

A Review of Forest Recreation Research Needs in Ireland

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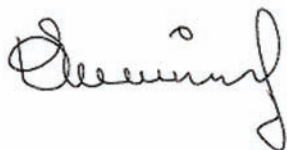
Foreword

Recreational use of forests, both state and private, is set to grow significantly in Ireland, given increased levels of urbanisation, growing wealth and leisure time, and increasing interest in outdoor pursuits and nature. Provision of recreational services and associated commercial spin-offs need, on the one hand, to be adequately reflected in national funding mechanisms, and on the other, to be supported by up-to-date information and research.

For these reasons we welcome this report on research needs for forest recreation in Ireland. Some aspects of the work proposed, particularly valuation and economic aspects, have already been covered in COFORD calls in 2006, but there are a number of other areas highlighted in the report that need investment in focused research and development.

The committee and drafting group responsible for the report deserve credit for putting together a cohesive and well argued schema of research needs in forest recreation - the first time such an exercise has been carried out in any depth. John Fennessy of COFORD was responsible for bringing the various interests together, while the group was chaired by William Murphy of Coillte, who was also significantly involved in drafting and editing. The group's work was facilitated by Michael Cregan and Associates, who collated and edited the contributions on specific topics, and synthesised the recommendations to form a consistent set of research topics.

COFORD looks forward to working with the forest industry and research provider community in addressing the important topics highlighted in the report.



David Nevins
Chairman



Dr Eugene Hendrick
Director



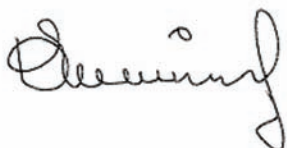
Brollach

Tiocfaidh fás suntasach ar úsáid fhoraoisí, príobháideacha agus de chuid an stáit araon, do chuspóirí áineasa in Éirinn toisc leibhéil méadaithe uirbithe, daoine ag éirí níos saibhre agus níos mó ama fóillíochta acu, agus suim níos mó i ngníomhaíochtaí lasmuigh agus sa dúlra. Is gá don soláthar de sheirbhísí áineasa agus sheachthairbhí tráchtála gaolmhara a bheith léirithe go fónta i meicníochtaí maoinithe náisiúnta ar lámh amháin, agus a bheith tacaithe le heolas agus taighde atá suas chun dáta ar an lámh eile.

Dá bhrí sin cuirimid fáilte roimh an tuarascáil seo ar na riachtanais taighde d'áineas foraoise in Éirinn. Tá roinnt gnéithe den obair molta, gnéithe eacnamaíocha agus luachála ach go háirithe, clúdaithe cheana féin i nglanna COFORD i 2006, ach tá aird tarraingthe ar roinnt réimsí eile sa tuarascáil seo ina bhfuil gá le hinfheistíocht i dtaighde dírithe agus i bhforbairt.

Tá moladh tuillte ag an gcoiste agus an grúpa dréachtaithe freagrach as an tuarascáil seo, as scéimre cuimsitheach atá áitithe go maith de riachtanais taighde in áineas foraoise a chur ar fáil – an chéad uair a ndearnadh cleachtadh dá leithéid le doimhneacht ar bith. Bhí John Fennessy ó COFORD freagrach as na leasanna éagsúla a thabhairt le chéile, fad is a bhí William Murphy ó Choillte ina chathaoirleach ar an ngrúpa, a ghlac páirt shuntasach sa dhréachtú agus san eagarthóireacht chomh maith. D'éascaigh Michael Cregan and Associates obair an ghrúpa, a rinne comhordú agus eagarthóireacht ar na hailt ar ábhair ar leith, agus a rinne sintéisiú ar na moltaí chun tacar comhsheasmhach d'ábhair thaighde a chruthú.

Tá COFORD ag súil le hoibriú leis an tionscal foraoise agus leis an bpobal soláthraithe taighde chun na hábhair thábhachtacha a tarraingíodh aird orthu sa tuarascáil seo a phlé.



David Nevins
Cathaoirleach



An Dr Eugene Hendrick
Stiúrthóir



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FOREST RECREATION - CHANGING USES REFLECTING CHANGING TIMES

Historical development of forest recreation

Forests in Europe have for many centuries been a valuable resource for local communities. Glacken¹ lists the many uses '*as sources of food and household needs; for grazing and hunting, and beekeeping; as the locale for small industries and of charcoal making (and) as valuable primitive areas in their own right*'. In the eighteenth and nineteenth century in Britain and Ireland, forests and woodlands were planted in large estates for aesthetic purposes, for hunting, and for timber production. The estates were the provinces of the wealthy. There was no active provision of countryside recreation facilities for the general public in the period. It may not have been required. However, the Enclosures Acts, the growth in rural poverty, and the consequent migration of large numbers of rural people to urban centres from the late 18th century created a need to provide open spaces for recreation

in the expanding cities. The public parks movement was initiated in the mid 19th century in the UK, and filtered across subsequently to Ireland. Countryside recreation was conflicted terrain through the earlier part of the 20th century and there was little public provision. In 1935, the Forestry Commission in the UK opened its first forest park. In the post war era, the passing of the National Parks and Access to the Countryside Act (1949) ushered in the official commitment to the development of countryside recreation. More recently, the English government passed the CROW Act of 2000 (The Countryside and Rights of Way Act) which greatly improved access arrangements to the countryside, while in Scotland the Land Reform Act of 2002 created one of the most liberal access regimes in the whole of Europe.

Public forest recreation is more closely associated with the USA and developments there from the latter part of the 19th century. The ideas that evolved remain significant and influential.



Coillte recreational woodland at Kindlestown, Co Wicklow.

¹ Glacken, C. (1973). *Traces on the Rhodian Shore*. U of Cal Press.

Industrial growth in the US from that period brought with it a huge demand for timber for fuel and as a raw material. By the late 19th century, the need to conserve forests as a resource for industry and at the same time to protect fragile watersheds was receiving increased recognition. The US Forest Service was established in 1905 with the overarching objective ‘*to provide the greatest amount of good for the greatest amount of people in the long run*’ (Gifford Pinchot²). One of the outcomes of this ‘philosophy’ was the forest as a locus for recreation for a growing urban population. The ‘democratisation’ of the forest resource made an important contribution to national well-being and contributed significantly to the regard the American people held for the Forest Service. Developments in the following decades saw the establishment of agencies such as the Civilian Conservation Corps and the Tennessee Valley Authority, the growing role of the US National Park Service, and the continuing important position held by the US Forest Service. Collectively they fashioned an approach to recreation that became a model for many other countries. The influence is still felt today, for example, in the education programmes such as Leave No Trace, and the concept of wilderness recreation.

Forest histories in Europe show the establishment of long lists of forest customs and rights. One of these is *Allemansretten* (‘everyman’s rights’) – a part of the national cultural heritage of the Scandinavian countries and of Finland. It is an unwritten ‘law’ that allows the public use the countryside including its forests for a range of activities – mushroom and berry picking, walking and cycling, swimming and camping in designated areas. It derives from Germanic traditions whereby the rights of ownership were rights of use, and users rights had precedence over individual owner’s rights. It has been a necessary part of the life of rural dwellers from the 19th century, enabling access to and use of natural resources and providing a means of access across properties to manage forests and farmlands located separately from the main property.

Appreciation of the countryside and the natural environment has been fostered as part of the ethos of

Scandinavians and Finns from the late 19th century. In an increasingly urbanising society, environmental awareness is seen as a fundamental aspect of caring for the countryside. Similarly in Germany, Austria, and Switzerland, and in a number of the East European countries, appreciation of the countryside is embedded in the cultures. *Wander* is perceived not solely as walking in the countryside but as a multi-faceted activity ultimately embracing the appreciation of nature and culture. *Betretungsrecht* (‘the right to walk’) is the traditional right of public access in Germany and is essentially similar to *Allemansretten*. The rights have been enshrined in German legislation.

Forest recreation issues in Europe

Forests produce a wide variety of public goods and services in addition to timber. These include carbon sequestration, protection of biodiversity, landscape enhancement and groundwater reservoirs. They are important and popular destinations for recreation. EU policies increasingly emphasise environmental quality, under the influence of the sustainable development protocol, with particular stress on biodiversity and nature conservation.³ The European Forest Action Plan, approved in 2006, established a framework for supporting sustainable forest management, based upon the co-ordination of forest policies in each of the member states. As a result, forests are increasingly being managed on a multi-functional basis. The Plan refers, *inter alia* to the following objectives:⁴

- To maintain and appropriately enhance biodiversity, carbon sequestration, integrity, health and resilience of forest ecosystems at multiple geographical scales.
- Contribute towards achieving the revised community biodiversity objectives for 2010 and beyond.
- Contribute to the quality of life.

The latter point recognises that forests provide public goods and services that benefit people and include recreation and amenities in rural and urban areas. The EU has evaluated the annual return from

² First Chief Forester of the US Forest Service.

³ EU Forest Action Plan 2006.

⁴ Cited in EC. (2006). *Communication from the Commission to the Council and European Parliament on an EU Forest Action Plan*.

forest recreation as being in the region of €2.6 bln (UNECE op.cit).⁵

The changes in the forestry sector with the diversification into recreation and conservation is creating a need for research, training, technical updates and skills development. It is notable in this regard that research undertaken in the UK over the last decade (Appendix 1) places particular emphasis on the social and psychological benefits of forest use. The research has contributed to policies and actions that are shaped by the recognition that these benefits are tangible and valuable. It has become an important component of the Forestry Commission's remit. The same recognition obtains in most other European countries.

