LAND MANAGEMENT

Agriculture

Woodlands & Forestry

Moors & Heaths

Field Boundaries

Rivers & Wetlands

Designed Landscapes




Agriculture

The appearance and character of the rural landscapes of County Durham owe much to the way they have been managed by successive generations of farmers. The second half of the twentieth century saw widespread intensification in agriculture under the influence of national and European Community agricultural policies promoting technological progress and productivity. This brought change to many agricultural landscapes, and for most, a decline in the strength of character and diversity of the landscape and a loss of wildlife habitats

In recent decades the introduction of new legislation and agri-environment schemes supporting farmers in maintaining valued areas of countryside have reduced the large scale loss of habitat and the removal of landscape features. Significant problems remain, however, including overgrazing in some upland areas, a continuing decline of historic landscape features, falling populations of some common farmland species, pollution of watercourses, and ongoing damage to sites of nature conservation value.

The future of our farmland landscapes is likely to be influenced by the growing economic pressures coming from the liberalisation of global markets and increased global demand for both food and bio-fuels, balanced by an increasing emphasis on support for agri-environmental schemes and diversification of the rural economy. It is also likely to be affected in the medium to long term by climate change, which may bring changing patterns of cultivation and new crops.

Issues and Objectives

Agricultural policy

Under recent reforms of the European Common Agricultural Policy (CAP) agricultural subsidies have been decoupled from production, the Single Farm Payment replacing a range of individual production-based subsidies. The impacts on the character of the landscape of this fundamental change in the nature of agricultural support are difficult to predict at this early stage. Increased resources have been allocated to agri-environment schemes, but again their potential influence on the landscape is not yet clear.

Objectives

- To monitor the impacts of new agricultural support mechanisms on the character of the landscape to inform the development of national policies.

Legacies of the past

In the uplands of the county, high stocking levels have lead to a decline in the quality of semi-natural vegetation. Across all landscapes there has been a reduction in the species-diversity of pastures and meadows as a result of drainage and reseeding, the use of high levels of fertilisers and herbicides, and the move from hay to silage production. There has been an increase in cultivation in areas of formerly mixed farmland resulting in the loss of older pastures, increases in field size, removal of hedgerows and hedgerow trees and drainage of wetlands.

Many traditional features of the agricultural landscape have also declined through neglect as they have become functionally less important, or costly to maintain. Many hedgerows have become overgrown or gappy - supplanted by wire fences or trimmed low by mechanical flails. Many hedgerow trees planted in the past for farm timber are now reaching the end of their natural lives and are not being replaced by a new generation of trees. Field ponds for the watering of livestock in formerly pastoral areas have silted up or become isolated in the

middle of large arable fields. Many old field barns and other farm buildings have fallen into disrepair or been replaced by larger modern buildings.

Restoration of landscape features is only possible or appropriate in some landscapes. In others we must look to the development of new farmland landscapes that meet the challenges of changing economic and environmental forces while respecting landscape character and local distinctiveness.

Objectives

- To encourage conservation, restoration and enhanced management of semi-natural habitats and traditional features of the farmland landscape.
- To promote a 'landscape-scale' approach to conservation and restoration works.
- To provide access to information on the character of the landscape to help inform the future decisions of farmers and land managers.

Agri-environmental schemes

From 2005 pre-existing agri-environmental schemes were replaced by the single Environmental Stewardship scheme, which includes both a Higher Level Scheme (HLS) for specialist management and restoration works and a 'broad and shallow' Entry Level Scheme (ELS) to support good environmental management. To be effective these new schemes will need to be responsive to the needs of different landscapes, be integrated with activities across the whole farm, and in some circumstances across the wider landscape.

Take-up of ELS has been fairly widespread in the county, although the number of schemes incorporating HLS has been limited to date. Take-up may be expected to increase as HLS replaces some existing ESA agreements and Countryside Stewardship schemes. There is some concern that HLS will be strongly targeted on important sites like SSSI, leaving a gap in resources available for specialised and capital works elsewhere.

Objectives

- To encourage and facilitate entry into Environmental Stewardship Schemes.
- To monitor the take up of schemes and identify gaps in funding provision.
- To inform the targeting of resources with an understanding of local landscape character.
- To encourage the development of integrated area-based schemes.
- To encourage the adoption of a 'whole farm' approach.

Environmental Management

Modern farming techniques have costs to the environment including pollution of watercourses or groundwater and reduction in the diversity of vegetation and wildlife through the use of herbicides and pesticides. Environmental impacts can be reduced by adopting practices like Integrated Farm Management, which integrates beneficial natural processes into modern farming activities using advanced technology, or by adopting organic techniques. New crops and technologies like genetically modified organisms can bring risks to the environment that must be assessed before deployment at a landscape scale.

Objectives

- To encourage the adoption of Integrated Farm Management techniques to reduce inputs and minimise environmental impacts.
- To encourage organic farming and particularly in areas of high environmental sensitivities.

- To encourage the adoption of permanent grassland margins, and /or conservation headlands, around arable fields to buffer hedges and watercourses.
- To resist the introduction of genetically modified organisms unless their environmental effects are thoroughly understood and are acceptable.

Diversification

Diversification of the rural economy is critical to the future of rural communities but brings its own challenges in terms of the scale and types of development appropriate to rural landscapes. The most sustainable forms of diversification are likely to be those which are closely associated with farming and forestry and which do not detract from the rural character of the countryside.

Objectives

- To encourage sustainable forms of farm diversification that respect the character of local landscapes.
- To encourage sensitive design in the conversion of old farm buildings, and sensitive siting, design and screening of new farm buildings.

Climate Change

In the coming decades, climate change is likely to bring new challenges to the agricultural landscape, which may see changing patterns of cultivation or the introduction of new crops. Agriculture itself contributes to climate change, being responsible for about 7.5% of UK greenhouse gas emissions. Food is increasingly transported long distances to markets which contributes further. There are farming techniques such as minimum tillage, improving grassland management and agro forestry which may improve carbon storage. In the long term the substitution of agricultural products for petrochemicals as fuels - such as bio-diesel or biomass - or in manufacturing processes may have a role in reducing CO2 emissions.

