Practising sustainable forestry means managing our forests in a way that meets our needs at present but that does not compromise the ability of future generations to meet their needs. They will rightly expect that their forests and woodlands offer at least the same benefits and opportunities as we enjoy today. To sustain these expectations, the UK governments have set out the UK Forestry Standard and its supporting Guidelines. At the heart of this approach is the importance of balancing the environmental, economic and social benefits of forests and the recognition that our forests serve a wide range of objectives. The Guidelines publications define sustainable forest management in the UK under a series of subject areas. The UK Forestry Standard requirements have been set out in each and guidance given on how to achieve them.
Key to symbols

UKFS Requirements for sustainable forest management

UKFS Guidelines
Forests and landscape

UK Forestry Standard Guidelines
## Contents

1. Introduction ................................................................................. 1

2. Overview of Forests and Landscape ........................................... 3
   UKFS Requirements ................................................................. 3
   Purpose of the UKFS Guidelines ............................................... 4
   Scope and application ............................................................. 4
   Definitions and terms .............................................................. 4

3. Introduction to forests and landscape ......................................... 7
   Forests and woodlands in the landscape .................................... 8
   The history of forest design ..................................................... 8
   Recent developments ............................................................. 9
   The forest design process ....................................................... 10

4. Policy and context ...................................................................... 11
   European Landscape Convention ............................................ 11
   Landscape policy and designations .......................................... 11
   Landscape planning .............................................................. 11
   Landscape Character Assessment .......................................... 12
   Landscape and Visual Impact Assessment ................................ 12
   Forestry policy ......................................................................... 12

5. UKFS Requirements: Landscape ............................................... 13
   Landscape context ..................................................................... 14
   Forest landscape design .......................................................... 14

6. UKFS Guidelines: Landscape .................................................... 15
   Landscape context ..................................................................... 17
   Landscape character .................................................................. 17
   Landscape and visual sensitivities ............................................ 19
   Historic context ......................................................................... 21
   Designed landscapes .................................................................. 22
   Forest design principles .......................................................... 23
   Shape ......................................................................................... 23
   Landform .................................................................................. 26
   Pattern of enclosure ................................................................... 28
   Scale ......................................................................................... 30
   Diversity .................................................................................... 35
   Unity .......................................................................................... 37
   Spirit of place ............................................................................ 39

7. Implementation and monitoring .................................................. 41
   The regulatory framework ....................................................... 41
   Felling ....................................................................................... 41
   Restocking ................................................................................ 41
   Environmental impacts of forestry .......................................... 42
   Consultation on forestry proposals ......................................... 42
   Plant health and forest reproductive material ............................ 42
Meeting UKFS Requirements ................................................................. 43
Felling licences ................................................................. 43
Forest management plans ................................................................. 43
Incentives ................................................................. 43
Monitoring ................................................................. 44
Strategic reporting ................................................................. 44
Monitoring of individual forests and woodlands ................................................................. 44
Monitoring and forest certification ................................................................. 45
Evidence of legality and sustainability ................................................................. 45

Further reading and useful sources of information ................................................................. 46

Appendix 1 – Legislation and conventions ................................................................. 49
Appendix 2 – Strategies and delivery mechanisms ................................................................. 51
Appendix 3 – General Forestry Practice ................................................................. 53
Appendix 4 – Applying forest design principles to UK forest landscapes ................................................................. 70
Glossary ................................................................. 77
1. Introduction

Forests and Landscape is one of a series of seven Guidelines that support the United Kingdom Forestry Standard (UKFS). The UKFS and Guidelines outline the context for forestry in the UK, set out the approach of the UK governments to sustainable forest management, define standards and requirements, and provide a basis for regulation and monitoring – including national and international reporting.

The UKFS approach is based on applying criteria agreed at international and European levels to forest management in the UK. However, because the history of forestry and the nature of the woodlands in the UK differ in fundamental ways from those of other European countries, a main purpose of the UKFS is to demonstrate that these agreements are applied in an appropriate way to the management of UK forests and woodlands.

The UKFS Guidelines on Forests and Landscape replaces the 2nd edition of the Forest landscape design guidelines published in 1994 (and the 1st edition 1989). This new edition, together with the 2011 editions of the UKFS and the rest of the Guidelines, has been produced to:

- provide an explicit statement of UKFS Requirements for sustainable forest management in line with statements for other land uses supported by EU rural development measures;
- ensure that the UKFS and its supporting Guidelines form an integrated whole by linking the UKFS Requirements through to the different elements of sustainable forest management;
- clarify the status of the UKFS, and the assurances provided by meeting the Requirements through the regulatory process;
- strengthen the role of forest planning;
- incorporate recent developments in legislation, international agreements, and the way forestry activity is monitored and reported;
- incorporate recent advances in the scientific understanding of forestry;
- include national and international initiatives on climate change and the role forests can play in mitigation and adaptation.

The new editions of the Guidelines have also replaced the ‘Standard Notes’, which gave detailed guidance on forestry practice in the first and second editions of the UKFS.

The UKFS and Guidelines have been developed by the Forestry Commission in Great Britain and the Forest Service, an agency within the Department of Agriculture and Rural Development in Northern Ireland, through an open and consensual process in accordance with government guidance. This has involved many interested parties and the general public in a formal consultation.

The UKFS and Guidelines have been endorsed by the UK and country governments and apply to all UK forests and woodlands. Together with the national forestry policies and strategies of England, Scotland, Wales and Northern Ireland, the UKFS provides a framework for the delivery of international agreements on sustainable forest management, alongside policies on implementation.

The standards for the planning, design and sustainable management of forests and woodlands in the UK use an approach based on internationally recognised science and best practice. The UKFS is the basis of forestry practice for the independent UK Woodland Assurance Standard (UKWAS), which is used for voluntary independent certification. It can also be used for assessing compliance as part of an environmental management system such as ISO 14001.

By meeting the Requirements of the UKFS, forest and woodland owners, managers and practitioners can demonstrate that forestry operations and activities are both legal and sustainable. The main bodies responsible for the regulation and monitoring of the UKFS and Guidelines are the Forestry Commission in Great Britain and the Forest Service in Northern Ireland.

The UKFS Guidelines on Forests and Landscape is relevant to all those with an interest in UK forests and woodlands – including government agencies, local authorities, non-governmental organisations (NGOs), charities and trusts.
Mixed conifers and broadleaves in a Perthshire woodland.
2. Overview of Forests and Landscape

Forests and Landscape is structured in the same way as the other Guidelines that support the UK Forestry Standard (UKFS). This section sets out the purpose of the UKFS Requirements, explains the role of the Guidelines and how they relate to the UKFS, defines the scope of the series and provides explanations of terminology.

UKFS Requirements

The UKFS Requirements for Landscape are set out in Section 5. There are two levels of compliance: Legal and Good forestry practice. Guidelines for managers on complying with the Requirements for Landscape are set out in Section 6.

In addition to landscape, there are UKFS Requirements for six other elements of sustainable forest management, each set out in an individual Guidelines publication, categorised as follows:

- Biodiversity
- Climate Change
- Historic Environment
- People
- Soil
- Water

General Forestry Practice is a further element of sustainable forest management that is covered by the UKFS itself, as it is common to landscape and the other elements of sustainable forest management. Requirements for General Forestry Practice apply in most forestry situations, for example planning and operations.

For completeness, and so that these publications stand alone, the UKFS Requirements and Guidelines for General Forestry Practice are set out in Appendix 3 of each of the Guidelines publications.

Guidelines

Guidelines provide more detailed information for forest and woodland owners, managers and practitioners on how to comply with the UKFS Requirements. Some guidelines apply to more than one situation and to more than one element of sustainable forest management. These guidelines are cross-referenced.
Purpose of the UKFS Guidelines

The series of UKFS Guidelines explains the principles of the various elements of sustainable forest management in further detail, sets out how the UKFS Requirements can be met, and points to sources of practical guidance. Each of the UKFS Guidelines covers a different element of sustainable forest management and is based on current, relevant research and experience.

The purpose of the UKFS Guidelines is to provide:

- a statement of the UKFS Requirements relevant to that particular element of sustainable forest management;
- guidance and advice for those managing forests and woodlands on how to meet these Requirements;
- the basis for assessing proposals, management operations and activities to ensure the sustainability of UK forests and woodlands.

Scope and application

The UKFS and supporting series of Guidelines have been developed specifically for forestry in the UK and apply to all UK forests. The UKFS and Guidelines are applicable to the wide range of activities, scales of operation and situations that characterise forestry in the UK. The relevance of the Requirements and Guidelines will therefore vary according to the circumstances of the site, particularly the size of the forest or woodland, the scale of operation, and the objectives of the forest or woodland owner.

The UKFS and Guidelines encompass the entire forest environment, which may include open areas, water bodies such as rivers, lakes and ponds, and shrub species in addition to the trees themselves. They apply to the planning and management of forests within the wider landscape and land-use context, and to all UK forest types and management systems, including the collective tree and woodland cover in urban areas. The scope of the UKFS and Guidelines does not extend to the management of individual trees (arboriculture), orchards, ornamental trees and garden trees, tree nurseries, and the management of Christmas trees.

Some aspects of forest management lend themselves to ‘yes or no’ compliance, but most do not, and the UKFS and Guidelines have not attempted to condense all the complexities of forest management into an over-simplistic format. The UKFS and Guidelines have therefore been written to be interpreted with a degree of flexibility and applied with an appropriate level of professional expertise.

It is also recognised that forest and woodland management is a long-term business and, while management opportunities should be taken to effect improvements, it may take more than one rotation to achieve some of the Requirements. In assessing whether the Requirements have reasonably been met, the overall balance of benefits or ecosystem services will be taken into account.

Definitions and terms

The UKFS and Guidelines apply to all UK forests. The term forest is used to describe land predominately covered in trees (defined as land under stands of trees with a canopy cover of at least 20%), whether in large tracts (generally called forests) or smaller areas known by a variety of terms (including woods, copses, spinneys or shelterbelts). The alternative term woodland has local nuances of meaning so it is used in the text where it is more appropriate, but for the purposes of the UKFS and Guidelines the meaning is synonymous with forest. Forestry is the science and art of planting, managing and caring for forests.

Short rotation coppice (SRC) and short rotation forestry (SRF) are both included within the scope of the UKFS and Guidelines, whether managed as part of a forest or as an agricultural or stand-alone regime. Although requirements for site selection and environmental protection for SRC and SRF will be the same as for other types of forestry, there will be differences in how other requirements can be met, particularly in the case of SRC, but the principles given in the UKFS will be applied.

Some UKFS Requirements and Guidelines are expressed as maximum or minimum proportions of the forest. In these cases the area in question is the forest management unit (FMU). The FMU is the area subject to a forest management plan or proposal. This area is selected by the owner and/or manager and will be determined by the nature of the forest, the proposed operations and management objectives. Extensive FMUs have the advantage of allowing a strategic approach to be taken in
achieving UKFS Requirements, both in terms of the area covered and the timescale.

For the UKFS Requirements the term must is used to reflect a legal requirement, whereas the term should is employed for a good forestry practice requirement, which recognises that there may, in exceptional cases, be reasons for divergence.

UKFS guidelines are concerned with greater detail and therefore use a range of imperative terms appropriate to context. For unacceptable practice or management, the term avoid is used, meaning ‘keep away’, ‘refrain from’ or ‘prevent from happening’. Where specific maximum and minimum values or proportions are defined, they refer to the forest management unit and serve as a starting point for assessing compliance with the Requirements. However, because UK forestry encompasses a variety of activity, the relevance of guidelines will vary and, as with good forest practice requirements, there will be exceptional situations where a reasonable case for divergence can be made.

Detailed definitions of terminology specific to the UKFS Guidelines on Forests and Landscape can be found in the Glossary.

Box 2.1  Guidance on good practice and reports of research to support the UK Forestry Standard can be found in the Forestry Commission technical publications series.
A rolling lowland landscape in England, with farmland and scattered woods.
3. Introduction to forests and landscape

The European Landscape Convention describes landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’. This is a wide-ranging and inclusive definition, and it covers all landscapes – including towns, villages and open countryside, whether natural or managed, and whether special or ordinary.

The British Isles have a great diversity of landscapes that have arisen from the interaction between geology, landform and climate since the last ice age, and the long history of human land use. This diversity is reflected in the rich variety of forest and woodland landscapes across the UK.

Landscape can be thought of as a combination of:

- Natural components: geology, landform, soils, ecology, climate.
- Human influences: land use, land management, settlement (Figure 3.1).
- Aesthetic qualities: visual and sensory impressions.
- Cultural values: historical, social and personal associations (Figure 3.2).

Visual perception is fundamental to the term landscape. It is more than just an area of land with its individual arrangement of features; it has an intrinsic visual quality imbued with the knowledge, emotions, associations and understanding of individuals and communities.

Time is a vital consideration in landscape planning, design and management, particularly when dealing with the long life cycle of trees and woodlands. Landscapes are constantly changing under the influence of natural or human forces. Sometimes these changes are subtle and imperceptible, reflecting gradual shifts in land management or climate; at other times they can be more dramatic or intense, such as when mineral sites are worked and restored or new development takes place.

Implicit in the European Landscape Convention is that all landscapes are important, whether officially recognised through formal designations or not. In addition, the Convention highlights the importance of involving the public and other interested parties in the creation and implementation of landscape policies – including the design and management of forests, woodlands and trees.

Figure 3.1 Kielder Forest in Northumberland is one of the largest man-made forests in Europe.

Figure 3.2 Pistyll Rhaeadr waterfall in Powys, Wales, is counted as one of the ‘Seven Wonders of Wales’.
Forests and woodlands in the landscape

Forests and woodlands are important visual elements in the landscape that change over time. They have great potential to enhance and enrich the environment and make a significant contribution to landscape quality. Very often they are the dominant element in the landscape, shaping and enclosing space, framing views and providing colour, texture and scale. Forests and woodlands provide a place for recreational activities and can bring people closer to nature in both town and country. Management activities provide a context for engaging local people, which can help promote community cohesion and environmental awareness.

The UK has lost a greater proportion of its natural forest cover than most countries in Europe, due to agriculture and other land uses. This has helped make the remnants particularly valuable and, as early as the Norman Conquest, areas such as the New Forest have been preserved (see the UKFS Guidelines on Forests and Historic Environment). Moreover, climate change has focused attention on the special roles of trees and woodlands in both mitigation – to reduce the effects of greenhouse gases, and adaptation – to reduce the vulnerability of both natural and human systems to the effects of climate change (see the UKFS Guidelines on Forests and Climate Change).

In terms of visual design, forests, woodlands and trees have long been appreciated in the layout of grounds of great houses, parks and sporting estates. In the UK, naturalistic approaches pioneered by great English designers such as Capability Brown and Humphry Repton in the late 18th century replaced the formal geometric styles of the 17th and early 18th century. The idea of a romantic ‘wild’ landscape, which has its origins in Classical mythology, later informed the development of the ‘picturesque’ which influenced the early landscape architects and landscape appreciation today.

The history of forest design

In the early years of the Forestry Commission – from the 1920s to the 1950s – the creation of a strategic timber reserve was the priority for the organisation and that took precedence over landscape, biodiversity and other environmental considerations. New forests (or more correctly the re-establishment of forest cover) were often characterised by large-scale plantations of non-native conifers laid out in geometric shapes that followed ownership boundaries and which had limited species and age diversity (Figure 3.3). While these proved to be the best choice for timber production and to meet the objectives of the time, they resulted in rapid and dramatic landscape change and were criticised by some as unnatural or ‘alien’.

From the early 1960s, more attention was given to landscape issues, and two guiding principles were adopted as a foundation for the visual design of forests:

- Forest landscape design should emulate ‘natural’ patterns and forms, and contrast with that which is controlled, regular and urban.
- Principles of visual design, used by designers in other fields, should be applied to forests in the landscape.

Much early work on forest landscape design was applied to large-scale afforestation and focused upon the aesthetics of these as features, especially in the uplands, where the scenery was highly valued (Figure 3.4). The same design principles have subsequently been extended and adapted to lowland and urban woodland to meet social and recreational needs. There has also been more recognition

Figure 3.3 The geometric shapes of early forest plantations often looked unnatural in the landscape.
of the importance of woodland type, relative to its landscape setting, informed by studies such as Landscape Character Assessments (LCAs) and Landscape Capacity Studies (see Appendix 2).

The development of forest design has been supported by research into public preferences for woodlands and trees in the landscape. Studies have highlighted the features people consider important in visually attractive forests and woodlands. Diversity of structure and composition emerge as the most important characteristics, while other preferences include:

- organic rather than geometric shapes;
- open areas within the forest;
- variety of tree size and species;
- views under the woodland canopy;
- ephemeral effects of colour, light and seasonal change;
- still or flowing water enhancing the attractiveness of a wooded landscape.

Recent developments

In urban areas, there has been increasing interest in the contribution that woodland and trees can make to urban character, quality of life, the restoration of derelict land and the rehabilitation of urban communities (Figure 3.5). They can be used in the landscape restoration process to help visually integrate otherwise disparate elements, as well as reducing any unwelcome visual prominence in the wider landscape of hard built structures such as roads and buildings. Woodlands and trees can be thought of as part of the green infrastructure – bringing a natural element into urban lives that can provide places for recreation and relaxation. This can enhance urban areas, and provide a setting for both new housing and economic developments.

Access to forests and woodlands for recreation is an important public benefit, and providing such opportunities is now a management consideration for all forests and woodlands in the UK. If internal landscape and recreation facilities are well designed, forests can accommodate large numbers of people participating in a variety of activities – many of these enhanced by the experience of being in a forest environment. Optimising a visitor’s experience is a main objective in forests and woodlands designed for recreation, although careful planning is required where activities such as equestrian bridleways and cycle tracks might conflict and require geographic separation (see the UKFS Guidelines on Forests and People).