The EU Rural Development Regulation is the main instrument for the implementation of the EU Forestry Strategy at community level. EU financial support for forestry amounts to €4.8mln or 10% of the Rural Development budget for 2000 – 2006. The proposed Rural Development Regulation for 2007 – 2013 provides a basis for a fuller integration of forestry into rural development and recognises a need for closer co-ordination between rural and forestry objectives. One of the important areas in rural development is tourism. According to the Dobris Assessment⁶, based on data from the World Tourism Organisation, tourism is likely to become the largest single economic activity in the EU and currently accounts for 5.5% of the EU's GNP. Land-use for tourism has been growing significantly and more extensive forms of tourism such as hiking, cycling, and fishing are increasing in popularity. The driving factor behind the trends are financial – the average citizen is becoming better off and consequently has more disposable income and an increase in leisure time. The Treaty of the European Union acknowledges that EU actions should include measures in the field of tourism. Sustainable tourism depends on clean environment and tourists will increasingly avoid visiting areas with serious environmental problems. At EU level the importance of integrating tourism with environmental considerations is recognised (and is the basis of the Irish SPRITE project referred to in this review).



Development of woodland walking trail.

Recreation within the Irish forest sector

In Ireland developments in forest recreation have been somewhat muted until quite recently. Forest recreation has been a management objective in the Irish forest estate since the opening of Ireland's first forest park at Gougane Barra in 1966. More recently recreation has been referred to in the 1996 Forest Strategy. In a review of forestry development strategy, Bacon acknowledges the important role for forestry in delivering multiple benefits.⁷ On a practical level, the publishing of Coillte's 'Recreation Policy – Healthy Forest, Healthy Nation' and the development of the Forest Service's recreation guide 'Forest Recreation in Ireland: A Guide for Forest Owners and Managers' and the Forest Service Neighbourhood Scheme demonstrates the emergence of recreation as an important function of forests.

⁵ UN. (2005). *European forest sector outlook study*. UN publication.

⁶ Dobris Assessment State of the Environment Report no. 1. The European Environment Agency.

⁷ Bacon, P. (2004.) *A Review and Appraisal of Ireland's Forestry Development Strategy*. Dublin.



Signposted woodland walk.

In a study commissioned by Coillte and the Irish Sports Council⁸, it was estimated that the direct expenditure by Irish trail users (food, accommodation, equipment, etc.) was in the region of €307mln annually and the direct economic impact of forest recreation by Irish residents in rural communities was estimated to be in the region of €268mln per annum, while the non-market value of forest recreation is estimated at €97mln.

At another level, rural Ireland is undergoing substantial and irreversible change. The changes predicted over the next twenty or so years⁹ include:

- A changing countryside due to the predicted and continuous decline in farming, notably in less favourable areas.
- A potential doubling of the areas under forest.
- Increasing urbanisation and urban culture with consequent perceptions and demands relating to the use and the 'look' of the countryside.
- Increasing affluence with consequent increase in mobility and accessibility.
- Sustained growth in countryside recreation.

The EU Framework Plans for 2007 – 2013 give recognition to the changes, which are occurring throughout Europe, and propose mechanisms for sustaining 'a living and vibrant countryside'. Recreation and, relatedly, tourism and, in particular, nature tourism can be important contributors to this endeavour.

Thus in the context of countryside recreation, Ireland is confronted on the one hand with a rapidly urbanising society, and on the other with the inevitability of substantial rural change. The countryside is becoming a locus for recreation as a consequence of increased affluence and leisure time, improved accessibility, and the need people have to escape from the stresses of work. Access to open lands for recreation is an issue. At a national level, it is recognised that making structured provision for the development and management of countryside recreation is an imperative that will yield benefits to recreational users and to occupants of the countryside. The Department of Community, Rural and Gaeltacht Affairs established Comhairle na Tuaithe in 2004 to address three priority issues -

⁸ Fitzpatrick and Associates. (2005). *The Economic Value of Trails and Forest Recreation in Ireland*.

⁹ *Rural Ireland 2025: Foresight Perspective*. NUI Maynooth and Teagasc 2005.

access to the countryside; the development of a countryside code of practice; and the development of a National Countryside Recreation Strategy. The Irish Sports Council is in the process of completing a National Trails Strategy.

The changes that are likely to emanate from the post-2006 strategies and policies for agriculture and rural development, and the requirements that may emerge from the National Countryside Recreation Strategy will have an impact on forest management and require a sharper focus. At present the principal economic value of a forest is derived from its output of timber, but forests create considerable additional value by providing public goods including recreation. These services are important in developing support for the forest sector and maintaining a 'licence to operate'.

The provision of recreation and the commercial management of the estate need not be mutually exclusive. Each year forests welcome million of visitors¹⁰ and are an important part of the tourism and recreation (and health) infrastructure of the country. These benefits are as yet not widely known in the Irish context and considerable work is required to examine the benefits that forest recreation contributes to national well-being, tourism and health.

Research needs

Present day forest recreation users are arguably more active and environmentally aware than those of a generation ago. Consequently, there are new and increasing demands being made on the forest for recreation. Forest managers need to address a wide range of issues when dealing with the provision of recreation. These can range from the impact that recreation usage can have on forest activities, biodiversity or indeed other users, to the need to create woodland amenities within easy reach of a growing urban population. Recreation has an important part to play in education on several levels. Furthermore the relationship between forest design, town planning and the use of urban forests are all linked to recreation in one way or another.

The review objectives

This review was initiated to examine recreation management knowledge and capabilities in the light of changing expectations and operating environments. The objective is to develop a prioritised research programme that can meet the challenge of delivering worthwhile recreation experiences to all users while managing the forest estate to deliver economic and environmental objectives as well as social benefits. Importantly, it should help the forest sector to research in a real way the benefits that forests can deliver to other sectors – education, health, tourism – and provide a backing for increased and sustained support for this area of forest management.

Working group

- William Murphy (Chairman), Recreation Manager, Coillte.
- John Fennessy (Secretary), COFORD.
- Michael Cregan, Michael Cregan and Associates, Environmental Planning.
- Kevin Collins, Forestry Inspector, Forest Service, Department of Agriculture and Food.
- Barbara Maguire, Forestry officer, Irish Farmers Association.
- Dr Ken Boyle, Lecturer in Environmental Management, Department of Environment and Planning, Dublin Institute of Technology.
- Barbara Hunter, Tourism consultant.
- Aeneas Higgins, Society of Irish Foresters.
- Alistair Pfeifer, Manager, Research and Environment, Coillte.

¹⁰ The joint study commissioned by Coillte and the Irish Sports Council estimated that there are over 18 million visits to Irish forests each year. Fitzpatrick and Associates, Dublin 2. op. cit.



I VALUING RECREATION

Introduction

Forests are a very valuable recreation resource attracting millions of visitors each year. The forest contributes to the national well-being by providing recreational outlets. Forests as tourism infrastructure contribute significantly to the economic output of the country¹¹. The public good benefits are also extremely valuable in supporting the forest industry by increasing the return on investment, generating a 'licence to operate', and in gaining support for improved investment in forest-related activities.

Current issues and gaps

Valuing recreation – The economic context

Assigning a value to informal recreation is difficult because no markets exist by which it can be valued - in general, visitors do not pay an entrance fee. The *total economic value* of recreation (and/or other non-market goods, for example, biodiversity management) is a combination of the **direct values** that accrue to the user (including both **use** and **non-use** values¹²), and **indirect values**, for example, those that accrue to the tourist industry. Indirect values are a useful tool in examining the impact of recreation on the economy of a region.

Valuing recreation in Ireland

A limited number of studies have been undertaken in Ireland to value the recreational benefits of the forest estate. In 1984, a field test was undertaken to

test a number of different valuation methods under Irish conditions.¹³ A broader and more detailed study was undertaken by Ní Dhubháin et al. (1994)¹⁴ as part of a project to determine the social and economic impacts of forestry on rural development in the Republic of Ireland, Northern Ireland and Scotland. In this study (the CAMAR report), forest recreation was valued using the *travel cost method* (TCM) and *contingent valuation technique* (CVT).

Boyle and Storey (1993)¹⁵ interviewed users of forests sites in south Co Dublin and north Wicklow to examine attitudes to recreation provision and the value of the forests to users and residents.

The Bacon Report in 2004 determined that forest recreation contributed in the order of €37 million per annum to the national well-being. The estimate was based on an extrapolation from existing sources. No field assessment was undertaken to test or verify the estimations.

Methods of estimating visitor numbers

Estimating the usage of forests also poses a problem. While Coillte, the National Parks and Wildlife Service, and other forest owners collect some data, the dispersed nature of the forest resource coupled with the limited level of fee charging, make data collection in Ireland less than satisfactory. Little research has been carried out on the most effective ways to estimate visitor usage under Irish conditions. Murphy (1984)¹⁶ outlines a number of methods to estimate the usage of forest

¹¹ 'the forest delivers considerable elements of the tourism infrastructure that benefits the economy...' *Strategic development plan for Ireland's walking tourism product 2003 – 2006*, Failte Ireland.

¹² Broadhurst, R. (2001). *Managing Environments for Leisure and Recreation*. Routledge Environmental Management Series. p119 –131.

¹³ Murphy, W.M. (1984). *An Examination of Methods for the Economic Evaluation of Forest Recreation*. Unpublished M.Agr.Sc. thesis. University College Dublin.

¹⁴ Ní Dhubháin, A., Gardiner, J., Davies, J., Hutchinson, W.G., Chilton, S., Thomson, K., Psaltopoulos, D. and Anderson, C. (1994). *The Socio-Economic Impacts of Afforestation on Rural Development*. Final Report, Contract No. 80001-0008, CAMAR. European Community.