Objectives

- To encourage farming systems which minimize inputs, and emissions of CO2 and other greenhouse gasses.
- To encourage local marketing of farm produce.
- To encourage farming techniques which increase carbon storage.
- To encourage the development of energy crops and particularly where they contribute to the enhancement of farmland landscapes

Changing land tenure

In recent decades there have been considerable changes in land tenure with an increasing number of both large and small land holdings. This reflects the amalgamation of working farms into larger units and the spread of smallholdings, part-time farms, hobby farms and ‘horsiculture’. An increasing proportion of the countryside is managed by people other than farmers, many of whom lack their expertise and their access to advice and resources. There remains a need for advice and small-scale grants for landscape conservation works which are not provided through mainstream agri-environmental schemes.

Objectives

- To support the provision of advice and financial assistance to the managers of smaller land holdings to promote appropriate management and conservation of landscape features.

Farmland around towns

Farming in the urban fringe is subject to many pressures including trespass, vandalism and fly tipping. At the same time the proximity of urban populations can bring opportunities for building local markets for farm produce or for diversification into providing recreational or educational services. The promotion and development of a local food economy through farmers markets is already well established in some of the county's market towns.

Objectives

- To encourage diversification in the countryside around towns where it can bring benefits to local communities and to the urban fringe environment.
- To encourage the production and marketing of high quality local produce and closer links between local farmers, processors, retailers and customers.
- To promote understanding of the countryside generally among urban communities and particularly the young.




Woodlands and Forestry

Woodlands and forests are very important to the character of the Durham landscape and particularly the valley landscapes of the Wear lowlands, the upland fringes and the dales. The Government's Strategy for England's Trees, Woods and Forests (DEFRA 2007) aims to:

- provide, in England, a resource of trees, woods and forests in places where they can contribute most in terms of environmental, economic and social benefits now and for future generations;
- ensure that existing and newly planted tees, woods and forests are resilient to the impacts of climate change and also contribute to the way in which biodiversity and natural resources adjust to a changing climate;
- protect and enhance the environmental resources of water, soil, air, biodiversity and landscapes (both woodland and non-woodland), and the cultural and amenity values of trees and woodland;
- increase the contribution that trees, woods and forests make to the quality of life for those living in, working in or visiting England;
- improve the competitiveness of woodland businesses and promote the development of new or improved markets for sustainable woodland product and ecosystem services where this will deliver identifiable public benefits, nationally or locally, including the reduction of carbon emissions.

The first Regional Forest Strategy (RFS) for the North East of England, Trees, Woodlands, Forests and People was published in 2005. Delivery plans for the strategy are produced annually.

Issues and Objectives

The condition and isolation of ancient semi-natural woodlands.

Most ancient woodlands in the county survive as isolated fragments. The physical and genetic isolation of woodland plants and animals has led to a decline in biodiversity and the ability of species to cope with forces like climate change. This has been compounded by changes in the agricultural landscapes around woodlands - particularly the decline in hedgerows and the improvement of grasslands - which have further reduced biodiversity and opportunities for migration. Many ancient woodlands have been heavily modified over the years by the planting of ornamental or commercial species. Many were clear felled and replanted with conifers in the mid C20th. These Planted Ancient Woodland Sites (PAWS) often contain relics of the flora and fauna of ancient woodland.

Objectives

- To encourage the mapping of ancient woodlands in the county and assessment of their condition.
- To encourage the protection of ancient semi-natural woods – and particularly the adoption of policies in Local Development Frameworks which protect woodlands from the impacts of development.
- To encourage positive and appropriate management of semi-natural woods.
- To encourage the restoration of damaged or planted ancient woodlands.

- To promote a strategic landscape-scale approach to the creation of new native woods, and encourage planting which extends, or improve links between, isolated woods.
- To encourage the positive management or restoration of other important habitats within the wider 'forest habitat network' – and particularly hedges and species-rich grasslands.

Conserving and managing existing woodlands.

Some woodlands in the County, and particularly smaller broadleaved woodlands, receive little active management. Traditional management techniques like coppicing have generally been abandoned for some time. Where woods are grazed – particularly a problem with upland gill woods – there is little natural regeneration and the woodlands are in decline in their physical extent and their landscape and wildlife value.

Objectives

- To encourage the protection and conservation of the county's woodlands.
- To encourage the appropriate management of woodlands to maximise their environmental value and ensure their long term viability and productivity
- To promote understanding of the management requirements of the varied woodland types within the county.
- To promote the adoption of woodland management plans and encourage greater participation in woodland grant aid schemes.
- To adopt the Forestry Stewardship Council standard for the management of the Council's woodlands, and promote its wider adoption.
- To support woodland initiatives such as the NORTHWOODS project.
- To encourage and promote greater involvement of local communities in the management, planting and care of woodlands and trees in their neighbourhoods.

Forest design

Some forests and plantations established in the C20th were designed with little regard to landscape character, biodiversity, water quality or archaeological interests. Opportunities now exist to improve forest design through restructuring as timber crops reach felling age. The adoption of Forest Plans and Forest Design Plans can assist in this process.

Objectives

- To encourage the sensitive restructuring of plantations
- To encourage an increase in the proportion of locally native broadleaved species in plantations.
- To encourage the removal of trees or plantations from sites of ecological or archaeological importance damaged by recent planting.
- To encourage improvements in the design of plantations and shelterbelts during restocking to improve their 'fit' with the surrounding landscape.

Supply and utilisation of woodland products

The utilisation of locally grown timber in the county is limited in some degree by lack of demand and supply. There is a need to develop new markets for timber products, and particularly hardwoods, as a way of adding value to woodlands and so fostering better management. There is also a need to encourage the production of higher quality timber to meet market requirements. Forestry crops, residues and biomass crops are likely to have

an increasing role to play in reducing greenhouse gases through their use in heating and energy generation schemes.

Objectives

- To encourage the development of new local markets for woodland produce including wood-fuels, woodland crafts and niche markets.
- To encourage architects and specifiers to use a greater proportion of timber for construction and other purposes and source such timber from regional suppliers.
- To encourage the increased use of wood fuels such as short rotation coppice and forest residues as a contribution to reducing greenhouse gas emissions.

Woodland expansion.

Woodland cover in the county is low (6%) in comparison with national average of 9%, the average for England of 7.5% and the average for the region of 12%. The landscape of parts of the county has been heavily affected by urban and industrial development or mineral extraction and would benefit from new woodland planting to strengthen its character and improve the setting of towns and villages. With ongoing pressures on farming incomes, forestry can have a role to play in diversifying the rural economy. The county contains substantial areas of lower grades of agricultural land and also of reclaimed or restored opencast land. Large areas in the west of the county have Less Favoured Area status. The whole of the county lies within either a *Rural Productivity 'Lagging' Area* or an *Economic Regeneration Priority Area* identified in the Forestry Commission's *England Woodland Grant Scheme*. Large areas of the county – including the North Pennines AONB and much of the West Durham Coalfield - lies within a *Woodland Creation Initiative Area* identified in the North East RFS.

