sustain such a long-term commitment.

7. AGENCY ROLES IN INITIATING ACTION

7.1 STRATEGIC APPROACH

The strategy outlined below is proposed for the countryside agencies in facilitating the development of New Wildwoods. The countryside agencies and their partners need simultaneously to:

- continue to promote and refine the concept at national/GB scale;
- establish conditions for projects to be initiated by others at regional and local levels;
- encourage and support practitioners and agencies who approach them.

Developing and implementing projects on the scale envisaged in New Wildwoods is a considerable undertaking, and regional scale projects of this type have proved to be problematic in the past. For example initial progress by projects such as Millennium Forest for Scotland and the Central Scotland Forest was often smaller in scale and slower than originally envisaged (Penny Edwards pers. comm.). It is important to retain as much flexibility to exploit opportunities as and when they develop, rather than attempting to lay down a blueprint. The main components in a strategy to achieve this are outlined below and more detail is provided in subsequent sections.

At National Level

1. **Initiation of collaborative working:** Collaborative working with key allies will be needed in order to establish a conducive institutional and policy framework.
2. **Promotion of the concept and consultation**: The idea needs to be promoted and consulted upon widely, including lobbying at all political levels and among the main stakeholder organisations and general public. This will include working to overcome some of the perceived and real barriers (e.g. incentive structures and levels).
3. **Identification of possible locations**: A few key locations where projects might best be progressed could be identified (using the material in chapter 6 as an initial guide)
4. **Support**: Research and information exchange amongst organisations and (eventually) projects.

At project level

5. **Formation of local project steering/management groups:** Setting up of local or regional level groups to develop individual projects involving representatives of key local organisations, individuals and communities, supported by countryside agency staff. In some cases suitable groups may already exist centred around current woodland initiatives.
6. **Promotion of the concept and consultation**: The idea would need to be promoted and consulted upon locally among the main stakeholder organisations and the public.
7. **Identification of key opportunities and constraints at the locations:** This would involve technical studies, consultation exercises involving participatory techniques.

8. **Seeking funding:** Organisations will need to draw together funds from their own and external sources.
9. **Initiation of projects**:
    - establishing institutional arrangements (e.g. formation of any trusts, establishment of land leases etc.);
    - drawing up of strategies and plans for projects;
    - ongoing stakeholder / community consultation;
    - initiating development of core area(s) with a few major landowners;
    - initiating work on peripheral areas with a wider variety of land owners;
    - initiating demonstration projects.

There is potentially much to be learnt from the process which established the national and community forests in England. The following sections describe the roles of the countryside agencies and their partners in developing this strategy.

7.2 COLLABORATIVE WORKING TO INITIATE ACTION

National level
Collaborative working will be required at GB (or national level) in order to create the conditions in which local projects can develop. The best way forward would appear to establish a core working group(s), with access to a wider circle stakeholder organisations who could be drawn in as necessary. The most likely members to join with the countryside agencies in a core group would be those organisations already showing interest in similar concepts e.g. Woodland Trust, Forest Enterprise, Forestry Commission and National Trust. It would be highly desirable to involve DEFRA / SEERAD/NAWAD at this stage, but this would require convincing them that this is an important part of the rural development agenda. It might also be useful to involve a few relevant local scale organisations and interested individuals at this stage to add a practical voice (e.g. Tir Coed, Borders Forest Trust). The wider circle of stakeholder organisations would include farming and landowner organisations, water industry, MOD, tourist boards and development agencies. It would add greatly to the viability of the concept if these interests could be "won over" to the idea.

Project scale
Projects will need to be progressed at regional or local scale by either, or a combination of:

- agencies and others seeking partners (top down);
- local organisations, initiatives, communities or landowners approaching agencies for support (bottom up).

At all scales of operation, a partnership approach will be required involving the countryside agencies and the types of partners listed above, plus crucially local authorities. Where suitable woodland or land use initiatives already exist (e.g. Tir Coed, Borders Forest Trust), these would often be suitable as core members of such groups. Such groups often have networks of useful contacts in relevant organisations and have

been involved in all the main activities needed to progress projects of this type. Partnership organisations will need to be clear that establishing New Wildwoods is a long term commitment requiring a stable organisation which is able to operate over an extended period.

7.3 PROMOTION OF THE CONCEPT AND CONSULTATION

The concept needs to be promoted at national, regional and project level. The aim of national promotion would be to secure backing, including funding, from government and other major organisations likely to be involved at project level. Such promotion would need to focus *on the national and local policies objectives that New Wildwoods would contribute* to i.e. integrated rural development, farm diversification, catchment management and woodland HAP targets (see chapter 2). Promotion at the project level would need to centre on optimising the benefits to individual stakeholders. Some of the key messages for promotion amongst key stakeholders are outlined in table 7.1 below.