¹⁵ Boyle, K.E. and Storey, D. (1993). *The Amenity Use of Forests in the Greater Dublin Area and Impact of Amenity Usage of Forests on Local Residents*. Dublin Institute of Technology. Report to the Forest Service.

¹⁶ Murphy, W.M. (1984) *op. cit.*



Forests are a valuable recreation resource - Glendalough, Co Wicklow.

recreation. These methods include interviews, traffic counts, self-registration and point sampling – analogous to the use of basal area in timber measurement. Clinch¹⁷ (1999) used surveys to estimate the number of visits to forests. Some agencies in the UK use reflective light barriers to provide a means of continuous visitor registration. Boxall et al.¹⁸ (1999) used self-registration in a study to determine the value of wilderness recreation. The Forestry Commission monitors visitor numbers using a combination of people/car/bike counters. Work in Ireland in this area is essential to determine the most effective method.

Current research efforts

To address some of these issues, Coillte and the Irish Sports Council commissioned a study¹⁹ in 2005 to examine the contribution forest recreation and trails make in economic terms and to assess their economic impact on the tourism sector. The research established the current economic value of the service provided by both forests and trails that are

part of the national trails network. It failed, however, to fully address the issue of visitor numbers.

Research needs

The Coillte/ISC study referred to above is a baseline study that looked at areas under the management of both organisations. It examined the direct use and the economic activity generated through tourism based on forests and trails (See section on forest recreation and tourism). In estimating visitor usage, however, it relied on UK-based data to establish the total number of visitors.

Examining the economic value of forest recreation has implications for other areas of research such as tourism, and health and well-being. In the UK and Europe, the focus of benefits has moved beyond the purely economic benefits to examining health and welfare benefits (see section on forest recreation and health and well-being). The primary research priorities relating to valuing recreation are:

¹⁷ Clinch, J.P. (1999). *Economics of Irish Forestry*. COFORD.

¹⁸ Boxall, P.C., Englin, J. and Watson, D.O. (1999). *Valuing Wilderness Recreation: A Demand Systems Approach in the Canadian Shield*. Information Report NOR-X-361. Canadian Forest Service, Northern Forestry Centre. Canada.

¹⁹ Fitzpatrick and Associates. (2005). *The economic value of trails and forest recreation in Ireland*. Coillte and Irish Sports Council.

1. Evaluating economic impact for users

- Evaluating methods for estimating visitor usage.
- Evaluating the economic impact on forest operations of recreation-related activities.

2. Health and well-being – what contribution does forest recreation/forest environment make to health and well-being?

- Measuring potential improved benefits performance for health providers arising from engagement in forest (outdoor) recreation.
- Measuring the contribution of improved health through forest recreation-related activities.
- What forest attributes contribute to improved health and well-being.

3. Economic impact – tourism

- What economic benefits accrue to an area from tourism associated with forests?
- What attributes of forests contribute to improved tourism value?

Key research actions²⁰

- Evaluation of the economic benefits of forest recreation to users.
- Evaluation of the economic impacts of recreation on forest operations and functions.
- Evaluation of the tourism-related benefits from forest recreation.
- Health and well-being benefits in economic terms.

²⁰ COFORD is currently (June 2006) inviting proposals from consultants to prepare a scoping report in a number of areas including forest economics. Three areas relating to the latter are identified for research – the contribution of forests to the national economy, structure funding and policy impact of afforestation programmes, and forest industry competitiveness.



2 MANAGING THE FOREST RECREATION RESOURCE

Introduction

Forests form a major part of the recreation infrastructure currently used in Ireland. This is because the forest environment is generally robust, has a high carrying capacity - through its ability to absorb sound and hide large numbers of users, and is served by an extensive network of roads, trails and ride lines. It is significant in relation to recreation in Ireland that 60% of the forest estate is publicly owned.

Current issues and gaps

Challenges for managers and policy makers

Recreation presents a number of management challenges from a forest managers' and a public policy perspective including:

- Meeting expanding demands for recreation in an increasingly urban society, particularly in peri-urban forests where recreation-related activities, and indeed anti-social behaviour, present many management issues.
- Managing the increasing conflicts between different user groups – for example, off-road vehicles and other forest users.
- Managing the impacts on timber production.
- Managing the impacts of timber production on recreation.
- Managing resource degradation.
- Managing conflict between recreation and other resource functions including nature conservation, biodiversity management and timber production.

Recreational use of the forest resource

While a broad range of activities can take place in forest settings, only a limited number of these

activities are compatible within the same space and time. Most recreation organisations recognise the need for some form of segregation for their activities. Boyle (1999)²¹ has undertaken work on the capacity to mix activities and the range of activities currently engaged in on forest lands. Further research is required to develop models for practical management strategies of use to land owners and managers. Issues relating to the carrying capacity, the opportunity to overlap activities and methods for developing zoning all require work in the Irish context. Work is also required to examine the management of small-scale forest resources in the private sector within an overall recreation context.

Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) has proved to be a valuable tool in other countries for recreational management zoning. A review of the applicability of ROS in the Irish situation would be a valuable desk study.

Resource degradation

The level of use of forests for recreation is causing concern in some locations. Studies on the general use of the countryside have been undertaken relating to a range of concerns including parking, increased traffic at weekends, damage to fences and walls, and disturbance to livestock (e.g. Muylleert 2000)²². They do not, however, relate specifically to the forest environment. Ferris 1993²³ has undertaken a study of degradation of hiking trails in the Mourne Mountains, and O'Connor and Boyle (1997)²⁴ developed a GIS of trails in the Wicklow uplands and an assessment of soil vulnerability to erosion from recreational usage. There are significant gaps in research relating to degradation and management of trails and other facilities specifically in the forest

²¹ Boyle, K. and O'Donnell, V. (1999). *The Recreation Potential of Coniferous Woodlands in Ireland*. DIT.

²² Muylleert, M. (2000). *Aspects of Recreational Access in the Wicklow Mountains*. M.Phil Thesis, DIT.

²³ Ferris, T.M.C. *The management of recreation-induced erosion in granite upland: The Mourne Mountains*. Unpublished PhD thesis, Queen's University, Belfast.

²⁴ O'Connor, S. and Boyle, K. (1997). *Development of a recreation management model using GIS to assess the vulnerability of soils and landscapes to erosion due to amenity usage*. Irish Geographers Conference, UCD, May 8-10, 1997.



Stepped boardwalk to protect the forest floor and improve accessibility.

environment. Considerable work has been undertaken in the United States²⁵ and in the UK²⁶ on trail and facility degradation in forests and in similar environments. These researchers have developed models that could be applied to the Irish situation.

Forest managers are finding that proposed recreational developments (for example, mountain biking) are being delayed or challenged because of the possible or potential impact on protected species

and habitats. There is little research information available on the impacts of recreation on such species or sites in Ireland. Many of the areas supporting important species are also extremely attractive to recreational users. Research is required to establish what impact recreational usage has on nature conservation and on scientifically important sites.

²⁵ David Cole of the Aldo Leopold Wilderness Research Institute (US Forest Service research station) has undertaken a large volume of work relating to resource degradation due to recreation pressures.

²⁶ Scottish Natural Heritage has examined resource degradation in the Scottish context.



Provision of facilities.

Research needs

Three areas of research emerge in this section:

- The users and usage patterns.
- The forest environment and the impact of recreation.
- The impact of recreation on important sites and species.

The user and usage patterns

- What do people want in the forest environment and how do they use forests for recreation?
- Who are forests providing recreation for and is there potential to increase the recreational use of forests?
- What are the impacts of recreation on the forest and on similar environments?
- Can a forest accommodate a range of activities?
- What is the carrying capacity of forest sites, and can increased capacity be provided for?

- Sustainability indicators for outdoor recreation use.
- The ROS model as a profile of the Irish forest resource

User surveys and mapping of the forest resource can be used in combination to identify potential sites and activities as a basis for the research.

The impacts of recreation

Research is needed to establish the impact of recreation on forest sites and facilities. The studies could include both desk surveys of international work and small-scale on-site validation. The research should have regard to physical and social sciences. The following topics would benefit from research:

- The impact of recreation usage on trails, picnic areas, etc.
- The types of message that would be effective in generating changing patterns of usage (see section on forest recreation and education).

- The ‘costs and benefits’ associated with the choices faced by managers in the area of resources management and recreation.

Impact of recreation on nature conservation and biodiversity

Research in this area would focus on the impacts and degree of impact of recreational activities on nature conservation and biodiversity management.

Key research actions

- The development of the ROS model for the Irish situation.
- Capacity and impact studies relating to the recreational use of the forest.
- Users studies relating to forest recreation usage and users needs.



3 LANDSCAPE, FORESTS, AND OUTDOORS RECREATION

Introduction

The Irish landscape, like all landscapes, is a dynamic phenomenon and is subject to continuous change. Major structural adjustments in the agricultural economy; increased coverage of land by forests; and urbanisation/suburbanisation are amongst the factors causing significant alterations in land use patterns. The degree of change is likely to have an ever-increasing impact over the next number of decades. The situation requires a twin approach to the planning and management of ‘new landscapes’ of which forests are a critical part. On the one hand, the changes require an active planned response to ensure that future landscapes are managed sustainably. At the same time, urban generated demand for outdoor recreation is likely to increase. Forests and other types of accessible open lands afford an attractive locus for these activities.

Current approaches to landscape design planning have been premised on a scenic model of landscape.

While there appears to be some evidence that the approach yields publicly preferred landscapes, there has been very little in-depth exploration of the issues in this country. There is a need to know more, to reconcile the scenic model with other objectives including timber production, biodiversity and ecological management. Would an ‘ecologically’-based silvicultural system, such as the Shelter-Wood System, yield more recreational satisfaction to users and would it more successfully address issues of conflict?²⁷ There is thus a need for meaningful criteria and indicators for adjudicating on forest aesthetics.