The recognition that action is needed to combat climate change will mean that in some areas there will be land-use changes in favour of forestry to help offset carbon emissions. This expansion can be undertaken in a way that will enrich the landscape and bring a range of public benefits, providing care is taken with siting and design, as outlined in these Guidelines. Climate change policies have also meant that coppice management, practised for centuries...
with species such as hazel and chestnut, have taken on a new significance; fast-growing crops of both native and non-native tree species offer an alternative and sustainable energy source. These crops have the potential to become woodland, and, as such, are included within the scope of these Guidelines – particularly in relation to siting and design.

The forest design process

The long-term nature of forestry has led to the development of forest management plans that aim to define and communicate forest management proposals. These include the creation of new forests and woodlands, and describe the consequences of activities over time. The forest planning process, involving all aspects of forestry, starts with the owner’s objectives and the opportunities and constraints offered by a site. This involves assembling and integrating a wide range of information about the site and its potential. The landscape and visual aspects of the forest design represent just one of many site and woodland management issues to consider, but in its broadest sense landscape provides the setting for the planning process. For a large forest, such planning will usually involve the services of a range of professionals dealing with different aspects of the forest environment (see the UKFS Guidelines for General Forestry Practice – Appendix 3).

The landscape and visual aspects of forest design start by taking account of the broad-scale landscape character and other factors affecting the context. This will guide the nature of forestry and, for new planting, the capacity of the landscape to accommodate change. In some areas, Landscape Character Assessment studies (LCAs) have been completed and these will help inform decisions about the nature, location and design of new forests or woodlands (see Landscape Character Assessment, page 17). Having taken the landscape context into account, the forest design principles can then be applied and the visual impacts assessed. The social dimension of forest planning is also an important consideration from the outset. For woodland that is regularly used for recreation or is prominent in the landscape, community involvement in the planning process will be a vital part of developing proposals (see the UKFS Guidelines on Forests and People).

Forest landscape design is important both for the creation of new forests or woodlands, and for re-designing existing forests at the rotation age; felling and restocking provides the management opportunity to reassess their design and enhance the visual contribution they make. There are also landscape considerations to address when forests or woodlands are lost from the landscape; in the cases of deforestation, an Environment Impact Assessment (EIA) will normally be required and the visual impact is likely to be cited in the determination. The guidelines given in Section 6 cover both the landscape context and the forest design principles, and provide a rationale to underpin the design process. By following the guidelines, landscape change can be developed in an informed way and communicated to a wide range of audiences. The analysis of the visual impacts using photographs and three-dimensional visual representations (Figure 3.6) of the forest has been undertaken for many years, and these are a vital aid to understanding and communicating the potential landscape change. Appendix 4 illustrates the application of the guidelines in some typical examples of UK forest and woodland landscapes.

Figure 3.6 A three-dimensional representation of the forest design plan at Lake Vyrnwy in mid Wales.
4. Policy and context

The European Landscape Convention, an initiative of the Council of Europe, is the first international convention to focus specifically on landscape. It promotes the protection, management and planning of all European landscapes, including natural, managed, urban and peri-urban areas, and landscapes that are special, everyday and even degraded. The Convention, ratified by the UK in 2006, provides a framework to establish and implement policies on landscape management and protection.

This section provides further background, gives an overview of the developments relevant to forests and landscape, and summarises the main statutes. Further details of legislation and conventions are provided in Appendix 1, UK and country-level strategies and delivery mechanisms in are summarised Appendix 2.

European Landscape Convention

The European Landscape Convention is one of a number of international and national policies and agreements that affect the landscape of the UK. The UK ratified the Convention in 2006, which means that the following common core principles and actions have been agreed:

• To put people from all cultures and communities, and their surroundings, at the heart of spatial planning and sustainable development.

• To recognise that all landscapes are important, whether beautiful or degraded, and that they are an inheritance shared by everyone.

• To increase awareness and understanding of landscape and its value, as a unifying framework for all stakeholders whose activities affect it.

• To promote a more accessible, integrated and forward-looking approach to managing the landscapes we have inherited, and in shaping new ones.

The provisions of the Convention are already integrated into UK policy and the broad context is provided by Securing the future: delivering UK sustainable development strategy and corresponding plans for the constituent countries of the UK.

Landscape policy and designations

The Forestry Commission established the first national forest parks, starting with Argyll in 1936. Subsequently, post-war movements to protect the countryside and provide access led (in England and Wales) to the National Parks and Access to the Countryside Act 1949 and a range of subsequent legislation and designations (see Appendix 1). Each country within the UK has a statutory body that advises its respective government on landscape matters. These bodies develop policies and are responsible for landscape protection, conservation and enhancement in key areas. They also recommend areas of national landscape importance, such as National Parks, National Scenic Areas and Areas of Outstanding Natural Beauty for special protection measures and mechanisms to foster their care (see Further reading and useful sources of information). Forests and woodlands are frequently significant components of these protected areas and the landscape impacts of afforestation, clearfelling and forest roads are considered in the context of the designation(s) and policies that apply.

Landscape planning

Forestry activities themselves are not defined as ‘development’ and so do not come within the scope of the Town and Country Planning Acts. The exceptions are where development, for example a windfarm or housing scheme, is proposed on a woodland site, or structures associated with a forest proposal – such as an access track – are predicted to have significant adverse environmental effects. In these cases the planning regulations apply and an Environmental Impact Assessment (EIA) may be required. Local authorities (in Northern Ireland, the Planning Service of the Department of the Environment)
can apply Tree Preservation Orders (TPOs) and designate Conservation Areas to protect trees that are important in the landscape. The owner will be notified of these designations. Local authorities may apply planning conditions to protect existing trees or plant new ones as part of the development consent. They may also enter into ‘planning gain’ agreements for additional woodland creation or protection. In areas with landscape designations, forest roads and quarries that do not form part of an approved afforestation scheme may be subject to planning controls.

At a local level, planning authorities (in Northern Ireland, the Department of the Environment) have responsibility for landscape issues. They have powers to designate local landscapes of importance, and their policies are incorporated into a range of plans and policy statements, all of which are likely to have a bearing on forestry. These include structure plans, development plans, local plans, local development documents and frameworks, and community strategies. Local planning authorities are consulted on forestry proposals and landscape and visual impacts are frequently important issues to be considered.

Some local authorities, in partnership with the forestry authorities, have developed specific plans for forestry which identify opportunities and sensitivities in indicative forestry strategies, local forestry frameworks and community forest plans. There are also local woodland initiatives and projects that have special policies, and sometimes incentives, for woodland development.

Many local authorities take a proactive role in co-ordinating registers or inventories of landscapes of design interest, and some also work with the historic environment agencies on historic landscapes. These sources of information help develop as comprehensive a picture as possible of the landscape context for forest and woodland design.

Several tools have been developed by local authorities, landscape professionals and statutory landscape advisors to analyse landscapes and help in decision making. Foremost are Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (LVIA).

Landscape Character Assessment

Landscape Character Assessment (LCA) is a recognised method used to analyse the key characteristics that make landscapes distinct, and to categorise and map landscape character types. LCAs have become strategic landscape planning frameworks across the UK. Frequently they have developed through partnerships between local authorities and the statutory landscape agencies. LCAs can operate at a range of scales, from broad regional studies to local areas of land (see Section 6 and Appendix 2).

Landscape and Visual Impact Assessment

Landscape and Visual Impact Assessment (LVIA) provides a consistent and recognised method for assessing the effects of landscape change. An LVIA can be tailored to the complexity of a forestry proposal and the sensitivity of the landscape. Forestry proposals considered sufficiently sensitive to require an Environmental Impact Assessment (EIA) may also require an LVIA (see Section 6 and Appendix 2).

Forestry policy

Forestry policy is set out in the forestry programmes and strategies for England, Scotland, Wales and Northern Ireland. These set out the priorities for each country and how landscape and other elements of sustainable forest management will be addressed. In urban areas, in particular, initiatives have been established to improve the landscape and promote regeneration through new woodlands. For example, the National Forest, Community Forests and Central Scotland Forest have produced local strategies involving landscape considerations, and there are many smaller community-based projects.
5. UKFS Requirements: Landscape

The UKFS Requirements for Landscape are set out in this section (see Section 2 for further information). The UKFS Requirements for General Forestry Practice are given in the UKFS itself and in Appendix 3 of this publication.

Key to symbols

Requirements

Cross-references

Cross-references may be made to the other elements of sustainable forest management (SFM), where the Requirement is common to more than one subject.

Legal requirement (if applicable)

Element of SFM
Reference number (N/A for landscape)

Good forestry practice requirement

Element of SFM
Reference number

The UKFS Requirements outline the main legislation and are intended as a source of advice. You are advised to consult the relevant statutes for more information and the definitive legal text.
The landscapes of the British Isles are renowned for their beauty and diversity. The variety of landscapes found across the UK is a result of the interactions between geology, landform and climate since the last Ice Age, together with the long history of human settlement and land use. Cultural values play a large part in the perception and appreciation of landscapes, and this is particularly the case in the UK, where many landscapes have strong, traditional and locally distinctive ‘character’, often with historical and literary associations. Policies have been developed to reflect the importance of landscape character and protect landscape qualities. Many areas have special designations and some may have locally specific policies that apply in addition to those accompanying the designation.

All these influences contribute to the setting or ‘context’ in which forestry is practised today. Through the appreciation and analysis of landscape context, forests and woodlands of an appropriate character can be designed so that they make a positive contribution to the environment, and in some areas create attractive new landscapes. However, it is also the case that, in a limited number of situations, the landscape context will be such that forests, woodlands and associated infrastructure will be inappropriate or restricted, in terms of type, scale or both.

1. Forests should be designed and managed to take account of the landscape context.
2. Forests should be designed and managed to take account of landscape designations, designed landscapes, historic landscapes and the various policies that apply.

Forest landscape design

The factors that determine landscape context provide the framework for assessing the site, determining the sensitivities and refining the forest design objectives. Informed by this assessment, forest design principles, based on the principles of visual design, can be applied. These have stood the test of time and provide a proven rationale for improving the visual quality of forests and woodlands.

3. The principles of forest design, informed by the landscape context, should be applied to ensure visual aspects are appropriately addressed.
4. Where existing forests do not meet the UKFS Requirements for Forests and Landscape, improvements should be made when management opportunities arise.
6. UKFS Guidelines: Landscape

Guidelines on meeting the UKFS Requirements for Landscape are set out in this section. Guidelines on meeting the UKFS Requirements for General Forestry Practice are given in the UKFS itself and in Appendix 3 of this publication.

Key to symbols

Guidelines

Cross-references

Cross-references may be made to the other elements of sustainable forest management (SFM), where the Guideline is common to more than one subject.

Element of SFM 7 Reference number

Element of SFM 12 Reference number

- General Forestry Practice
- Forests and Biodiversity
- Forests and Climate Change
- Forests and Historic Environment
- Forests and Landscape
- Forests and People
- Forests and Soil
- Forests and Water
The table below introduces factors important for forests and landscape. The Guidelines that follow provide more information on how to comply with the UKFS Requirements, grouped by the factor headings.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Importance for landscape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape context</td>
<td></td>
</tr>
<tr>
<td>Landscape character</td>
<td>Analysis of landscape character is the starting point for considering forest design, the capacity for change and the integration of new forests into the landscape.</td>
</tr>
<tr>
<td>Landscape and visual sensitivities</td>
<td>Forests, woodlands and trees can have a significant impact on the landscape and on how people experience it.</td>
</tr>
<tr>
<td>Historic context</td>
<td>Forests, woodlands and individual trees are key landscape components that can be integral to the historic character, but they can also detract from historic character if sited or managed inappropriately.</td>
</tr>
<tr>
<td>Designed landscapes</td>
<td>Designed landscapes are a valued art form and an important part of the cultural heritage of the British Isles.</td>
</tr>
<tr>
<td>Forest design principles</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>The shapes of forests and woodlands within the landscape can be the most striking visual features: both the overall shape, and the patterns of species and felling coupes within.</td>
</tr>
<tr>
<td>Landform</td>
<td>In hilly or mountainous areas, landform is usually the dominant and most obvious landscape influence for forest and woodland design.</td>
</tr>
<tr>
<td>Pattern of enclosure</td>
<td>In lowland areas, field patterns are usually the dominant and most obvious landscape influence for forest and woodland design.</td>
</tr>
<tr>
<td>Scale</td>
<td>Scale describes the relative size of visual elements as seen by the viewer. Generally, the scale of forest and woodland shapes should reflect the scale of the landscape.</td>
</tr>
<tr>
<td>Diversity</td>
<td>Diversity refers to the number of different elements in a design. Diverse forests are usually more visually appealing, but the level of diversity should be appropriate to the situation.</td>
</tr>
<tr>
<td>Unity</td>
<td>Unity is achieved when forests or woodlands integrate well with other features and look as though they belong in the landscape. Unity also applies to the integration of the various elements within a forest design.</td>
</tr>
<tr>
<td>Spirit of place</td>
<td>Spirit of place is a term used to describe the intangible qualities, such as wilderness, tranquillity and cultural associations, that make a location special or unique.</td>
</tr>
</tbody>
</table>
Landscape context

This section begins with consideration of the landscape context; this is the first part of the forest design process and starts with an assessment of landscape character.

Landscape character

The UK has a rich variety of landscapes, and understanding their character is fundamental to planning for landscape change and informing forest design. A systematic process of identifying distinct, recognisable and consistent patterns of elements that give tracts of landscape their character and coherence is provided by Landscape Character Assessments (LCAs). LCA studies have been carried out throughout the UK, at national, regional (Figure 6.1) and local (Figure 6.2) levels. These have identified various landscape character types based on geology, land-use pattern and other landscape features (see Appendix 2 for more details).

LCA studies also provide guidance on a variety of issues that may result in landscape change, these may include the design and location of a forest or woodland. Where available, formal LCA studies and associated guidance provide an essential starting point for forest design, and will inform how the extent, form and structure of forests and woodlands can be planned so that they make a positive contribution to the landscape. This is particularly important for significant areas of new woodland or large-scale felling and restocking, and also for proposals that may impact on sensitive landscapes.

Figure 6.1
An example of a regional landscape character map from the series produced by Scottish Natural Heritage. The map divides the area into different zones based on geology, landform, land-use types and other factors.

1 Refer to relevant Landscape Character Assessments and associated design guidance as part of the forest planning process.

2 Study the landscape character at a local level, identifying the key characteristics of the landscape; use the analysis to inform the forest design.

3 Where new forests or woodlands are proposed, consider the capacity of the landscape to accommodate change, and design them to have a positive impact on landscape character.
Figure 6.2
An example showing the analysis of local landscape character produced at the scale of a forest management plan, with associated photographs.

a. A map showing the area divided into three different zones on the basis of landform, land use, scale, and the nature of the viewing experience (see below).

b. Zone 1 is a flat area of estate grounds with views across open areas through trees.

c. Zone 2 is a rolling, medium-scale landscape with farms.

d. Zone 3 is a large-scale open landscape with distant views dominated by semi-natural vegetation.
Landscape and visual sensitivities

The creation of new forests and woodlands and the felling and restocking of existing woodlands have the potential to dramatically alter landscapes. Changes occurring to familiar scenes can be unwelcome – especially when the change is sudden and unexpected. An essential part of the forest design process is therefore a consideration of the visual sensitivity of the landscape within which changes are proposed. This can be considered and assessed in terms of:

- **Landscape visibility** – determined by the prominence and topography of the landscape (Figure 6.3), the number of viewpoints, and the presence of elements that block or screen views.
- **Number of viewers** – will depend on the size of the local population, settlement pattern and tourist use.
- **Nature of viewing experience** – is influenced by factors such as whether the view is seen from a car, or provides the backdrop to a scenic village or tourist viewpoint.
- **Landscape value** – cultural or historical associations all contribute to landscape value, and may be reflected by a designation such as a National Park, an Area of Outstanding Natural Beauty (in England, Wales and Northern Ireland) or a National Scenic Area (in Scotland).

The particular quality of a locality that gives it its identity and makes it unique and special to the people who live there or visit is known as local distinctiveness (Figure 6.4). This quality may be cultural or historical, or linked to local and individual perceptions of what is important. Local distinctiveness helps people enjoy, remember and value particular places.

Proposals for change need to be considered throughout the area from which they will be visible and the impacts on the nature of views assessed. This is typically done from a range of representative viewpoints. The changes can then be illustrated to provide the basis for an assessment of people’s responses to proposed changes, and to the overall effects on visual amenity.

The potential visual effects of forestry proposals from each selected viewpoint can be considered against six criteria:

- **Description of effect** is an assessment of the potential impact of the proposals on the viewer by virtue of their extent, proximity and transience and whether they have a positive or negative effect on the landscape.
- **Importance of view** is a judgement on the relative significance of the viewpoint to the viewer, including an assessment of the local distinctiveness of the scene to local people.
- **Landscape sensitivity** is an evaluation of the sensitivity of the landscape and whether proposals can be accommodated without detrimental effect on landscape character.
- **Magnitude and duration of landscape effect** is an assessment of the relative scale and nature of the potential changes to the landscape and their duration.
- **Mitigation of landscape effect** considers any measures that could be considered to mitigate the visual impact of the proposals from the viewpoint.
- **Significance of visual effects** is a summary statement of the potential significance of the effects of the proposals on the landscape.
For all forestry proposals, assessing the landscape context will involve an appreciation of landscape and visual sensitivities as part of the forest design process. For the more extensive and environmentally significant proposals, for example where an Environmental Impact Assessment (EIA) is required, a methodology described as a Landscape and Visual Impact Assessment (LVIA) may be required to guide the forest design and communicate the landscape change (see Appendix 2 for more information). This involves an assessment of landscape and visual sensitivities, evaluation of design options, and the impacts of the design proposal that represents the best overall solution. Where visual sensitivity and local distinctiveness are important, taking account of local opinion will help inform the development of proposals and provide assurances about the nature, scale and rate of change.