General messages about native woodlands need to reach the widest range of land-holders. In Scotland, 'selling' the benefits of native woodland to traditional land owners with messages emphasising their economic and social benefits (though mentioning their environmental value) has been a useful avenue during the last 10 years (e.g. see Worrell 1999) and this approach needs to be applied in England and Wales. There is an element of contradiction between these messages and the banner of "New Wildwoods" which needs to be handled carefully. It is important that these different groups (e.g. fisheries interests, community groups) start to "own" ideas about native woodland; that it is not simply a concept thrust upon them by outside agencies. It would be helpful if agencies developed joint working with other land use interests with a view to working up promotional material aimed at specific constituencies.

The process of promotion would be greatly strengthened by adding a strong element of consultation and active participation to pick up on the key misconceptions, barriers and unforeseen opportunities in a given area. It is clear that the concept is not immediately easy for people to grasp and that the constraints are often more apparent to people than the longer term benefits. Examples such as the Tir Coed Participatory Rural Appraisal in the Ystwyth Valley in 1999 provides a useful example of innovative community and stakeholder consultation that is required to progress the debate. Furthermore it is important that there is a public debate about New Wildwoods before the concept becomes entrenched within agency agendas, perpetuating a 'top down' realisation.

7.4 IDENTIFICATION OF KEY OPPORTUNITIES AND CONSTRAINTS AT THE LOCATIONS

At locations proposed for New Wildwoods an evaluation of the opportunities and constraints will be needed, ideally in the form of a feasibility study. Most of the main

Table 7.1 Key messages for promoting New Wildwoods

Stakeholder group	Issue or message
Politicians	New Wildwoods is a concept which helps to deliver several key rural policy objectives, especially integrated rural development.
	There is scope for innovative thinking in order develop suitable incentive packages.
Farming	Promote New Wildwoods as vehicle for diversification and for accessing future environmental subsidies.
	Promote its role in integrated rural development.
	Acknowledge that it will lead to a reduced area under farming. Make it clear that novel opportunities will be sought to involve farmers in woodland ownership, management and contracting.
	Promote its role in developing integration of farming and woodland management based around shelter for stock, woodland grazing and on-farm use of timber. Acknowledge current difficulties in generating income from woodlands after establishment and prior to maturity. Point out moves are underway to establish grant schemes which reward controlled management of stock in woodland.
Forestry	Promote the long term economic and social benefits with reference to existing forests such as New Forest Promote the idea that conversion of conifer plantations to native woodland is good practice, especially on ancient woodland sites (PAWS) and economically marginal sites.
	Promote the idea amongst private forestry companies that private clients may be interested in contributing to a New Wildwood project i.e. that individuals managing private forest land for pleasure, amenity and conservation, rather than for economic gain, is a social good.
	New Wildwoods will deliver new Core Forest Areas and therefore greatly strengthen Forest Habitat Networks / defragmentation projects.
Conservation organisations and individuals	Promote the idea that extensive woodland cover can be developed without harming established conservation interests. Promotion of the "New Wildwoods" concept as a mosaic of woodland, wild land and other land uses with considerable large scale conservation benefits.
	Promote the message that land acquisition for native woodland establishment is a particularly good use of funds for conservation charities.
	Promote of the conservation value of semi-wooded habitats, especially wood pasture.
	New Wildwoods will deliver new Core Forest Areas and therefore greatly strengthen Forest Habitat Networks / defragmentation projects
Water industry and freshwater fisheries	Promote native woodland management for delivering high water quality and good fisheries habitat. Promote of the water quality and related (economic) benefits of native woodlands
	Acknowledge that water yields will be reduced where pasture is converted to native woodland

Table 7.1 continued

Water industry and freshwater interests	Point out that water yield and quality will increase when conifer forests are converted to native woodland
	Promote research on the hydrological impacts of native woodland.
Local Communities	Acknowledge past lack of support for community woodland initiatives and state that a major aim of New Wildwoods is to support initiatives by community groups
	That the new landscapes and mixes of land use will confer considerable economic and quality of life benefits in the future
	Acknowledge that employment impacts are unknown, but will include some short term gains as woodland are established followed by a period of potential downturn (compared with farming), followed again by longer term gains as forest mature and tourist related benefits emerge
	Signal that suitable agency support packages will be developed and bureaucracy will be reduced to a minimum.

issues to be resolved are outlined in chapters 4 and 6 of this report. This process would require significant and carefully managed stakeholder and public consultation utilising a range of participatory techniques. Project partnerships may need to establish forums or whereby concerns can be voiced, discussed and resolved where appropriate.