The management of forests for outdoor recreation and for nature and ecological functions have become important objectives. As a consequence, functions other than timber production require much more explicit attention, not least because of the potential conflicts between the different functions. Recreational activities could



Environment and landscape are important attraction factors for outdoor recreation.

²⁷ Cregan, M. (2003). *Making Forests Work in the Landscape*. COFORD Conference: Forest Planning - Policy and Practice.



A variety of landscape elements enhances the recreational experience.

have an adverse impact on the rural landscape in the absence of deliberate and reflective planning and design. There is a need through research to develop an understanding of the complex relationship between recreation and landscape. A solid knowledge base will increase attention and awareness at all levels from policymaking and spatial planning to site-specific design and management.

Available research

Much of the current data available are derived from research and practice in the US and to a lesser degree from the UK and Scandinavia. The issues that confront us in Ireland require a particular focus responding to issues such as the culture, the social and economic status of the country and the planning style.

Current issues and gaps

Environment and landscape are important attraction factors for outdoor recreation. There are a number of levels of enquiry required: an analysis of forested landscapes to determine their potential suitability for outdoor recreation and relatedly, an appraisal of the scenic quality of landscapes to determine their attractiveness for recreation. Another area of importance is an appraisal of use patterns in outdoor recreation areas by users to establish design briefs for specific locations and uses. Techniques are available internationally to carry out such appraisal including landscape capacity studies.

Attractive landscapes can attract intense levels of usage and research is required to assess the level of impact of recreation use on forested landscapes. For example, users can be attracted to resources that also have a high level of value for landscape conservation and high levels of recreation use in turn may damage this. There is a need for research into the impact of recreation on landscape values and on other valued forest functions. Recreation Impact Analysis is a technique that has been

developed to explore the interaction between recreation and timber values and to estimate the impact of timber harvesting on the quality of recreation opportunities.

Public perception of forest landscapes and management for sustainability are components of the above. There is, in this country, a poor understanding of what influences people's landscape 'values'. Some preliminary work has been carried out by O'Leary et al.²⁸ There is a need for a deeper understanding of these values and their implications for recreation and landscape management. There are techniques available to promote public understanding and for assisting public perception though, for example, computer-generated images.

Research needs

Many of these topics can be linked with *Managing the Recreation Resource* (Section 2):

- To evaluate the public perception and public preferences for forested landscapes and to determine what landscape attributes are important for outdoor/forest recreation.
- To develop criteria for selecting forest lands based on their suitability for outdoor recreation.
- To assess the capacity of landscapes to accommodate recreational activity.
- To assess the impacts of outdoor recreational activities on the quality of landscapes and landscape and resource functions (including timber production).
- To develop sustainability indicators for outdoor recreation use of forest landscapes.
- To develop design standards and templates for recreation infrastructure in forest to provide for the sustainable management of the resource.
- To examine techniques for public participation in planning for recreation use of forests.
- Developing sustainability indicators for public perception and aesthetics of recreational forest resources.
- The use of computer simulation models to support the appraisal of public preferences for forest landscape types.

Key research actions

- Developing landscape evaluation techniques for use in outdoor recreation in Ireland.
- Review models of public participation techniques for co-operative decision-making in forest recreation planning and management and develop models for use in Ireland.
- Develop recreation impact analysis for use in the management of forest recreation.

²⁸ O'Leary, T., Mc Cormack, A. and Clinch, P. (1999). *Afforestation in Ireland: Regional Differences in Attitudes*. UCD.



4 NATURE CONSERVATION, BIODIVERSITY AND RECREATION MANAGEMENT

Introduction

Forests in Ireland are recognised as important for nature conservation and biodiversity management. For example, Criterion 4 of The Irish National Forest Standard refers to ‘*Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems*’.²⁹ The National Parks and Wildlife Service has undertaken an inventory of all areas of conservation value in Ireland as part of the Natura 2000 network. Coillte has a target of designating 15% of its estate for biodiversity management. Forest-based recreation can be linked to sustainable tourism. It is recognised that sustainable tourism can make positive improvements to conserving biological diversity through, for example, facilitating people obtaining knowledge of and respect for natural ecosystems and biological resources.

Current issues and gaps

There is a limited body of research on the topic of recreation impacts on protected species, landscapes and nature conservation. Farrell (2005)³⁰ has examined the relationship between sensitive areas of the Burren and visitor pressures. Further research is needed to establish what types of impact occur and to propose appropriate management solutions. The Forestry Commission has researched a range of topics, including the natural regeneration of native pine woodlands, and establishing criteria for defining ‘wilderness areas’. The Aldo Leopold Institute has an extensive research portfolio on such topics.³¹ In Scotland, the John Muir Trust, Scottish Natural Heritage, and forest managers are finding that proposed recreational developments (e.g. biking trails) are being delayed or opposed because of a perception that they could have an impact on, for



Wildlife in a woodland setting – Castletwellan, Co Down.

²⁹ Forest Service. (2000). *Irish National Forest Standard*.

³⁰ Farrell, H.C. (2005). *An investigation of GIS-based methodology for the sustainable, participative management of walking routes in Ireland*. Unpublished PhD, Dublin Institute of Technology.

³¹ For example: Cole, D. N. (2004). *Environmental Impacts of Outdoor Recreation in Wildlands*.

Flood, J.P. et al. (2000). *The Influence of Wilderness Restoration Programmes on Visitor Experience and Visitor Opinions of Managers*.

Watson, A. et al. (2002). *Wilderness: Searching for comparisons between traditional relations with nature, ecotourism, and ecological protection*.

example, protected species. In an Irish context, the EU Life projects on bog restoration present many issues, such as the definition of a forest and criteria to be used in the selection of areas for conservation. Large-scale forest owners such as Coillte are presented with significant challenges with regard to the management of the RED AREAS³², landscapes that could present many benefits if managed as ‘wild forests/landscapes’, and thereby offering a different recreation experience while enhancing landscape and conservation values.

While there has been a considerable amount of research and fieldwork in Ireland into the cataloguing etc. of species and habitats, there has been little, if any, into the management of the interface between humans and the biosphere. Areas requiring attention include:

- Research is required into the potential impacts of recreational facilities on natural and semi-natural habitats and on rare species.
- What is the public’s perception of naturalness and do people have a preference for natural areas or not? This is an area that could be linked with the perception of urban woodlands.
- The social and economic benefits of biodiversity to society, expressed as economic values.
- Interpretation of habitats. There is a paucity of information in Ireland on forest and woodland interpretation.



Native species such as holly contribute to the sense of place of the location.



A variety of plant species reflects rich biodiversity.

³² Coillte has defined the ‘red areas’ as areas where commercial forest management is unsustainable.

A desk study to review the topics from other countries would assist considerably in developing a map of the research needs in this area.

- The development of eco-tourism in a way that maintains the wild land value that people are drawn to.

Research needs

- A study of habitats and species in Ireland that are susceptible to impacts from visitors. A review on how these site types are dealt with in other countries. The outcomes would lead to best practice guidelines.
- An examination of the public's preferences for natural areas as against managed forests or unmanaged plantations.
- An evaluation of the physical and mental benefits of forests and biodiversity areas to society.
- Developing models and criteria for selecting and 'managing' wild landscapes within the forest estate.
- The contribution that forestry can make to ecotourism in Ireland - what is the potential resource – economic analysis.

Key research actions

- Desk study on current research topics, findings and practice abroad.
- Attitude surveys on the preferences of Irish people for 'wild' versus managed recreation areas.
- Developing criteria for 'wild forest' landscape selection in an Irish context.
- Impact studies on habitats and species subject to recreation pressures.
- Ecotourism and forest management.



Forests in Ireland are recognised as important for nature conservation and biodiversity.



5 TOURISM AND FOREST RECREATION

Introduction

Current tourism statistics indicate that tourists, both domestic and foreign, are motivated by factors affording physical and emotional benefits arising from outdoor activities (walking, angling, horse riding, etc.) the unspoilt 'natural' environment, and scenery. The statistics also suggest a downturn in the actual number of walkers and outdoor enthusiasts. Poor maintenance of outdoor spaces (walking trails, lake access, etc.), lack of visitor services (signage, amenities, programmes, etc.), and inadequate visitor management are identified as factors contributing to this decline although the constant issue of access that arises in the national press would also seem to play a major part.

More generally, published information reveals that forest recreation encourages an uptake of outdoor activity. It can broaden the tourism product base and thereby has the potential to address the under-utilisation of areas' rich natural resources, as

well as providing an opportunity to maximise on local products and services. It can also draw attention to less developed locations, and serve as a mechanism to support balanced regional tourism development.

In Ireland, the concept of forest recreation as an integral part of tourism is new although, given the access issue to land in general for recreation, Irish forests are a major part of the outdoor recreation infrastructure that services the tourism sector.

However, within current tourism and rural development structures, opportunities exist to provide a supportive framework in which it could be further developed. The Fáilte Ireland Special Interest Tourism (SIT) provides measures to encourage a greater uptake of outdoor activity-based tourism. The measures include a commitment to ensure sensitive development in relation to the conservation and protection of the natural and built environment.



Glendalough is a very popular tourist destination not only because of its rich cultural associations but also due to the extensive woodland trails.