1. Analyse the visual sensitivity and local distinctiveness of the landscape; consider visibility, how people view the area, the nature of the viewing experience and the importance of views.

2. Where visual sensitivity and local distinctiveness are important, communicate the predicted visual effects of proposals to interested parties and consider local opinions in developing the best overall solution.


4. Ensure that forest designs adequately reflect the visual sensitivity and local distinctiveness.
Historic context

The long history of settlement and land use in the British Isles has left a legacy of varied landscapes rich in historical and cultural values (Figure 6.5). The vast majority of natural tree cover was cleared to provide land for other uses and, at a broad scale, the geomorphology of an area dictated where activities such as quarrying, mining, agriculture or forestry would have been the predominant land use. Features such as burial mounds, hillforts and farmsteads indicate a history of open land, whereas features such as saw-pits or charcoal hearths indicate a woodland history.

Ancient woodland, parkland and wood pasture will all have a long history of woodland culture associated with them – although the historical use of the term ‘forest’ was misleading as it was often used to describe wild land, irrespective of tree cover, in ancient hunting forests. Cultural values are often linked to historical uses and may include designed landscapes, literary associations, or areas imbued with social history such as the crofting landscapes of Scotland.

Projects to understand the historic development of landscapes, rather than individual special sites, have been undertaken across the UK. Examples include, Historic Landscape Characterisation (HLC) in England, and Historic Landscape Assessment (HLA) in Scotland. These projects examine the origins of land-use patterns and map them in areas of similar character to provide a basis for guiding land-use policies. They can also contribute the historical element to wider landscape character assessments. The most important historic and designed landscapes are entered onto registers of landscapes of historic and design interest and some of the most sensitive historical areas have been identified in indicative forestry strategies, regional forestry frameworks and local forest management plans (see the UKFS Guidelines on Forests and Historic Environment).

There is popular interest in landscape history, and this can present opportunities: for example, in generating support for proposals to restore woodland cover on sites that were wooded in the recent past. First-series Ordnance Survey, other early maps and old aerial photographs (e.g. the RAF stereoscopic cover produced from the late 1940s) provide useful sources of information and can help show how the landscape has developed over time and how the woodland and tree elements have changed.

In some cases, tree planting may have disguised or detracted from the historical value of landscapes and there may be a case to consider removing trees to restore special sites.

Figure 6.5 A view in Dartmoor National Park where the landscape is full of many different historical features. The hedgerow pattern and the hedgerows themselves are an important part of this, dating back centuries or even millennia.
Contact the local historic environment services for information on the historical context; check to see if a historic assessment/categorisation has been undertaken or the landscape is listed or registered as being of historic or design interest.

Use the historic assessment/categorisation or any description given in a historic register or list, together with the landscape character assessment, to inform the development of proposals.

Consider the impacts of forestry on the historical context and landscape character in forest management plans; consider opportunities to complement, enhance or re-create landscapes of historic interest.

**Designed landscapes**

Designed landscapes are an important part of the cultural heritage of the British Isles and trees and woodlands are often their defining components. Most of the more prominent examples of designed and historic landscapes are listed in the registers or inventories maintained by local authorities, and special policies and restrictions (such as conservation areas) apply (Figure 6.6). However, these lists are not always complete and in many landscapes it may be possible to identify a fading design history for conservation and restoration. Further relevant information may be obtained from historic land-use assessments and the Garden History Society.

Check if the landscape is listed in the relevant register or inventory of designed or historic landscapes. If so, seek specialist advice to inform the development of proposals.

If the landscape is not listed, but there is evidence that it is part of a park or designed layout, investigate the original design intentions and use these to inform design proposals.

*Figure 6.6*  
Stourhead Park in Wiltshire is a listed landscape park.
Forest design principles

The assessment of landscape context, as described above, will inform how the following forest design principles should be applied to ensure that forests and woodlands make a positive environmental contribution. Many existing forests were originally planted with little attention to landscape, but felling and restocking provides the management opportunity to reassess their design and enhance the visual contribution they make.

Shape

Shape is a powerful factor that has a major influence on how we perceive our surroundings. The perception of a particular shape is influenced by its overall proportions, how edges are defined and the viewer’s position. Compatible shapes achieve harmony in a composition, whereas shapes that are incongruous have a visually jarring effect. Landscapes contain many shapes but there is always an underlying influence which can be used to help integrate new forest shapes.

Studies of public preferences for forest landscapes have confirmed ‘shape’ as one of the most important visual factors. The distinction between naturalistic (usually meaning organic) and geometric (implying human-influenced) shapes is particularly significant and plays a major part in forest and woodland design (Figure 6.7). This applies to both the overall shape of forests or woodlands in the landscape and to the patterns within them made by species compartments, felling coupes, access tracks and fence lines (Figure 6.8).

Shapes in a forest design that are influenced by the landscape appear better integrated with their surroundings. The dominant landscape influence differs according to whether the landscape is upland, lowland or flat:

- In the uplands, the landform is the dominant influence on shapes and on the patterns of vegetation and rocky areas. The hills and terrain may be rugged and angular, or smooth and rolling. The use of irregular shapes that reflect these landforms will help integrate the woodland with its surroundings.

- In the lowlands or on undulating farmland, the field or enclosure pattern may be more dominant than the landform. In these landscapes woodland shapes can be based more on these influences.

- In flat landscapes, where there are no vantage points for people to see the overall shapes of a woodland, the woodland edge and internal spaces (e.g. felling coupes) are the main influences and considerations in deciding shapes.

For new woodlands, existing semi-natural vegetation patterns can also help guide planting shapes and species choices (Figure 6.9). Vegetation responds to soil type, drainage, aspect and exposure, and these patterns are often related to the underlying landform. However, it should be borne in mind that the existing vegetation may have been modified to a greater or lesser extent by enclosure and management such as fencing, re-seeding, fertilising and draining. Much of the coherence of various patterns in the landscape is due to the interlocking of shapes, rather like pieces of a jigsaw puzzle (see Unity, page 37).
Figure 6.8
Examples of different forest shapes.

a. This forest has a very geometric layout, which looks out of place on this hillside. Gospel Pass, Black Mountains, Wales.

b. This semi-natural woodland has an organic shape which reflects the underlying landform. Sutherland, Scotland.

c. A felling coupe which also has an organic, curvilinear shape, near Lairg, Sutherland.
13. Analyse the main landscape influences and base forest shapes on either the landform or the enclosure pattern.

14. If the enclosure pattern is dominant, use the field pattern and links to existing hedges and woodlands to guide the design of forest shapes.

15. In landscapes where the landform dominates, design forest shapes that reflect the landform: avoid geometric shapes, symmetry and parallel lines.

16. On hillsides, where the landform predominates, use curving diagonals to run across slopes rather than straight, horizontal or vertical lines.

17. Use the natural or near-natural vegetation pattern to help guide new planting shapes and species patterns.

18. Consider how management practice will achieve the most appropriate forest shapes over time, including the effects of fences, felling coupes and access tracks.

Figure 6.9
a. A landscape where the vegetation pattern is very well defined, related in part to the local landform. Vegetation often indicates soil condition, near Loch Arklet, Scotland.

b. A design for new woodland based on the vegetation pattern. Conifers (possibly Scots pine) on the heathery, drier sites and broadleaves (possibly birch) on the grassy, moister slopes. Rocky, shallow soils are left open.
Landform

When viewing a landscape the eye tends to look around a scene, for example along a river or a winding road. This applies in particular where landform is the dominant landscape influence, and it has been widely recognised that there are directional forces that affect how a landform is observed. These directional forces 'flow' down the main spurs, ridges and convex landforms, and up into hollows, valleys and concave landforms. This perception of movement in landform holds true for all but the flattest landscapes where the eye is led across the horizon. Known as 'visual forces', these directions can be identified and analysed. The most prominent landform features have the strongest visual forces, and lesser forces relate to the more minor features (Figure 6.10).

Natural forests and other vegetation patterns tend to reflect the underlying landform. Upper treelines are lower on exposed ridges and higher in sheltered valleys. Forests look artificial when shapes and lines are imposed that cut across landform patterns, and fail to respond to visual forces. An example is where an upper forest margin follows a horizontal line (often a fence line or ownership boundary) rather than an irregular margin that inflects by rising up into valleys and falling back on exposed ridges (Figure 6.11).

Identifying visual forces and using them to help shape a forest design ensures it will reflect the landform influence and fit in to the scene rather than contrast with it and create a disruptive visual effect (Figure 6.12).

Figure 6.10 (a) A landscape with dramatic landform in the Highlands of Scotland. (b) An analysis of visual forces demonstrates how the landform tends to draw our attention and how there appear to be directional movements associated with the ridgelines and valleys; our gaze is subconsciously attracted to the junction of the visual forces.
Figure 6.11
Landform and forest design.

a. Two contrasting patches of woodland at Loch Fyne, Scotland. The natural colonisation on the left flows up the gullies; the geometric block on the right does not respond to landform.

b. This felling coupe has been designed to follow the landform, which is the major influence in this landscape. Loch Lomond and the Trossachs National Park, Scotland.

Figure 6.12
An example to show how landform and an analysis of visual forces can be applied to the design of the forest.

a. The original landscape.

b. The visual force analysis of landform using red and green arrows to follow the ridges and hollows, respectively. The strongest arrows illustrate the largest and most pronounced forms, the smallest the more subtle shapes.

c. A woodland design based on this analysis, where the trees run up into the hollows and the open ground runs down the ridges.
Analyse the landform by identifying lines of visual force; use a combination of contour maps and photographs or a digital terrain model of the landscape.

Design the edges of forest shapes, such as planting areas or felling coupes, so that they respond to landform by rising up into hollows following the upward forces, and flow down on ridges with the downward forces.

Vary the degree to which the shapes respond to the landform. The main woodland shapes should reflect the major landforms, and the more detailed design – such as edges and internal features – should reflect the minor landforms.

Avoid putting straight lines of forests across distinctive landforms or over skylines; where this is unavoidable, take forest margins across skylines at low points.

Pattern of enclosure

An enclosure pattern refers to the network of hedges, walls, ditches, fences and trees that define field boundaries in most of the lowlands and upland fringes of the British Isles. Enclosure has a historical and cultural value and is a cherished and distinctive visual feature of the UK countryside. Broadly, there are two main categories of enclosure, known as ‘ancient’ countryside and ‘planned’ countryside:

- Ancient countryside can be traced back to prehistoric times and is characterised by irregular field boundary shapes, winding lanes, hedges of many species, and patches of ancient woodland linked into the hedgerow pattern (Figures 6.13a; 6.14a).

- Planned countryside dates from when open common fields and other land were enclosed by the Parliamentary Enclosure Acts in the 18th and 19th centuries. It is characterised by a more geometric and regular patchwork of fields, simple hedges and plantation woodlands (Figures 6.13b; 6.14b).

In some landscapes the enclosure pattern is the dominant feature (Figure 6.15a), in others landform exerts a stronger influence (Figure 6.15b).

Figure 6.13 These diagrams illustrate the visual differences between ‘ancient’ and ‘planned’ countryside. (a) Shows the irregular fields and winding roads while (b) shows straight field boundaries and roads.
Figure 6.14  **a.** An example of ancient countryside in Dorset. Note the irregular field shapes and loose, dense hedgerows.

**b.** An example of planned countryside in East Lothian. Note the regular pattern of enclosure.

Figure 6.15  **a.** A scene in Herefordshire where the enclosure pattern is very strong and intact, providing a major influence in the landscape compared with the underlying landform.

**b.** Another Herefordshire scene where the hedgerow pattern has become weak through removals – as a result the landform is starting to exert a greater effect.
The first step in the forest design process is to assess whether the landform (see previous section) or enclosure pattern is dominant and should be the main influence on the design. Where the enclosure pattern is dominant, tree planting and woodland management can help reinforce the pattern, especially where hedges have been removed and trees have been lost. The layout and proportion of woods can be designed to reflect and add to the established pattern (Figure 6.16). New woodlands or areas of short rotation coppice can be linked into the pattern where hedgerows intersect by planting similar species and providing a degree of interlock.

Figure 6.16 Describing woodland in landscapes with strong enclosure patterns.

a. A hillside in Devon where the enclosure pattern is strong and intact.

b. An illustration to show how extra woodland could be fitted in among the field pattern, enhancing it yet not creating a geometric woodland structure.

Analyse the enclosure pattern, and where it is the dominant influence in the landscape use it to guide woodland planning.

Use new woodlands to reinforce and extend the enclosure pattern; avoid the imposition of extensive forests in important landscapes that detract from the enclosure pattern.

Scale

Scale has a major effect on perception. In landscape, it is defined as the relative size of one visual element to another, and the relative size of the whole landscape to the observer. The scale increases with the elevation of the observer and the expanse of the view (Figure 6.17). Hilltops and higher slopes with open views present a much larger scale of landscape than the intimacy of restricted views on lower slopes and in valleys.
Scale is an important visual factor in fitting forests and woodlands into the landscape. This applies both to the forest or woodland overall and to its constituent elements, such as felling coupes, species compartments or open space. In assessing scale, the position of the viewpoint is all-important. In general, this results in small elements being appropriate in valley bottoms, on lower slopes and along lower woodland edges, whereas much larger elements fit in at higher elevations and on hilltops where the scale is greater (Figure 6.18).

Problems of scale in forest design may be caused by:

- A single felling coupe that is too extensive or a number of coupes that are perceived as a single element because previous restocking of felled adjacent coupes has not yet established (see the UKFS Guidelines for General Forestry Practice – Appendix 3).
- Large-scale swathes of forest in intimate landscapes.
- Small-scale unrelated elements at higher elevation.
- Thin strips of woodland on skylines.

It is important to assess the scale of the landscape and to ensure that, as far as possible and within limits imposed by ownership boundaries and site fertility, the proposed woodland relates to landscape scale (Figure 6.19).
There are four aspects to scale that can help with issues of visual design:

**The rule of thirds** can help to resolve the visual balance between elements such as woodland and open ground. When a landscape, or part of it, is seen as divided into two major elements, a ratio between them of one-third to two-thirds is usually the most satisfying visual proportion (Figure 6.20). This ratio also applies to proportions of visual elements within a wood, or the size of felling coupes – providing the resultant scale is commensurate with the landscape. The visual balance will change with the viewpoint – when applying the rule of thirds, priority should be given to the most important views.

**Enclosure** can be used to define space and break down the scale of the landscape (Figures 6.21, 6.22 and 6.23). This applies in flatter areas where the height of trees confines the view and creates a visual separation.

**Nearness** is a way to increase the apparent scale of small woodlands or clumps of trees and ensure they do not appear isolated and incongruous in a large-scale landscape. When woodland elements are positioned far apart they appear completely separate, but when relatively close together they tend to be seen as a group and the apparent scale is increased (see Figures 6.24 and 6.25).

**Coalescence** can also be used to give the appearance of a more heavily wooded landscape than is actually the case (Figure 6.23). Small woods and trees can be positioned so that they overlap each other when seen from important viewpoints (see Figures 6.26 and 6.27).
Figure 6.20 The rule of thirds.

a. The forest occupies more than two-thirds of the scene and leaves a small, poorly scaled open area at the top of the hill.

b. The forest and open ground are split 50:50 so that neither is dominant and a horizontal split occurs, despite the shape of the margin.

c. The forest occupies two-thirds of the visible area and the open ground one-third, which is more visually pleasing.

Figure 6.21

This diagram illustrates the concept of enclosure, where the space in the centre is separate from that beyond the green shapes.

Figure 6.22

A sketch showing how woodlands elements can enclose space, creating a smaller scale to the landscape. Enclosure is not complete – a space is still visible – but is sufficient for the viewer to sense that the trees enclose the space.

Figure 6.23

The trees coalesce and create a sense of enclosure in this view. They appear as a larger-scale element in the landscape than the area they actually occupy in plan.
Consider the relative size of woodland elements and aim to fit with the scale of the landscape.

Use smaller-scale woodland elements in valleys and progressively larger elements at higher elevation.

On hilltops and ridges, avoid narrow slivers or patches of both trees and open ground.

Consider a visual proportion of one-third to two-thirds where there are two main visual elements in important woodland views.

Make use of enclosure, nearness and coalescence to increase apparent scale and resolve design issues.

Figure 6.24 These sketches illustrate the concept of nearness. (a) shows several woodlands separated by wide spaces so they appear to be isolated and not visually connected. (b) shows how they appear to be part of a group or unit when placed closer together.

Figure 6.25 These woods are too far apart to appear as part of a group. They appear to ‘float’ in the landscape because they are too small in scale.

Figure 6.26 These sketches illustrate the concept of coalescence. (a) shows several woodlands separated by space in plan view. However, in (b) the perspective view shows that they appear to be part of one larger and better-scaled woodland.

Figure 6.27 In this Gloucestershire landscape the separate woodland elements and clumps of trees seem to coalesce into a single wooded appearance.
Diversity

Visual diversity refers to the number of different elements in a landscape or design. Landscapes in the British Isles have a high degree of diversity and this is described and classified in Landscape Character Assessments (see Appendix 2).

Diversity is a complex factor; it applies both to the wider landscape and to the constituent elements, such as woodlands. Diversity has many benefits for forest and woodland habitats and provides resilience in the face of climate change. In general, diversity creates visual interest and is welcomed (Figure 6.28a and b), whereas a lack of diversity can result in visual monotony (Figure 6.28c). However, it is not always the case that more diversity equates to a higher quality landscape (Figure 6.29); too much diversity can be visually confusing and appear cluttered, chaotic and incoherent – for example where many signs or advertisements compete for attention. It should also be appreciated that some landscapes have an intrinsic quality based on their very simplicity.

