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illustrate the way amenity planning has developed in different world regions, with a particular emphasis on innovative and integrated approaches to forest amenity in the context of broader landscape-planning initiatives. The conclusion points to areas of emphasis and challenge for the future.

Definitions of Amenity Planning

Amenity is generally deemed to refer to something pleasant as well as useful, often (but not always) associated with leisure. Forest amenity planning is therefore concerned with visual pleasure or attractiveness, often termed visual amenity (see **Landscape and Planning: Visual Analysis of Forest Landscapes**), but also with other aspects of the forest that make it a pleasant place to visit or to have as a nearby resource. Amenity planning thus places people rather than timber at its heart, and pleasure rather than economic return as its end; this sets it apart from planning for productivity, where the focus is on silviculture and the economic value of the forest products. Environmental impact assessment (EIA) requirements in the planning legislation of many parts of the world, including Europe and North America, tend to focus on the impacts of plans on soils, water, air, fauna, and flora, in other words, ecological and natural heritage, rather than cultural heritage, although this is beginning to change in some regions and countries. Amenity planning implies, at its ideal, an integrated approach to planning where aesthetic issues are combined with recreational and other social needs as part of a holistic planning process. In an increasingly globalized society, amenity planning is also an important tool in preserving the diversity and distinctiveness of different locations and landscapes.

Forest Amenity Planning Approaches

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Introduction

This article begins by defining forest amenity planning and its relationship with other planning approaches. The benefits of forest amenity are explored in the context of a brief history of forest planning and design. Modern amenity planning is set against the international agenda for sustainability and recent legislation on forest and landscape planning. Examples of different approaches from North America, Europe, and Australasia are used to

Forest Amenity Benefits

There is a considerable range of potential amenity benefits that forests can provide for people who live or work near them, or who visit them for leisure activities. The amenity benefits that have been identified include functional aspects such as landscape enhancement (especially in areas of dereliction or abandoned agriculture); screening (for example, of mineral workings); noise reduction; dust filtering; summer shade; shelter; wildlife conservation and enhancement; providing the setting for buildings or groups of buildings in the landscape; and providing a location for many different kinds of recreation, from bird-watching and berry-picking to children's play and mountain biking. The perceptual and psychological benefits that are also important in amenities

include: contact with nature and the seasons; peace and tranquillity; spiritual and emotional renewal; relief from stress and improved recovery from illness; improving the attractiveness of the living environment and the quality of everyday life; and raising a sense of pride of place and self-worth.

These benefits combine to create an economic argument for amenity forest planning, since attractive and pleasant forests can add to property values and tourism revenues, and attract other, appropriate development in some cases. There have been many attempts to place precise economic values on environmental amenities, including forests, although all have their limitations due to the intangible nature of many aspects of amenity. The economic approach has usually valued forest amenity based on 'willingness to pay' criteria. Hedonic pricing attempts to place a cash value on landscape elements by estimating the value of amenity benefits from the costs and prices of related market transactions, while contingent valuation of a particular change in the landscape uses 'preferred elicitation' models to distill the value of different preferences based on how consumers decide what to purchase. Such methods have been used to show that creation and management of farm woodlands or urban forests for amenity benefits can be profitable in economic terms. However, recent research in both Europe and North America has suggested that a combination of monetary and nonmonetary approaches to values needs to be adopted in coming to decisions on environmental decision-making.

Amenity is a culturally defined term. Cultural differences between countries and regions lead to variations in recreational use and access to forest resources. Berry and mushroom collecting are, for example, very popular in northern and Eastern Europe, as is skiing in winter, while in the UK and parts of central Europe, cycling is a popular tradition that is developing in new ways with the increasing interest in mountain biking. Forest amenity planning approaches should, therefore, define their aims in the context of determining appropriate cultural understandings, expectations, and aspirations on the part of local people and visitors. It is this cultural component which has often proved problematic to incorporate in practice and has led to a rapidly increasing interest in public participation and 'stakeholder involvement' in planning processes in the 1990s and early twenty-first century.