The creation of new woodlands can provide many benefits including:

- ❖ expanding timber and other woodland resources;
- ❖ enhancing the beauty of the countryside and contributing to the diversity and distinctiveness of rural and urban landscapes;
- ❖ creating and improving habitats for wildlife;
- ❖ regulating the movement of water through river catchments, reducing soil erosion and the leaching of pollutants into surface and ground waters;
- ❖ helping to revitalise derelict and degraded land;
- ❖ creating jobs and providing opportunities for economic diversification in rural areas;
- ❖ improving the quality of life, especially in and around towns and cities by creating opportunities for recreation, education and local community involvement;
- ❖ storing carbon.

Objectives

- To promote a substantial increase in the County's woodland cover while ensuring that plans for woodland expansion are integrated with wider environmental, economic and social objectives.
- To encourage the establishment of new woodlands and particularly:
    - o new native woodlands to help reverse woodland losses and habitat fragmentation, strengthen landscape character and enhance biodiversity;

- new community woodlands in areas close to settlements to provide new opportunities for public access;
- new large multi-purpose woodlands in landscapes which can accommodate them and in particular those areas affected in the past by land reclamation, opencast working or agricultural intensification;
- new woodlands in the urban fringe improving the appearance of settlements and creating a setting for new development;
- new woodlands in the restoration of mineral workings or waste disposal sites, or in the reclamation of derelict land;
- new woodlands on land in public ownership including reclaimed land and industrial sites;
- new woodlands in the Great North Forest.

A spatial strategy for new woodland planting

The landscapes of the county vary in their ability to accommodate new woodlands – either because of their existing wildlife value or historical interest, or the particular characteristics of the local landscape. The benefits of woodland creation are also likely to be greater in some areas, for example close to centres of population or in areas heavily affected by mineral working.

In some cases land might be sensitive to new planting for one reason while planting may be desirable there for another. For example an upland meadow on the dale floor may be sensitive because of its existing landscape and wildlife value, but it may lie within a potential corridor for connecting native woodland habitat. For this reason, the Woodland Strategy maps these two factors separately.

Sensitivity

The sensitivity of any landscape to new woodland planting depends partly on the contribution that woodlands already make to its character. Landscapes in which woodlands are important components of character are generally less sensitive to new woodland planting than those where woodlands are absent or uncharacteristic. Some landscapes where woodlands are sparse may be of lower sensitivity, and particularly if their openness is a product of recent forces like agricultural intensification or surface mineral working, or where wooded examples of the same landscape type can be found elsewhere. In some sensitive open landscapes there are local landscapes or landscape features which are less sensitive to woodland planting than their surroundings. For example the development of new native woodlands in moorland gills may enhance the character of the moorland landscape without compromising its general openness.

Sensitivity also depends greatly on the scale, type and location of new woodlands. Landscapes in which small woodlands are characteristic may not be sensitive to the development of similar woods but may be sensitive to the introduction of large woods. Sensitivity mapping can therefore only be carried out with a relatively broad brush. Guidance on the design of new woodlands in the county's different landscapes can be found in the County Durham Landscape Guidelines.

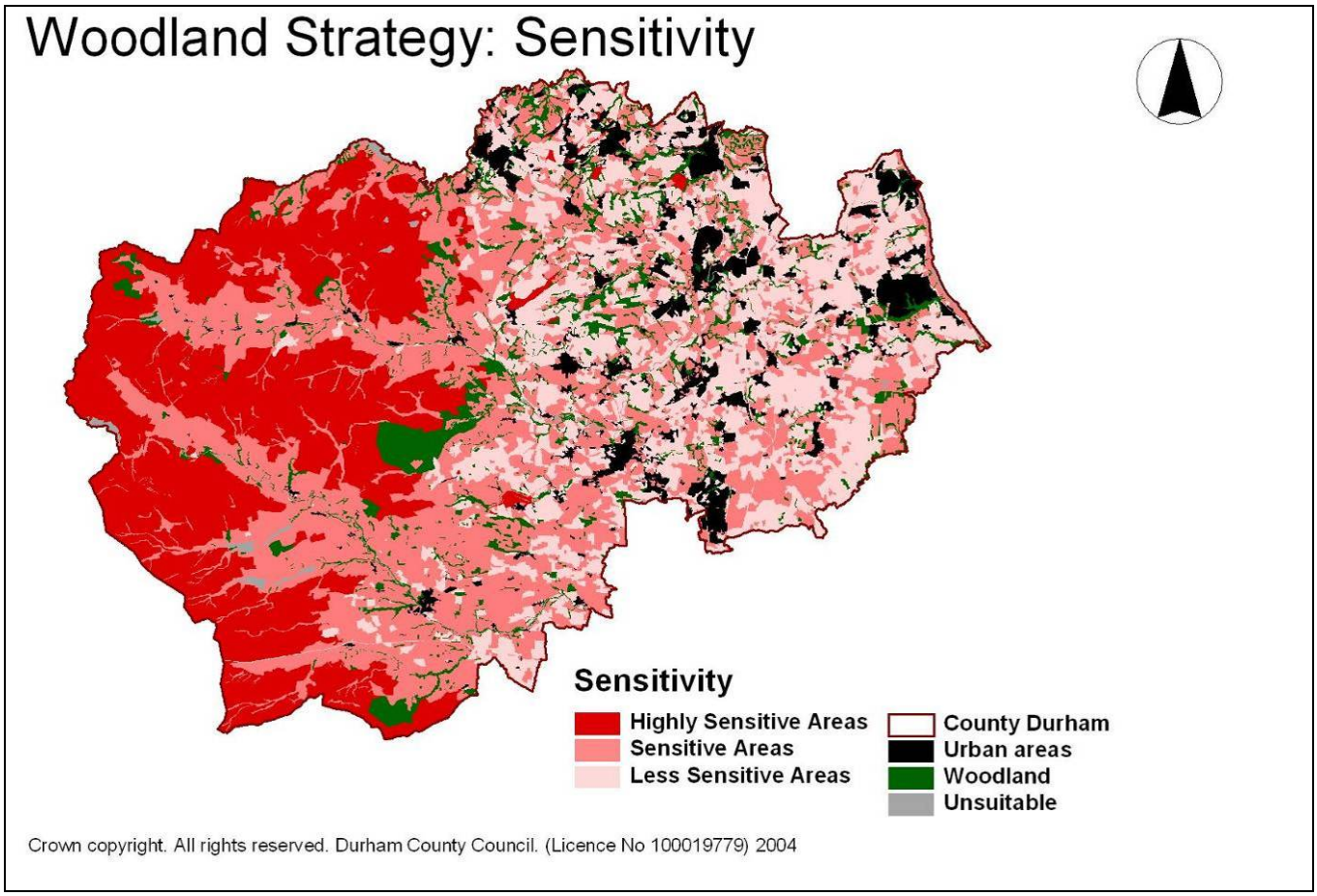
The strategy identifies *Highly Sensitive*, *Sensitive* and *Less Sensitive* areas on the basis of the character of the local landscape type, and the presence of nature conservation and cultural heritage designations.

