

INFORMATION NOTE

ISSUED BY FORESTRY PRACTICE

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SUMMARY

Research into public perceptions of different aspects of farm woodland design in England is described. The research was carried out by Entec (UK) Ltd for the Ministry of Agriculture, Fisheries and Food and the Forestry Commission. Photomontages of different design options for a range of variables were ranked for preferences by a sample of the public. The research concluded that guidance provided by the Lowland Landscape Design Guidelines is broadly supported by the public.

INTRODUCTION

Since 1988 the Government, through the Forestry Commission (FC) and Ministry of Agriculture, Fisheries and Food (MAFF), has paid farmers to take land out of agriculture and plant it with trees to produce woodlands of benefit both to the farmers, to the environment and to the nation. By 1996, when the research described in this Note was undertaken, some 18 400 hectares of new woodland had been approved under the Farm Woodland and Farm Woodland Premium Schemes and considerable amounts of money had been spent in the initial planting grants (FC) and annual payments (MAFF).

One of the benefits expected to be realised by planting farm woodlands is enhancement of the landscape. Many agricultural scenes had experienced losses of hedges, trees and woods, either by their removal or from Dutch elm disease. An increase in woodland cover would restore some of these losses. In already quite well-wooded areas extra woodland may either enhance or possibly detract from the scene, depending on its scale and design, and may not provide the same public benefit as extra woodland in less wooded areas.

In order to qualify for grants to plant woodland, farmers and landowners have to satisfy Forestry Commission environmental guidance. The landscape design guidance applicable to farm woodlands is contained in the *Lowland Landscape Design Guidelines*, a document written by technical experts (though subject to wide consultation) and containing design principles which, if followed, are expected to produce attractive landscapes giving a positive benefit to society.

As part of its programme of evaluation of the effectiveness of the Farm Woodland and Farm Woodland Premium Schemes, MAFF was interested in establishing whether woodlands planted according to FC guidelines did in fact produce a positive benefit to the public (expressed as the perception that the landscape is improved) and thus justified (in part) the expenditure.

During 1995–96 a research project (MAFF No.WD0113) was undertaken by Entec UK Ltd on behalf of MAFF and the Forestry Commission to test certain of the assumptions behind the design recommendations contained in the *Lowland Landscape Design Guidelines*. The outcome of the research is intended to be used to help revise (where necessary) that advice so as to reflect more accurately public perceptions and preferences.

THE RESEARCH METHOD

The approach to the research was centred around:

- personal interviews with a representative cross-section of the public;
- use of visual imaging (using photomontage techniques) to show different design options;
- design principles laid down in the *Lowland Landscape Design Guidelines*;
- qualitative measurement of public perceptions.

The method used questionnaires to elicit perceptions and attitudes to rural English landscapes, to woodlands in these landscapes and to variables in the layout and design of woodland. Single questionnaires were used for individual members of the public, excluding anyone involved with agriculture, forestry or landscape design. The interviews took place in five locations and the questions relating to landscape and woodlands were centred on pictures of landscapes characteristic in the locality where sampling took place.

Information about the respondents was collected on the basis of factors that are normally the most statistically significant: gender, age, socio-economic class, and the level of use of woodlands by respondents (which normally influences the degree of interest or care shown in the subject).

The design principles being tested for their validity operate quite differently depending on the character of the landscape, in particular the type or strength of landform and field patterns. Thus four generic and one 'special' landscape type were used so as to test the principles across their range of application:

- flat ground;
- undulating topography;
- rounded landform;
- scarp and dip slopes;
- river valleys.

Sampling took place in five regions selected as being within or near one of the five landscape types. In each area two locations for interview were selected: a rural and an urban area. Interviews were conducted in the street during daylight hours so that as much time could be devoted as each respondent was willing to give. The variables to be tested were as follows:

age of trees

to identify at what stage of growth people perceived a collection of trees to be a wood;

species mix

to identify the preferred proportion of broadleaves and conifers in a wood;

size/scale

to determine what was considered to be the optimum proportion of tree cover within a landscape (Figure 1);

shape

to obtain preferences for linear, rounded, rectilinear or irregularly shaped woodlands (Figures 2 and 3);

edge effects

to identify preferences for different edge structures of woodland (Figure 4);

screening

to explore preferences for different methods of using woodland to screen two types of development (a factory and road)(Figure 5);

internal views along footpaths

to elicit preferences for different spatial and structured qualities along paths within woodland (Figure 6);

establishment techniques

to test preferences for different planting layout (straight rows, curved rows)(Figure 7);

protection methods

to obtain views on different methods of protecting newly planted trees (fences or treeshelters of different colours);

felling methods

to determine preferences for different patterns of clearfelling.