Figure 6.28 Examples of diversity in forest landscapes.

a. A forest landscape which has a lot of diversity, but not too much for the character of the landscape. The spring colours show this to good effect. Achray, Scotland.

b. A forest landscape with a good balance of diversity which reflects the background colours in the landscape, such as bracken on the upper slopes and the larch below. Dysynni Valley, Wales.

c. A forest landscape lacking in diversity – a large proportion of the scene is covered in evergreen conifer of the same age, colour and texture. Glen Orchy, Scotland.
In the wider landscape, forests and woodlands introduce diversity into treeless scenery, but extensive uniform forests can hide landscape features and reduce visual diversity and habitat diversity. An assessment of landscape character will help identify the degree of diversity and the key characteristics within a given landscape type.

Within forests, public preference research shows a strong affinity for diversity (Figure 6.30). Internal diversity can be achieved by cultivating different ages, densities and species of trees – providing these are suited to site conditions. From a distance these will appear as a visual composition of contrasting textures and colours, with subtle changes marking the passage of the seasons. Diverse and graded forest edges, together with species mixtures, can help in creating visual diversity. Other landscape elements, such as water, wetland, rocky outcrops and open spaces, also contribute to woodland diversity and should be revealed and emphasised, rather than hidden within the trees.

Figure 6.29 Examples of increasing landscape diversity.

a. A simple landscape with little diversity.

b. An increase in diversity through additional woodland, field boundaries and a house.

c. Adding more and more elements of diversity can lead to a scene that looks visually cluttered or chaotic.

Figure 6.30 A view of a very diverse forest where the pattern of different species reflected in the autumn colours makes the scene attractive without being chaotic or fussy. This kind of appearance reflects public preferences. Crafnant Valley, Wales.
Consider the appropriate level of visual diversity: this will depend on the location, scale and character of the landscape.

Match elements of diversity to the scale of the landscape. Use a greater number of small elements where the landscape is contained, such as in valleys, and progressively fewer and larger elements within simpler landscapes at higher elevations.

Emphasise natural features and non-woodland elements as part of the visual diversity of a forest.

Pay particular attention to the diversity of external and internal forest edges: vary the tree density and consider adding additional tree and shrub species.

**Unity**

Unity is achieved when the component parts of a design contribute harmoniously to the whole and all the visual design factors work well together. In landscape, this is achieved when the elements fit together well and relate to the landscape characteristics, and nothing looks out of place or unbalanced (Figure 6.31).

In forest design, unity means that the wooded elements should appear to be an integral part of the landscape, fitting in with or defining local character, and not standing out from it (Figure 6.32). Similarly, within a woodland itself, the various component parts should appear to fit together (Figure 6.33).

**Figure 6.31**  These sketches illustrate the concept of unity. The various elements in (a) are not compatible with the landscape or each other in shape, scale, colour and position. (b) shows how the woodland and the building could be better unified within the landscape.

**Figure 6.32**  
(a) In this scene the various elements of forest sit uncomfortably on the hillside. The shape, scale and position of the woodlands detract from the unity of the landscape. Near Moffat, Scotland.

(b) These felling coups detract from the unity of the forest due to their geometric shapes, positions and overall proportion. They also make the forest itself stand out in the landscape. Ballachulish, Scotland.
The interlock of shapes provides coherence to various patterns in the landscape by giving shapes a stronger visual connection to one another (Figure 6.34; see also Shape, page 23). Interlock can be at a large scale, as in the broad pattern of open space and woodland, or at a very small scale, for example between two woodland tree species. A high degree of interlock gives more unity to a design (Figure 6.35).

Figure 6.34
The shapes on the left abut one another and do not interlock. The two shapes on the right interlock and appear as a single unit.

Figure 6.35
a. The forest on this hillside has an organic shape to its upper edge which interlocks quite strongly with the open hill above.

b. The patterns of different tree species in this view are organic in shape and strongly interlock with one another.

Figure 6.33
This forest shows a strong sense of unity in the pattern of species shapes, their proportions, interlock and degree of diversity. County Down, Northern Ireland.
Apply the forest design principles, particularly shape, scale and diversity, to achieve unity in design proposals.

Design interlocking shapes with forest margins and edges to make the internal forest elements fit together and to tie the forest into the wider landscape.

**Spirit of place**

Spirit of place is linked with the factors affecting landscape context, but is included here as one of the well-established principles of forest design. It is a term for the intangible factor that gives a specific location special character and makes it unique to people. Often it is a combination of things, and it is important to identify what makes a place special so that this quality is not lost or damaged when changes occur. Dramatic landform or rocks, the presence of water (Figure 6.36), ancient trees (Figure 6.37), striking views (Figure 6.38), or a sense of wilderness and tranquility, may all define a 'spirit of place'. Human elements, such as historical or artistic associations and archaeological elements, are also likely to contribute.

Trees themselves can be fundamental to the spirit of place, or the woodland environment may enhance the setting of other features, or the access to them. Forest design and management needs to be undertaken with sensitivity to ensure that changes enhance the special quality of a place rather than detract from it.

*Figure 6.36*
Waterfalls like this frequently have a strong sense of place. Dunkeld, Scotland.
Identify what makes a place special or unique and consider how forest design can conserve and emphasise these qualities, rather than detract from them.

Figure 6.37
These ‘Ancient and Ornamental Woods’ in the New Forest have a strong spirit of place.

Figure 6.38
An impressive view of Urquhart Castle and Loch Ness – a place redolent of history with a strong spirit of place. The forest in the background is integral to the setting and will appear in the many photographs taken by tourists.
7. Implementation and monitoring

The revised edition of the UK Forestry Standard and its supporting series of Guidelines have not changed the legal framework for forestry or introduced new regulations. The aim is to provide greater clarity by outlining the scope of relevant existing regulations, and using these, together with the principles of sustainable forestry, to define forest management requirements in a more explicit way.

This section explains the mechanisms for regulating forestry in the UK and ensuring that forests are managed sustainably according to UKFS Requirements.

The regulatory framework

The Forestry Commission has a range of powers under the Forestry Act 1967 (as amended) through which the primary regulatory powers over forestry in Great Britain can be exercised. In Northern Ireland, the equivalent role in respect of the Forestry Act (Northern Ireland) 2010 is performed by the Forest Service, an agency within the Department of Agriculture and Rural Development. Some legislation is specific to forestry, but much legislation of relevance to forest and woodland owners and managers has wider application to any land management activity. The implications for forest managers of the main statutes of relevance are set out in the UKFS Requirements (Section 5).

Forestry policy in England, Scotland, Wales and Northern Ireland is the responsibility of the respective governments. Their forestry policies and strategies set out the priorities and programmes agreed in each country. For the public forest estate, policy is applied directly by the Forestry Commission and the Forest Service. For other forests, policy is implemented through a range of regulatory instruments and incentives. The forestry authorities also fund research and provide advice and guidance to support policy development. Increasingly, forestry policy is delivered through or in partnership with a range of other departments of government, agencies and organisations.

Felling

Under the Forestry Act, it is illegal to fell trees in Great Britain without prior approval, although there are exceptions for trees below a specified size, dangerous trees, and very small-scale felling operations. Cases of illegal felling are rare, but suspected cases are investigated, and prosecution may ensue. Where trees are subject to designations, for example on Sites of Special Scientific Interest, the consent of the relevant statutory authorities is required for management activity. In addition, deforestation for the purposes of conversion to another type of land use may be subject to the Environmental Impact Assessment Regulations (see below).

In Northern Ireland, the Forestry Act (Northern Ireland) 2010, with its provisions for felling licences and felling management plans, now aligns more closely with Great Britain.

Restocking

There is a presumption against the removal of woodland and the loss of forest cover in the UK, and it is normally the case that felling approval is granted subject to restocking. Restocking is required as a policy priority linked to a number of national and international commitments to prevent forest losses worldwide and to mitigate the effects of climate change. In Great Britain, the Forestry Commission may serve a Restocking Notice, which requires restocking and establishment to take place.

In Northern Ireland, granting of a felling licence will be subject to conditions set out in a felling management plan, which may refer to the restocking of the land with trees. In addition, a restocking notice may be served following unauthorised felling. This provision of the Forestry Act will come into operation when subordinate legislation is made. There are some special cases in the UK where trees can be established elsewhere (usually referred to as compensatory planting) or permanently removed.

The permanent removal of trees may be sanctioned if there are overriding environmental considerations, for example to allow the restoration of important habitats;
such projects have to be individually assessed, taking into account the practicality of restoration, together with the implications for future management.

The removal of trees may also take place to enable development, authorised under the planning regulations, to proceed. Such developments may include alternative sustainable land uses such as windfarms or hydroelectric schemes. In such cases, all the arguments, including impacts on climate change through loss of forest cover, will need to be addressed within the framework of woodland removal policies at country level and the planning legislation. As deforestation is involved, an Environmental Impact Assessment is likely to be required.

**Environmental impacts of forestry**

Proposals for new planting (including short rotation coppice and Christmas trees), deforestation, and the construction of forest roads and quarries come under the forestry provisions of the EU Environmental Impact Assessment (EIA) Regulations. The Forestry Commission and the Department of Agriculture and Rural Development in Northern Ireland are responsible for the implementation of the Regulations, and will advise applicants about their scope and whether there is likely to be a need for an EIA. Forestry proposals that may have significant environmental impacts will require an EIA before approval is granted.

If an EIA is required, the applicant must prepare a comprehensive forest management plan, together with an exploration of the potential environmental impacts – this process will involve appropriate specialists. The applicant must submit an Environmental Statement to the forestry authority, and this and the EIA will be made available to the public and to the various statutory environmental authorities. The Forestry Commission or Department of Agriculture and Rural Development will take account of any comments received before making their decision.

The Environmental Liability Directive (2004/35/EC) establishes a common framework for liability with a view to preventing and remediying damage affecting the land, including damage to animals, plants, natural habitats and water resources. The Directive is the first EC legislation whose main objectives include the application of the ‘polluter pays’ principle. It requires those responsible for the most significant cases of environmental damage to take immediate action to prevent the damage occurring and to put right damage where it does occur.

**Consultation on forestry proposals**

The forestry authorities make provision for anybody to comment on forestry proposals before a decision is reached. The mechanisms for doing this vary across England, Scotland, Wales and Northern Ireland, and with the significance and extent of the proposal: Consultation is extensive where an Environmental Impact Assessment is involved. The minimum consultation requirement in Great Britain is that clearfelling applications, forest management plans (for the public forest estate and for other woodlands) and grant applications are entered on the Public Register of New Planting and Felling. The arrangements for viewing the Register are on the Forestry Commission website at: www.forestry.gov.uk/publicregister.

In addition to the Public Register, local authorities and other statutory bodies are sent details of proposals under formal consultation and notification procedures. This process ensures a wide range of views is taken into account. The majority of applications, often with amendments, are approved through this process. If objections are lodged and sustained, the Forestry Commission may ask for advice from an advisory committee, and/or refer to the appropriate forestry minister before arriving at a decision. The above procedures do not negate the requirements for forest and woodland owners to consult other statutory agencies with regard to particular woodlands, for example the conservation agencies in the case of Sites of Special Scientific Interest.

**Plant health and forest reproductive material**

The Forestry Commission and the Forest Service also exercise legal powers to prevent the entry and spread of non-endemic pests and diseases of trees, under the 1967 Plant Health Acts. Trade in forest reproductive materials (seed, plants or cuttings) is also controlled under the 2002 Forest Reproductive Material Regulations (as amended), which implement the EU Directive 1999/105/EC on the marketing of forest reproductive material.
Meeting UKFS Requirements

The UKFS Requirements in Section 5 provide the basis for assessing whether the UK Forestry Standard has been implemented. Guidelines for forest and woodland managers on meeting the Requirements are given in Section 6 of this publication for Landscape, and in the rest of the Guidelines series for the other elements of sustainable forest management. The numbered Guideline points will enable an assessment to be made as to whether the relevant Requirements of the UKFS have been achieved.

The current regulatory mechanisms for forestry allow two options for the approval of forest and woodland management proposals:

- Felling licences
- Forest management plans

The forestry authorities also provide incentives to encourage the creation of new woodlands and the management of existing woodlands. The payment of grants is conditional on meeting UKFS Requirements.

Felling licences

The felling licence is a straightforward statutory instrument that gives permission to fell trees and is separate from the offer of incentives. There are many situations where a felling licence will be the most appropriate way to get approval for forestry proposals. Felling licences offer proportionate and expedient regulation to suit many UK situations, particularly where management activities are of limited scope, modest impact or infrequent occurrence.

In Northern Ireland, a felling management plan will be an integral part of a felling licence under the Forestry Act (Northern Ireland) 2010.

A felling licence gives the owner the legal authority to proceed on the basis of the discrete operational area and activity involved. The licence requires the applicant to submit a range of information and to exercise good forestry practice. However, the licence does not extend to the wider context and area covered by a forest management plan – as a result, there will be UKFS Requirements and Guidelines that are not relevant or applicable to the individual licence area.

While the Requirements and Guidelines that are relevant or applicable to the licence area must be complied with, the limited scope of a felling licence necessarily restricts the levels of assurance that can be provided in relation to sustainable forest management. Accordingly, the minimum levels of UKFS assurance provided by a felling licence will be confined to the discrete operational area and defined as:

- Legality.
- Environmental suitability to the site.
- Conservation of high-value habitats and protected sites.
- Protection of society values and the provision of opportunities for public comment.
- Protection of the forest area through a replanting condition.

Forest management plans

The forest management plan provides a more comprehensive basis for assessment that extends beyond the discrete operational area. This area is defined as the forest management unit (FMU). Forest management plans set proposals in a broader context, both in the area covered and over time. They also provide a clear statement of intention and allow proposals to be communicated to others. Forest management plans will be assessed for approval, monitored and periodically updated and their approval renewed. All publicly owned forests are managed using forest management plans which are available for public comment. The level of assurance provided by a forest management plan will therefore extend to all the UKFS elements of sustainable forest management applicable to the FMU.

Incentives

The Forestry Commission and the Forest Service offer a range of incentives for woodland creation, woodland management and related activities. Each country in the UK has grant programmes aimed at supporting the delivery of their forestry policies and strategies. For forests and woodlands that are not part of the public forest estate, most planting, natural regeneration and some management operations take place with the assistance of grants and through the approval of a forest management plan. However, the approval required by the Forestry Commission or the Forest Service to proceed with proposals may be separate from the offer of a grant.
In Great Britain, the offer of incentives for forestry will be conditional on meeting the UKFS Requirements. This will have to be demonstrated through the submission and approval of a forest management plan. In Northern Ireland, there is no general requirement for forest management plans at the current time. However, essential planning information including maps, a statement of objectives and establishment prescriptions is required for forest and woodland grant applications.

Monitoring

Monitoring is carried out at a strategic level, which is used for international and national level reporting, and at the level of individual forests and woodlands, to check that agreed proposals are being implemented.

Strategic reporting

The UK is committed to international agreements on sustainable forest management and these require countries to report at intervals of about five years on indicators developed by the Global Forest Resources Assessment (GFRA) and Forest Europe (formerly the Ministerial Conference on the Protection of Forests in Europe). These indicators show the extent and condition of forests and woodlands, together with environmental, social and economic aspects of sustainable forest management.

The range of reportable indicators was greatly increased for the GFRA in 2005 and 2010 and for the Ministerial Conference on the Protection of Forests in Europe in 2007. These, together with indicators at country level, now form the main basis for strategic monitoring that has superseded the earlier UK Indicators of Sustainable Forestry. Forestry also features in other international indicator sets on which the UK reports, such as those for the UN Convention on Biological Diversity (UNCBD) and the UN Framework Convention on Climate Change (UNFCCC).

A range of mechanisms provides data for this monitoring and reporting. For indicators concerned with UK forests, the national forest inventories, where the total forest and woodland resource is comprehensively assessed, have been the main source of data. Additional data are provided by a range of research plots across the UK that are used for environmental monitoring, and which form part of international co-operative programmes. Aspects covered include biodiversity, forest health, air pollution and climate change.

In the UK, each of the country forestry programmes or strategies has developed a set of performance indicators linked to strategic priorities. Where regional strategies exist within countries, indicators can also be linked to their strategic aims. These country indicators also draw upon existing statistics and surveys (for example, the current National Forest Inventory), and projects such as the Native Woodland Survey of Scotland will improve the scope of data collection and future reporting.

In Great Britain, the Forestry Commission has prepared a digital base map for all woodlands over 0.5 hectares, as part of the National Forest Inventory. This will ensure that monitoring will take place against definitive woodland areas. A sample survey, based on the digital map, will be undertaken for all these woodlands and data collected on species, structure, timber potential, and a range of environmental attributes. (A separate survey has been proposed for woodlands less than 0.5 hectares.) New technologies, including remote sensing, will enable the forestry authorities to carry out further checks on forest management and ensure the woodland map and associated survey data are regularly updated. In Northern Ireland, the Forest Service is in the process of completing an analysis of data on woodland area and type and will, in the future, provide and maintain a register of woodland.

Monitoring of individual forests and woodlands

Within the framework of the UKFS, the Forestry Commission in England, Scotland and Wales and the Forest Service in Northern Ireland will develop their own approaches to assessing forestry proposals for approval and verifying their implementation. These approaches will be informed by the nature of forests and woodlands in each country and risk factors associated with non-compliance.

The UKFS Requirements and Guidelines provide explicit statements against which proposals can be checked and their implementation monitored. The approval and monitoring regime will extend to individual forests and woodlands, but, as with all aspects of compliance, a risk-based approach appropriate to the context will be
taken. This will reflect the relevance and importance of the various elements of sustainable forest management, and individual Guidelines.