Highly Sensitive Areas are those where landscape, nature conservation or heritage value is particularly high, and likely to be threatened by significant changes in land use. The strategy for these areas should be to broadly maintain the current balance of land uses. New woodland planting should only take place in exceptional circumstances.

Sensitive Areas are those where the landscape has many valued characteristics but depends in part for its character on the presence of woodlands. New woodlands of an appropriate scale, type and location may

strengthen landscape character and bring wider environmental benefits. The strategy for these areas should be to increase woodland cover where it can make a positive contribution to landscape character and biodiversity, and particularly in Priority Areas.

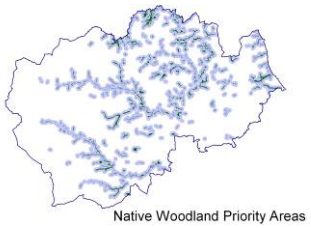
Less Sensitive Areas are those where new woodlands could generally be developed without adverse effects on landscape character or biodiversity provided that careful consideration was given to siting and design. The strategy for these areas should be to increase woodland cover, and particularly in Priority Areas



Priority Areas

Priority areas for new woodland planting are those where the greatest public or environmental benefit might arise from new woodland creation. Four types of priority areas are mapped.

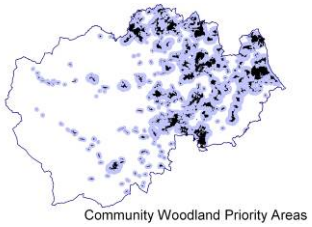
Native Woodland Priority Areas are areas close to (<500m) existing native woodlands where new planting may buffer or extend the woodland habitat.


Native Woodland Priority Areas

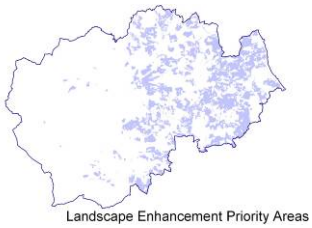
Riparian Woodland Priority Areas are areas close to rivers and streams (<100m from major watercourses, <50m from minor watercourses) where new planting may control erosion and improve the quality of the river and river corridor habitat.

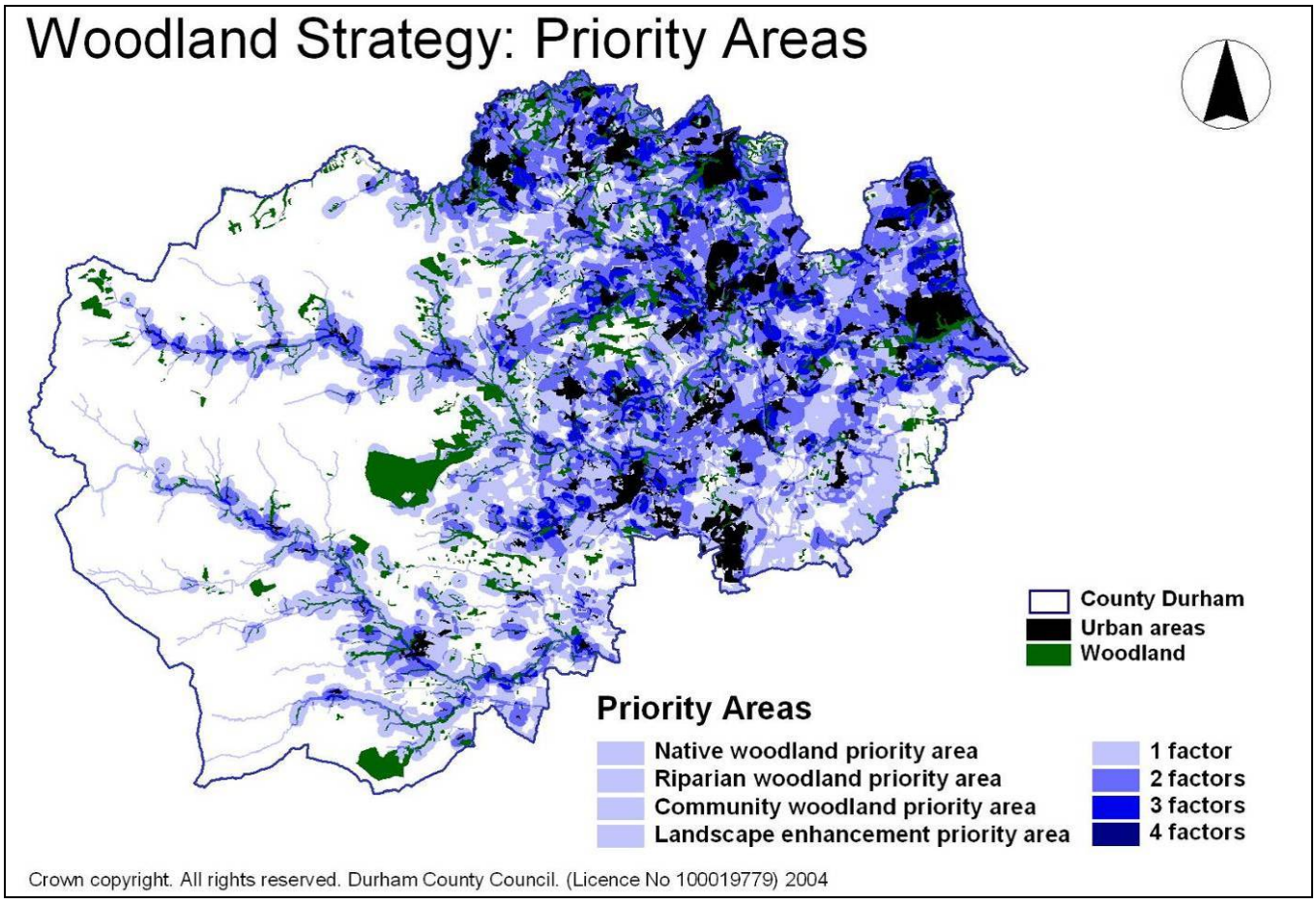

Riparian Woodland Priority Areas

Community Woodland Priority Areas are areas close to where people live (<1000m from larger settlements, <500m from smaller settlements) where new planting may create opportunities for access and recreation.