History of Forest Amenity Planning

Forests have been managed for amenity for as long as privileged members of society have had control over

parkland and woodland to enjoy at will. The earliest records of hunting parks, e.g. from Assyrian Mesopotamia (thirteenth century BC), or late Shang dynasty China (sixteenth to eleventh century BC), suggest that they were managed to create a beautiful and pleasurable setting for recreational pursuits. While these forest lands were often the exclusive domain of the ruling classes, there is also a long history of more modest forest management for amenity, combining the practical and the pleasurable in local woodland economies. Western European forests in the early Middle Ages, for example, provided sustenance and pleasure for their inhabitants in many ways, from grazing for pigs to a source of berries, nuts, mushrooms, and honey for local people, quite apart from any economic exploitation of the timber itself. In England, the Norman invasion of 1066 brought an end to this in many parts with the creation of huge areas of special jurisdiction, known as 'forests' (not all were wooded), policed at the king's pleasure for the preservation of game. Thus the treatment of woodland as common land varied in place and time, depending on the extent of woodland coverage and the dominance of regulation and restriction over local cultural traditions at different stages in history. Their legacy remains reflected today in contemporary laws and the approach to forest amenity planning taken in different countries and regions.

The grand plans for royal and aristocratic hunting parks in seventeenth-century Europe were an extension of the Baroque articulation of space and visual order, culminating in designs such as André le Notre's plan for Versailles; this took a comparatively modest hunting lodge and set it in an extraordinary landscape of woodland articulated with geometric patterns of canals, allées, and rides which dominated the landscape to the horizon. This was amenity forest and landscape planning at its grandest and most autocratic, and led to a reaction in Britain from which the more curvaceous and undulating lines of the English Landscape style grew. In the eighteenth century, when these landscape designers were making their impact, there was considerable interest in tree planting for amenity as a part of estate improvements, and there was a lively discourse on appropriate species, planting style and management for beautiful, sublime, or picturesque effect, an aesthetic approach which has dominated the English landscape ever since. Such planting was still largely in the private domain of the landowner, however, and came at a time of the Enclosure Acts which removed much land from common use. In the nineteenth century, foresters were primarily concerned with gaining recognition for their role in their country's economy

and amenity values were not a major concern. Germany led the way in developing academic institutions to train foresters and developed planning and management concepts such as the sustained yield system, which resulted in chessboard-pattern stands of single-aged trees in contrast to the more natural pattern sustained by selective felling. It was not until the twentieth century that forest amenity planning for the public at large and for local community enjoyment became a frequent duty of public authorities and philanthropic organizations. By the end of the century, nearly all developed countries were committed to sustainable, multiple-purpose forest-planning policies.

Early Amenity Planning – Examples from the UK

The British Forestry Commission, established in 1919 largely to secure a strategic home supply of softwoods, began to address amenity matters in the 1930s with the establishment of national forest parks, planned to provide for the integration of timber production and recreation. Visual amenity was addressed by avoiding straight outlines to plantations and introduction of species variety within plantations and at their margins. The first attempts to liaise with public opinion on amenity matters, through the Council for the Preservation of Rural England, were also made at this time. By the 1950s the Commission recognized that recreation provision should be an aim in all its state forests, wherever desirable and practicable. Sylvia Crowe initiated the integration of planning for nature conservation, recreation, and visual amenity, through her pioneering work as landscape architect and consultant to the Forestry Commission from 1963 to 1975, and the Commission has since been at the forefront of forest amenity planning throughout the UK and internationally.

In the 1990s, Forestry Commission initiatives to encourage planning of amenity forests in an integrated way included development of the concept of community forests and woodlands, supported by woodland grant schemes and community woodland design guidelines. The focus is on planning local countryside near towns and cities for the benefit of the whole community. The concept draws upon other European traditions, such as the *Stadtwälder* (town forests) of Germany, many of which were created over 200 years ago, and the 895 ha of new polder woodlands in the Bos Park on the outskirts of Amsterdam, created in the early twentieth century as a major recreational resort for the city. Such community woodlands are often developed as a way of reclaiming derelict land in a postindustrial

age and so they have been particularly targeted at former mining and manufacturing centers. The National Forest, which covers 502 km² in the Midlands of England, and the Central Scotland Forest, covering 1600 km² in the central Scottish industrial belt between Glasgow and Edinburgh, are two such examples, initiated in 1994–1995.