Current issues and gaps

From an Irish viewpoint, research into forest recreation as an integral part of tourism is limited. The issues that can narrow the research gap, as well as providing a focus for this research would include:

- The identification of best practices in integrating forest recreation with tourism development.
- The examination of successes and failures, and what can be learned from them - of particular importance would be the following:
 1. To consider institutional arrangements and levels of commitment within the sector. This would examine barriers (and linkages) to co-operation within the forest recreation/tourism development process.
 2. To develop an understanding of the views of the main players and decision makers, directly and indirectly associated with tourism. Such collaboration would ensure that forest recreation remains an attractive and sustainable resource for all concerned, including the consumer.
- The development of assessment processes for identifying an area's potential and determining if the area is an appropriate setting for forest recreation.

Research needs

- To examine and evaluate current tourism, rural development and forestry policy and its implications for forest recreation development within the tourism sector.
- To identify types of users, their requirements, needs and satisfaction rates (see section on managing the forest resource).
- To identify the support mechanisms required (economic, personnel, social, resource use, etc.) and from whom these are or should be available, and how they can be mobilised.
- To establish how the return on investment can be achieved. How are the 'users' to pay for this resource, and how willing are the developers to impose a payment? How has this been addressed in other countries?

Methodologies

Information can be obtained using a variety of techniques including survey questionnaires, focus groups, and thematically guided interviews. Another approach would entail the use of thematic questionnaires and a SWOT analysis of small- and medium-scale tourist enterprises with a forest involvement.

Desk studies of practices and outcomes in other countries will contribute significantly as will Ireland's participation in the European-wide research network - COST Action 33 '*Forest Recreation and Nature Tourism*'.

Key research actions

- Research in the context of tourism development on user types, user needs and levels of satisfaction.
- Methods of securing returns from financial investment in forest-related tourism.

6 URBAN WOODLANDS AND FOREST RECREATION

Introduction

The concept of urban woodlands is European in origin. Examples are provided by Bos Park in Amsterdam, by the natural re-colonisation of areas previously used for heavy industry in the Ruhr and the Greater Manchester conurbation, and the creation of wildlife open spaces in Holland and British new towns in the 1970s.

Irish society is becoming increasingly urbanised. Over 60% of the population is now living in cities, and in towns with populations in excess of 10,000. Urban living by its very nature reduces the opportunities for access to the countryside for recreation. As cities and towns expand, the situation correspondingly intensifies. The stresses of modern urban living are well documented. Arguably the quality of urban life has deteriorated with consequences for the health and well-being of city dwellers. The incidence of stress is one of the indicators.

While the importance of providing an infrastructure to allow people to recreate in open areas in cities has been recognised for a long time, the contemporary situation adds an additional urgency to the situation. There is increasingly a need to provide accessible green spaces that can simulate the 'natural' environment in urban areas, where people can engage in passive and active recreation. Urban woodlands are an excellent example of this type of rural 'simulation'. Urban woodlands have been developed as community endeavours and have provided an increased level of social cohesion to the communities involved. Urban woodlands are also important in terms of maintaining natural functions and biodiversity in urban areas. They also can function as a living classroom and laboratory.

Urban woodlands have in recent years become one of the constituents of urban green space. They are woodlands that are accessible to urban dwellers and can be used by them as part of their daily routine

– for commuting, cycling, family walks, exercising and relaxing. They are managed principally to provide quality recreational opportunities for communities surrounding them. They can range from small to large areas of woodlands, and can be a constituent element of other open space types in urban areas such as public parks, riverside parks, road and railway margins, and wildlife areas.

The incorporation of woodlands into the urban fabric in Ireland and the means by which this can be achieved deserves further consideration.

Current issues and gaps

Urban woodlands are relatively uncommon in Ireland and those that exist are fairly recent in origin. Agencies such as the Local Authorities, OPW, etc., as the primary providers, have gained a certain level of experience in the management of these woodlands on public green space. Coillte has developed experience in the management of state-owned forests in peri-urban areas, which are often subject to high-intensity use (and misuse) by the urban population. Further experience has also been gained under the Forest Service NeighbourWood³³ Scheme and its predecessor, the Urban Forestry Scheme. NGOs have also run various initiatives for the promotion of the overall urban forest resource, including urban woodlands.

Research into urban woodlands in Ireland is quite limited. A recent PhD thesis, undertaken in the University of Ulster³⁴, studied the development of urban forestry in Britain and Ireland. This is an excellent review of urban forestry practice. However, although it includes various urban woodland projects, it does not look specifically at the practicalities of urban woodland development per se.

Collins undertook further work in 1994³⁵. This study included the development of a plan for urban

³³ A grant scheme designed to promote the development of urban woodlands.

³⁴ Johnston, M. 1999. *The Development of Urban Forestry in Britain and Ireland*. PhD thesis submitted to the Faculty of Science, University of Ulster, N. Ireland.

³⁵ Collins, K.D. (1994). *Urban Forestry in the Republic of Ireland: A Review and Case Study*. Thesis submitted M.Agr.Sc. (Forestry), UCD.

woodland in West Dublin, based on a public consultation process and a review of the practical aspects of woodland development in the Irish urban context. A series of national urban forestry conferences were held between 1991 and 1998, which included aspects on urban woodlands.

There is, however, a limited understanding of the role and value of woodlands in urban settings in Ireland. It cannot be assumed, given our relatively recent urban history, that their popularity in other countries would be replicated here or that people's perception of them would correspond to perceptions in other countries.

Research needs

The research needs of urban forests overlap considerably with 'traditional' forest recreation management – the benefits, managing the resource, education, etc. The primary focus of research in this area should be on social aspects of urban woodlands:

- What is the public perception of them?
- Who uses or would use them?
- What values do they bring to urban communities?
- Are there issues relating to fear and safety?
- What qualities and designs are required to make them attractive to user needs?

There are also ecological aspects requiring study, including their contribution to natural processes and biodiversity in urban areas. Work is also required in the practicalities of urban forest establishment.

A number of the topics could be explored by desktop studies; others will require more fundamental investigations. These items would include:

- Opportunities for, and barriers to, the development of urban woodlands.

- Review of research regarding urban woodland development on former landfill sites, and possible application in Irish context.
- Practical aspects of urban woodland design and management with Irish urban context.
- Mechanisms to facilitate public participation in design and management in the development of urban woodlands.

Key research actions

- Perceptual aspects of urban woodlands (social/community values).
- User needs.
- Good practice for design, delivery and management.



Woodlands have become important constituents of urban green space.

7 FARM FORESTRY, RECREATION AND RURAL DEVELOPMENT

Introduction

Both the expansion of the forest estate over the past two decades and its projected future growth have relied on, and will continue to rely on, the farming sector. Furthermore the new Rural Development Regulation puts greater emphasis on the non-timber values of forests and includes provisions to support forest owners for enhancing the public amenity value of their forests. The initiative by the Forest Service to promote such usage through their recreation guidelines³⁶ also adds impetus to the need for research into the issues faced by private landowners who intend to provide recreation facilities.

The fact that private forests cover 40% of our forest land area and the ability of forests to accommodate recreation usage emphasises the potential value of private forests to contribute to the overall recreation mix in the country. The post-2006 changes to the common agricultural policy will bring significant changes in the agricultural sector

and place a greater emphasis on alternative enterprises, such as farm-based recreation and forestry. As is the case in other countries, outdoor recreation is an activity that could significantly contribute to local economics and maintain viable communities particularly in those areas that will continue to undergo a decline in agriculture.

Unlike Scandinavian countries or the north-eastern region of the United States, there has never been a tradition of on-farm recreational forestry in this country and it remains an area largely unexploited by Irish farmers. A small number of examples of successful on-farm commercial recreational enterprises do exist. Meelmore Lodge is located in the Mourne Mountains in Co Down. A local farmer, with assistance from the Mourne Heritage Trust, converted a farmyard into a car park with adjoining toilets/showers and coffee shop. He also developed a small camping site and charges a fee for the use of the facilities. The annual return from the venture far exceeds the return made from traditional sheep farming. Cronin's Yard is a similar



Farmland has the potential for offering a wide variety of recreational activities.

³⁶ Forest Service. (2006). *Forest Recreation in Ireland: A Guide for Forest Owners and Managers*.

venture located in Mealis, Beaufort, Co Kerry, and supported by South Kerry Development Partnership.

An awareness of change in the countryside is gradually encouraging entrepreneurial endeavours. It has inspired a cross-border project set up to explore issues of farming in the protected landscapes of the Mourne and Wicklow under the aegis of the Mourne Heritage Trust and the Wicklow Uplands Council. In Scotland many private landowners provide recreational facilities on their land with financial and other supports made available by the Forestry Commission Scotland through a scheme called the Walkers Welcome Initiative. Since 1994 the Swiss Forest Agency has been encouraging private forest owners to diversify under a programme called VAFOR (Valorisation of Forests).

For the private landowner, the economic return will be a key driver. In other countries, various models have been applied to income generation from direct fees³⁷ to easements.³⁸ The Irish Farmers' Association has recently launched proposals for a walkways initiative to address some of these concerns.³⁹

Current issues and gaps

There are a number of barriers affecting the development of recreational forestry among Irish farmers. The most significant of these are the issues surrounding access and public liability. Many farmers are afraid to allow the public to enter their lands for fear of litigation. The fear is somewhat misplaced. The Occupiers Liability Act of 1995 clarified the law relating to the liability of landowners. It contains specific provisions designed to facilitate the use of lands for recreational activity. It refers to a 'recreational user' as a person who enters land for recreational purposes. To be found liable for injuries occurring to such a person on privately owned land, a landowner would have to behave with 'reckless disregard'. Farmers nevertheless require assurance on this issue.

Farmers and private landowners are also concerned that if they open their estate to public use, they may become victims of anti-social behaviour, and be required to deal with problems similar to those faced by public forest land managers (see section on managing the recreation resource).