Community Woodland Priority Areas

Landscape Improvement Priority Areas are areas where the landscape is in poor condition (local landscapes with strategies of *Enhance* or *Restore or Enhance*) and where new woodland planting would enhance the character of the landscape.


Landscape Enhancement Priority Areas



Outside of priority areas there are other areas suitable for new woodland creation that have not been identified due to the more limited opportunities arising there for meeting wider social and environmental goals.

These woodland strategy maps can be viewed in an online Geographical Information System (GIS) on the council's website at www.durham.gov.uk/landscape




Moors and Heaths

Moorlands are important components of the Durham landscape, covering extensive areas on the higher ridges and plateaux of the North Pennines. Many are of national or international importance for their biodiversity. Smaller heathlands in the lowlands and Pennine fringes are survivors from the more pastoral medieval landscape and are the last refuges for heathland plants and animals in otherwise intensively managed farmlands. Many moors and heaths in the county are registered as common land, and most are now also designated as Access Land.

Issues and Objectives

Moorland drainage

Moorland drainage or 'gripping' has been extensive in the North Pennines, causing damage to blanket bog, erosion of peat, and in some cases conversion of bog to acid grassland or heath. Gripping reduces the water retention capacity of the peat leading to increased flooding downstream. It also leads to drying and decomposition in the peat, resulting in the emission of carbon dioxide, a greenhouse gas. The associated erosion leads to discolouration of water in public water supplies which can be expensive to treat.

The blocking of grips can restore natural hydrological conditions to blanket bogs, increasing their ability to store water and carbon and improving water quality. The North Pennines AONB Partnership's Peatscapes Project – funded by the Environment Agency through the Northumbria Regional Flood Defence Committee - is currently promoting grip-blocking across the area.

Objectives

- To support and encourage the restoration of natural hydrological conditions in the County's peatlands.

Grazing levels

Overgrazing has lead to a decline in biodiversity on some moors and a notable shift from heather to 'white moor' of acid grassland. Overgrazing can be a particular problem on common land due to over-registration of grazing rights and lack of co-ordinated management. It tends to be less prevalent on grouse moors where heather is conserved.

Stocking densities on the moor have increased gradually over many decades as a result of agricultural improvements such as drainage, liming, reseeding and supplementary feeding. This was given added impetus in the past by headage-based support payments for sheep and cattle. A general trend towards specialisation has also seen a decline in mixed livestock farming and an increasing emphasis on sheep. This has been linked to other vegetation changes such as the spread of bracken on some moors.

While agricultural subsidies have moved away from headage payments, the impacts of these changes on stocking levels and the intensity of management of upland moors is difficult to predict. It seems likely that these changes, coupled with resources in Higher Level Stewardship being targeted at important sites, will see stocking levels decrease and management improve on some moors. It is also possible that high stocking levels might be maintained elsewhere under economic pressures, or that stocking levels will reduce dramatically in places leading to changes in vegetation.

Objectives

- To promote environmentally sustainable moorland management.
- To encourage and support initiatives for the restoration of damaged moorland habitats.
- To monitor the effect of changing agricultural support mechanisms on moorland management to inform the development of policy.

Management of Grouse Moors

The economic importance of shooting has helped protect some moors from overgrazing or forestation in the past and many now support important bird populations that benefit in varying degrees from management for grouse. Rotational burning is an important management tool but where it is very frequent or poorly controlled it can be damaging, and particularly to sensitive habitats like blanket bog. The Heather and Grass Burning Code 2007 gives guidance on good practice. Moorland drainage or 'gripping'- though not now as popular with grouse moor managers – also causes damage to blanket bog. Some managers are now reversing this process to improve feeding opportunities for grouse chicks. Greater diversity in moorland vegetation which incorporates stands of mature heather and native woodland or scrub along with areas of short heather, bare ground and bog or mire is likely to support a wider range of wildlife while enhancing the scenic qualities of the moorland landscape.

Objectives

- To promote sustainable management of grouse moors to meet wider environmental goals.
- To encourage observance of the Heather and Grass Burning Code 2007

Access and recreation

The moors are an important recreational resource providing a sense of tranquillity and wilderness that is central to the experience of the North Pennines. They also provide opportunities for active pursuits like fell walking, horse riding and orienteering. Pressures on the landscape from these activities are modest and localised in the North Pennines compared to some upland landscapes due to the scale of the moors and the relatively low numbers of visitors.

Most of the moorland in the county is now designated as Access Land. This offers new opportunities for visitors to experience the landscape. It may also bring new pressures including disturbance to birds and mammals, trampling and erosion in previously undisturbed areas, and car parking on moorland roads. These pressures are likely to fall unevenly, the most accessible sites becoming more heavily used but remote areas remaining largely undisturbed.

Some of the potential impacts of access to open land will be managed through seasonal or permanent closure of sensitive areas. Other impacts will need to be addressed through education and visitor management.

Objectives

- To promote an integrated approach to managing public access to open land that recognises both the benefits to visitors and the sensitivities of the landscape.
- To provide information to the public about the character, biodiversity and management of moorland landscapes.

Management of lowland and mid-altitude heaths

Lowland and mid-altitude heaths have declined in extent over hundreds of years under pressures from development, mining, forestry and agricultural improvement and now survive only as isolated fragments. Their role in the surrounding agricultural landscapes has diminished and few are currently grazed or actively managed.

Neglected heaths are at risk from scrub encroachment and from abuse in the form of motorcycle scrambling and fly tipping.

Objectives

- To conserve existing lowland and mid-altitude heaths and to seek improvements to the management of those which are neglected.
- To restore damaged heaths and create new heathland on appropriate sites such as former heaths and restored mineral sites.

Archaeology and cultural heritage

Moorlands contain relics from many different periods. In the North Pennines notable remains include Bronze Age ritual landscapes and cairn-fields, and industrial remains from lead mining. Most of these remains are under no immediate pressures although some lead mining features, having fallen out of use in relatively recent times, are in a derelict, occasionally dangerous condition. There are many shafts, adits and drainage levels which remain open and uncapped. Most of these features are found in relatively inaccessible areas. Increased public access will bring new opportunities for interpretation as well as a need for some sites to be made safe.