7.5 INITIATION OF PROJECTS

7.5.1 Land-holding arrangements

An important phase in the initiation of projects will be to clarify all the institutional arrangements which might apply to land-holdings. This may include the establishment of tailor-made trusts or the extension of the remits of exiting woodland initiatives in order to be able to handle large partnerships of landholders and a range of different types of land. New Wildwoods could benefit from novel land holding / management arrangements. These could include *strategic land purchase*, where partners (e.g. a conservation charity) could commit to purchase land which is strategically important as its contribution to a wider project. Examples of this might include land which links existing woodlands or land immediately adjacent to converted FE plantations. A further option is *land swaps*, where the aim would be for land to be swapped amongst partners; for example FC might be able to transfer ownership of low-lying plantations adjacent to farm holdings which could be useful as farm woodlands to individual farmers, in return for larger areas of poorer higher level grazing land, which could then be converted to woodland. *Land leases*, for example of FC plantations to a woodland initiative or community might also be a possibility where a clear demand can be demonstrated.

The FE current undertakes partnership working with other interests and leases land to other interests, i.e.:

- partnerships with community groups where the community has a strong input to planning and management, for example at Laggan in Scotland.

- partnerships with conservation organisations for the management of informal nature conservation sites, for example with Scottish Wildlife Trust at sites across Scotland;
- leases of FE land to other companies, for example for mining.

A further potential arrangement would be FE ceding planning and execution of forest management to a partnership organisation and relinquishing its budget for that forest, whilst the government retains ownership. Whilst this would be unusual, it would appear to be feasible, and is essentially the arrangement currently operating in Canada under the Canadian Forest Service's Model Forest programme (see box 7.1)

Box 7.1 Canadian Model Forest Programme

This programme gives control of areas of state owned forest to local partnerships in order to develop new forms of sustainable forestry. The partnerships include representatives from environmental organisations, native groups, industry, educational and research institutions, all levels of government, community-based associations, recreational users, and landowners. This cross-section of membership is charged with demonstrating how social, environmental, cultural and economic interests can be integrated. This initiative was a response to public concerns about forestry practices and conservation during the 1980's and early 1990's. Model forests are intended to:

- encourage the development of forest management systems that demonstrate practical application of the concepts of Sustainable Forest Management (SFM);
- form partnerships between individuals and organisations sharing the common goal of sustainable forest management.
- encourage the incorporation of a broad range of forest values into each Model Forest provide a forum where these partners can gain a greater understanding of conflicting views, share their knowledge, and combine their expertise and resources to develop innovative, region-specific approaches to sustainable forest management.
- act as a hands-on "laboratory" in which these leading-edge techniques are researched, developed, applied, and monitored.
- encompass a working scale area of forest land where the participants have a direct interest and influence over the uses in the forest. However, the rights of participating landowners and land managers are not superseded by the model forest.

7.5.2 Progressing Core and Peripheral Areas

It seems clear that progressing the establishment of Core Areas (in both New Wildwoods and Forest Habitat Network terms) is the priority action and that this something which is unlikely to happen (in the short or medium term) simply as a result of ongoing work in Forest Habitat Network or defragmentation projects. In upland areas, the FE is usually the key partner who can deliver this most easily. There is a range of ways in which conversion of an FE plantations to native woodland might be organised, i.e.:

1. FE to carries out conversion as a contribution to a New Wildwoods project.

2. FE enters into a partnership with another organisation (e.g. a community woodland) and the planning and management operations are shared between FE and the partner organisation. Examples of this already happening include several community woodlands.
3. FE cedes control of planning and management operations to another organisation but the government ownership of the land (as in the Canadian Model Forest approach above). This might involve a land lease.
4. FC sells the forest to an appropriate organisation.

In lowland areas, core forest areas could be built up by strategic land purchase, or by the use of challenge funds, ideally linking areas of existing native (and other) woodland.

Peripheral areas are less of an immediate priority and can be developed, to some extent, through existing mechanisms (e.g. defragmentation, farm forestry projects). However, it would make sense to ensure that such initiatives were underway or likely to develop so as to deliver the entire New Wildwoods vision. Using a New Wildwoods banner would have many advantages in terms of co-ordination of action and maximising future funding options.

7.6 FUNDING

Funding is clearly the key limiting factor both for establishing projects and for owners wishing to establish native woodland. The countryside agencies and their partners could help by providing matched funding alongside other partners, as well as leading bids for Lottery, European funding or similar.

A "challenge fund" approach is potentially appealing, where syndicates of owners are encouraged to apply for funding for a significant land area under several ownerships. The funding could be pooled from several government agencies. A two-stage application process similar to that currently applied to HLF funding could be developed.

There may be a case for attempting to develop special incentives for land owners in the following circumstances:

- to encourage natural colonisation schemes, which do not fit in well with WGS provisions for natural regeneration (time scales too long, tree densities too low).
- to encourage multiple ownership schemes, particularly relevant for the farming community (e.g. special support for drawing up management plans).
- to support linking woodlands to develop forest habitat networks.

7.7 SUPPORT ROLES OF COUNTRYSIDE AGENCIES

7.7.1 Research

An important role of the countryside agencies (and other key partners) will be in commissioning of research on:

- specific obstacles which become apparent as practical projects develop; e.g. hydrological issues.
- the design and management of the core forest areas in relation to forest habitat networks and the interactions between wooded and unwooded land.
- some of the potential benefits, particularly in relation to integrated rural development
- monitoring and evaluating projects so that we can learn from experience, and are better able to quantify the benefits and impacts.