The implementation of forest management plans will be checked by the forestry authorities for grant payment purposes and again periodically as plans are amended or revised. At intervals, active forest management plans will be updated and formally re-submitted for an assessment of implementation to date and approval. Inspections will be based on a proportion of approved plans, selected at random, and the remainder based on the perceived risk profile of non-compliance.

Inspectors will offer advice on meeting the UKFS Requirements and allow the opportunity for remedial work to be carried out. However, where there are serious or persistent departures from UKFS Requirements, and these are not remedied, approved plans may be suspended and grants may be reclaimed. Where there is failure to meet the legal requirements, legal action may ensue.

Operational plans are a requirement of good forestry practice (see General Forestry Practice – Appendix 3), and the forestry authorities may ask to see these on site visits and more formally when forest management plans are due for renewal. Other UK regulatory authorities and organisations responsible for environmental standards, water quality, health and safety and employment may carry out checks to provide assurance of operational and legal compliance. As with other aspects of forest monitoring, the authorities will take a risk-based approach.

In addition, a new representative sampling survey will be introduced as a general audit on the implementation of UKFS Requirements and the systems in place. Taken together, these various measures will give assurance that the UKFS is being applied for the forest resource as a whole and, on the basis of a risk-based sample programme, will give assurance for individual woodlands.

Monitoring and forest certification

The processes of government regulation and independent forest and woodland certification will remain distinct. However, the forestry authorities will take account of certification in adopting a risk-based approach to monitoring. The UK Woodland Assurance Standard (UKWAS), which is used as the basis of independent certification in the UK, draws on the UKFS and is compatible with the UKFS Requirements. UKFS monitoring will therefore be done with a lighter touch where additional assurance is provided by independent certification. All the forests and woodlands managed by the Forestry Commission and the Forest Service are independently certified and this will similarly be taken into account in the monitoring regime.

Evidence of legality and sustainability

For the majority of timber production in the UK, certification can be used to provide evidence that timber and wood products are legal and sustainable. For forests and woodlands that are not certified, the UKFS may be used to provide a risk-based approach to demonstrating legal and sustainable forest management. All active forest management plans will be regularly assessed and renewed against the UKFS Requirements, but checks on the detailed implementation of plans will be undertaken on a sample basis. As with certification, evidence will also be needed that links products to the forest covered by the management plan (see Section 4 of the UKFS). Where a felling licence is issued but a forest management plan is not in place, the levels of assurance will be lower and extend to legality and the aspects of sustainability outlined under Felling licences (see above).
Further reading and useful sources of information

Detailed information and resources for the UK Forestry Standard and each of its supporting series of Guidelines can be found at:

www.forestry.gov.uk/ukfs
www.forestry.gov.uk/ukfs/biodiversity
www.forestry.gov.uk/ukfs/climatechange
www.forestry.gov.uk/ukfs/historicenvironment
www.forestry.gov.uk/ukfs/landscape
www.forestry.gov.uk/ukfs/people
www.forestry.gov.uk/ukfs/soil
www.forestry.gov.uk/ukfs/water

Forestry Commission and Forest Service publications

Forestry Commission publications can be viewed and downloaded from: www.forestry.gov.uk/publications

Forest Service publications can be viewed and downloaded from: www.dardni.gov.uk/forests/service/publications

Other publications


Forestry Commission and Forest Service websites

Landscape

For research information on the physical structure of landscapes and ecological function: www.forestry.gov.uk/fr/landscapeecology

For information and guidance on land regeneration and urban greening: www.forestry.gov.uk/fr/landregeneration

General

For information on forestry statistics, including forestry facts and figures: www.forestry.gov.uk/statistics

For information about the National Forest Inventory: www.forestry.gov.uk/inventory

For information about forest research: www.forestry.gov.uk/forestreresearch

For information on plant health and biosecurity issues: www.forestry.gov.uk/planthealth

For information and guidance on Environmental Impact Assessments: www.forestry.gov.uk/eia
www.dardni.gov.uk/forestservice/environment

For information and guidance on felling: www.forestry.gov.uk/felling
www.dardni.gov.uk/forestservice

For information and guidance on grant schemes: www.forestry.gov.uk/grants
www.dardni.gov.uk/forestservice

To view the public registers on grants and felling applications, and Environmental Impact Assessments: www.forestry.gov.uk/publicregister

Other useful websites

www.naturalengland.org.uk
Natural England
www.snh.gov.uk
Scottish Natural Heritage

www.ccw.gov.uk
Countryside Council for Wales

www.doeni.gov.uk
Department of the Environment Northern Ireland

www.naturalengland.org.uk/lcn
The Landscape Character Network is an informal network with a dual focus on Landscape Character Assessment and the European Landscape Convention (ELC).
Contact addresses

Forestry authorities

Forestry Commission (GB)
Silvan House
231 Corstorphine Road
Edinburgh EH12 7AT
T: 0131 334 0303
E: enquiries@forestry.gsi.gov.uk
www.forestry.gov.uk

Forestry Commission England
620 Bristol Business Park
Coldharbour Lane
Bristol BS16 1Ej
T: 0117 906 6000
E: fcengland@forestry.gsi.gov.uk
www.forestry.gov.uk/england

Forestry Commission Scotland
Silvan House
231 Corstorphine Road
Edinburgh EH12 7AT
T: 0131 334 0303
E: fcscotland@forestry.gsi.gov.uk
www.forestry.gov.uk/scotland

Forestry Commission Wales
Welsh Assembly Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth SY23 3UR
T: 0300 068 0300
E: fcwenquiries@forestry.gsi.gov.uk
www.forestry.gov.uk/wales

Forest Service
Department of Agriculture and Rural Development
Dundonald House
Upper Newtownards Road
Ballymiscaw
Belfast BT4 3SB
T: 02890 524480
E: customer.forestservice@dardni.gov.uk
www.dardni.gov.uk/forestservice

Landscape authorities

Natural England
1 East Parade
Sheffield S1 2ET
T: 0300 060 6000
E: enquiries@naturalengland.org.uk
www.naturalengland.org.uk

Scottish Natural Heritage
Great Glen House
Leachkin Road
Inverness IV3 8NW
T: 01463 725000
E: enquiries@snh.gov.uk
www.snh.gov.uk

Countryside Council for Wales
Maes-y-Ffynnon
Penrhosgarneud
Bangor LL57 2DW
T: 0845 1306229
E: enquiries@ccw.gov.uk
www.ccw.gov.uk

Department of the Environment Northern Ireland
Clarence Court
10–18 Adelaide Street
Belfast BT2 8GB
T: 028 9054 0540
E: enquiries@doeni.gov.uk
www.doeni.gov.uk

Forest Research

Forest Research is the agency of the Forestry Commission and the UK leader in forestry and tree-related research.

E: research.info@forestry.gsi.gov.uk
www.forestry.gov.uk/forestresearch
Appendix 1 – Legislation and conventions

Legislation

Landscape designations

The relevant statutory bodies in England, Scotland, Wales and Northern Ireland advise on landscape matters, develop policies, review legislation and are responsible for landscape protection. Details of the designations (summarised below), relevant legislation, and planning policy in relation to landscape can be found on their websites.

<table>
<thead>
<tr>
<th>Statutory advisor</th>
<th>England</th>
<th>Scotland</th>
<th>Wales</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural England</td>
<td></td>
<td>Scottish Natural Heritage</td>
<td>Countryside Council for Wales</td>
<td>Department of the Environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Principal landscape designation</th>
<th>England</th>
<th>Scotland</th>
<th>Wales</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Parks</td>
<td></td>
<td>National Parks</td>
<td>National Parks</td>
<td>National Parks are under consideration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific landscape designations</th>
<th>England</th>
<th>Scotland</th>
<th>Wales</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas of Outstanding Natural Beauty (AONBs) Heritage Coasts</td>
<td></td>
<td>National Scenic Areas</td>
<td>Areas of Outstanding Natural Beauty (AONBs) Heritage Coasts</td>
<td>Areas of Outstanding Natural Beauty (AONBs)</td>
</tr>
</tbody>
</table>

Natural England
www.naturalengland.org.uk

Scottish Natural Heritage
www.snh.gov.uk

Countryside Council for Wales
www.ccw.gov.uk

Department of the Environment Northern Ireland
www.doeni.gov.uk
Conventions

European Landscape Convention (ELC)

http://conventions.coe.int

The ELC is the first international convention to focus specifically on landscape, and is dedicated exclusively to the protection, management and planning of all landscapes in Europe. The ELC was signed and ratified by the UK Government in 2006, and became binding from 1 March 2007. The ELC definition of landscape is:

‘A zone or area as perceived by local people or visitors, whose visual features and character are the result of the action of natural and/or cultural (that is, human) factors.’

This definition reflects the idea that landscapes evolve through time, as a result of being acted upon by natural forces and human beings. It also underlines that a landscape forms a whole, whose natural and cultural components are taken together, not separately.

The Convention highlights the need to recognise landscape in law, and to develop landscape policies dedicated to the protection, management and creation of landscapes. It also establishes procedures for the participation of the general public and other interested parties in the creation and implementation of landscape policies.

In Article 6, specific measures include the identification and evaluation of landscapes, and setting landscape quality objectives. The relevance of Article 6 to individual forest plans is the need for carrying out and using Landscape Character Assessments and providing context to individual forest plans; these are co-ordinated through the relevant agencies and local authorities. These landscape assessments, and landscape strategies based on them, then form a core landscape information baseline to which those preparing forest plans should refer at an early stage (see Appendix 2).
Appendix 2 – Strategies and delivery mechanisms

Strategies

Landscape – general


Landscape – forestry related


Planning tools

Landscape Character Assessment

Landscape Character Assessment (LCA) is a tool for landscape planning and design that was developed in the 1970s. It defines landscape character as ‘a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse’. LCA was developed as a large-scale programme by the various UK agencies in the 1990s so that most of the UK is now covered by some type of assessment. Many of the assessments are available from the agency websites and it is straightforward to identify the relevant landscape character area for any woodland project.

The LCA helps to identify:
- the key characteristics of a landscape that make it special;
- the landscape characteristics to which new development or landscape change should particularly relate;
- what should be retained to avoid loss of the essential character of the landscape and ideally what might be enhanced;
- the drivers for change that exist within the landscape;
- the landscape’s vulnerabilities to different types of development, whether these can be accommodated, and if so the ways in which this is best achieved.

Information from the LCA can be used for two main types of study:
- Landscape sensitivity studies that highlight distinct areas of varying sensitivity to generic landscape change.
- Landscape capacity studies that identify what type of change is most appropriate for landscape character types in relation to landscape policies, for example the retention of a range of landscape character types over a particular region.
Some LCAs also include design guidance. This usually takes one or more of the ‘drivers for change’ identified above and develops guidance aimed at ensuring the changes complement rather than detract from the landscape character. In some LCAs, forestry has been identified as driver for change and design guidance produced.

LCA follows a recognised methodology, described in Landscape character assessment: guidance for England and Scotland. For more detailed information:

In England, the Countryside Character Programme is a project carried out by Natural England, with the aim of uniting the original Countryside Character mapping with the Natural Areas project of English Nature. More information can be found at www.naturalengland.org.uk. There is also the Landscape Character Network, which provides a forum for users of the system.

In Scotland, Scottish Natural Heritage undertook an assessment of the whole of Scotland in the 1990s. The assessment reports are available online and the digital data for the LCA boundaries are also available from the website. Details can be found at: www.snh.org.uk

In Wales, the Landmap Project is a digital information system compiled by local authorities to a common standard, which is maintained and facilitated by the Countryside Council for Wales. Landscape is the combination of five LANDMAP aspects, of which visual and sensory landscape is one. For more information go to Countryside Council for Wales Landmap pages at: http://landmap.ccw.gov.uk

In Northern Ireland, the Environment Agency, following a similar method to Scotland and England, undertook a programme for the province. For details and an interactive system for examining the LCAs go to Northern Ireland Landscape Character Areas on: www.ni-environment.gov.uk/land-home/landscape_home/country-landscape.htm

**Landscape and Visual Impact Assessment**

Landscape and Visual Impact Assessment (LVIA) has become a recognised method of assessing the sensitivity of a landscape to potential change. LVIA involves an assessment of landscape and visual sensitivities, evaluation of design options, and the impacts of the design proposal that represents the best overall solution. In forestry, an LVIA is particularly relevant where the visual impacts are going to be significant and the forestry authority has called for an Environmental Impact Assessment (EIA). The LVIA method is set out in Guidelines for landscape and visual impact assessment published by Taylor & Francis.

Typically, LVIA are produced for specific projects and include analysis of how people currently experience the area, and illustrate the impacts of potential changes, with ‘before and after’ views. These make use of visualisations from representative viewpoints and may combine them with montage or three-dimensional representations. For LVIA, a judgement is required regarding the magnitude of landscape and visual impacts, whether these are positive or negative and also the level of impact significance.
Appendix 3 – General Forestry Practice

General Forestry Practice Requirements

This section replicates the Requirements for General Forestry Practice set out in the UKFS (see Section 2 for more information). General Forestry Practice is covered by the UKFS itself and not by an individual Guidelines publication because the Requirements and supporting Guidelines describe aspects of management that apply to most forest and woodland situations and that are common to the other elements of sustainable forest management (SFM).

Key to symbols

Requirements

![Symbol for Legal requirement]

Legal requirement

![Symbol for Good forestry practice requirement]

Good forestry practice requirement

Element of SFM

Reference number

Element of SFM

Reference number

Cross-references

Cross-references may be made to the other elements of sustainable forest management, where the Requirement is common to more than one subject.

![Symbol for Cross-references]

Element of SFM

Level of requirement

Reference number

The UKFS Requirements outline the main legislation and are intended as a source of advice. You are advised to consult the relevant statutes for more information and the definitive legal text.
General compliance

All occupiers of land and parties engaged in commercial activities are subject to a range of laws and regulations. Some are of special relevance to land-based activities in general and others are more specific to forestry. Compliance with the law is fundamental to the UKFS, and the main legislation of most general relevance to forestry is outlined in this section. More specific legislation is outlined under the relevant elements of sustainable forest management and in the supporting series of Guidelines.

1. Forestry activities and businesses must comply with all relevant laws and regulations.
2. Operations must be authorised by the legal owner.
1. Reasonable measures should be taken to ensure no illegal or unauthorised activity takes place within the forest or woodland.
2. Forestry activities and businesses should comply with relevant codes of practice and industry guidelines.

Forest protection

The Forestry Act 1967 conveys wide powers to control felling and provide assistance to promote the interests of forestry, the development of afforestation, and the production and supply of timber in Great Britain. The Forestry Act was amended by the Wildlife and Countryside (Amendment) Act 1985 and, in Scotland, by the Nature Conservation (Scotland) Act 2004 to take account of wider environmental considerations and to incorporate the concept of ‘a reasonable balance’ between the interests of forestry and the environment. In Northern Ireland, the Forestry Act (Northern Ireland) 2010 conveys wide powers to promote afforestation and sustainable forestry, to protect the environment and to promote recreational use. There are also powers to regulate felling.

The Town and Country Planning Acts do not apply to forestry activities themselves, as they are not defined as ‘development’. The exception is where development, for example housing, is proposed on a woodland site, in which case the planning procedures apply. Local authorities (in Northern Ireland, the Planning Service of the Department of the Environment) can apply Tree Preservation Orders (TPOs) and designate Conservation Areas to protect trees that are important in the landscape. Owners are notified of these designations. Local authorities may apply planning conditions to protect existing trees or plant new ones as part of the development consent. They may also enter into ‘planning gain’ agreements for additional woodland creation or protection. In areas with landscape designations, forest roads and quarries that do not form part of an approved afforestation scheme may be subject to planning controls. Areas of woodland are material considerations in the planning process and may be protected in local authority Area Plans. These plans pay particular attention to woods listed on the Ancient Woodland Inventory and areas identified as Sites of Local Nature Conservation Importance (SLNCIs).
Where required, proposals for felling or thinning must be submitted to the appropriate forestry authority for approval. Following felling, restocking will normally be required.

Note that:

- Submission for approval can be done as an integral part of a grant application.
- There are a number of exceptions: trees under a specified size, trees proved to be dangerous, fruit trees and small-scale felling may not require a felling licence. Priority habitat restoration proposals may not require restocking.
- Forestry authority approval is not required if trees are included in development approval under the Town and Country Planning Acts or other planning legislation.
- EC Directive 97/11 provides *inter alia* that deforestation for the purposes of conversion to another type of land use may be subject to the Environmental Impact Assessment (Forestry) Regulations.
- In Northern Ireland, the Forestry Act (Northern Ireland) 2010 regulates the felling of trees growing on land of 0.2 hectares or more, through granting of felling licences which include felling management plans to control necessary replanting.

Before felling and pruning trees, a check must be made to ensure there are no Tree Preservation Orders or Conservation Area designations. Permission must be obtained from the relevant authority to fell or prune trees subject to Tree Preservation Orders or notification made where Conservation Areas have been applied.

The impacts of forestry on the environment must be taken into account in the submission of forestry proposals.

There is a presumption that forest land should not be converted into other land uses; guidance on the exceptional situations where woodland removal may be possible is available from country forestry authorities.

The capability of forests to produce a range of wood and non-wood forest products and services on a sustainable basis should be maintained.

Forests should be protected from the time of planting or restocking to ensure successful establishment and long-term viability.

Environmental impact

EC Directive 85/337/EEC is transposed into UK legislation by the various Environmental Impact Assessment (EIA) Regulations, which apply to afforestation – including short rotation coppice and Christmas trees, deforestation, and the construction of forest roads and quarries. The regulations require the forestry authority to determine whether a proposal may have a significant effect on the environment, and where this is the case the proposer is required to prepare an Environmental Statement.