North American Developments

Scenic amenity has been a consideration in US forestry planning since the early 1900s. The US Forest Service used landscape architect consultants to develop early guidance on wilderness preservation and recreation plans which recognized scenic values. However, their first official landscape management program was not developed until 1968, based on work done by R. Burton Litton Jr. and influenced by the work of Sylvia Crowe in the UK. This led to the development of visual management systems for scenic amenity and forest plans with scenic quality targets (see **Landscape and Planning: Visual Resource Management Approaches**). In 1995 a Forest Service handbook for scenery management entitled *Landscape Aesthetics* gave guidance on forest planning for visual amenity. This has been developed separately from guidance on ecosystem management and nature conservation and on provision for recreation. The social and cultural dimension of amenity planning is not well integrated, by contrast with European systems of amenity planning. The British Columbian Ministry of Forests, Canada, used concepts of landscape character and forest landscape management borrowed from the USA to develop their guidance on scenic amenity in the early 1980s. This has subsequently been refined into a visual landscape management process, with guidance from Simon Bell of the British Forestry Commission, who recommended a more integrated approach to amenity planning as a whole – total resource planning and design. This more integrated approach has been used in parts of British Columbia and the rest of Canada, where high-profile proposals have raised complex and sensitive issues.

The United Nations Conference on Environment and Development (the 1992 Earth Summit) embraced a statement of forest principles and helped define concepts of sustainability in the trio of economy, environment, and social equity, through Agenda 21. Social equity refers to social justice, the concept of equal access to facilities and benefits for all of society's members, and thus has implications for amenity planning. The Local Agenda 21 advice to local authorities supported the notion that global issues might best be tackled at a local level, taking

into account cultural issues and the specificity of place. Yet forest-planning approaches in North America have not necessarily adopted a holistic approach that reflects this in practice. Planning for visual amenity, for biodiversity and nature conservation, and for recreation have tended to be undertaken as different exercises with separate goals, leaving out the local and the cultural dimension, but are integrated through subsequent multiattribute planning and decision-making approaches, such as the US Forest Service forest and resource management plans or decision support systems using diverse criteria and indicators.

The Council of Europe's European Landscape Convention

As agriculture in Europe at the turn of the twenty-first century has become ever more intensified, so a new interest in forests has grown: forests which will reclaim marginal agricultural land and create new kinds of amenity for rural and suburban populations. This creates challenges for planning and design as a more enclosed landscape is not necessarily always welcomed by local populations, and may be unfamiliar as a recreational environment. Equally, in a postindustrial age, there are many areas of landscape dereliction in and around major urban settlements, where forestry can make a contribution to improving the environment and reclaiming the land. This is particularly an issue for Eastern European countries whose economic base, agriculture, and heavy and extractive industries are changing more rapidly than elsewhere. As European society becomes more urbanized, the pressures on forests and green areas close to towns are increasing at the same time that land for other uses is being abandoned elsewhere.

The Council of Europe's *European Landscape Convention* was agreed in 2000 and aims to promote landscape protection, management, and planning, and to organize European cooperation on landscape issues. The convention recognizes in particular the importance of public interest in the cultural, ecological, environmental, and social roles of the landscape as a resource. It highlights the way that the landscape contributes to the formation of local cultures and asserts that the landscape is 'a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity.' In the light of the perceived acceleration of landscape change, in forestry as in other aspects, it seeks to 'respond to the public's willingness to play an active part in the development of landscapes and to enjoy high

quality landscapes.' Signatories to the Convention undertake to establish and implement landscape policies aimed at landscape protection, management, and planning, to establish procedures for the participation of the general public, local and regional authorities, and other interested parties in the definition and implementation of landscape policies, and to integrate landscape amenity with any other planning policies.