The average size of the Irish private forest holding is only 9 ha. Therefore the types of recreational enterprise that can be accommodated may be limited. Hunting on private forest land is well developed on the continent but has not really taken off amongst farmer-foresters here, perhaps due to the young age of the farm -forest estate.

Current knowledge available

Some information exists on the role of forests in the tourism mix of a locality⁴⁰. The issues raised elsewhere in this review will have equal application to public and private forest landowners alike. Similarly the work on valuation and biodiversity/nature conservation are all of relevance to private landowners. Scottish Natural Heritage has examined the issue of access to the countryside across Europe⁴¹ and a similar study is currently being undertaken under the EU COST Action E33 Working Group 1.

Research needs

To develop recreation in the private forest sector, three areas of primary concern arise for further research:

- Supporting frameworks.
- The legal framework for access to recreational areas.
- Specifications for the development of farm-forest based recreational enterprises.

Economic contribution

In the short term, a desk study is required on the type of supports/operating climate in other countries that

³⁷ Scottish Natural Heritage has mooted the idea of a £1 stg. fee per day on the West Highland Way.

³⁸ Easements are extensively in the United States to purchase access rights for recreation. They offer a potential model for the transfer of resources for public goods.

³⁹ IFA. (2005). IFA Countryside Walkways Management Scheme.

⁴⁰ The SPRITE project is discussed in Cawley, M. et al. (2004). *Integrated Regional Tourism Development in the West of Ireland* and in Hunter, B. et al. (2004). *An approach to developing tourism in rural areas*. Teagasc.

⁴¹ Scot, Peter. *Planning Services* (1998). *Access to the countryside in selected European countries*. SNH.



An awareness of change in the countryside is encouraging entrepreneurial endeavours.

have encouraged farmer-foresters to develop recreational enterprises. Further desk research should also examine:

- Types of forests most suitable for recreational development.
- Methods for income generation from private forest owners – A review of different methods from direct fees to recreation easements on an international basis.
- Existing linkages or potential for linkages between farm forests and other recreational enterprises.

Legal framework

A desktop review of access and related topics such as liability in other countries, particularly other EU countries and its relevance to Ireland would be a considerable assistance in dealing with much of the misinformation that exists around the whole access debate.

Information

As noted above, recreational use of small private forests and indeed the recreational use of private forests generally is an area about which there is little experience or knowledge in Ireland. If it were established that such developments are feasible, a guidance booklet for private forest owners would be of considerable value. The booklet would provide information on all aspects of recreation provision for the private owner, from securing funding to designing the facilities to managing the overall enterprise as an ongoing concern.

Key research actions

- The types of forest and type of recreational enterprise most suited to private forest owners.
- Methods of generating income from private forest-based recreational enterprises.
- Guidance booklet on creating and managing the recreational resource.



8 HEALTH AND WELL-BEING

Introduction

As a society we are witnessing the adverse effects of changing lifestyles. The report from the Obesity Task Force⁴² documents the problem. Research evidence is demonstrating that outdoor (forest) recreation can make a significant contribution to health and well-being.

Current issues and gaps

Work in this area is only beginning in Ireland. Work has been conducted by the Sports Science Department at Dublin City University as part of the

Sports Council '*National Trails Strategy*'. The most comprehensive research on the physical and mental benefits of outdoor recreation in recent years is the collaborative report⁴³ produced by the Countryside Recreation Network. In a European context, COST Action E39 '*Forests, Trees, Human Health and Well-being*' has been established to examine this topic. Ireland is a participant in this COST Action.

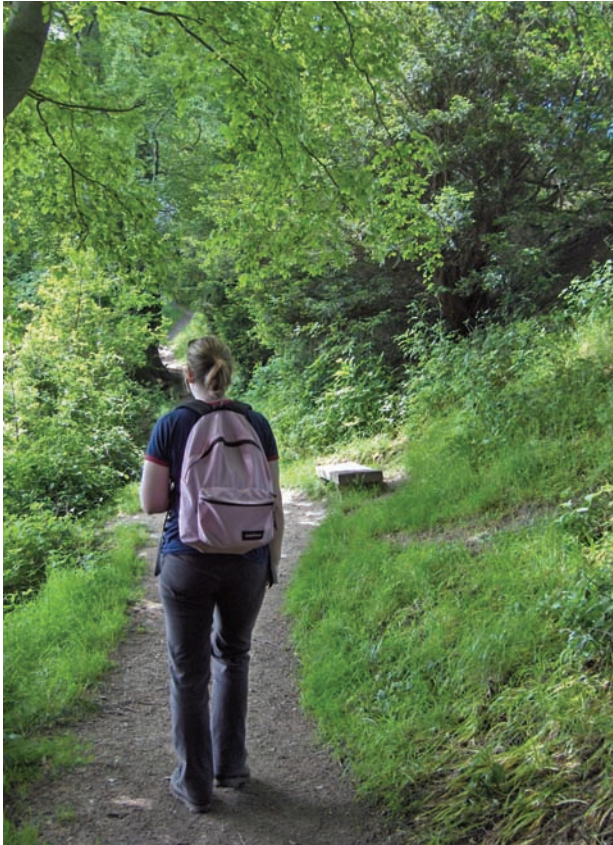
The topic requires a collaborative approach with pertinent agencies to develop a research agenda. It is unusual in that it requires a connection to be made between two apparently unconnected areas: health and forestry.



Cycling in a forest setting provides both enjoyment and health benefits.

⁴² Department of Health and Children. (2005). *Taskforce on Obesity Report*.

⁴³ A countryside for health and well-being - the physical and mental health benefits of green exercise. 2005. Countryside Recreation Network.



Physical health benefits are associated with outdoor recreation.

Research needs

Initial research should focus on collaborative work with other organisations, and would require raising the awareness of these agencies on the health benefits of outdoor recreation. Organisations such as the Countryside Recreation Network (CRN), and the COST actions provide an ideal vehicle whereby we in Ireland can tap into a larger research effort with neighbouring countries.

Desk research

The first objective is to compile a desk study of all the research into recreation and sport that has been undertaken in Ireland (north and south) examining not only the physical health benefits but also the mental health benefits.

Collaborative projects

Collaborative projects with other organisations, including the

Health Research Board and universities and other third level institutions in Ireland, CRN, the Forestry Commission, the Countryside Agency and English Nature in the UK, should be sought and promoted. Opportunities are available through a range of EU-funded or supported projects for collaborative actions. These include COST Action, Terra, LIFE and INTERREG amongst others. These should focus on:

- Physical health benefits associated with outdoor (forest recreation) in terms of improved health, savings and economic benefits of health improvements and examination of pilot projects.
- Mental health. An examination of the benefits associated with forest recreation in terms of improved quality of life, improved health benefits and savings and economic benefits of these programmes.

Key research actions

- Desk study to compile data on Irish-based research into the broad range of health benefits associated with outdoor recreation.
- Collaborative work with other agencies on physical and mental health benefits and outdoor recreation.



Outdoor recreation can make a significant contribution to health and wellbeing.

9 FOREST RECREATION SITES AS AN EDUCATION RESOURCE

Introduction

Forests are a valuable educational resource, a fact that has been recognised in Ireland since the beginning of forest-based recreation in 1966. The Forest and Wildlife Service and the Society of Irish Foresters undertook, from the mid-1960s onwards, a number of initiatives aimed at increasing the visitor's understanding of forests and nature. These included the provision of information leaflets, nature trails and organised walks. The Forest Service continues to promote the use of forests as a resource for education by supporting educational organisations and initiatives. Examples include the Tree Council of Ireland's Outdoor Classroom programme in Balrath Wood, Co Meath, and its annual National Tree Week and Tree Day events. Educational trails and interpretative information are available at many forest sites across the country.

The forest as a resource for education remains largely under-utilised despite these endeavours and despite the public's acknowledged interest in having increased contact with the countryside and the natural world. Some sectors within the industry tend to view education primarily as a tool to promote the value of trees in a commercial context. While this is a legitimate objective, a more broadly based perspective on forest-related education would yield many benefits not only to the forestry sector but also to the broader community. The forest offers opportunities for schools to participate in structured programmes where the forest is the educational resource and for children and adults alike to interact with the natural world. The forest also provides opportunities for the public to develop a greater awareness of the sustainable management of natural resources though interpretive forest-related activities.



The forest is a valuable educational resource.

Ireland's forests offer an invaluable and under-utilised resource for raising an awareness of our physical and natural surroundings and for providing specific knowledge on forests, their multi-functional roles, and the new challenges of sustainable land management. They also can support a wide range of educational programmes linked to school curricula. Examples include the initiatives to link orienteering programmes with earth sciences and mathematics in the Northern Irish school curriculum.

Current issues and gaps

Education opportunities and challenges

David Orr stated that *'All education is environmental education. By what is included or excluded, students are taught that they are part of or apart from the natural world'*.⁴⁴ UNESCO⁴⁵ stated: *'It is widely agreed that education is the most effective means that society possesses for confronting the challenges of the future. For the foreseeable future, sustainable management of the environment will be one of the greatest challenges confronting the world.'* Environmental literacy through education can enable us integrate ecological thinking into social and economic planning - which is essential for sustainable management – indeed for sustainable forest management. Richard Louv⁴⁶

argues strongly that the use of the natural world for play (loosely based education) promotes a huge array of benefits in terms of childhood development both in and out of school. This concept is being explored in the whole area of 'biophilia'.

Education aiding management challenges

Many forest managers, in the course of their daily work, are required to consult with local communities on decisions concerning the forests in their charge. The process can be hampered by the poor quality of information amongst the public concerning forestry. Forest-related education can be supportive by providing a means for the public to secure a better understating of forest management and forest operations.

