

Part 4 *Analysis of the Elements that Shape Countryside Character*

Introduction

- 4.1 Having given an overview of the methodology used in the CQC Project and the headline results, this section of the Final Report provides a detailed account of how each of the seven elements that were used to assess change in character were analysed.

Woodland

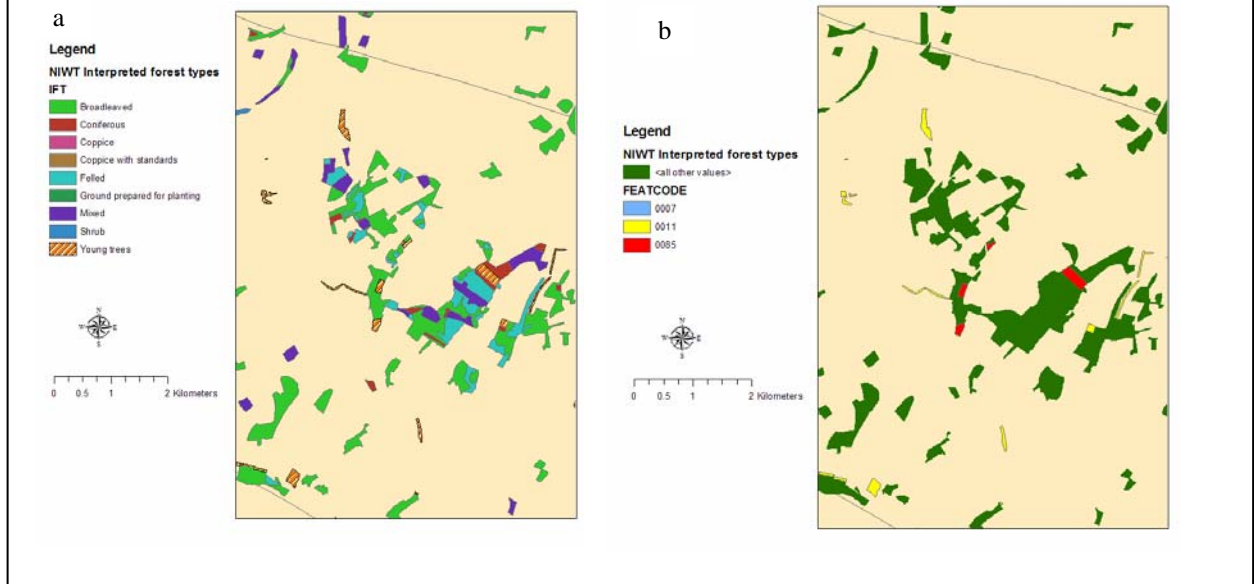
- 4.2 Change in woodland character was assessed in relation to two attributes. These were the location and magnitude of change in woodland *cover*, and evidence of the extent of active *management* of the existing woodland stock.

Location and extent of change

- 4.3 An insight into the location and magnitude of change in woodland cover at Character Area level was gained from the map of Interpreted Forest Types (IFT), which forms part of the Forestry Commissions *National Inventory of Woodlands and Trees*²⁶. The map was largely based on interpretation of 1:25,000 aerial photography which was plotted against a 1:25,000 Ordnance Survey base. It shows (see Figure 4.1a for an example extract) the national distribution of woodland parcels larger than 2ha, and identifies them in terms of 9 ‘interpreted forest types’ (IFTs).
- 4.4 The IFT map was published for the first time in 2000. It represents an approximate ‘baseline’ for this date, although it should be noted that ‘the reference date’ for the base information varies by OS 100x100 tiles; in general the ‘reference dates’ for the base mapping are earlier in the south and south west of England (between 1996 and 1998) and later in the midlands and north (1998 and 2000). Updates of the map are published by the Forestry Commission annually, and these provide additional data for some of the types recorded on the original survey. The most recent version of the IFT map that was available to the Project Team was for 2002. This version was used to look at woodland data for the period 1990-2000.
- 4.5 Although the IFT map is primarily a baseline survey, some information on woodland change is available both on the original version and via the updates. A key category is that shown as the ‘young trees’ interpreted forest type. Within the IFT map, a woodland polygon has been labelled as ‘young trees’ where planting as seen on the aerial photo ‘was clearly visible but the where trees could not be allocated to Conifer and Broadleaved due to their immaturity’. The information derived from the original analysis of aerial photography was then supplemented in two ways:

²⁶ See <http://www.forestry.gov.uk/forestry/hcou-54pg4d>

Figure 4.1a & b. Mapping young trees using the National Inventory of Woodlands and Trees (NIWT)



- (a) From additional information on Forestry Commission Planting that took place between 1992 and 1999, obtained from digitised FC paper maps covering the period 1992 and 1999, and other FC digital data, for the period 1995-2000.
- (b) Information on the location of new planting related to a Woodland Grant Scheme (WGS) Agreement, obtained from digitised maps held by the Forestry Commission for the period 1995-1999, and the WGS database for the period 1995-2002.

4.6 Given the way in which the ‘young trees’ forest type has been constructed and updated, we can assume that mapped parcels represented an approximate picture of the location and extent of new planting or replanting that occurred during the 1990s, at least for parcels that are larger than 2ha in size.