Although the Convention does not recommend in detail approaches to landscape planning, it is of relevance to forestry because it sets out a pan-European approach to managing forests for visual, cultural, and social amenity. It points clearly to the need for public and community consultation and collaboration in developing amenity plans for the future of forests, and gives a perspective on the contribution that forests make to shaping people's lives and identities far beyond the economic value of its products.

The next section sets out some recent examples of innovative or distinctive approaches to forest amenity planning from different European perspectives.

Finland and the Nordic Countries

Forestry landscape planning in many Nordic countries focuses on visual amenity and on the local-scale integration of ecology and nature conservation with forest management. There is a legal right to roam in Finnish forests for everyone and thus the amenity of the forest is potentially available to all. One Finn in five is a forest owner, many on a small scale, and so forest amenity planning is often at the level of 'family forestry.' Some of the cultural traditions which used to be common across Europe remain, such as the gathering of berries, mushrooms, lichens, and hunting of game, as well as more modern enterprises such as ecotourism. However, for the forests in and around urban areas, which are often owned by municipalities, multipurpose planning objectives are often lacking. In a joint project a similar pattern of lack of strategic investment and failure to plan for urban forest amenity is seen across much of Europe.

Recent work in Finland and Sweden in the late 1990s has aimed at developing better ways of integrating environmental considerations and biodiversity with sustainable production of forestry, taking a landscape amenity perspective. In a joint project, a geographical information system (GIS) has been developed to provide an easy user interface for forest management planning, allowing for the notion of interactive communication and learning with forest owners over planning proposals. The GIS

program divides the forest into management zones and can be used to calculate and analyze the influences of public participation and the requirements set by society on the economics of forest planning at landscape and estate level. It is still in development at the time of writing.

By contrast with Finland and Sweden, Denmark has a comparatively low level of forest cover but rationalization of rural land in response to EU agricultural policies has led to a desire to increase afforestation. In 1989, the Danish government committed to a doubling of forest land from 12% to 24% within a period of 80–100 years. In designating land for afforestation, local authorities were given the power to determine the priorities for criteria, particularly in relation to reduction in agricultural land, wildlife conservation, and outdoor recreation, for their county. The plans for each county, which are reviewed regularly, are now made available using GIS, via the internet, to all citizens, and this allows for an increasingly democratic involvement in amenity planning. Such electronic means of communication and participation are becoming commonplace across Europe and elsewhere, allowing local interests in and definitions of amenity to inform the planning process.

Southern Europe

Compared with northern and central Europe, few southern European countries have highly developed or integrated forest amenity planning strategies, although forests may still have an important cultural role. An example from Turkey illustrates the European Convention's statement on the importance of cultural identities: the forest lands around the Bosphorus have, since the 1980s, been designated as public assets which must be protected as part of an initiative to preserve cultural, natural, and historic assets in the Bosphorus zone. By contrast, and unlike many southern European states, Slovenia still has a considerable level of forest cover (57%), most of which is private, often in shared and highly fragmented ownership. Perhaps because of this, Slovenia is unusual in having a long-term strategy for forestry that extends to advice and guidance for a horizon of 100 years. However, larger forest owners have pressed in recent times for a reduction in freedom of public access, thereby threatening traditional enjoyment of forests for mushroom picking. The matrix of open fields and forest is also changing as agriculture is abandoned and fields are left to natural succession. Thus, there are new challenges for amenity forest planning in Slovenia as for many countries now entering the European Union.

The UK Forestry Standard

The UK Forestry Standard, published in 1998, sets out a vision for new woodlands that recognizes the need to plan for multiple benefits in an integrated and sustainable way. Of the seven benefits identified as arising from new woodlands, at least three are directly associated with amenity planning: (1) enhancing the beauty and character of the countryside, and contributing to the diversity and distinctiveness of rural and urban landscapes; (2) helping to revitalize derelict and degraded land; and (3) improving the quality of life, especially in and around towns and cities, by creating opportunities for recreation, education, and local community involvement.