This was a long list of variables so individual respondents were only shown six or seven of them.

The variables (except for the **age** and **internal views**) were illustrated using photomontage techniques. For each variable in each location a single photograph was adjusted using computer software (Adobe Photoshop) so that only the variable under test was different in each option. The task of finding suitable examples was difficult as they had to be representative, of good quality, of similar brightness and colour, of woodlands in farm landscapes and technically accurate in terms of woodland management. Each variable was tested in 3–4 options with the exception of screening (two options) and interior views (6 options). In total, 81 images were produced and used.

Respondents were asked to rate the most preferred and least preferred option for each variable and to explain their choice. The survey was piloted on 120 respondents. The results of this helped to refine the questionnaire. The preferences were then analysed against the characteristics of the respondents enabling patterns of preference to be linked to gender, age, socio-economic class and so on.

Figure 1

Views A–D are one set of images used to test different proportions of woodland in a landscape of rounded landform.



Figure 2

Views A–D are one set of a series used to test woodland shapes, in this case in scarp and dip slope topography.



Figure 3

Views A–D are one set used to test woodland shapes in a landscape of rounded landform.



Figure 4

Views A–C are one set of two evaluating different woodland edge structures. Unfortunately the fence detracted from the scene and reduced the impact of the differences in edge structure.



Figure 5

Views A–C are one set used to test perceptions of screening a factory using trees or woodland.



Figure 6

Views A–F are a series of real, not photomontage views, used to test preferences for the interior of woodlands experienced along paths.

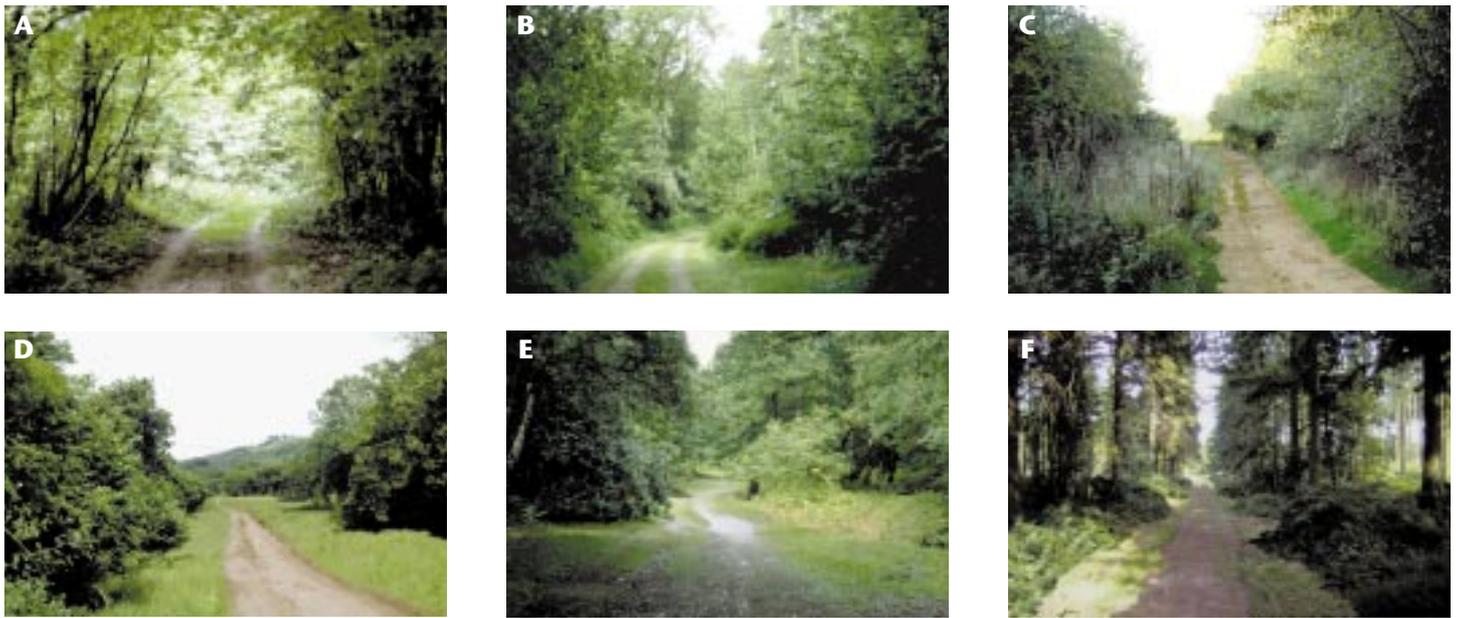
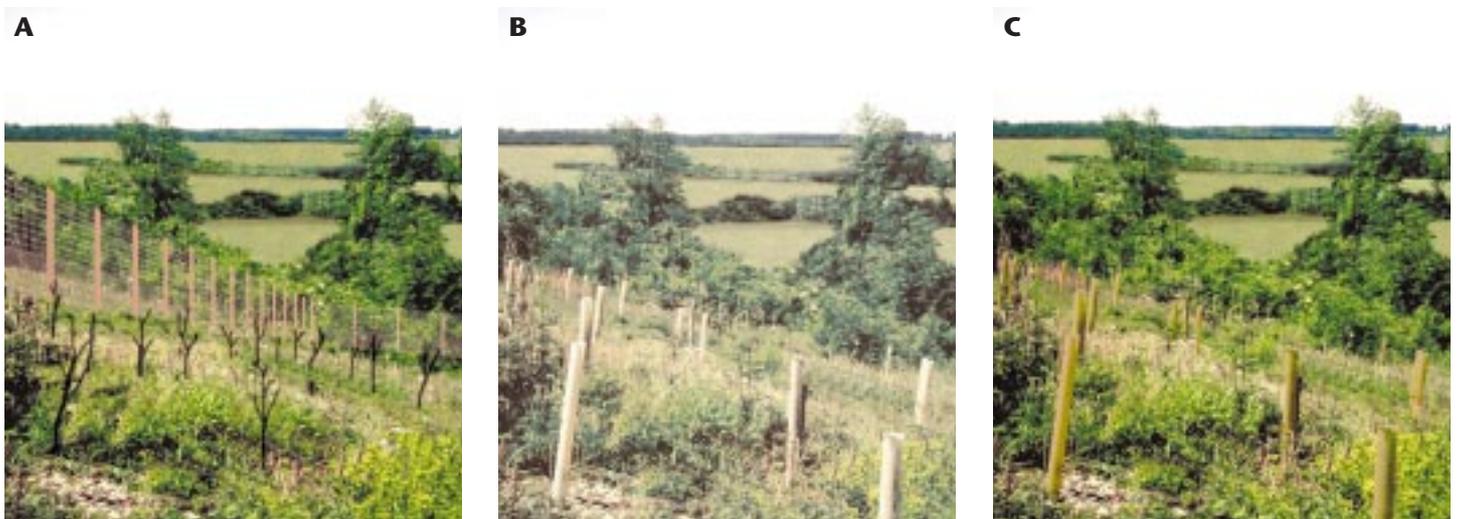