Education for improved behaviour

Forest managers, like other land managers, are increasingly faced with managing recreation pressures from growing numbers and poor behaviour. Agenda 21⁴⁷ focuses on the role of education in environment decision-making: *'It is (also) critical for achieving environmental awareness and ethical awareness, values and attitudes, skills and behaviours consistent with sustainable development'*. Forest-based programmes such as the Leave No Trace initiative,



The forest as an educational resource is under-utilised in Ireland at present.

⁴⁴ David W. Orr. *Earth in Mind: On Education, Environment, and the Human Prospect*. (Washington D.C Island Press, 1994).

⁴⁵ UNESCO. (2003). *Education for a Sustainable Future: A Transdisciplinary Vision for Concerted Action*. Conference, Prague.

⁴⁶ Richard Louv. *Last child in the woods-saving our children from nature deficit disorder*. (Algonquin Books of Chapel Hill, N.C. USA. 2005).

⁴⁷ Agenda 21. (Chapter 36). *Promoting Education, Public Awareness and Training*.

and forest-based information (trail head signs, etc.) can have a huge part to play in effecting behavioural change.

Forest-based education therefore can be broken down into a number of categories:

- Forest education which increases real awareness as to the value, challenges, etc. facing modern forest management.
- ‘Propaganda’-related education aimed at increasing the level of support for forestry.
- Education designed to influence behaviour, e.g. Leave No Trace.
- Education supporting other curricula programmes in the education system, e.g. the NI orienteering programme.
- Physical education through a variety of programmes from trim trails to orienteering.
- Education where the forest provides the background to developing the new concepts associated with biophilia.

Research needs

There is a considerable body of work relating to the dispersal of information on the natural environment in other countries. For example, at the Aldo Leopold Institute in the US, David Cole⁴⁸ has examined connections between environmental education and recreation-related issues. While there has been considerable advocacy for environmental educational programmes, there appears to be a dearth of information on the agenda requirements for such programmes as they relate to the forest environment. Detailed information is required on the range of programmes that would be beneficial, and on the methods by which they would be presented. It is likely that information and methods in the traditional education sector would be transferable to the forest situation. The research could be advanced by desktop appraisal of current education thinking on outdoor education.⁴⁹

A research programme in environmental education would determine how best environmental education could be delivered. The research would address such questions as:

- What is the function and value of forest-based education?
- How best should it be structured to provide maximum benefit to users?

The research would require detailed consultation with relevant specialists in addition to desk studies. The outcome could be a set of Good Practice Guidelines.

Key research actions

- A review of the current international research programme to establish the range of functions and service of forest-based education.
- A review of research on the methods and issues relating to delivery.
- A review of best practices – this will vary depending on the education message, in particular in relation to developing education to inform public consultation.
- Co-operative programmes with researchers on the value of nature-based education programmes.

⁴⁸ <http://leopold.wilderness.net/staff/cole.htm>.

⁴⁹ The Journal of Environmental Education is a primary source. A web page managed by Dr R. Greenaway provides a comprehensive listing under the heading ‘Outdoor Education Research A – Z’ www.reviewing.co.uk/research/links.



10 RESEARCH PRIORITIES AND METHODOLOGIES

Research approach

The range of issues that relate to forest recreation identified in this review is extensive and involves an overlap between different ‘disciplines’. It is therefore recommended that a number of different methodologies be adopted to encompass the scope necessary for an extensive review.

Desktop research

Ireland is relatively new to outdoor/forest recreation research. There is a considerable volume of research available in the UK and in other EU countries, and in North America, including research on the topics discussed in this review (see Appendix 1). It is recommended therefore that the initial research effort should be a desktop review of pertinent studies. It would be a cost-effective approach to narrowing the range of areas requiring to be studied and would facilitate a refining of the key research actions. The outcome would be a listing of research areas where there is an inadequacy of data available, and a listing of issues, which would be specific to conditions in Ireland, irrespective of research carried out in other countries.

Collaboration

Organisations such as the Countryside Recreation Network, and the COST Actions provide a vehicle whereby we in Ireland can tap into a larger research effort with neighbouring countries. For field-based programmes or new areas of research work, every effort should be made to support new research through collaborative programmes between different organisations. This would include establishing connections between different pertinent research agencies such as COFORD (in association as necessary with the Irish Sports Council), the Health Research Board, Universities and other third level institutes with the research interest and capacity to commit to a long-term research programme in the fields of health, social science, psychology, and resource conservation and management. Reference should also be made to EU-funded research programmes and notably COST Actions, INTERREG, LIFE and CORDIS.

Field research

Field-based research will be required to examine issues in the Irish context. Work needs to be undertaken, for example, to establish the impact of recreation on forest sites and facilities.

Research priorities

The topics covered in this review show a large degree of overlap. Therefore they have been grouped into priorities relating to different topic areas. The key action areas are presented in Table 1. The topic areas are ‘associated’ on the table as:

- User studies.
- Capacity and impact studies.
- Benefits – economic, non-market and other public goods.
- Health and well-being.
- Good practice.
- Collaborative research.

The key research actions are generic and thus indicate the general area for which research is required. There are a number of overlapping topics and a number of ‘stand alone’ topics listed in the table. These are:

- **Capacity and impact studies** in relation to landscape capacities to absorb recreation, habitats and species and biodiversity impacts, and conversely recreational impact studies including the suitability of different forest types to accommodate different modes of recreation. Sustainability indicators would be one of the outcomes of impact studies. The research disciplines would include resource conservation and landscape planning.
- The general area of **perceptual studies**, which would include studies on user needs and user behaviours in addition to looking at perceptions and values in relation to forests, nature and the countryside. The studies would identify trends, motives, attitudes, barriers, typologies and profiles of participants, etc. The area of public participation would also be included. The disciplines associated with these

TABLE 1: Key action areas.

Managing the forest recreation resource	Landscape	Valuing Recreation	Nature Biodiversity	Tourism	Urban Woodlands	Farm Forestry	Health and Well-being	Education
User studies – patterns of use and user need	Public participation for recreation planning	Economic benefits to users	Attitude surveys in regard to preferences for wild areas	User studies	User needs			
	Attitude surveys in regard to preferences for wild areas	Usage data			Perceptions in relation to urban woodlands			
		Economic value on forest operations	Ecotourism and forest management	Ecotourism and forest management				
Capacity and impact studies	Recreation impact studies	Economic impacts on forest operations	Habitats etc. susceptible to impacts					Methods and issues relating to delivery
ROS model for Irish situation	Landscape evaluation techniques							
		Economic benefits from tourism		Securing returns on investment from recreation		Income generation methods		
						Suitable forest and enterprise types		
		Economic value of health benefits					Health benefits in Irish context	
					Good practice in design etc.	Advisory manual		Review of best practice in regard to functions and services
							Collaborative research	Collaborative research into education value of forests

areas would be broad and would include resource management and conservation, social science and psychology. Related to this area and overlapping with a number of other topic areas is the need to review and develop models of public participation in forest recreation planning and management and to develop models for use in Ireland. Allied to that would be the development of **sustainability indicators for public perception** and the aesthetics of forest recreational areas.

- **Ecotourism** and the contribution that forests can make to its development and the requirements that would arise for forest management. The disciplines would include resource conservation and forestry, with inputs from specialist tourism areas.
- **Benefit evaluations**, in the context of both large-scale and small-scale forests, would include studies on the direct health benefits of outdoor recreation as measured using economic indices in addition to the evaluations listed under 'Valuing Tourism and Farm Forestry'. The disciplines would include forestry, environmental economics and health research. Overlaps would include tourism and farm forest recreation.
- **Tourism research** would address the following economic areas:
 - A desktop review of Irish and European studies on the economic impact of forests to the tourism value of an area.
 - An evaluation of the specific attributes of forested areas that contribute directly to tourism.
 - An evaluation of current policies in tourism, rural development and forestry and their implications for the development of forest recreation within the tourist sector.
 - To determine the type of support structures and mechanisms required to develop the sector.
- **Farm forestry** would benefit from a desktop review of recreational project types and methods of income generation. Similarly, research is required to determine the type of support structures and mechanisms that would support and develop the sector.

The 'stand-alone' topics are:

- **The ROS model**, referred to in *Managing the Forest Recreation Resource* with resource management as the relevant discipline.
- **Urban woodlands**. The area would include:
 - Perceptual studies referred to above (social, community values in the Irish context).
 - Desktop and field research on the opportunities and barriers to the development of urban woodlands.
 - Desktop review of best practice in relation to design delivery and management.
 - Mechanisms to facilitate public participation in the design and care of urban woodlands (a topic that overlaps with landscape and resource management).
- The general area of **environmental education** which would require broad collaborative work between forest managers and researchers in addition to specialists in education research:
 - A desktop review of current international research programmes that would establish the scope of forest-related education and the services required to effect delivery range.
 - A desktop review of best practice in relation to the all areas and aspects of forest-related education.
- **Health benefits (both physical and mental)** associated with forest recreation, which would require collaboration with health agencies and research institutes, possibly co-ordinated by COFORD in co-operation with other organisations such as the Irish Sports Council and Health Service Executive. The research would require:
 - A desktop review of forest-related recreational activities that contribute to improved health and well-being.
 - A review of international studies, to include on-site validation of improved financial performance in the health sector directly attributable to improved health arising from forest recreation.
 - Evaluation of specific aspects of forest recreation that contribute to improved health, both physical and mental.



Water features enhance forest recreation.