The following technical issues were highlighted by stakeholders:

- ability of native tree species to colonise clearfelled or *Molinia* areas.
- methods of establishing and managing wood pasture.
- design of woodland/moorland mosaics on Pennine moorland sites.
- effects of establishment of native woodland on the hydrology of pasture, moorland and conifer plantation.
- options for the introduction and use of semi-domesticated herbivores.

7.7.2 Disseminating information on good practice

This would focus on:

- general advice on aspects of native woodland management in relation to key ecological and landscape issues e.g. the Forest Habitat Network, management of woodland/open space matrices. Customary channels of advice would be used i.e. publications, seminars etc.
- developing and publicising good examples of woodland establishment and management to inspire other stakeholders i.e. using demonstration projects.

An important need would be helping to develop a network of demonstration projects and associated materials to aid transfer of ideas among stakeholders (see chapter 6 for possible themes).

7.8 THE ROLE OF DEMONSTRATION PROJECTS

7.8.1 Role of demonstrations

Feedback from the seminars suggested that development of a series of formal demonstration projects could be a useful tool for promoting new wildwoods. Any project set up under a New Wildwoods banner could potentially focus on one or more of the "cutting edge issues" outlined below.

Demonstration projects focus on the following aspects:

- **Innovation**: demonstrates aspects of practice/management which are new, uncommon or carried out to a particularly high standard. Often an element of experimentation is involved. The aspect of novelty can extend to new types of owner becoming involved or even new or innovative sources of funding.
- **Transfer of ideas**: ideas can be tested and transferred to a wide target audience. They are particularly useful for practically orientated target audiences such as land owners and managers.
- **Choice of site**: project is set up with careful thought about the type of site i.e. representativeness, location, physical and habitat characteristics, previous or existing land use, type of ownership or community involvement.
- **Background information**: project is accompanied by good quality background data, on-site interpretation, publicity and encouragement to visitors.

As well as providing projects on the ground, they play a pivotal role in dissemination of advice and in promotion of the benefits of native woodland. In addition they can contribute to an understanding of the financial viability and funding requirements of projects and of research needs. Hence any project would be more useful if it could also be set up as a demonstration project.

7.8.2 Cutting edge issues requiring demonstration

Issues which could most usefully be progressed by means of demonstration projects need to:

- be new or "ahead of their time";
- be established in theory, but proving difficult to progress in practice;
- be aimed at overcoming inadequate standards in practice;
- involve transfer of ideas or technology.

For establishment of New Wildwoods a potentially large number of issues could be usefully promoted using demonstration projects. The many factors mentioned in the first section of this report give rise to a very large number of possible permutations for potential demonstration projects.

1. Landscape scale establishment of native forest across multiple ownerships.

Aim: To demonstrate:

- development jointly by the community and the countryside agencies (and FC) of a local scale flexible approach for increasing the cover of a range of types of native woodland over a substantial watershed, with multiple owners. This could also include other types of wild land.
- co-operation among land owners and between forestry and farming agencies;
- development of local scale forest habitat networks
- use of top-up funding by agencies.

Water catchment(s) could be chosen to represent a range of different types of owner and site characteristic.

Justification: Establishment of native forest needs to take place at large scale (though this can happen over an extended time period) and ideally in accordance with FNH principles. A key aspect of land ownership in England, Wales and some parts of Scotland is that ownerships tend to be small and it is difficult to co-ordinate native woodland expansion in a way which leads to the best over all outcome.

Target audience: land owners, land-use agencies, local community groups.

2. Large scale conversion of forestry plantations to native woodland

Aim: To demonstrate the feasibility, techniques, benefits and impacts of converting areas of existing plantation to native forest.

Justification: in many parts of Britain, forestry plantations represent a form of land use which is relatively logical to convert to native forest. This is because it already has a forest environment / infrastructure, regeneration and planting into felled conifers is easy and on some upland sites, opportunity costs can be relatively low.

Target audience: Foresters and forest owners especially FE, land use agencies

3. Farm extensification / diversification using native woodland and trees.

Aim: To demonstrate approaches including establishment and integrated management of:

- pasture and woodland for grazing/shelter;
- wood pasture;
- native species agro-forestry.

Projects(s) could be chosen to concentrate on either intensively managed native woodland or options closer to the new wildwoods concept.

Justification: most land which is potentially available for native woodland is and is likely to remain in farming use; therefore farmers need to be convinced of the viability and benefits of increasing the proportion of woodland on farms. Such a project could also generate cost benefit data.

Target audience: farming community, farming press, farmers' unions, farming agencies and advisors.