The Forestry Standard aims to integrate physical, biological, human, and cultural resource planning, recognizing the importance of cultural heritage and landscape amenity in the last of these. The tools for this include the items identified in Table 1.

Assessment of landscape character (Figure 1) has been an important tool for planning and design of forests in the UK since the 1960s and was made explicit in design guidelines developed as part of Forestry Commission planning methodologies in the 1980s (*see Landscape and Planning: Visual Resource Management Approaches*). Such assessment has since been codified in generic guidelines for landscape planning across the UK, developed separately for Wales and for England and Scotland. Forestry planning now incorporates this assessment, which reflects an increasing understanding of the complex nature of the cultural landscape (Figures 2 and 3).

Landscape Character Assessment (UK)

Landscape Character Assessment, promoted in 2002 by the Countryside Agency in England and Scottish Natural Heritage, is an amenity-planning tool designed to serve a range of predominantly countryside planning purposes, including forestry planning. It recognizes the importance of people and place and the cultural/social, perceptual and aesthetic and natural elements of this interaction which determines what we call 'landscape.'

In developing the guidelines for landscape character assessment, a 'character of England' map was produced by the (former) Countryside Commission, building on previous work by English Nature and English Heritage. An equivalent exercise in Scotland produced the Natural Heritage Futures initiative, which promotes integrated management of the natural and cultural heritage. The Landscape Character Assessment Guidelines grew out of these exercises. Examples of the range of possible uses

Table 1 Sustainable forestry management in the UK: amenity and cultural resource planning

<i>Criteria for sustainable forest management</i>	<i>Source of national-level indicators</i>	<i>Forest management unit indicators</i>
Rural development Access and recreation Quality of life in and around forests Increased awareness and participation Community involvement Other land uses	Surveys of forestry employment Information on employment multiplier effects of forestry Rate of afforestation in areas of strategic importance for other land uses Surveys of visitors to forests, UK Day Visits Survey, Time Use research reports Monitoring of planting in sensitive areas as defined by Indicative Forestry Strategies Inventory—woodlands close to towns National opinion surveys Reports on public awareness and involvement in forest biodiversity conservation	Evidence that: <ul style="list-style-type: none"> • Access is available along public rights of way and permissive routes • Information is promulgated about recreational facilities and access • Opportunities for walking and other recreational pursuits in woodland are considered • Activities associated with recreation do not compromise unnecessarily any future benefits of forest products or nature conservation • Efforts are taken to mitigate the consequences of vandalism or other antisocial behavior in woodlands • Requests to use woodlands for environmental education have been reasonably considered • Consultations and involvement of communities are reasonably accommodated, especially in relation to work opportunities
Conservation of heritage features Landscape quality	Surveys and registers of ancient monuments Reports of damage to ancient monuments Woodland aspects of rural countryside character and landscape assessments Survey reports for special areas, e.g., national parks, moorlands, coastal plains	Evidence that: <ul style="list-style-type: none"> • Important sites are clearly recorded • Sound principles for integrating archeological sites in woodland are adopted • Archeological sites are protected and damage is avoided • Landscape principles of forest design are used • Cultural and historical character of countryside is taken into account when creating new woods and when making changes to existing woods

Adapted, with permission, from Forestry Authority (1998) *The UK Forestry Standard: The Government's Approach to Sustainable Forestry*. Edinburgh, UK: Forestry Commission.

for landscape character assessment in the planning process are shown in **Table 2**.