To develop a research agenda, which embraces the identified key research, needs for the sector requires setting out an agenda covering institutional arrangements and a prioritised research programme. The institutional arrangements refer to the management of the research programme and with developing formal arrangements with collaborating institutes. The final arrangement should involve the establishment of a main agency with responsibility for the overall managing and monitoring of the programme, and a core committee consisting of the collaborating institutes.

Organisation of research funding

The review establishes that forest recreation and countryside recreation in Ireland requires detailed research attention. In the context of urbanisation and major, irreversible change in rural Ireland, it is likely that demands will be made on the countryside and on forests into the future. The impacts of these demands could have adverse effects unless they are understood, anticipated and managed. Ireland as an emerging urban society is only now having to contend with the relatively large-scale use of the countryside for recreation. It is not large-scale at

present but there has been a very significant expansion over the last decade. There is a dearth of research information in the area of countryside recreation and the research agenda is therefore in its infancy. It is therefore essential that funding be provided to address the issues identified, on a scale that is sufficient to properly resource the area, and in a sustained manner over the period of new R&D funding from 2007 to 2013.

APPENDIX I

A REVIEW OF RESEARCH ACTIVITIES IN THE UK AND EU PROGRAMMES

Research in the UK and EU Programmes relating to Outdoor Recreation and Forests

INTRODUCTION

As part of this review an exploratory visit was undertaken to Scotland to get an overview of research activities in the UK relating to forests, countryside and outdoor recreation. Recreation development has been an active component of the forestry agenda in the UK for at least a decade and has been accompanied by a comprehensive regime of research, which is ongoing. As part of this visit the authors met with the Edinburgh College of Art, School of Landscape Architecture (Professor Catherine Ward-Thompson and Simon Bell) and with Forest Research, the Research Agency of the Forestry Commission (Marcus Sangster and members of the Forest Social Research Group).

EDINBURGH COLLEGE OF ART

The school has an active research programme in the area of the use and benefits of outdoor recreation. The programme is posted on a web page – www.openspace.eca.uk/projects.html.

Children and Outdoor Recreation

The areas of research undertaken takes account of a changing society, which is altering the expectations in regard to recreation requirements. Young people are found generally less inclined to plan, and expect instant solutions. The consequences of these changes require to be understood and explored in any area of recreation research and marketing. Teenagers and young adults expect their activities to be attractive, not threatening and to be socially 'cool'.

Childhood experience is intimately linked to the style of upbringing and will influence decisions and choices children will subsequently be making as young adults. Thus if a healthy lifestyle is a component of their upbringing, it will continue into

adult life. It has been found that adults who engage in outdoor activity were encourage to do so when they were children.

If upbringing does not include exposure to the outdoors and to the countryside, it has been found that perceptual problems are created - notably in regard to fear of the countryside as an unknown domain and associating it with imagined dangers.



The forest provides an education resource for children and adults to interact with the natural world.

The consequences of urbanisation have been to further alienate people from the countryside and to reinforce the sense of it being an unknown domain. Children are seen as ‘suffering’ from ‘*nature deficit disorder*’. Research is needed to determine ways of encouraging access to the countryside by young people and would include ways of overcoming fear and alienation.

ECA have the following research programmes relating to the topics generally:

- *‘Wild Adventure Space - Scoping Research – A project to investigate the hypothesis that ‘the wild environment’ can play an important role in meeting the development needs of young people across England. The research will identify issues concerned with providing wild adventure spaces for young people, including benefits to society, future planning and possible barriers.*
- *Evaluation framework for projects to increase access to the countryside.* The project involves preparing an evaluation framework aimed at means of increasing the diversity of visitors to the countryside,
- *EU COST Action E33 Forest Recreation and Nature Tourism – in which issues of design in relation to accessing natural areas are explored. Ireland has an involvement in this project, which commenced in 2004 and is of four years duration*
- *Local open space and social inclusion: case studies of use and abuse of woodlands in Central Scotland.* The research was commissioned to explore public use of and attitudes towards woodlands, to address aspects of use and user provision, which had been identified as important by landowners and managers. These aspects are concerned with the level of use of forests, the profile of users, and their reasons for visiting certain places and the quality of the experiences gained by the different segments of the population who visit them.
- *The effectiveness of wayfinding systems with forest users and countryside visitors’*

wayfinding needs – This is a three-phase study. The first two phases examine design problems connected with visitor information and wayfinding at visitor recreation sites. A key output was the development of a prototype wayfinding assessment toolkit. The third phase involves field-testing and validation of the toolkit (called VIEW) and its presentation as a training package to forest and countryside site managers.

- *Diversity review options in relation to the use of the countryside.* When the options have been explored the way will be opened for a programme that will research ways of encouraging a wider range of people to explore the countryside, and will examine issues of social exclusion. A separate study (I'DGO) will identify effective way of ensuring the outdoor environment is designed inclusively to improve the quality of life for older people, and will also address issues that are relevant to disabled people, regardless of age.
- *The social value of nature in the East Midlands* studied the contribution that the environment makes to peoples’ well-being and the feeling they have towards a selected number of artificial and natural greenspace sites.

FOREST RESEARCH/ FORESTRY COMMISSION

The group gives recognition to the need within the spectrum of recreation research to focus more fully on services rather than the facilities – what are peoples’ experience of recreation and what are the needs for recreational programmes within a wider socio-economic context?

Reference was made to volunteerism and the need for develop strategies to enlist the support of volunteers to carry out tasks relating to outdoor recreation⁵⁰ and to develop support and understanding of the outdoors environment. Another area of interest that the FC social researchers predict will have a research requirement is ‘corporate responsibility’ in which employers provide

⁵⁰ *Environmental volunteerism is an area, which is poorly developed in Ireland, but one which is likely to see growth in light of government policy to increase volunteerism across the spectrum. The Countryside Recreation Network ran two seminars on this topic in 2006 and Mountain Meitheal - an Irish voluntary group who undertake conservation and restoration projects on mountain and forest paths - presented papers on the level of volunteerism in Ireland.*



Forest recreation research recognises the importance of services to the public in addition to facilities.

additional free time to the employees to develop themselves and enrich their life experiences.

The group have targeted two generic areas for study which represent a continuation of the focus of the social research group:

1. What will be the trends in outdoor recreation over the next number of years?
2. What, in consequence, are the linkages that will be required to further the research agenda?

Three areas have been particularly targeted – health and well-being ('recreation is good for industry'), culture, and landscape. It is noted the Forestry Commission allocates €0.5 mln per annum to the social research programme. The studies derive from a recognition that:

- Urban expansion is making the countryside remote from the urban community. Urban dwellers are losing contact with the countryside and the natural world, and are confronting what is increasingly perceived as a 'sealed' countryside in the absence of an open access policy.
- The further issue concerns communities who would benefit from easier access to the countryside. The Countryside Agency has undertaken research to determine how to

support the participation in outdoor recreation of disabled, and minority ethnic groups, people who live in inner city areas and young people.⁵¹ The concern connects with Article 13 of the EU Treaty of Amsterdam, which codifies a set of social rights based on the premise '*that all citizens should be able to participate to the full in the social heritage of their country.*'

In the context of multi-function forestry, questions arise as to the broader benefits of forestry to the public, as a basis for justifying funding, and relatedly the involvement of local communities in decision-making concerning forests.

The following is a compendium of both completed and ongoing research connected to the above themes being carried out by or on behalf of Forest Research:

- *Public access, recreation and tourism* - research which aims to develop and disseminate understanding of how access, recreation and tourism contribute to sustainable development as well as build and disseminate guidance and good practice on managing forests to maximise the benefits of recreation and tourism to society. The research relates to EU legislation on Access for All.

⁵¹ Countryside Agency. 'Outdoors for All' as part of a Rural White Paper 2004.

- *Leisure landscapes research* with recreation and tourism providers to understand current and potential links between forests and woodlands and the leisure sector.
- *Ownership patterns and owners attitude and perceptions of public access provision in the South East of England* - research to explore the attitudes and perception of private forest owners to the provision of public access.
- *Recreation Toolkit* - a project to develop an interactive web-based advisory package for woodland owners, rural communities and others wishing to develop woodland recreation.
- *Wildlife tourism and forests and woodlands in Scotland*—the development of a scoping paper.
- *INNOFORCE – Fostering innovation and entrepreneurship in forest recreation and tourism* – a project run by the EFI centre in Vienna that brings together 23 research organisation to conduct research on innovation in relation to forestry policy and includes work on entrepreneurship in forest recreational service provision.
- *EU COST Action E39 ‘Forests, trees and human health and well-being’* whose main objective is to increase the knowledge on the contribution that forests, trees and natural places make to the health and well-being of the people of Europe.
- *Social and cultural values of woods* whose research objectives were, inter alia, exploring the values held for woodlands and trees through a series of in-depth discussion groups.
- *Accessibility and Racial Equality* whose key questions include how and to what extent do the attitudes and perceptions of specific minority groups influence their use of woodlands, and what are the features of best practice to promote racial equality.
- *People, Trees and Woodlands* aims to develop a better understanding of the ways in which trees benefit society, and improving delivery of these benefits.

In addition to the paper previously referred to - *Health and Well-being – Trees, Woodlands and Natural Spaces*, the Forestry Commission published a related scoping study.⁵²

- *Governance and public involvement* seeks to develop practical guidance to forest managers on how to plan for public involvement in forest planning and decision-making and associated with this programme is VISUALANDS - an EU-funded project aimed at developing a visualisation tool in the assessment of landscape change. A further piece of related work is ‘*A critical assessment of the use of computer rendered visualisation technology as an aid to public participation in landscape planning*’.

⁵² Willis, K. and Osman, L. (2005). *Economic Benefits of Accessible Green Spaces for the Physical and Mental Health: A Scoping Study*. Forestry Commission.