Environmental Impact Assessment (EIA) Regulations must be complied with; where an EIA is required, all the relevant environmental impacts must be considered by the proposers and the requirements for public consultation must be met.
Plant health and biosecurity

The Plant Health Act 1967 identifies the Forestry Commission as the competent authority in Great Britain, as regards the protection of forest trees and timber, and empowers the Forestry Commissioners to make orders to prevent the introduction and spread of forestry pests and diseases. The Plant Health (Forestry) Order 2005 lays down a number of conditions and prohibitions to support these objectives. In Northern Ireland, under the Plant Health Act (Northern Ireland) 1967, the Department of Agriculture and Rural Development is the competent authority for these purposes, and the Plant Health (Northern Ireland) 2006 and the Plant Health (Wood and Bark) Order (Northern Ireland) 2006 supports these objectives.

Statutory orders made under the Plant Health Acts to prevent the introduction and spread of forest pests and diseases must be complied with; suspected pests and diseases must be reported to the forestry authority if they are notifiable, and access must be given to Plant Health Inspectors and their instructions followed.

Managers should be aware of the risks posed by pests and diseases, be vigilant in checking the condition of their forests and take responsible measures to combat threats to tree health.

Information should be reported to the forestry authority that might assist in preventing the introduction or spread of forest pests and diseases.

Suspected pests and diseases should be investigated, reported to the forestry authority and biosecurity control measures recommended by the forestry authority carried out.

Forest reproductive material

The Forest Reproductive Material (Great Britain) Regulations 2002 implement EU Directive 1999/105/EC in Great Britain and provide a framework for controlling plant materials used in forest establishment. A voluntary scheme is also in place to cover native species and other species commonly planted for forestry purposes. In Northern Ireland, the Forest Reproductive Material Regulations (Northern Ireland) 2002 are applied through the Forest Service, an executive agency within the Department of Agriculture and Rural Development. The Forest Service maintains a National Register of Basic Material for Northern Ireland.

For species covered by Forest Reproductive Material Regulations, only certified material can be used for forestry purposes.

Forest planning

Forest planning takes place at a number of levels. The highest level is the strategic plan, which defines the broad objectives of the owner and how these can be met across the forest estate, which sometimes comprises several forest areas. Beneath this are the three levels at which the UKFS Requirements should be addressed:
• Forest planning applies to a convenient management unit, called the forest management unit (FMU). These plans will vary with the scale of the forest and the size and nature of the holding – usually called the forest management plan.
• Operational planning is concerned with the operational detail of how proposals will be implemented at site level – usually called the operational plan or site plan.
• Contingency planning ensures that procedures are in place and can be enacted should unforeseen events occur, for example, forests fires, catastrophic wind damage and accidental spillages – usually called the contingency plan.

Forest management plan

The forest management plan is the reference document for the monitoring and assessment of forest holdings and forest practice. It is also used for communicating proposals and engaging with interested parties. The plan itself should be proportionate to the scale, sensitivity and complexity of the forest management unit (FMU).

19 Forest management plans should state the objectives of management, and set out how the appropriate balance between economic, environmental and social objectives will be achieved.

20 Forest management plans should address the forest context and the forest potential, and demonstrate how the relevant interests and issues have been considered and addressed.

11 In designated areas, for example national parks, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.

12 At the time of felling and restocking, the design of existing forests should be re-assessed and any necessary changes made so that they meet UKFS Requirements.

13 Consultation on forest management plans and proposals should be carried out according to forestry authority procedures and, where required, the Environmental Impact Assessment Regulations.

14 Forests should be designed to achieve a diverse structure of habitat, and species and ages of trees, appropriate to the scale and context.

15 Forests characterised by a lack of diversity due to extensive areas of even-aged trees should be progressively restructured to achieve a range of age classes.

16 Management of the forest should conform to the plan, and the plan should be updated to ensure it is current and relevant.

17 New forests and woodlands should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape.
Operational and contingency plans

Operational plans can make forest practice more efficient and ensure that important site features are known about and protected in advance. Contingency plans address potential threats to the forest environment and accidental events, such as spillages, and help prevent or remedy environmental damage.

Operational plans should be in place before major operations such as harvesting and engineering works take place.

Where appropriate, contingency plans should be in place for dealing with actual and potential threats to the forest and environment.
General Forestry Practice Guidelines

This section replicates the Guidelines for General Forestry Practice set out in the UKFS (see Section 2 for more information). General Forestry Practice is covered by the UKFS itself and not by an individual Guidelines publication because the Requirements and supporting Guidelines describe aspects of management that apply to most forest and woodland situations and that are common to the other elements of sustainable forest management (SFM).

Key to symbols

Guidelines

Cross-references

Cross-references may be made to the other elements of sustainable forest management, where the Guideline is common to more than one subject.

Element of SFM  Reference number

General Forestry Practice
Forests and Biodiversity
Forests and Climate Change
Forests and Historic Environment
Forests and Landscape
Forests and People
Forests and Soil
Forests and Water
The table below introduces factors important for general forestry practice. The Guidelines that follow provide more information on how to comply with the UKFS Requirements, grouped by the factor headings.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Importance for general forestry practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest planning process</td>
<td></td>
</tr>
<tr>
<td>Forest management plans</td>
<td>Forest management plans allow a manager to demonstrate that all relevant aspects of sustainable forest management have been considered. They provide a basis for monitoring and assessment.</td>
</tr>
<tr>
<td>Operational plans</td>
<td>Operational plans help to ensure safe and efficient working practices on a site and the protection of the forest environment.</td>
</tr>
<tr>
<td>Contingency plans</td>
<td>Contingency plans set out what happens in the event of accidents, unexpected or unplanned events so damage to the forest environment can be minimised.</td>
</tr>
<tr>
<td>Forest planning considerations</td>
<td></td>
</tr>
<tr>
<td>Forest productivity</td>
<td>The UK is committed to maintaining or increasing its forest area, and to enhancing the environmental, economic and social values of forest resources.</td>
</tr>
<tr>
<td>Forest structure</td>
<td>Diverse forests provide a range of benefits and are more resilient to changing environmental conditions.</td>
</tr>
<tr>
<td>Silviculture</td>
<td>A range of silvicultural systems are available to meet management objectives and add to structural diversity.</td>
</tr>
<tr>
<td>Felling and restocking</td>
<td>Opportunities are presented at felling and restocking to restructure age classes and to redesign forests to meet UKFS Requirements.</td>
</tr>
<tr>
<td>Mammal damage</td>
<td>Wild mammals and domestic livestock can cause damage to forests and woodlands, particularly at the establishment stage. Some such as deer require co-operative action for effective control.</td>
</tr>
<tr>
<td>Pests and diseases</td>
<td>Forests and woodlands in the UK are experiencing unprecedented levels of threats from a range of pests and diseases; climate change is expected to exacerbate levels of damage.</td>
</tr>
<tr>
<td>Use of chemicals</td>
<td>Chemical pesticides and fertilisers can be an important management tool in some situations but they can cause damage to the environment if used inappropriately.</td>
</tr>
<tr>
<td>Fencing</td>
<td>Fencing can have major impacts on wildlife, landscape, archaeology and access.</td>
</tr>
<tr>
<td>Forest roads and quarries</td>
<td>Forest roads, quarries and associated works can be highly visible in the landscape and are subject to Environmental Impact Assessment.</td>
</tr>
<tr>
<td>Harvesting operations</td>
<td>Harvesting operations are resource intensive and can also have a significant environmental impact both on the forest and surroundings.</td>
</tr>
</tbody>
</table>
Forest planning process

Forest management plans

At its most simple, the details required for a forest or woodland grant or felling application can provide the basis for the forest management plan. This basic plan will be appropriate for the majority of low-key and small-scale proposals, and provides an approach that is proportionate to the risks of the operations involved.

For extensive or sensitive areas, a more comprehensive approach is required. Additional information will need to be collected to ensure that all the relevant issues have been addressed. The most significant proposals may come under the Environmental Impact Assessment (EIA) Regulations, and will require comprehensive analysis.

A thorough forest planning overview is helpful to both the regulatory authorities and landowners and managers; it has the advantage of allowing UKFS Requirements and Guidelines to be considered over a larger area and a longer, more appropriate, timescale. The forest management plan provides assurances of intent and therefore individual operations within it can be approved with a lighter touch.

Some UKFS Requirements and Guidelines are expressed as maximum or minimum proportions of the forest. In these cases the area in question is the forest management unit (FMU). The FMU is the area subject to a forest management plan or proposal. This area is selected by the owner and/or manager and will be determined by the nature of the forest, the proposed operations and management objectives. Extensive FMUs have the advantage of allowing a strategic approach to be taken in achieving UKFS Requirements, both in terms of the area covered and over time.

The process of producing a forest management plan can be organised into seven distinct stages (Table A3.1).
Table A3.1  The process of producing a forest management plan.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Objective</th>
<th>Activities and/or sources of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scoping</td>
<td>Development of management objectives</td>
<td>Owner’s objectives, the potential of the site, UKFS Requirements and Guidelines, forestry strategies, policies and plans at country, regional and local level, forestry frameworks.</td>
</tr>
<tr>
<td></td>
<td>Analysis of interests or ‘stakeholder analysis’</td>
<td>Consideration of all potential interests, including those of specialist interest groups and the local community.</td>
</tr>
<tr>
<td>Survey</td>
<td>Collection of information</td>
<td>A comprehensive exercise to collect and map all the information about the site and its location, including any statutory constraints. Meetings held at this early stage with stakeholders and those with specialist knowledge will help identify all the factors involved and alert interested parties to the proposal.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Assessment of survey information</td>
<td>The survey information is evaluated in the light of project objectives, allowing the potential of the site to be assessed.</td>
</tr>
<tr>
<td>Synthesis</td>
<td>Development of a design concept</td>
<td>The broad concept for the forest design is formulated from the information that has been collected and analysed, including the visual aspects.</td>
</tr>
<tr>
<td></td>
<td>Development of a draft management plan</td>
<td>The design concept is refined and developed into a draft management plan. The draft forms the basis of consultation with interested parties. Several drafts may be required in an iterative process.</td>
</tr>
<tr>
<td></td>
<td>Finalisation of the plan and submission for approval</td>
<td>The draft is amended, refined and firmed up into a final forest management plan.</td>
</tr>
<tr>
<td>Implementation</td>
<td>Development and implementation of work programmes</td>
<td>Operational plans are developed from the forest management plan and work programmes are implemented.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Evaluation of progress</td>
<td>Indicators of progress are checked at regular intervals. Data are collected and recorded to evaluate management.</td>
</tr>
<tr>
<td>Review</td>
<td>Periodic updates of the forest management plan</td>
<td>Work done on the plan is recorded, and at regular intervals the plan is updated to keep it current. Periodically (usually at five-year intervals) the plan is thoroughly reviewed and updated.</td>
</tr>
</tbody>
</table>

Produce a clear forest management plan to demonstrate that all relevant aspects of sustainable forest management have been considered and to provide a basis for implementation and monitoring. The plan should:

- state the objectives of management, and how sustainable forest management is to be achieved;
- provide a means to communicate forest proposals and engage interested parties;
- serve as an agreed statement of intent against which implementation can be checked and monitored.
Operational plans

Operational or site planning helps ensure safe and efficient working practice on site and the protection of the forest environment. The starting point is a thorough assessment that identifies important features to be protected and options as to how the work could be undertaken. From this a detailed operational plan can be developed which sets out the working arrangements for the site, protected areas and other site constraints. It is particularly important that the operational plan is communicated and understood by all those involved.

Produce a clear operational plan that is understood by all those working on the site. For major operations, the plan should address:

- potential hazards to workers;
- potential hazards to forest users – by making them aware of operations and putting diversions in place;
- machine access, refuelling and timber stacking;
- how to safeguard sensitive or easily damaged parts of the site;
- how to ensure only the intended trees and shrubs are felled;
- how the site will be left on completion, including the disposal of waste materials;
- how to modify operations in case of bad weather.

Contingency plans

Contingency plans cover what happens in the event of an unexpected or unplanned event. For site operations this may include accidents and dealing with spillages or other problems that could pose a serious risk to water supplies and aquatic ecosystems. The Environmental Liability Directive (2004/35/EC) seeks to achieve the prevention and remedying of environmental damage and reinforces the ‘polluter pays’ principle, making operators financially liable for damage. Contingency plans can also be used to address other threats to the forest, for example fire, extreme weather events such as gales, or outbreaks of pests and diseases.

Have appropriate contingency plans in place to deal with risks to the forest, including spillages, pest and disease outbreaks, extreme weather events and fire.

Forest planning considerations

This section sets out the key forest management issues that should be considered when producing a forest management plan.

Forest productivity

The maintenance of the productive potential of forests includes both timber production, which serves the development of forest industries and economic well-being, and wider non-market benefits and values such as recreation, and other ecosystem services. The essential consideration for the landowner or manager is to ensure that the forest thrives and is not degraded. This includes protecting young trees to make sure they become
successfully established, and protecting the health of forests and woodlands, for example, by ensuring they have the necessary resilience to cope with emerging threats and changing conditions – in particular climate change. It also involves maintaining levels of fertility and site potential for future rotations.

4 Retain or expand the forest area and consider compensatory planting where forest area is lost through land-use change.

5 Ensure new woodland and replanting becomes established, and young trees are not overcome by competing vegetation.

6 Plan for forest resilience using a variety of ages, species and stand structure; consider the risks to the forest from wind, fire, and pest and disease outbreaks.

7 Ensure the removal of forest products from the site, including non-timber products, does not deplete site fertility or soil carbon over the long term and maintains the site potential.

Forest structure

Ensuring a forest has a varied structure in terms of age, species, origin or provenance and open space will provide a range of benefits. It will endow forests with the resilience necessary to cope with emerging threats and changing climatic conditions, and will provide for flexibility in management options, for example by allowing for modifications to forest practice (see the UKFS Guidelines on Forests and Climate Change and also Forests and Biodiversity for more information).

Structural diversity can be increased by incorporating open areas and through phased felling and restocking to ensure that, over time, a varied woodland develops. As part of this, some trees can be left as long-term forest cover to produce standing and fallen deadwood. For woods of less than 10 hectares, internal diversity is less important – in these situations diversity can be considered in the context of the landscape setting. There are also some woodlands that derive their particular landscape character or biodiversity value from a principal species and in these situations a case for divergence from the guidelines can be made.

Open space is a key element of diversity within woodland. It can be used to develop permanent internal edges, structural diversity, and flexibility for operational management. Wildlife habitat can be enhanced by developing non-woodland elements, such as streams, ponds, roads, utility wayleaves and rides. Open space is also important for the provision and development of access and recreation.

8 Diversify forest composition so that no more than 75% of the forest management unit is allocated to a single species and a minimum of the following are incorporated:

- 10% open space;
- 10% of other species or ground managed for environmental objectives;
- 5% native broadleaved trees or shrubs.
Note: (i) Where more than one species is suited to the site and matches the management objectives, opportunities must be taken to further diversify the above species composition: this is important in the context of climate change. (ii) In woodlands of less than 10 hectares and in native woods the above proportions may be relaxed providing the adjacent land uses provide landscape and habitat diversity.

Develop a long-term forest structure of linked permanent habitats, such as riparian woodland, open space, and broadleaves.

Leave a proportion of standing and fallen deadwood: concentrate it in areas of high ecological value, where there is existing deadwood and where linkages can be provided between deadwood habitats – avoid uniform distribution across the forest management unit.

Retain and manage existing veteran trees and select and manage suitable individuals to eventually take their place.

Manage a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective.

Silviculture

A range of silvicultural systems are available to provide flexibility in meeting management objectives and to add to the structural diversity of the forest. Silvicultural systems with a lower environmental impact than clearfelling are recommended in semi-natural woodland. In the context of climate change, varied silviculture will increase the resilience of forests and may limit the damage caused by extreme events such as gales or pest outbreaks.

Consider alternatives to clearfelling systems, such as continuous cover forestry, where suitable sites and species combinations allow and management objectives are compatible.

Maintain a range of stand structures and silvicultural approaches across the forest as a whole, including veteran trees, open-crowned trees, open space, and areas of natural regeneration.

Felling and restocking

Many forests, particularly those established in the 20th century, were planted or felled and replanted over a short timescale and have little diversity. Other older woods may have been neglected, leading to the development of a uniform structure. In both cases, felling and restocking presents the opportunity to restructure age classes and improve diversity. In even-aged woodlands, this may involve bringing forward felling in some areas and delaying felling and restocking in others. Following initial restructuring, further age class diversity can be introduced in subsequent rotations, especially where the nature of the forest site limited the initial scope.

Rotational felling also presents a major opportunity to reassess the forest through the forest planning process. Future felling coupes can be identified within a long-term forest structure.
defined by open ground, watercourses and semi-natural habitats. The various elements of sustainable forest management, detailed in the UKFS Guidelines, can be addressed and changes made where necessary to bring the forest up to current standards. These may include aspects such as the redesign of buffer areas and drainage systems, extending habitats for biodiversity and addressing forest landscape design.

15. In forests characterised by a lack of diversity due to extensive areas of even-aged trees, retain stands adjoining felled areas until the restocking of the first coupe has reached a minimum height of 2 m; for planning purposes this is likely to be between 5 and 15 years depending on establishment success and growth rates.

16. In upland forests, identify future felling boundaries as part of the long-term forest structure; manage compartment edges to increase stability and make use of permanent features such as watercourses and open space.

17. Take the opportunity provided by felling and restocking to redesign forests to meet UKFS Requirements and address issues such as buffer areas, drainage systems, biodiversity habitats and forest landscape design.

18. In semi-natural woodland, limit felling to 10% of the area in any five-year period unless there are overriding biodiversity or social advantages.