Landscape character assessment is seen as a two-stage process, the first a relatively objective one in which the landscape, at whatever level or scale is appropriate, is mapped, classified, and described in a (supposedly) value-free way – ‘characterization’ – and the second an evaluative process where judgments are made using approaches appropriate to different end-uses, e.g., woodland development. Judgments based on the landscape characterization are then available to help in the decision-making processes which lie beyond the landscape character assessment exercise. The main approaches to making judgments about landscape character are identified as:

- *landscape character and guidelines* which focus on the conservation and enhancement of the key

characteristics of landscape character types and areas

- *landscape quality and strategies* which provide a strategy for the whole landscape character type or area based on considerations of landscape quality and the physical state of the landscape
- *landscape value and designation/recognition*, based on the relative value attached to the different landscape character types or areas and their ability to match with specific criteria
- *landscape sensitivity and capacity*, i.e., the ability of the landscape to accept change without adverse consequences.

The production of the Landscape Character Assessment Guidelines has been accompanied by a discussion on how stakeholders can help, recognizing the need to incorporate this dimension more fully in

making landscape assessments. A discussion paper has identified:

- stakeholders that are ‘communities of interest,’ e.g., government departments and agencies or special-interest groups such as the Royal Society for the Protection of Birds
- stakeholders that are ‘communities of place,’ e.g., local residents.

There are a number of benefits to be gained from stakeholder participation in making judgments

about the landscape and its future, not least in identifying what it is that particular stakeholders value in the landscape, and why (see **Recreation: User Needs and Preferences**). The ‘globalized’ aspects of landscape designation have involved communities of interest, by and large, in identifying what is valuable in the landscape. Assessments of this type have involved expert judgments on biological rarity and historical significance. The involvement of communities of place in identifying the value of landscapes must be, necessarily, a more local endeavor.

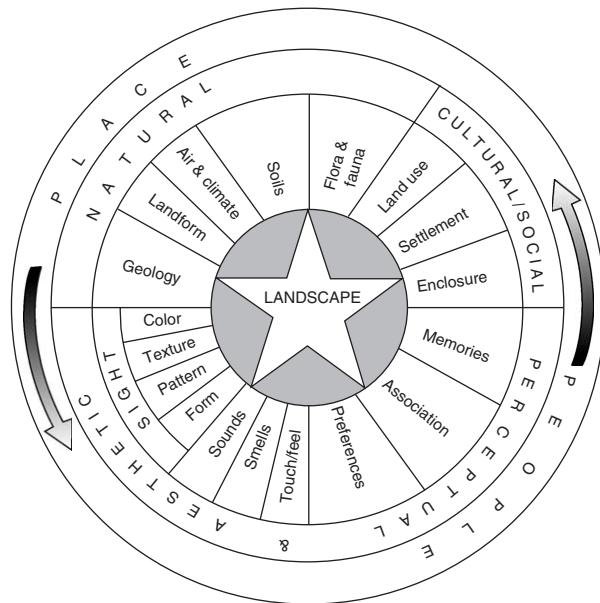


Figure 1 Landscape character. Adapted, with permission, from Countryside Agency and Scottish Natural Heritage (2002) *Landscape Character Assessment, Guidance for England and Scotland*. Wetherby: Countryside Agency Publications.

Australia and New Zealand

The New Zealand Forest Service of the 1980s, since disbanded, developed an early model for holistic forest planning, combining visual amenity with recreation and cultural provision that recognized the diversity of the landscape and the need for interpretation. Discussions of amenity planning approaches often focus on the challenge of defining amenity precisely; this has been particularly so in New Zealand and Australia. Amenity values have been defined as natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, esthetic coherence, and cultural and recreational attributes. Amenity planning policy in Australia aims to maximize the amenity enjoyed not only by the relevant property owners and occupiers, but also by neighbors and by the community at large. Social inclusion and planning for forest access for less mobile members of the community have become important issues here, as they have worldwide.

The original Landscape Character Assessment for the National Forest was central to the development of the Forestry Strategy. The consultation on the Strategy provided the opportunity for comment on the descriptive assessment and on the Forward Strategy for forestry creation based on the assessment. Consultation techniques included:

- written responses to the full strategy (220 replies)
- 1300 questionnaires returned by the general public from 18000 distributed summary documents of the strategy
- extensive media coverage – press, radio, and production of a video for loan to outside groups
- 30 talks to specialist stakeholder groups
- six public meetings and six day-long manned displays in local shopping centers
- watercolors commissioned to depict the changes in rural and coalfield landscapes over a 50-year period, for use in talks and exhibitions
- community views sought by interviewing six groups from within a typical coalfield village and an urban settlement from within the Forest

Source: Information supplied by the National Forest.