Objectives

- To encourage the conservation and interpretation of relic landscapes and archaeological features in moorland landscapes.

Climate change and atmospheric pollution

The potential impacts of climate change on upland landscapes are, as yet, poorly understood. Increases in temperature are likely to lead to greater decomposition of peat, the decline of blanket bog and an increased risk of fire damage. The decomposition of peat is itself a major source of CO2 emissions which fuels climate change. Conversely, wetter conditions may lead to bog expansion but greater risks of erosion. The artic and alpine flora of upper Teesdale are likely to be at particular risk from climate change of any scale.

Acidification and nutrient enrichment of upland soils and watercourses from atmospheric pollution in the form of sulphur dioxide, ammonia and nitrogen oxides, continues to have impacts on flora and fauna.

Objectives

- To encourage the conservation and restoration of moors and heaths to make them more robust and more able to adapt to climate change.

Forestry

The development of commercial forestry in the uplands in the C20th left a legacy of conifer plantations in the moorland fringes and on some smaller heaths in the upland fringes and lowlands. Many were designed with little regard to landscape character, biodiversity or archaeological interests. Opportunities now exist to improve forest design through restructuring as timber crops reach felling age. Potential improvements include removing trees from sensitive habitats or archaeological features, increasing the proportion of native broadleaved species and sensitive design of compartments, rides, watercourses and forest edges.

Objectives

- To encourage the restoration of moors and heaths where they have been damaged by forestry planting and the enhancement of plantations to complement the moorland landscape.




Field boundaries

Field boundaries make an important contribution to the character and biodiversity of the landscape and are one of the strongest surviving links to the farming traditions of the past. Some hedges and walls along parish boundaries, old roads and tracks date back to the medieval period and perhaps even earlier. Most were laid out in successive waves of enclosure from the late middle ages through to the nineteenth century.

Over much of the County the network of field boundaries has been subject to piecemeal erosion over many decades. The Durham Hedgerow Survey 1994 found that almost half of the hedges on parish and township boundaries had been lost since 1860, or survived only as relics. The Durham Hedgerow Survey 2006 estimated that 21% of the hedgerow resource had been lost since 1979.

The removal of hedges to create larger fields has had a large impact in the lowlands where the emphasis has moved to increasingly specialised arable production after a long period of mixed or pastoral farming. The decline of hedges and walls through neglect has been a less conspicuous but equally powerful force in the pastoral farmland of the uplands and upland fringes. Many hedges have also been lost to development, both built development and mineral extraction. The fragmentation of boundary networks has consequences for both the character and biodiversity of the landscape. The loss of habitat - and the loss of connectivity between habitats as the network declines - has impacts on wildlife, which increasingly depends on hedgerows for food, shelter and dispersal in intensively managed agricultural landscapes.

In recent years concern over the decline of hedgerows has lead to the development of both protective legislation (*The Hedgerow Regulations 1997*) and financial support for hedgerow planting and renovation in the (now obsolete) *Hedgerow Incentive* and *Countryside Stewardship* schemes. The current *Environmental Stewardship Entry Level Scheme* encourages appropriate cutting regimes for hedges but does not provide support for renovation works like laying and coppicing. The *Higher Level Scheme* is likely to be more focussed on national land management priorities and is unlikely to offer the same level of support for field boundary work as Countryside Stewardship. In County Durham the *County Durham Hedgerow Partnership* was established to address the decline of hedgerows and walls and provides financial assistance through its Field Boundary Restoration Grant. The *Durham Biodiversity Action Plan* contains an Action Plan for hedgerows.

Issues and objectives

Hedgerow removal

The rate of hedgerow removal for agricultural purposes has slowed in recent years but some pressure continues in arable areas as farmers seek increases in efficiency from larger field sizes. Further pressure might be expected in the longer term and particularly if climate change brings changing patterns of land use.

The removal of hedges when land is developed continues to be an issue wherever there is development pressure. Established hedges and trees can often be successfully incorporated into the design of new development and in some circumstances can be translocated where preservation is impractical. Losses of hedgerows can be mitigated in some cases by the provision of new hedges or the renovation of hedges in the locality.

Hedgerow removal is controlled by the Hedgerow Regulations 1997. The regulations have been criticised by some as being difficult to apply and failing to protect important hedges. They are currently under review. Further work is needed in the County to identify hedges of particular historical or ecological importance.

Objectives

- To encourage the protection, conservation and restoration of field boundary networks to maintain and strengthen landscape character.
- To promote awareness of the importance and value of hedges in the landscape and to provide information on the hedgerow resource to decision makers and land managers.
- To encourage and inform the reform of the Hedgerow Regulations and to guide their application.
- To encourage the retention of mature hedgerows and trees in new development together with new hedgerow planting and renovation.
- To encourage the mitigation of hedgerow loss in development through compensatory hedge planting or maintenance using Section 106 Agreements.

Neglect and abandonment

In pastoral areas, particularly in the upland fringes where returns from land are small, hedgerow maintenance can be a low priority. Unmanaged hedgerows, reduced by grazing pressure to lines of individual thorns, are gradually supplanted by fences or abandoned altogether in favour of larger enclosures and more extensive grazing regimes. The Durham Hedgerow Survey 2006 found that 62% of the hedges surveyed showed no signs of active management, and that only 17% were in 'favourable' condition, with gaps along the length and in the base of the hedge being the main factors in this.

Most pastoral landscapes in the county are subject to these trends and are therefore undergoing a period of transition that will significantly affect their character in the medium to long term. Where field systems are old, or their pattern has a strong influence on the character of the landscape, this decline is of particular significance. In landscapes of more recent enclosure, a return to extensive grazing and a more open landscape may be unavoidable.

Well-managed hedgerows are cost-effective to maintain, but when management has been abandoned for some time, renovation by can be expensive. Land managers may lack the resources or the skills to carry out the work. Grant assistance for renovation was available in the past through the Hedgerow Incentive Scheme and its successor Countryside Stewardship. As Entry Level Environmental Stewardship does not provide for capital works and the Higher Level scheme is likely to be focussed on more environmentally important sites, there is currently (2007) a significant gap in funding for this kind of work. In the Durham BAP area the County Durham Hedgerow Partnership's Field Boundary Restoration Grant is available, though it has limited resources. The Partnership produces detailed guidance on the restoration and management of field boundaries which is published on the County Council's website.