4. Establishment of tree cover by natural colonisation techniques

Aim: To demonstrate that woodland /wild land mixtures (matrices) can be established over a long time period by natural colonisation, possibly aided by intervention such as

direct seeding, planting of future seed sources and planting a areas of new native woodland.

Justification: this approach offers a good way of maintaining and enhancing the wild nature of land in the upland whilst increasing tree cover, and maintaining some grazing either of domestic or semi-domesticated stock.

Target audience: landowners, especially conservation charities, agents, agencies, local community groups

5. Integration with freshwater/water industry interests

Aim: To demonstrate:

- Upland riparian habitat restoration by fisheries owners
- Establishment and management of woodland in catchments

Justification: riparian corridors and land around waterbodies constitute key parts of FHN's, and the benefits of restoration are large compared with the area of woodland involved. Riparian owners are or can be relatively well organised and responsive to messages about fish habitat. Water companies are becoming more concerned about several diffuse pollution issues in public water supply catchments and amelioration of this presents an opportunity for woodland expansion. Work is needed on the possibility of native woodland establishment in upland catchments being used to ameliorate flooding risks downstream.

Target audience: riparian owners, water companies, other land owners

6. Native woodland rural development forestry

Aim: To demonstrate best practice in agency support for native woodland community woodland projects of a New Wildwood type. This could include demonstrating links with recreation and tourism sectors and with education/schools.

Justification: Social aspects of forestry remain the last main policy sector to be developed. Practical progress is still at an early stage with both communities and agencies poorly equipped to make advance. Nascent groups interested in the native forest concept would benefit greatly from substantial support.

Target audience: local communities, agencies, tourist associations, enterprise companies, educational services.

7. Deployment of funds for establishing native forest from external bodies

Aim: To demonstrate how funds from external bodies (e.g. carbon tax revenues, or landfill tax rebate) could be best deployed to create native forest, but also to benefit rural communities. This could include both land purchase for native forest creation (thereby

releasing funds for existing land owners) and arrangements to support woodland creation by existing land holders (e.g. payments towards management costs in return for carbon tax credits).

Justification: Firstly, it is clear that the opportunity costs associated with substantial planting of native forest requires levels of funding beyond the means of many landowners, especially farmers. Secondly donors seeking to support woodland creation projects are emerging. The countryside agencies could attempt to help as brokers (alongside private organisations) to help facilitate this.

Target audience: landowners, potential donor organisations, land use agencies

8. Woodland on floodplains

Aim: To demonstrate how tree planting in floodplains may contribute to improved water flows and water quality, with consequent benefits including those to downstream urban areas. The involvement of the Environment Agency and the Scottish Environment Protection Agency would be a pre-requisite. The benefits and costs would be on a different basis than other cost benefit analyses (which would relate losses in agricultural income) and so need to be explored in practice.

Justification: The recent floods have brought land use decisions into sharper focus. It has been suggested that agricultural intensification of floodplains (especially drainage) has contributed to flood peaks and diffuse pollution

Target Audience: Agency staff concerned with water flows including flood defence, water quality, consulting engineers, riparian owners.

It is clear that these issues are inter-related and that projects would integrate aspects of several of these issues.

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APPENDIX 1: RECORD OF SEMINARS

This report gives a summary of the ideas discussed at the "New Wildwoods" seminars held in November 2001 at Newcastle, Newtown and Exeter. The Countryside Agencies recognise the value of many of the proposals outlined below but are not able to commit to taking all of them up.

1. Strategic issues

- **Bottom up / top down**: Project initiation should be a combination of bottom up (community or locally initiated) and top down (agency inspired). The agencies need to combine an *initiating* role with one which *responds to and supports* those wishing to implement a project.
- **Scale**: There are a range of general approaches on a spectrum between a) projects which are large scale from the start or b) projects which are small and build up by integration. Large scale ones would ambitious and visionary, smaller ones more subtle and pragmatic.
- **The core and periphery**: The need to consider remoter, less intensively managed core areas, with peripheries subjected to more intense management; say shelter belts and timber production. A core area could be purchased, followed by strategic smaller land purchases (drawing on experience from the Community Forests). One proposal was to restrict access significantly in core area which would be managed for real wilderness value, with access and recreation encouraged around the peripheral areas. In contrast others thought that encouraging recreation throughout was important.
- **Landscape approach**: One alternative is to present this as a "whole landscape" project – for which woodland merely provides the framework. There is a downside of being too focussed on forestry. It is important not to just talk of the about sheep grazing and forestry and ignore other land uses.
- **Time scales:**. The kinds of time scales being envisaged needed clarification. Whilst a lot of the focus was on initiation and therefore short term, we also needed to extend time horizons considerably so as to envisage long term development maybe involving quite different political and land use contexts – and therefore wider opportunities.
- **Balance of objectives**: Should we shoe-horn projects into "Objective 1" priorities with a focus on socio-economic benefits, or develop them with conservation as main a objective ? Recreation and tourism were widely regarded as the key benefit to focus on.
- **Archaeology**: Protecting archaeology is a key issue as many upland areas especially in England, are rich in sites.