Mammal damage

Forests and woodlands may be subject to damage or degradation due to grazing or browsing mammals, particularly when trees are at the establishment stage. The manager’s role is to monitor damage and decide whether intervention is necessary.

In areas where deer pose a threat to the forest and wider environment, deer management plans – often incorporating culling – allow a strategic approach to be taken. Keeping records of both deer culled and levels of damage will help inform plans so they can be refined to give more effective levels of control. Participation and consultation with local deer management groups (where they exist) will help to achieve effective deer management on the appropriate landscape scale. In Scotland, Scottish Natural Heritage advises on the sustainable management of wild deer (formerly performed by the Deer Commission), while the Deer Initiative performs similar functions in England and Wales.

Responsibility for wild deer in Northern Ireland lies with the Northern Ireland Environment Agency of the Department of the Environment for Northern Ireland.

19. Monitor forest damage, and intervene to protect vulnerable trees from browsing and grazing mammals, including voles, deer, rabbits, hares, grey squirrels and livestock.

20. In areas where deer are a threat, develop deer management plans – ideally in co-operation with local deer management groups.
Pests and diseases

There has been a significant increase in the incidence of pest and disease outbreaks in forests and woodlands in recent years. Climate change is likely to exacerbate these threats in the future. It is vital that all those involved in forest management take a proactive role in monitoring damage, keeping abreast of emerging threats and deciding when intervention is necessary.

Consider the susceptibility of forests and woodlands to pests and diseases; take specialist advice and develop strategies for protection.

Be vigilant for pests and diseases in forests and woodlands, particularly in urban areas where the risks of new problems are high.

Use of chemicals

The use of artificial pesticides and fertilisers is generally a last resort in practising sustainable forestry, although they can have more of a role in energy crops, such as short rotation coppice. Pesticides and fertilisers are expensive, and only deployed in a reactive way to protect trees when a problem has been identified or is highly likely. Their use on special sites such as ancient woodland is particularly discouraged.

Minimise the use of pesticides and fertilisers in accordance with Forestry Commission and Forest Service guidance.

Fencing

The alignment and design of forest fences can have major impacts on wildlife, access, landscape and archaeology. Fence lines themselves are not usually prominent but they can generate striking textural changes in the landscape through differences in grazing or land use.

A particular problem of fences in upland areas is that they can be invisible to birds such as black grouse. Techniques to mark fences to improve their visibility and to align them so that they avoid obvious flight paths will help minimise collisions. Fencing also needs to be considered in relation to public access: it is illegal to obstruct rights of way and in other areas access can be an important consideration in fence alignment. When fences are replaced or become redundant, removal is a better option than leaving them as they can be a nuisance to livestock, wildlife and people.

Consider the impacts of fencing on biodiversity, landscape, archaeology and access, and minimise adverse effects.

Consider removing old and redundant fencing rather than leaving it in place.

Forest roads and quarries

Forest roads, quarries and associated infrastructure works can be highly visible in the landscape and therefore come within the scope of the Environmental Impact Assessment.
(EIA) Regulations. In areas with landscape designations, roads and quarries that do not form part of an approved afforestation scheme may be subject to planning controls. Considering important viewpoints, and allowing road alignments to respond to the landform – rather than taking the most direct route – can both ameliorate visual impacts and sometimes reduce the amount of cut-and-fill during construction. The construction of forest roads and the extraction of material accounts for a high proportion of the total energy expended in the forest life cycle, and so has a bearing on the sustainability of the timber grown (see the UKFS Guidelines on Forests and Climate Change).

Forest roads and access onto them can disrupt forest drainage systems and cause water and soil problems. It is important that road drainage is designed and functions independently from the main forest drainage network. Where minor public roads and bridges are weak, consideration can be given to how the forest road network can be designed or upgraded, to avoid using public roads for timber transport. In many areas, there are timber transport groups that involve local authorities and advise the forestry industry on preferred routes and the options for using rail or sea alternatives to road transport.

26 Minimise the adverse visual impacts of forest roads and quarries; blend road alignments with landform, and locate quarries, roads and bridges to respect landscape character, especially in designated landscapes.

27 Design road surfaces, drainage and harvesting machine access points to avoid erosion and other adverse impacts on soils, watercourses and water quality.

28 Plan forest operations, civil engineering and timber transport to minimise energy use; consider using sustainable biofuels.  

29 Consider how forest road networks can be exploited to minimise damage to public roads, and take advice from timber transport groups.

Harvesting operations

Harvesting and extraction operations are resource intensive and can have a significant environmental impact on both the forest and its surroundings. With careful operational planning it is possible to combine good silviculture and cost-efficiency with care for people and the environment. Soil compaction, leading to rutting and erosion, can be minimised by the planning and good management of forest operations, such as protecting extraction routes by using layers of fresh brash to spread the machine load. Machine choice and working method affect the ground pressure and the risk of damage. The potential of damage to soils and the water environment is usually greatest in wet weather and consideration needs to be given to how changes in weather will affect operations.

Burning of forest residues such as brash is generally discouraged and is not acceptable on ancient woodland sites. Other management options are less environmentally damaging, but if burning is the only practical alternative, a written application to the environment agencies will be required under the Waste Management Regulations (as amended). The maximum allowed is 10 tonnes in any 24-hour period. The environmental risks, safety and
potential nuisance of burning should all be taken into account as part of the application. Where felling might have an impact on road users, either from trees coming down or from vehicles emerging onto the highway, safety will need to be considered and liaison with the highway authority is advisable.

30 Minimise compaction, rutting and erosion during forest operations by selecting the most appropriate working method for site conditions; monitor operations and modify, postpone or stop procedures if degradation starts to occur.

31 Maintain adequate brash mats throughout extraction operations.

32 On sites vulnerable to compaction and erosion, consider the weather and aim to carry out operations during dry periods; plan ahead for changes in the weather that could affect site conditions.

33 Keep streams and buffer areas clear of brash as far as practicable; avoid felling trees into watercourses and remove them or any other accidental blockages that may occur.

34 Install culverts or log bridges to avoid crossing and blocking drains; restore the site and drains as extraction progresses.

35 Avoid burning brash and harvesting residues unless it can be demonstrated that it is a management necessity, all the impacts have been considered, and the necessary approvals obtained.

36 Liaise with the highway authority when felling near public highways or when lorries emerging onto the highway might pose a threat to road users.
Appendix 4 – Applying forest design principles to UK forest landscapes

This appendix sets out examples of the application of forest design principles to some typical UK forest and woodland landscapes. Where a Landscape Character Analysis (LCA) has been undertaken, there may be additional local guidance on forest design associated with the defined landscape types. The process of forest design planning, as part of the overall process of producing a forest management plan, follows an established sequence of stages outlined in the UKFS (see Guidelines on General Forestry Practice – Appendix 3) and supporting publications.

Urban and community woodlands

Woodlands in the UK are increasingly playing a major role in making urban areas attractive places to live and work, and contributing to the restoration of post-industrial landscapes. Urban and community woodlands are designed and managed to provide opportunities for a wide range of recreational and educational activities that will contribute towards the health and well-being of local communities. While the balance of management objectives in urban areas is weighted towards the social and environmental, careful management will ensure that economic benefits from timber and other woodland products can also be realised.

Woodlands in urban environments should be designed to engender feelings of naturalness, and provide a contrast to the regularity of the built environment. Woodlands in towns can also be used to enhance transport networks, particularly paths and cycle ways. Taking account of public opinion and developing a sense of local ownership through community participation is especially valuable for both urban woodlands and those used intensively for recreation. The development and maintenance of a good balance of amenity features requires careful management to ensure social benefits are delivered for all sectors of a community.

Woodland users in urban areas are likely to include a higher number of people with restricted mobility, such as the elderly, people with disabilities, and people with babies and young children. Special attention should therefore be paid to access points and the gradients and

Figure A4.1 shows some of the key landscape aspects to take into account when designing urban and community woodlands.

Woodland designed to create an informal and naturalistic feel, including a sequence of open spaces to promote habitat diversity.

Diversity of tree species providing visual interest and enclosure, with strategic screening of the urban areas.

To help people orientate themselves into, through and out of the wood, views are maintained of local buildings and features in strategic locations.

The local community is involved in the planning and design of the woodland, and encouraged to participate in its establishment and maintenance, carrying out activities such as tree planting.

Opportunities are provided for informal recreation for the local community.

Material for furniture and surfaces are appropriate for the informal setting and woodland experience, such as compacted gravel for paths and stout timber for benches.
surfacing of paths. Consideration should also be given to personal security, where woodland is used for recreation. Many people are concerned about getting lost and some may be especially concerned with personal safety. Good signage, areas of open space and well-thinned stands of trees should be provided in some areas so that people feel secure and confident that they know where they are and who is in their immediate vicinity. In certain strategic locations, lighting and metalled paths might also be needed. In other areas, the experience of remoteness and adventure can be provided with a minimum of control in the environment.

Involving the local community in the planning, design and management of urban and community woodlands will generate interest, develop a shared sense of ownership, and ensure that the woodland is meeting local needs. Consideration should be given at the outset to how areas will be maintained, and flexible options for changing use and management should be developed. The design philosophy for urban and community woodlands should be to bring the countryside into the town, and so, wherever possible, informal materials – such as gravel and timber – should be used instead of tarmac and concrete.

Mixed agricultural and estate landscapes

Much of the landscape of the UK is characterised by a range of woodlands of different sizes and character in an essentially agricultural scene. Some will be ancient broadleaved woodlands, others will be of more recent origin – perhaps planted as shelterbelts or game coverts. Woodlands in mixed agricultural and estate landscapes are important for their contribution towards both visual diversity and biodiversity, and have a wide range of uses and benefits.

The parkland landscapes (or policy landscapes in Scotland) that surround many large country houses in the UK form part of the wider estate landscape. Parklands often have elements of woodland and other distinctive wooded features, such as clumps or avenues of trees. These woodland features are often carefully composed and designed and are recognised as ‘designed landscapes’. Such woodland compositions need to be managed with a great deal of care to maintain and restore their qualities. The spirit of place of these parkland areas may be determined by the character and quality of the designed landscape, its historical associations and related features.

Figure A4.2 Some of the key landscape aspects to take into account when working in mixed agricultural and estate landscapes.
Outside parkland landscapes, other woodlands – some ancient, some more recent – are integral elements of the enclosure pattern of a wider agricultural landscape. The main influence for the design of new woodlands in these landscapes will be the enclosure pattern, if this, rather than landform, is the dominant feature. Where the enclosure pattern is less distinct, the landform may be the key influence to guide new woodland design. Visual diversity within the woods is less important than the way the woodlands themselves contribute to landscape diversity. Unity comes into play in how well woodlands are integrated with the whole. In this respect interlock provides a useful way to ‘key’ woodlands into the enclosure pattern, for example by extending species found in features such as hedgerows into woodland edges.

Shelterbelts and game coverts can sometimes conflict with forest design principles, in terms of both their shape and scale. Small, geometric shelterbelts high on hills can look artificial and too small for the scale of their location, making them appear unconnected to the rest of the landscape. Nearness and coalescence can be used to increase the apparent scale, and visually link them to other features. In some landscapes, distinctive shelterbelts have become part of the recognised landscape character; in these cases working with the character to sustain and extend such features can sometimes override other landscape factors.

**Forests in flat or undulating landscapes**

The UK has a range of forests and woodlands in essentially flat or slightly undulating landscapes. These include ancient broadleaved woodlands, heathland forests, wood pasture, and pine forests planted on sand dunes. Forest management is likely to embrace a range of silvicultural systems, from clearfelling to the variety of systems that deliver some degree of continuous cover. The landform in these areas generally has a minor influence on the design of these woodlands, except where the dunes and slacks of coastal forests can be used to shape the internal pattern. Most of these forests are appreciated from within – for example along roads and paths. When seen from outside, the views are usually just of the trees and shrubs along the forest edge.

Unity with the surrounding landscape is developed by integrating the forest with other landscape elements at the edges, such as broadleaved trees and hedgerows, and the...
use of open space running into and through the forest from outside – which can also promote habitat linkages. The plan shapes of tree stands and coupes cannot usually be seen in flat terrain (except from the air or adjacent hills), and so are visually less important than the design of internal and external edges. Diversity is achieved by establishing different ages and species of trees, as well as open spaces and other features. Where a forest is well used for recreation, such planned diversity is a key factor for creating memorable features that help visitors orientate themselves in what may otherwise be a flat and featureless landscape.

Forests on rolling hills

Rolling hills and drumlins in landscapes of an intermediate scale often feature a variety of mixed woodlands. The woodland in this type of landscape is likely to be interspersed with enclosed farmland, or straddle the transition from lower enclosed land to higher open land. Areas of brown earth soils allow a wider range of tree species to be planted, both coniferous and broadleaved.

Forest margins should be designed to tie in with the field pattern, incorporating similar broadleaved tree species into the edges of the forest or woodland where hedgerows abut. Where such woodlands ascend up to more open terrain, the upper areas of the forest should be designed using landform as the key design influence.

Forests often extend over the skyline in rolling landscapes, so discordant visual effects – such as felling coupes that bisect hills or leave thin horizontal rows on the skyline – should be avoided. If crossing a skyline is unavoidable, taking a line across a low point is usually the best visual option. Typical methods of fitting forests into these landscapes include the design of medium-scale interlocking coupes, stands of different species, and lower margins with small, diverse elements of broadleaves and shrubs.

Larger landholdings, for example traditional estates, may afford the opportunity to develop a unified landscape that combines the functional and the aesthetic. Where the ownership of extensive woodland is divided, co-operation between adjacent owners in the forest design process can help ensure any negative landscape impacts are avoided. Occasionally, there may be important designed elements and historic aspects that override other design factors.
Forests in upland hill and plateau landscapes

Forests in upland hill and plateau landscapes tend to be large-scale and composed mainly of coniferous species. They are often found in the north and west of the UK, where soil and climate limit species choice. Smaller-scale coniferous forests have also been established, for example those found in the hills of Antrim, east and southwest Fermanagh, and west Tyrone in Northern Ireland. The largest and most extensive forest areas, such as Kielder and Eskdalemuir, have created new landscapes with their own character.

The landform of these areas tends to be simple, with rolling hills or valleys between extensive areas of plateau. This simplicity should be reflected in the forest design, with flowing organic shapes that avoid geometric shapes and fragmentation of the landscape. The landform should be the main design influence, combined with an appreciation of the large scale of the landscape. This should result in a relatively simple design of bold lines, interlocking shapes and some smaller-scale elements – where these link with specific local characteristics, in the valleys. The upper margins of the forest should have sweeping interlocking shapes with the surrounding landscape. At the lower margins, broadleaves can be used at a relatively small scale to link with hedges, should there be the opportunity to integrate the forest into a farmland landscape.

Although soils and climate confine the range of tree species that can be introduced, open space can be used creatively to interlock the forest into the surrounding landscape. On the lower slopes, and in valleys and riparian areas, there may be some shelter and better soils. In these locations, broadleaves and shrubs can be used to introduce diversity, together with a wider range of conifer stands. Landform features, particularly watercourses, should also be used to develop a sustainable forest structure of wind-firm edges. Simple large-scale elements on plateau areas should give way to medium-scale on the valley sides, and small-scale in the valley bottoms.

Many of these forests were first planted over a relatively short period of time, and established in geometric patterns. Felling and replanting using more organically shaped coupes that appear directly linked to the landform should be the aim, although in some situations site limitations will mean this may take more than one rotation. Where this is the case, using the forest design principles to establish long-term wind-firm boundaries of the next rotation will move landscape patterns away from the previous rigid geometry. Introducing age class diversity by allowing replanted trees on felled areas to establish before felling

Figure A4.5 Examples of the main features in upland hill and plateau landscapes.
adjacent coupes will provide elements of diversity in texture and colour. Establishing and maintaining graded margins can also contribute towards the integration of such forests into the surrounding open landscape.

Forests in mountainous landscapes

Forests and woodlands in mountainous landscapes are characterised by steep slopes in dramatic terrain. They are often in the most scenic areas of the UK, with high landscape and visual sensitivity and local distinctiveness. The forest frequently lies in a band along the mid-slopes of a valley or mountainside, with agricultural land below and open mountain above, sometimes with side margins that are prominent against hill land. Transport routes usually follow the valleys and thus it is from this perspective the forests are mainly seen, prominent against the backdrop of the hills. Depending on the geology, the landform may range from extremely rugged with rock outcrops, to quite smooth and featureless. The importance of the landscape context requires a high standard of forest design.

The key design principles to be taken into account are the shape and scale of the entire forest within the wider landscape, the level of diversity, and how unity is achieved with the forest and its surroundings. This means that the forest design should start with the external margins – ensuring that shapes respond to the major landforms. From there the internal shapes can be developed, working on species compartments, coupes and open spaces. These will need to interlock and reflect the scale and nature of the landforms, for example by using irregular shapes and margins in rocky landscapes.

Prior to woodland establishment, these landscapes are often quite diverse in land cover, with distinctive vegetation and hydrology patterns. These patterns can be used to guide the design of shapes and the overall degree of diversity appropriate for the area. Diversity can be expressed with changes in species, such as the use of larch and broadleaves to diversify other conifers, as well as with the textural changes of different age classes of trees. The forest should achieve interlock both with the surrounding land and internally with the forest shapes. The use of the ‘rule of thirds’ from key viewpoints can help determine the scale of open ground above an upper margin and also the broad species patterns and felling proportions.

A strong sense of wildness will be the key characteristic to which a forest should relate within some of the remotest parts of the UK. In these locations, forests should be designed to appear as natural as possible, for example

**Figure A4.6** Examples of design issues to take into account when working with forests in mountainous landscapes.
extending to obvious physical boundaries, using native species distributed in direct relation to the underlying ground conditions and avoiding the use of prominent built elements such as access tracks.