Objectives

- To encourage the restoration of neglected hedges, particularly those of older field systems, ancient boundaries and where field patterns are an important component of landscape character.
- To promote the development of rural skills in hedgerow management.
- To secure resources for the County Durham Hedgerow Partnership's Field Boundary Restoration Grant.
- To advise Government on the need for financial support for hedgerow renovation.

Hedgerow and headland management

Mechanical trimming is the commonest form of hedgerow management and in most circumstances the most cost efficient. Excessive trimming has been linked with declining vigour in hedges and greatly reduces the value of a hedge as a habitat and food resource for wildlife. In arable fields uncultivated headlands are often narrow or absent which reduces the habitat value of hedges and makes them more vulnerable to spray or fertiliser drift.

In open arable landscapes hedgerows are often important refuges for wildlife and significant, if sometimes isolated, features in the landscape. Trimming over longer rotations can be more cost effective than annual trimming and create more robust and ecologically valuable hedgerows. This is now a requirement of Entry Level Environmental Stewardship. The adoption of broader field margins of permanent grass increases the value of hedges as habitat for invertebrates, including pollinating insects, birds and wildlife. The County Durham Hedgerow Partnership produces detailed guidance on the trimming of hedges which is published on the County Council's website. The National Proficiency Tests Council (NPTC) now has a module on the environmental aspects of hedgerow maintenance in its Certificate of Competence in the Safe Use of hedge Trimmers.

Objectives

- To encourage the appropriate management of hedges to maintain and improve their vigour and value as habitat.
- To encourage the adoption of permanent grass field margins along field boundaries.
- To promote training in the environmental aspects of hedgerow maintenance and the use of suitably qualified personnel in maintenance works on the council's land holdings.

Hedgerow and field trees

Boundary trees are important feature of much of the lowland and upland fringe landscape and in many cases are veteran survivors of a time when they where more highly valued for their timber or for shading livestock. A high proportion of hedgerow trees are mature and there is little positive recruitment of new trees to replace those that are lost to sustain their overall numbers. Boundary trees are vulnerable to damage from close cultivation, from fencing works and mechanical hedge trimming. Trees may be removed in arable areas to reduce crop shading or increase field size.

Objectives

- To support the recording and mapping of ancient and veteran trees.
- To encourage the protection and careful management of mature hedgerow trees.
- To encourage the planting or recruitment of new hedgerow and boundary trees in landscapes where they are characteristic.

Dry Stone Walls

Dry stone walls are a distinctive feature of the County's upland and upland fringe landscapes. In places the network is in generally good repair and particularly in the Pennine Dales Environmentally Sensitive Areas (ESA) where financial assistance has been available for restoration. Elsewhere the situation is more varied. In the marginal land of the upland fringes many walls are derelict or in poor repair and are often abandoned, replaced by fences, or removed as a source of building stone. Roadside walls in particular are vulnerable to damage and theft. Grant assistance for repairing walls was available in the past through ESA agreements and Countryside Stewardship. Some assistance will continue to be available in Environmental Stewardship Higher Level schemes but only for whole farm schemes within the AONB. There is likely to be a significant gap in funding for this kind of work elsewhere. A new training scheme for apprentice wallers was launched in 2007 by the North Pennines

AONB Partnership and BTCV. This should go some way to addressing the skills shortage in dry stone walling in the area as a whole.

Objectives

- To encourage the restoration of dry stone walls and particularly where they are part of a wider network or make a strong individual contribution to local landscape character.
- To support the development of rural skills in dry stone walling.
- To advise Government on the need for financial support for walling renovation.

New hedges in the landscape

There is increasing interest in planting new hedges both amongst farmers, conservation organisations and developers. Priorities for new planting include areas where hedgerow networks have been severely disrupted in the past – for example in areas of intensive arable farmland and restored mineral workings – and in connecting isolated habitats such as semi-natural woodlands, field ponds and species rich grasslands. The County Durham Hedgerow Partnership produces detailed guidance on hedge planting which is published on the County Council's website.

Objectives

- To encourage the planting of new hedgerows of an appropriate character where they can bring particular benefits in restoring landscape character and enhancing biodiversity.




Rivers and Wetlands

Rivers and wetlands are a valuable environmental resource, which contribute to the diversity of landscape and habitat in the county. They are also an important economic resource supporting tourism based on walking, canoeing, angling or shooting. Many of the county's major rivers are used for domestic and industrial water supply. The quality of their water is affected by the management of both the watercourses themselves and their wider catchments.

The management of rivers and wetlands involves many organisations and private individuals. The Environment Agency is the principle regulatory body, and has prepared Local Environment Agency Plans (LEAPS) for the Tyne, Wear and Tees catchment areas which deal with many of the issues set out below. The European Water Framework Directive is a new piece of legislation which promotes a new approach to water management through river basin planning. River Basin Management Plans will be produced for each River Basin District by 2009. The county falls within the Northumbria River Basin District.

Issues and Objectives

Mine-water pollution

Deep mining for coal on the Durham coalfield has ceased and there is no longer a need to pump groundwater to protect underground workings. Cessation of the pumping currently carried out by the Coal Authority could lead to severe pollution of rivers and streams with mine-water which is both acidic and contains rusty deposits of iron hydroxide. The situation is monitored by the Environment Agency. There are existing discharges from a number of old spoil heaps on the coalfield, and from metalliferous mines in the dales, which affect water quality. A number of these have recently been improved through the use of reed-beds.

Objectives:

- To protect the rivers and streams of the coalfield from pollution by mine-water.
- To encourage the improvement of existing discharges through the use of natural solutions like reedbeds.

Loss of bank-side vegetation

Natural bank-side vegetation has been lost in many places due to urbanisation, river engineering, grazing by livestock or the cultivation of land up to bank edges. Loss of bank-side vegetation can damage the structure of rivers and streams leading to increased erosion, widening and shallowing of channels, siltation of spawning beds and a general decline in habitat quality and connectivity.

Objectives:

- To promote the restoration of natural bank-side vegetation, and particularly wet woodland, along the county's rivers and streams.

Spread of invasive species

A number of invasive alien species are becoming increasingly widespread, principally Himalayan Balsam, Japanese Knotweed, and Giant Hogweed. These species can displace native bank-side vegetation.

Objectives:

- To encourage the control of invasive species and the improvement of riverbank habitat to make it less susceptible to colonisation.