2. Location: upland/lowland

- There was strong interest in extending the concept to the lowlands. There was clear support for floodplain sites and we need to review the range of site types and criteria for prioritising projects. Floodplain woodland, rivers SACs and FM areas are important and can act to get small scale projects started, that together can create new wildwoods.
- Upland areas are more amenable to large scale projects because of the space and the cost of land; the potential for land use change is greatest in the uplands.

- Intensively farmed / lowlands areas have greater barriers in terms of land costs and arable subsidy. However woodland creation can be presented to government as a reduction in public subsidy. Lowlands areas present significant potential for restoration of PAWS.
- Woodland creation has greatest benefit in biodiversity terms to be located near existing woods. It is necessary to look at the landscape patterns and enhance woodland connectivity. Reducing the intensity of (non-woodland) land use around and between woods in a way that allows woods to function more effectively on a landscape scale is also useful.

3. Land ownership / management

- **Transformation of conifer forests** – Transformation of FE plantations seen as the 'easy option' in terms of large scale projects, especially in Wales. However it is still necessary to convince FE/FC, NAW and the Treasury. The types of woodland that emerge (including conifer regeneration) will be interesting and may present challenges for future management. Change to deciduous trees could have a positive impacts including acid balance, nitrogen balance and soil compaction. Conifer plantations are not making money –so projects could make them into something better at less cost.
- **Farming:** Integrated land management is a key concept. Conversion of large areas of farmland to wood will not happen unless there are financial incentives. With forestry there is the added burden of a loss in land values. Farmers organisations would prefer expansion of existing woodland and would be most amenable to projects which build up by linking small areas.
- **Common land**: Common land Involves large areas which are often heavily grazed and devoid of trees e.g. in Cumbria and Wales. There is considerable difficulty of getting farmers involved due to the difficulties getting all the graziers to agree to land use change. A minority can scupper the best laid plans. Also need to recognise that common land is an important resources for farms who have grazing rights. However, some graziers are now talking positively about woodland options
- **Foot & Mouth Disease:** In areas where large loss of stock has resulted from FMD, farmers are looking actively at the future management options of land. This involves integrating farming with business management and conservation (heathland, blanket bog restoration and tree regeneration from the gills). However lots of farmers are saying that they are going to restock in the same numbers. Agencies are delivering mixed messages and we need funding in order to get in now with native new woodlands projects (said in terms of Pennines)

4. Ecological aspects

- **Deconiferisation**: Change to deciduous trees could have a positive impacts including acid balance, nitrogen balance and soil compaction.
- **Other important habitats**: We do not want native woodlands to intrude on other valued habitats. We also need to include the quality of the matrix in restoration, i.e., restore habitats on farmland, even if it is not include in a rewilded area.
- **Hydrology**. Has emerged as a central issue (particularly in Wales). Expansion of woodlands may reduce water yields in supply catchments but may also lead to reduced peak flows downstream and thus reduce flood risks. However some hydrologists are saying that despite apparently reducing water yields, woodland expansion in the uplands will not mitigate flood risks downstream. The lack of

information about the hydrological characteristics of native woodland is a significant barrier. We need projects which will help us understand this.

- **Re-introductions**: Beaver is a possibility together with other large semi-wild / wild herbivores. Top carnivores e.g. lynx, wolf are hard to accommodate. Re-introductions are controversial, so need to move cautiously with a good degree of support.

5. Social issues

- **Timescale of benefits**: The timescale makes things difficult – there is potentially a very long lead time before many of the benefits come on stream, particularly the economic / rural development elements. This makes the concept difficult to justify to potential funders and the local community.
- **Employment** – idea of wildwood implies little management. Is it associated with withdrawal of economic activity? There is the possibility that there will be an initial downturn in employment opportunities in the early stages of projects.
- **Phasing economic activity** Because of the long timeframe it may be useful to phase the economic activity. Important to keep it local.
- **Tourism**: Long term emphasis needs to be on tourism benefits.
- **Access/recreation**: Note an ambiguity: we seem to seek wildwood in remote locations, but then try to justify this as beneficial to recreation, which implies access and use.

6. Stakeholders

- Politicians, ministers, and the Treasury need to be included the list of stakeholders and require very simple messages, because they don't have the time to digest them. An analysis of which rural problems the wildwood approach solves (i.e. economic, social, environmental etc) is needed and then sell this to politicians.
- **Welsh Assembly** AMs have recently supported native woodland initiatives.
- **General public/visitors:** these are important stakeholders. The Carrifran project provides a model of how to engage people and develop a message.
- **EA** might generally favour change from conifer to broadleaves, but there would need to be further benefits e.g. upgrading drainage associated with existing conifers plantations to modern practice standards (e.g. removing ploughlines near watercourses, blocking drains).
- **Existing network**s: Important to build on existing networks of possible partners e.g. RDAs, NPAs, County Biodiversity Groups and other regional groupings.