Forests in mountainous areas account for a large proportion of the most visible forests in the UK. Their restructuring and redesign provide major opportunities for improvement to forest landscapes. These forests have, in several places, contributed to the creation of a distinct character type which is increasingly valued for its contribution to the local landscape. Examples include Strathyre and the Trossachs in Scotland, Coed y Brenin and Gwydyr in Wales, and the Mourne Mountains in County Down, Northern Ireland.
Glossary

Aesthetic  Relating to the appreciation of art and beauty.
Afforestation  The process of establishing a new forest on land that was not previously forest or land which has not been forest in the recent past.
Ancient hunting forest  Usually Crown or Ducal land where the feudal owner held rights over game. The term ‘forest’ includes areas of open land.
Ancient semi-natural woodland (ASNW)  Ancient woodland composed of mainly locally native trees and shrubs that derive from natural seedfall or coppice rather than from planting.
Ancient woodland  Woodland which has been in continuous existence since before AD 1600 in England, Wales and Northern Ireland, and before AD 1750 in Scotland. The term ancient woodland site refers to the site of an ancient woodland irrespective of its current tree cover. Where the native tree cover has been felled and replaced by planting of tree species not native to the site it is referred to as a plantation on ancient woodland site (PAWS).
Arboriculture  The management of individual trees, but sometimes used to include the management of trees and woodlands in urban situations.
Area of Special Scientific Interest (ASSI)  An area or site designated in part IV of The Environment (Northern Ireland) Order 2002 as having special scientific interest.
Balance (visual)  A state when the dynamic influences of the parts of a design or composition appear to be in visual harmony and equilibrium.
Biodiversity  The variety of plant and animal life (species), including genetic variation within species.
Biosecurity  A set of measures designed to prevent the spread of harmful organisms or diseases.
Brownfield (sites)  Land or sites that have been used in the past for industrial activity or development; sometimes abandoned, under used or contaminated by past activities. When work is required to restore them to useful purposes they are also known as derelict land.
Certification scheme  A voluntary scheme that establishes a forest management standard together with an auditing system to verify compliance. Forestry certification schemes are owned by international non-governmental organisations and exist to promote good forest practice. They offer product labels to demonstrate that wood or wood products emanate from well-managed forests.
Characteristic  An element or feature that is repeated or distributed in a design or landscape which is distinctive in itself or contributes to the landscape character.
Charcoal hearth/platform  An area of flattened or compacted ground used for charcoal burning.
Clearfelling  Cutting down of an area of woodland (if it is within a larger area of woodland it is typically a felling greater than 0.25 ha). Sometimes a scatter or small clumps of trees may be left standing within the felled area.
Coalescence  When several elements overlap and combine to visually reinforce each other. A technique used to create the appearance of greater scale in landscape design by using a number of small elements.
Colonisation  Natural regeneration (of trees) on previously unwooded sites.
Community (of interest)  All the people living in one district or a group of people with shared origins or interests.
Community woodland  Woodlands for people to access and enjoy, where the needs and wishes of local people are important in planning and management.
Compensatory planting  Creating new woodland on previously unwooded land should an area of woodland be lost due to change in land use.
Compliance  Acting in accordance with something, particularly in accordance with the law. In the context of this standard, the term ‘compliance’ refers to meeting the requirements of the UK Forestry Standard.
Conifers  Trees and shrubs that belong to the gymnosperm division of the plant kingdom (as distinct from the angiosperm division that includes broadleaves). Conifers mostly have needles or scale-like leaves and, with the exception of larches, all are evergreen. Sometimes referred to as ‘softwoods’, they produce softwood timber.
Conservation agencies  The statutory nature conservation agencies: Natural England, Scottish Natural Heritage, the Countryside Council for Wales and the Northern Ireland Environmental Agency.
Continuous cover forestry  A silvicultural system whereby the forest canopy is maintained at one or more levels without clearfelling.
Coppice  An area of woodland in which the trees or shrubs are periodically cut back to ground level to stimulate growth and provide wood products. see also Short rotation coppice (SRC).
Copse  A small wooded area historically used for small-wood production, often through coppicing.
Coupe  An area of woodland that has been clearfelled or is planned for clearfelling.
Cultural heritage  Man-made things of a nation, people, community or group passed down from previous generations. They can be divided into the tangible (such as paintings, sculpture, monuments and archaeology) and the intangible (such as customs, intellectual achievements, history and institutions).
Cultural value  The weighting or worth attributed to the arts, customs, intellectual achievements, history and institutions of a nation, people, community or group.
Culture  The arts, customs, intellectual achievements, history and institutions of a nation, people, community or group.
Design Plan  The part of a forest management plan that predominantly addresses landscape and visual aspects.
Designed landscape  A pleasure ground, park or large garden laid out with the primary purpose of creating an aesthetically pleasing scene or sequence of vistas.
Development  Change of land use authorised by the planning authorities, usually for building and urbanisation.
Directional forces  see Visual force.
Diversity (visual)  The range or variety of different elements in a landscape or design. In a forest these include variety in ages and species of trees and other elements such as open ground or water. An important factor in design, but one subject to a
Drumlin  A low, oval mound or small hill, typically one of a group, consisting of compacted boulder clay moulded by past glacial action.

Ecosystem services   The benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits.

Element (landscape)  A fundamental component or basic building block of the landscape such as trees, woods, hedges, buildings and roads.

Enclosure  An area of land defined by a boundary such as a fence, wall, hedge or woodland belts. The enclosure pattern is the distribution of such boundaries in a tract of landscape. A sense of enclosure is the degree to which views or spaces are limited by surrounding landscape elements.

Environmental Impact Assessment (EIA)  The process and documentation associated with the statutory requirement under the EU Environmental Impact Assessment Directive 85/337/EEC as amended by 97/11/EC and 2003/35/EC. This introduced a Europe-wide procedure to ensure that environmental consequences of projects are evaluated and public opinion is taken into account before authorisation is given.

Environmental Statement  A statement of environmental effects that is required where an Environmental Impact Assessment is called for.

Establishment (period)  The formative period which ends after young trees are of sufficient size so that, given adequate protection, they are likely to survive as woodland at the required stocking density.

Field pattern  see Enclosure

Forest  Land predominately covered in trees (defined as land under stands of trees with a canopy cover of at least 20%), whether in large tracts (generally called forests) or smaller areas known by a variety of terms (including woods, copses, spinneys or shelterbelts).

Forest certification  see Certification scheme

Forest Design Plan  see Design Plan

Forest design principles  Principles of design, such as shape, scale, proportion etc related to the design of forests by the Forestry Commission and adopted as the recognised approach to forest design in the UK and beyond.

Forest Europe  Until 2010 known as MCPFE (Ministerial Conference on the Protection of Forests in Europe), Forest Europe is the pan-European policy process for the sustainable management of the continent’s forests. Forest Europe develops common strategies for its 46 member countries and the European Union on how to protect and sustainably manage forests.

Forest management plan (woodland management plan) A plan which states the objectives of management together with details of forestry proposals over the next five years and outlines intentions over a minimum total period of 10 years.

Forest plans allow managers to communicate proposals and demonstrate that relevant elements of sustainable forest management have been addressed, and can be used to authorise thinning, felling and other management operations.

Forest management unit (FMU)  The area subject to a forest management plan or proposal. A convenient management area determined by the nature of the woodland, the management objectives and proposed operations. Extensive FMUs allow a strategic approach to be taken to meeting UKFS Requirements and Guidelines.

Forest Service  An agency within the Department of Agriculture and Rural Development in Northern Ireland responsible for the regulation of forestry and the management of state forests in Northern Ireland.

Forestry  The science and art of planting, managing and caring for forests.

Forestry authorities  The Forestry Commission and Forest Service are the principal forestry authorities in the UK. Other bodies also have roles in regulating forestry in particular circumstances.

Forestry Commission  The government department responsible for the regulation of forestry, implementing forestry policy and management of state forests in Great Britain. Forestry policy is devolved, with the exception of some reserved issues, such as international forestry, plant health and forestry standards, and a range of common issues addressed on a Great Britain basis. The abbreviations FCE, FCS and FCW refer to the respective parts of the Forestry Commission in England, Scotland and Wales.

Forestry operations  Work or procedures carried out within a forest such as felling, extraction, cultivation and planting.

Game  Animals that are either wild or reared that are managed for hunting, shooting or fishing, usually for food.

Geometric  A description of shape or form derived from geometry, usually simple and regular, comprising straight lines, rectangles, triangles, arcs of circles etc.

Hillfort  A hilltop enclosure bounded by one or more substantial banks, ramparts and ditches.

Historic environment  All tangible evidence of past interactions between humans and their environment, incorporating archaeological sites, historic landscapes and natural heritage.

Historic Landscape Assessment (HLA)  The process of mapping the extent of past and present land-use areas, categorised according to their form, function and period of origin. In Scotland, HLA is a joint project between Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS).

Historic Landscape Character (HLC)  The character of a landscape defined by its historical interest such as historic buildings, ornamental landscapes and evidence of past uses, and embracing features such as hedge patterns and managed woodland. It recognises that the landscape itself can be of historical interest, in addition to the individual historic features within it. Historic Landscape Characterisation is a process (undertaken in England and Wales) to map the extent of past and present land-use areas, and categorise them according to their form, function and period of origin. (A similar process in
Indicative forestry strategies  In Scotland, these strategies provide a focus for local authority responses to consultations on grant scheme proposals and inform those developing proposals for forestry of possible sensitivities when considering options for planting. Local forestry frameworks provide a focus on key local issues within indicative forestry strategies.

Interested parties  People directly affected by, or who have a financial or other interest in, the woodland being managed, also sometimes called stakeholders.

Interlock  A relationship between two elements, where one extends into the other and creates a visual connection; this can increase the unity of a design, or the unity between elements in a landscape.

ISO 14001  An international standard for environmental management systems (EMS) developed by the International Organization for Standardization (ISO). It can be applied to any industry sector. ISO 14001 requires a company to undertake a review of its environmental impact, and, based on this, to develop a policy, objectives and targets and a programme to ensure they are implemented. ISO 14001 does not set specific performance targets, other than legal and/or human factors (Article 1, European Landscape Convention Council of Europe, 2002).

Landscape  The three-dimensional shape of the land or terrain.

Landscape character  The distinct and recognisable pattern of elements that occur consistently in a particular type of landscape and combine to describe its essential nature.

Landscape Character Assessment  The process of systematic description, classification and analysis of landscape in order to identify, describe and understand its character. The scale and detail of the assessment will depend upon the purpose for which it is being undertaken (Landscape character assessment guidance for England and Scotland. The Countryside Agency and Scottish Natural Heritage, 2002).

Landscape character type  Distinct types of landscape which share broadly similar combinations of geology, topography, drainage patterns, vegetation, and historical land use and settlement pattern. They are generic in character and may be repeated across an area or country.

Landscape context  The relevant circumstances pertaining to the site, situation and local area, in landscape these will include the landscape character, sensitivity, distinctiveness, historic and cultural significance.

Landscape sensitivity  The degree to which specific types of land-use changes or development affect the character and qualities of the landscape. Sensitivity depends upon the type, nature and magnitude of the proposed change as well as the characteristics of the host landscape. High sensitivity indicates landscapes are vulnerable to the change; low sensitivity that they are more able to accommodate the change and that the key characteristics of that landscape will essentially remain unaltered.

Local distinctiveness  The qualities of a particular locality that give it identity and make it unique and special to the people who live there or visit.

Local forestry frameworks  see Indicative forestry strategies

Margins  The borders or edges of a forest, divided into the external margins between forest and other land uses and the internal margins or boundaries between species, felled areas, open ground etc.


Native species  Species which have arrived and inhabited an area naturally, without deliberate assistance by humans. For trees and shrubs in the UK, usually taken to mean those present after post-glacial recolonisation and before historical times. Some species are only native in particular regions. Differences in characteristics and adaptation to conditions occur more locally – hence ‘locally native’.

Natural regeneration  Plants growing on a site as a result of natural seed fall or suckering. The term is also used to describe the silvicultural practices used to encourage natural seeding and establishment.

Naturalistic  The appearance of being natural or organic as distinct from man-made.

Nearness (visual)  The proximity of elements to each other so that they appear to be part of a group in a composition; this can increase the perception of scale.

Notification  The process of informing someone (about something). The forestry authorities have various arrangements for notifying interested parties of forestry proposals.

Open space  Areas within a forest without trees, such as glades, stream sides, grass or heath land, water bodies, rocky areas, roads and rides.

Operational plan  The operational details of how planned work will be implemented at site level within the framework of a forest management plan. Also called a site plan.

Organic  An attribute of shape or form derived from a resemblance to natural shapes, especially those of plants or animals, which lack straight lines and geometry and are usually asymmetric, with diffuse and ill-defined edges.

Perception  An awareness (of something) through the senses usually referenced to experience, associations or expectation. Sight is a large part of perception for most people.

Plantations  Forests that have been planted or sown and are characterised by intensive silviculture treatment to meet a specific objective or limited range of objectives. Plantations lack most of the characteristics of natural forests.

Proportion (visual)  The relative size or extent, the visual relationship of parts of a design or composition to the whole; rules and theories of satisfactory visual proportion have been established from ancient times.

Public Register  Public listing by the Forestry Commission of grant schemes, felling proposals and Environmental Impact Assessments to allow public comment.

Regeneration  The regrowth of a forest through sowing, planting or natural regeneration, or regrowth following coppicing.
**Registers of landscapes of historic and design interest** Lists and descriptions of landscapes such as gardens, grounds, planned open spaces, parks etc of historic and design interest (rather than botanical interest per se) compiled under the aegis of heritage authorities. The inclusion on the register is of material consideration to the planning process.

**Resilience** The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.

**Restocking** Replacing felled areas by sowing seed, planting, or allowing or facilitating natural regeneration.

**Restoration of derelict land** see Brownfield (sites)

**Restructuring** Diversifying the distribution of age classes of a forest, usually by advancing felling in some areas and retarding it in others. Restructuring is usually associated with wider measures to redesign a forest as part of a forest management plan.

**Riparian** Relating to or situated adjacent to a watercourse or water body.

**Rotation** The period required to establish and grow trees to a specified size, product, or condition of maturity. The period varies widely according to species and end use, but for conifers in the UK this is usually about 35 years and for broadleaves at least 60 years.

**Rule of thirds** A way of proportioning parts of a design by dividing it into sections of one-third to two-thirds of the whole. Loosely based on the ratio of 1:62 (the Golden Section), it helps achieve a satisfactory proportion in which one part dominates.

**Saw-pits** A site that was used to enable tree trunks to be sawn into planks by hand, usually involving an excavated pit.

**Scale** The relative size (of visual elements) as perceived by the observer. Scale varies with the position and distance of the observer.

**Semi-natural woodland** Woodland composed of mainly locally native trees and shrubs that derive from natural seedfall or coppice rather than from planting. However, the definition varies according to the local circumstances in England, Scotland, Wales and Northern Ireland.

**Shape** The outward form produced by the outline, such as a forest or area within a forest.

**Short rotation coppice (SRC)** Trees (usually willow or poplar) typically grown as an energy crop and harvested at intervals of about three years.

**Short rotation forestry (SRF)** The practice of growing single or multi-stemmed trees of fast-growing species on a reduced rotation length primarily for the production of biomass.

**Site plan** see Operational plan

**Species compartments** Divisions of a forest into mapped and numbered areas for management purposes, usually by age and species of tree.

**Spinney** A small area of trees and bushes traditionally surrounded by a hedge.

**Spirit of place** The intangible factor that gives a specific location special character and makes it unique to people. Often it is a combination of character, features, quality, space and associations which creates the sense of identity of a location.

**Stakeholder** see Interested parties


**Sustainable forest management** The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity and vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions at local, national and global levels, and that does not cause damage to other ecosystems. (MCPFE 1993)

**Texture (visual)** The appearance of a surface due to the size, nature and density of surface elements, coarser textures having larger elements at wider spacing and fine textures having smaller elements at closer spacing. In forestry, different ages and species of tree appear as different textures in the landscape.

**Unity (visual)** The appearance of wholeness and continuity between an element and its background or landscape, or when all the elements of a design or landscape appear part of the whole. Unity is achieved when forests or woods are well integrated and have the appearance of belonging.

**Visual force** The illusion of movement, or potential movement, found in a static image or object. The landscape is full of visual forces, especially influencing the way we look at landform.

**Visual sensitivity** An attribute determined by the visibility of the landscape, the main views of the forest, by whom and how it is seen, the nature of the viewing experience and the value placed on the landscape. Cultural or historical associations all contribute to this value.

**Water body** The basic water management unit defined under the Water Framework Directive for which environmental objectives are set. Water bodies can be parts of rivers, lakes and estuaries, stretches of coastal water or distinct volumes of groundwater.

**Watercourse** Any natural or man-made channel through which water flows continuously or intermittently.

**Wildness (wildland)** A quality of the landscape, usually due to natural character, remoteness or lack of obvious human influence, experienced by people through such values as feeling close to nature and experiencing a sense of solitude.

**Wood pasture** Areas of historical, cultural and ecological interest, where grazing is managed in combination with a proportion of open tree canopy cover.
Practising sustainable forestry means managing our forests in a way that meets our needs at present but that does not compromise the ability of future generations to meet their needs. They will rightly expect that their forests and woodlands offer at least the same benefits and opportunities as we enjoy today. To sustain these expectations, the UK governments have set out the UK Forestry Standard and its supporting Guidelines. At the heart of this approach is the importance of balancing the environmental, economic and social benefits of forests and the recognition that our forests serve a wide range of objectives. The Guidelines publications define sustainable forest management in the UK under a series of subject areas. The UK Forestry Standard requirements have been set out in each and guidance given on how to achieve them.