Figure 2 Landscape Character Assessment and Stakeholder Input in the National Forest. Adapted, with permission, from Countryside Agency and Scottish Natural Heritage (2002) *Landscape Character Assessment, Guidance for England and Scotland*. Wetherby, UK: Countryside Agency Publications.

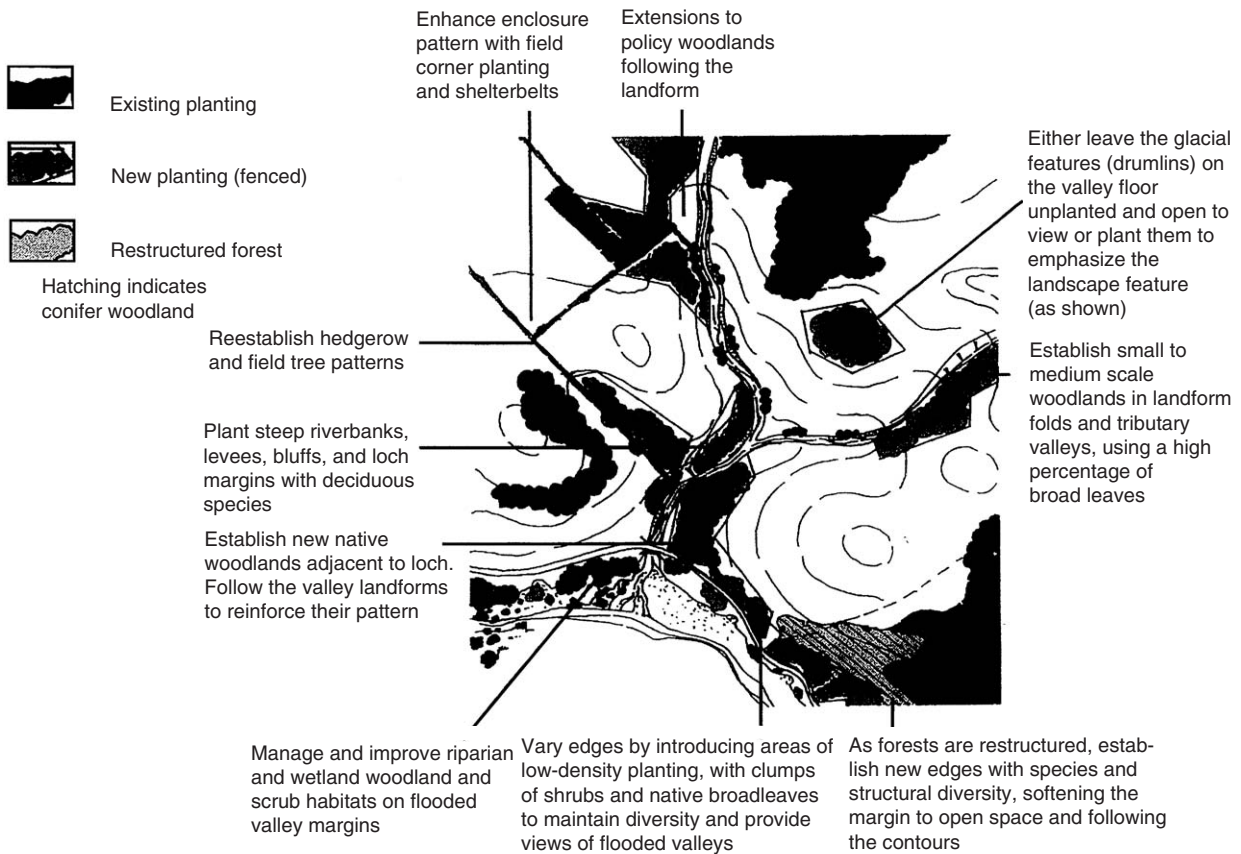


Figure 3 Landscape design guidance for forests and woodlands in Dumfries and Galloway. Source: ERM (1998) Landscape Design Guidance for Forests and Woodlands in Dumfries and Galloway. Forestry Commission, Dumfries and Galloway Council, Scottish Natural Heritage.