7. Definitions and terminology

- One view is that, to get stakeholders on board there should be a clear definition, so as to deliver a clear message. The current definition is confusing for practitioners and especially negative for agricultural/farming/estate-owning communities. Designation as "wildwood" may raise antagonism as it will be portrayed as preventing other uses of land. On the other hand, the consultants and agencies consider that that the terms employed are less important, because different projects will adopt different terms/titles; and might adopt unique geographic names attached (e.g. Eagles for Ennerdale), with the term wildwoods not appearing.
- Another view is that it is better not to get too attached to the "wild" label, and rather to shift emphasis onto semi-natural woodlands and landscapes.

- The obvious alternative label is New Native Woodland; though this project is trying to define a subset within New Native Woodland, to capture the least intensive management type.
- The definitions of natural regeneration and natural colonisation were unclear. One possible definition was that natural regeneration happens *within* the woodland, natural colonisation happens *outside* of woodland.

8. Funding and incentives

- We need to assemble funding/incentive packages which give landowners confidence to make major land use changes. Confidence in continuity of funding is fundamental. The timescale of woodland expansion is much longer than present grant schemes. Also, the separation between agricultural subsidies and woodland incentives remains wide.
- **Headage payments**: The whole issue of headage payments critical - with the switch from headage to area payments, farmers will be reluctant to devote grazing land to forestry.
- **WGS review**: Particularly relevant for possible changes to the farm woodland premium scheme. However there is a problem in Wales as LFA status means that current grant levels would not support it.
- **CAP changes**: In the medium term there is a need to press for changes in CAP reform to change the way subsidies are distributed
- **Incentives or abandonment**? – the latter is unpopular with many organisations, though it is happening….

9. Demonstration projects

- The idea of demonstration projects was generally endorsed. However, one view was that the emphasis on demonstration projects might be unhelpful: lets just go ahead and do it!

- The list of possible demonstration projects in the report should be treated as a checklist. These are not exclusive options and any project may cover several. Some of the priorities which emerged were:
  1. Transformation of conifer plantations (Wales)
  2. Linking existing woodlands and wild habitats (SW and lowland England)
  3. Farm extensification / diversification (Wales, SW)
  4. Focus on multiple land ownership (NE, SW)
  5. Floodplains and riparian woodlands - can involve fisheries interests (NE, SW)

Specific options

1. Big Upland Wildwood

Several hundred hectares of FE spruce forest together with wildwood creation on a further ~1500 ha of Molinia. e.g. Twyi /Elan, Plynlimon; Cadair Idris, Rhinogydd, including Coed y Brenin. Partners: NAW/ FE / FC/ RSPB / NT / WT+ EA + CCW. Also hopefully water companies and farming organisations The countryside agencies could begin by getting into partnership with FE and helping to develop a new version of a Forest Design Plan.

2. *'Pontbren Plus'*
Pontbren type location (or even Pontbren see below for details) – smaller, organic growth from grassroots. but could eventually become large scale. However, need to determine how project would expand 'up the hill' and become more wildwood orientated. Mechanism might involved "Farming Connect" - demonstration farms.

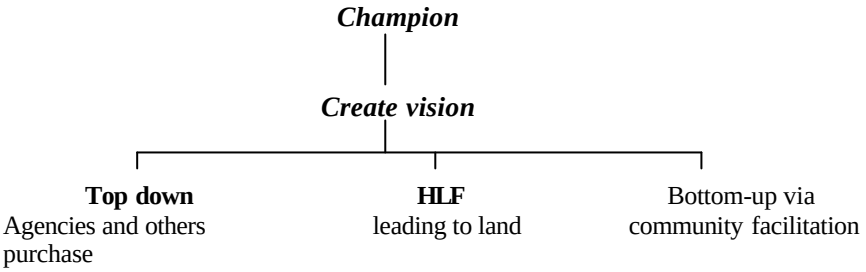
3. 'Between the Moors'
Between the moors – N Devon, N Cornwall including Dartmoor, Exmoor Culm Measures, retaining links between moors and valleys. Partners SW Forest, Working Woodlands, Greater Exmoor Woodland Initiative

4. Lowland farming restoration
Buy a large area in S England and/or work with large landowners e.g. MoD, Duchy of Cornwall. Could include Mendips, Somerset Levels. Should aim to link areas of existing woodland and other semi-natural habitats. Could build onto existing large forest e.g. New Forest, Rockingham Forest. Main partner: Woodland Trust

Criteria for choosing sites might include:
- Water catchment management
- Sense of remoteness but good accessibility
- Presence of existing native woodland and other semi-natural habitats
- Presence of major sympathetic landowners / players: e.g. National Trust, FC
- Altitudinal connectivity: river valleys
- Derelict landscapes: e.g. spoil tips
- Existing local community initiatives
- Historic 'forest' culture

10. Making it happen
Need the following elements:
- Need an obvious lead organisation which develops a vision.
- Start with existing major landowners to establish core area: FC, NT, WT.
- Survey: regional or national survey of existing woodland at landscape catchment scale. Need to share data.
- Establish special demonstration grant rate; challenge funds / tenders.
- Involve local people, though mechanisms to get grass roots involvement are unclear. Involve community initiative and BAP partners.
- leasing arrangements, land banks, land swaps etc.
- in developing the vision one could adopt a 'virtual' approach, which would allow local input and flexibility.
- Start with a core area - 100-300 ha and build out organically.
- work with existing organisations rather than forming a new 'Trust'
- Strengthening cultural links: e.g. Use art and education.