Loss of field ponds

Field ponds, both natural and artificial, are important features of the landscape in many parts of the county but have declined in number and quality in recent decades. As their role in watering livestock has diminished, ponds have been drained, in-filled or become choked with vegetation and silt. This has lead to fragmentation of the habitat and increased genetic isolation of less mobile aquatic or amphibious species. We need to increase our understanding of the distribution of ponds in the county and its implications for wetland species.

Objectives:

- To encourage the restoration and creation of field ponds.
- To promote a 'whole landscape' approach to the management and creation of ponds.

Water Quality

The water in some of the county's rivers and streams is of poor quality, often as a result of discharges from sewerage treatment works or combined sewerage overflows. This affects both the habitat value of the watercourse and its recreational use. Often those rivers or streams with the poorest water quality are in heavily populated areas and have potentially high levels of recreational use.

Parts of the county are identified as Nitrate Vulnerable Zones - areas where nitrate from agricultural land is causing pollution of the water environment. In these zones Action Programmes of compulsory measures apply including requirements for farmers to limit their applications of livestock manures.

Objectives:

- To support the continued improvement of water quality in the county's rivers and streams.
- To promote the use of natural systems like reed-beds in conditioning water.
- To promote the adoption of uncultivated or tree-planted margins to ditches and watercourses and particularly in Nitrate Vulnerable Zones.

Drainage of upland bogs and mires

Drainage of moorland bogs by gripping was carried out extensively in the 1960s and 1970s. Gripping leads to the rapid run-off of rain and snow melt, increasing the risk of flash flooding, and the drying out of peat margins. Over deepening of grips has lead to areas of severe erosion on some moors and increased sediment load and siltation in watercourses downstream. This has adverse impacts on both fisheries and water abstraction. The decomposition of moorland peats is also a major contributor of atmospheric CO2 which contributes to global warming.

Objectives

- To support and encourage the restoration of natural hydrological conditions in the County's peatlands.

Drainage of wetlands and wet grasslands

Wet grasslands across the county have been in progressive declined for decades due to improvements in field drainage and larger scale land drainage and flood alleviation schemes. Wet or seasonally flooded grasslands are a particularly important feature of the uplands and upland fringes, river floodplains, and the poorly drained carr landscapes of the lowlands.

Objectives:

- To encourage the restoration of natural hydrological conditions to wetland systems and particularly river floodplains, lowland mires and lowland carrs.
- To encourage the conservation and restoration of wet grasslands

Development

New development in the form of housing, industry, roads and mineral sites can have substantial, if largely hidden, impacts on the water environment. Development on floodplains can reduce flood storage or require flood protection. Impermeable surfaces such as car parks and roads create increased rates of run-off and a reduction in water quality.

Objectives:

- To promote 'sustainable urban drainage'.
- To protect floodplains from inappropriate development.

Engineering of watercourses and ditches

The majority of rivers and streams in the county are relatively natural in their structure, but many have been modified by flood berms, by channel straightening or profiling, or by structures such as weirs and culverts.

Objectives:

- To promote the restoration of natural 'dynamic' conditions to watercourses and floodplains where possible.
- To promote the adoption of more 'natural' techniques in river engineering works
- To promote good practice in managing ditches and engineered watercourses to maximise biodiversity and enhance landscape character.

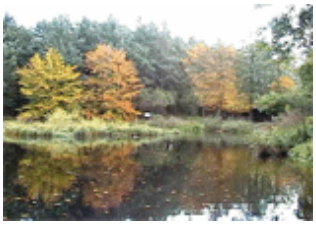
Reservoirs and treatment works

The county contains a number of reservoirs, most notably in the upland dales and dale-heads, developed in the nineteenth and twentieth centuries. Some of their features – and particularly engineered structures and bare drawdown zones – can look alien or visually intrusive in the upland landscape. Across the county sewerage treatment works are found close to many settlements. These are generally small in scale but can be visually intrusive in rural locations.

Objectives:

- To encourage the enhancement of the setting of reservoirs and particularly through the planting of new native woodlands where appropriate.
- To improve the appearance of treatment works in rural locations through design detailing, tree and woodland planting.



Designed Landscapes

Historic parks and gardens are an important part of the County's cultural heritage and are often of considerable scenic value. Some are of medieval origins, others surround the later country houses of larger landowners and industrial entrepreneurs. Historic parks and gardens are a living record of the evolving aesthetics of English landscape design. They are also often of nature conservation value because of their age, physical structure, or continuity of management, and contain some of the county's most notable ancient and veteran trees.

English Heritage has compiled a Register of Parks and Gardens of Special Historic Interest, 13 of which are in County Durham. Development plans contain policies for the protection of the historic interest and special character of parks and gardens, and a number are also designated as, or fall within, Conservation Areas. The register is currently subject to review and further sites within the county may be included in future.

Issues and Objectives

Recognition and protection

While some historic parks and gardens are recognised and protected in some degree by policies in local plans, many are not. The County Durham Landscape Assessment has identified a large number of parklands, relic parklands and ornamental gardens, most of which are not registered or covered by any protective designations or policies.

Objectives:

- To develop and maintain a record of the county's designed landscapes.
- To encourage appropriate levels of protection for designed landscapes in local development frameworks.

Neglect and decline

Many historic parks and gardens no longer function as recreational landscapes and their features survive only as relics on land that is now managed for other purposes. There may be little incentive to invest in the upkeep of relic features like park walls, iron railings, ornamental lakes and buildings, ha-has, formal copses, walled gardens, and veteran avenue and parkland trees. These features are therefore often neglected and in progressive decline.

Objectives:

- To encourage the conservation, management and restoration of designed landscapes and landscape features.

Development pressure

Historic parks and gardens, and the buildings associated with them, are often under pressure for the development of new or alternative uses. While new development can bring resources for managing them sustainably in the future, it needs to be carried out in a way which is sensitive to their special character and historic interest.

Objectives:

- To encourage, and provide guidance on, sensitivity in the development in designed landscapes

Veteran trees

The county's historic parks and gardens contain some of its oldest trees. The physical structure of parkland is often similar to that of wood pasture and can be important for species associated with old trees and mosaics of woodland and grassland, and particularly certain dead-wood invertebrates, fungi, hole-nesting birds and bats. Veteran and ancient trees are particularly vulnerable to damage from livestock, soil compaction and cultivation. They are also often seen erroneously as being 'dead' 'dying' 'diseased' or 'over-mature' and are therefore susceptible to being felled or heavily pruned on safety grounds.

Objectives:

- To develop and maintain a record of notable, veteran and ancient parkland trees
- To encourage the sensitive management of veteran and ancient trees.