International Trends

On the international scene, amenity forestry planning must increasingly take into account the United Nation's Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention and the International Council of Monuments and Sites (ICOMOS), which advises UNESCO. The protection and conservation of archeological heritage in forest areas are concerns in many parts of the world, particularly where afforestation is increasing. Less attention has been paid to date to the concept of designating forests as cultural landscapes (as opposed to natural landscapes) in their own right but it seems likely that, in future, ICOMOS may designate world-class heritage landscapes on the basis of their cultural forest traditions. This is particularly likely as the European Landscape Convention and other initiatives across the world indicate a shift in emphasis on heritage value from monuments to people.

In some countries, forest planning may need to take into account the distinctive role that forests play in aboriginal cultural traditions. Forest planning in developing regions must also integrate

Table 2 Landscape character assessment contributions to the planning process

Planning

- Capacity studies for different purposes, e.g., housing
- Expansion of settlements at the urban edge
- Input to environmental assessment of development projects

Landscape conservation and management

- Guiding land use change, e.g., woodland expansion

Landscape change for regeneration

- Community forests
- Reclamation and restoration strategies

Wider environmental initiatives

- Local agenda 21
- Environmental capital
- Environmental monitoring

Adapted, with permission, from Countryside Agency and Scottish Natural Heritage (2002) *Landscape Character Assessment, Guidance for England and Scotland*. Wetherby, UK: Countryside Agency Publications.

amenity value in the context of subsistence economies and local ethnic communities' needs. Research has shown that recreational enjoyment of woodlands

may often be restricted for women and young people, for older and disabled people, for those from ethnic-minority groups, and for socially disadvantaged groups. Amenity planning is increasingly required to take an inclusive approach which addresses these issues, although planning procedures which do so in practice are rare.

Conclusion

European traditions in forestry continue to provide a far-sighted model for the development of integrated amenity planning tools and multiple-use forest planning. Recent areas of interest in amenity planning in the UK include tranquillity mapping (mapping areas of countryside away from noise and visual intrusion) and mapping of areas free from light pollution, as well as focusing attention on the physical, mental, and social health benefits of living near woodlands, recognizing the potential for forests to improve people's quality of life. Nordic European countries such as Finland, with a different and more continuous tradition of living in and enjoyment of forest landscapes, have contributed to planning models which place an emphasis on the cultural landscape of forests. Early holistic approaches to forest planning in New Zealand have been matched by more recent innovative community-planning models in Australia. Worldwide, with the advancing urbanization of most nations and lifestyles, forest amenity planning has turned its focus increasingly on urban and urban periphery woodlands. For less developed countries, amenity planning for ecotourism is seen as a way to conserve forests while benefiting the local economy but requires strategies that are also compatible with the traditional dependence of local communities on forest resources for their way of life. This calls for integrated and holistic approaches to planning for multiple use that place a high value on social benefits, cultural contexts, and engagement of the community in the planning process.

See also: **Landscape and Planning:** Perceptions of Nature by Indigenous Communities; Urban Forestry; Visual Analysis of Forest Landscapes; Visual Resource Management Approaches. **Recreation:** User Needs and Preferences. **Social and Collaborative Forestry:** Joint and Collaborative Forest Management; Social and Community Forestry; Social Values of Forests.

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The Role of Visualization in Forest Planning

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Introduction

Modern techniques of computer visualization, involving three-dimensional (3D) modeling, computer animation, and virtual reality (VR), are taking their place among decision-support tools for forestry. This article focuses on the emerging role of visualization techniques that simulate the appearance of forested landscapes in forest resource planning, design, and management.