One possible route map might be:



Roles of Countryside agencies

- **Roles**: To advise, monitor, seek funds, raise public awareness, explain and market the concept, appraisal of success, commission research, networking to link projects
- **Research** is needed on methods of creating new wildwood, between the extremes of planting and natural regeneration.
- **Policy agenda**: Agencies also need to address how to provide wider support for the concept – especially helping to release resources and moving the policy agenda forward.

11. Current interesting projects

"Eagles for Ennerdale" Contact David Russell (National Trust)

- Valley drained by what is more-or-less a wild river. Currently includes a large tract of conifer forestry, mostly managed by FE. FE is not replanting when conifers are felled, so broadleaved elements are increasing. NT has all the surrounding fells, and a small area of oak in the valley.
- NT is planning management on a whole-landscape basis, treating the land as a single unit. Done in partnership with FE, United Utilities (who own the lake), local farmers and local community groups around Whitehaven.
- Aim is to reduce intensity of management in both forestry and grazings. Grazing will be allowed into the forest. Conversely, they can expect SS to spread in natural regeneration outside current forest fence. Management will be less prescriptive, allowing ecosystem change. It will permit sub-optimal solutions, and is large enough to absorb these. Intervention can be accepted if events dictate in places now designated as minimum intervention. They would also accept social and economic reasons for intervention, i.e. limited utilisation of timber grown in MI stand. Seen as a catchment management project, not 'rewilding'.
- Seen as 'future orientated', not putting back the past. Envisage recreation and education centres in the valley benefiting. They would accept use of woodland products in the future – not minimal intervention.
- There remains a problem with the adjacent, heavily stocked common pastures, because sheep will stray to the low-stocking ground in Ennerdale. Solutions: fencing, since shepherding would be too expensive.

Pontbren Contact: David Jenkins (Coed Cymru)

- Described a project developed by a group of 10 farming families living 12m N of Newtown. They manage about 1000ha, ranging from alder carr to open moorland. Their problem is low income and fear that next generation will not want to continue the family farming tradition.
- It's not a woodland project, more a change in farm management practice. Decided to expand woodland considerably, targeting land on streamsides and steep slopes, planting exclusively native tree species (mostly pioneer types, birch, alder, sallow).
- Effect will be to increase woodland from 1.5% to 15% of land area. Value added as timber could also be valuable. Will aim to at least maintain livestock productivity.
- Practical aim is to increase shelter, and change to hardier breeds of livestock. Want to reduce the current massive bill for imported feed and straw: experimenting with wood chips as alternative to straw, which would eventually come from thinnings of the new plantations. Will reverse some of the past over-draining; enlarge area of wet grassland.

FE (Wales) *contact Peter Garson FC Wales*

- FE Wales has several examples in Wales of native woodland restoration including:
- Towy Forest (plan includes 750ha to be deconiferised to native broadleaves by natural regeneration); Trawsfynnedd area (aim for native woodland treated as minimum intervention on PAWS ? sites); plus several isolated plantations

Tir Coed *Contact: Alec Dauncey Director, Tir Coed*

- Tir Coed have been pushing the concept of one, large, near-natural woodland in Wales. Aspiration is to create native woodland with interior habitats and minimal edge. Includes reintroductions of lost species, especially those that might prosper under climatic warming, e.g., small-leaved lime.
- Would use agriculturally marginal land, now with Molinia or poor spruce plantations.
- Looking at low-input methods of recreating an 'Atlantic woodland'. Recognises risks of various kinds: there are places where trees should not be planted; need to be careful about provenance; need to be aware of consequences for water yield.
- Sees recreational and educational benefits, as well as environmental gains. May not be much overt profit, but existence values and ecological improvements will help, and ceasing to sink subsidies into unproductive pasturage and spruce-growing will be an economic gain.

Other relevant initiatives

- **Woodland Trust**. Currently collating information on existing semi-natural woodland and other habitats as a tool for prioritising areas for woodland creation and restoration.
- **Moor Trees** (Adam Griffin). Community initiative encouraging woodland creation on Dartmoor.
- **Northumberland Land Management Initiative** (EA, Newcastle).
- **BANC** (Peter Taylor) Initiative on large scale habitat creation.