Figure 7

Views A–F are one set used to test preferences for fences or different colours of treeshelter for protecting young trees.



RESULTS

Age at which groups of trees are perceived by people to be a wood

The main findings here were that people appear to associate a wood as containing well grown mature trees, especially so in the case of people living in flat landscapes where the edge of a wood is the main external feature. This suggests associations with age and possibly interior structure such as being able to walk beneath the trees. The images used were all of conifers and it may be the case that using broadleaved trees might have led to different results. However, if this finding is statistically significant, it means that it will be some decades before the full landscape benefits of woodlands planted during the last few years will be realised.

Species mix

This topic includes the effect of variables such as diversity of colour and texture, the shape of species blocks and the degree and method of mixing species. As not all of these could be tested, the main variable under consideration was that of the proportion between conifers and broadleaves. Respondents in the Rounded, Scarp and Dip and River Valley landscapes were exposed to this variable. Preferences for pure broadleaves were strong and bore out the results from previous research. Of those who chose mixed woodland, however, the preference for mixtures of 70% conifer to 30% broadleaves was marginally higher while the mainly conifer option was the least liked image. Thus the preference for pure broadleaves as 'more natural' stands out. The proportion of species in terms of an ideal split neither supports nor refutes the recommendations in the guidelines.

Size and scale

The scale of woodlands in a landscape relative to non-wooded areas is a key principle of design and in the guidelines a 2:1 or 1:2 ratio is suggested. This variable was tested in the Flat, Undulating and Rounded landscape types by showing different percentages of woodland in the scene. There was a significant preference expressed for scenes showing two-thirds wooded while the least wooded option was least preferred. The conclusion is that in those landscape types a well wooded appearance is preferred and in the ratio (2:1) suggested in the guidelines.

Shape

Woodland shape is another principle considered important in the *Lowland Landscape Design Guidelines*. This was tested in the Rounded, Scarp and Dip and River Valley landscape types using designs of linear, rectangular, rounded and irregular shapes. There was a significantly greater preference for the irregular (organic) shape option while the others were evenly spread. There was a greater preference for the irregular option amongst frequent woodland users than the rest. Variation, especially in the preferences expressed in the Rounded landscape, was partly explained by the sense in which the woodland shapes appeared to fit or blend into the landscapes. In the rounded landscape the irregular shapes actually worked less well as a design than the others which demonstrated greater unity and interlock. However, the general conclusion bears out the *a priori* principle that non-geometric shapes fitting into the landscape will be found more attractive by the public.

Edge effects

The woodland edge where it abuts fields is an important aspect of lowland landscapes. The *a priori* expectation is that varied, graded and diverse edges will be preferred over hard, abrupt ones or layered effects. This was tested in the Flat and River Valley landscapes where edges are particularly significant. The results were affected by the presence in each image of a rather obvious fence which detracted from the impact of each option. However, the more natural and varied edge structure was preferred so that the recommendations given in the guidelines appear justified.

Screening

Although not discussed in the guidelines, woodland is frequently cited as being good for screening unsightly objects such as busy roads or factories. Designers have often considered that integrating such features into the landscape may be better than full screening. Any preferences expressed could have implications for design or for amounts of woodland necessary to screen eyesores effectively. The results of testing three options for screening a factory and two for a road showed a marked preference for complete screening although the screening woodland should look natural; one of the options depicted a very regimented appearance which many people disliked. In landscapes where the rural character has been disrupted by large-scale developments or urban intrusions, strong woodland planting which screens or

hides much of these could be very beneficial, but the wooded elements should be well designed in themselves or they can stand out almost as badly.

Interior views

Views within woodlands can be important, especially if there is public access or a right of way through a wood. Concern is often expressed about the degree of visibility along paths and designs frequently keep woodland back from either side of a path. The guidelines recommend variation in path alignment, spatial qualities and edge structure as being more attractive. Is this true?

Examples were selected which showed different effects – intimate and enclosed, open and with different edges or degrees of overhanging trees. The results showed a lot of variation but in general, the preference was for paths which were more enclosed and secluded, had sunlight coming through creating dappled shade and with more natural edges. The least preferred images were the straight, open example which was considered unnatural, lacking variety and looked boring. This bears out the guideline recommendations.

Establishment methods

The research examined the preferences, if any, for different row mixtures (of conifers and broadleaves), a subject discussed in the guidelines where a general avoidance of such patterns is recommended. Examples of straight, curved and changed alignment of the rows were shown to respondents. Unfortunately, people found it difficult to detect much variation in some of the images. Quite a number of respondents did not find any of the examples attractive and most disliked the parallel straight lines, preferring one of the others although without a definite preference overall. However, the image which was preferred overall by a very small margin was the option which most resembled the recommended layout given in the guidelines, that of blocks of differently aligned rows.

Protection methods

It takes a number of years for trees to become established so that the sight of fences or treeshelters is now a common one in the newly planted countryside. The guidelines recommend brown or olive green shelters to reduce their impact. What do the public think? Three options were shown: deer fenced, white treeshelters and green treeshelters. The olive green shelters were significantly preferred. The fence was equally disliked while the white

shelters were also unfavourably received. This bears out the guideline recommendations quite strongly.

Felling methods

The impact of felling was not in the original brief. It was added later because it was considered an aspect where the public might express a strong opinion because of its significant impact on the landscape. Three options were shown, although with hindsight their design would not have met the guideline standard. However, the effect of scale and shape was tested. Large regular, large irregular and small irregular felling areas were tested. The smaller scale irregular blocks were preferred, seen as doing less damage to the view, while the large regular option was least preferred. This is in line with the recommendations in the guidelines.

OVERALL CONCLUSION TO THE RESEARCH PROJECT

- Woodland is seen as an integral part of the lowland English landscape and not as a separate component. Thus it is important to consider any woodland within the wider landscape context.
- The consistent theme running through the preferences was for naturalness and blending into the landscape, the landform and the existing woodland patterns. Variety is also valued.
- People generally disliked unnatural, man-made, elements such as geometric shapes, straight paths, fences, and white treeshelters.
- On the whole the principles contained in the *Lowland Landscape Design Guidelines* which were tested, were broadly supported. Recommendations on woodland shape, scale, edge treatment, path layout, species mixes, felling coupes and treeshelters, presented as *a priori* assumptions of preference were all significantly reflected in the expressed preferences.

Criticisms of the methodology

On the whole, the methodology worked but there are some improvements worth making for any future project of this type:

- Limit the number of variables: people cannot handle too much in a survey of this type.

- Make the differences between options as clear as possible to avoid confusion and to get better statistical significance.
- Select the best base photos and ensure that bias is not introduced by poor rendering so that artificial effects that affect preferences are avoided as far as possible.

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