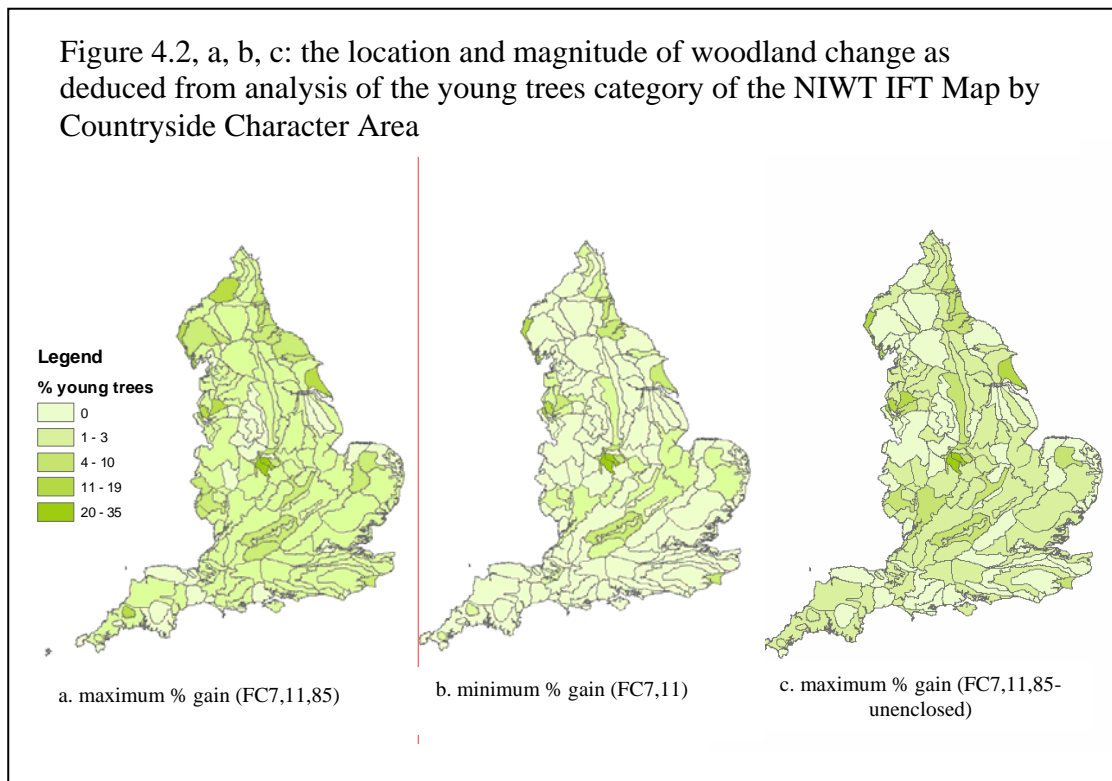
4.7 Although ‘young trees’ can therefore be mapped, it is not easy to separate new planting from replanting, although a partial attempt can be made using the Feature Codes assigned to the various sub-categories of the young tree type:

- The easiest subtypes of ‘young trees’ to interpret are those assigned feature codes 7 and 11. The former represents new Forestry Commission planting, while the latter, new planting arising from WGS agreements. Using the 2002 update of the IFT Map, *these data were screened and polygons with a reference year of 1999 or earlier were extracted for analysis.*
- The bulk of the parcels assigned to the ‘young tree’ type on the original version of the IFT map were assigned a feature code 85, which represented *either new planting or replanting.* The two cannot be separated as the data is presently structured

Thus if we assume that all the features labelled FC 85 represent replanting (which they do not), the stock estimates derived from the analysis of parcels with FC7 or FC11 give us a *minimum* figure for the area of new planting over the period. Alternatively if we assume that all the features labelled FC85 are new planting, the sum of the areas assigned to FC7, 11 and 85 give us a *maximum* figure. Since the features labelled FC85 are a mixture of planting and replanting, the real figure is somewhere between these extremes.

4.8 In order to aid interpretation of the 'young tree' forest type, the spatial context of parcels labelled FC85 was considered (Figure 4.1b). Parcels were separated into two groups. First, those which were located *within* or *adjacent* to a block of established woodland. Second, those which were not part of an existing block, but which were isolated features. If we assume that 'young tree' parcels within or adjacent to mature woodland are more likely to be replanting, undertaken as part of the forest management cycle, and those that are isolated are more likely to be new planting, then the proportions of the total area within a CCA that are isolated from or joined to a mature stand could be used to 'predict' the extent of new planting, that lies somewhere between the extremes noted above.

4.9 Thus for the purposes of the analysis of change in woodland character, the data derived from the NIWT IFT Map were used to estimate, for each CCA, the maximum, minimum and 'predicted' area of new planting and replanting. Since the Map does not record losses (other than by felling related to forestry operations) the estimates of the proportional increase to the existing forest cover that the new planting represents is itself a *maximum* figure. Figure 4.2 shows the location and magnitude of woodland change as deduced from the



young trees category of the NIWT IFT Map by Countryside Character Area.

Evidence of positive woodland management

- 4.10 Although the NIWT IFT Map provides information on the location and extent of Woodland Grant Scheme Agreements associated with new planting, it does not identify which of the established woodland polygons are also covered by the Scheme. These data are, however, available for download via *MAGIC*²⁷ and so these were examined for the purpose of assembling evidence of 'positive' woodland management within a CCA. The need for such an assessment arose because many of the Character Area Profiles noted that better management of the established woodland cover would potentially strengthen character.
- 4.11 The WGS data from *MAGIC* are useful in that they give both the start and end years of agreements from 1993 onwards, and map the woodland areas covered by an agreement. A limitation of these data is that they do not differentiate between woodland types. Agreements for new planting, for example, are not separated from agreements for the management of established woodlands.
- 4.12 The problem of identifying different types of WGS agreement was overcome by linking these data to the parcel information held on the NIWT IFT Map. However, the process of integrating these two sources was not straightforward. The boundaries of the woodland parcels held on the two maps rarely coincided: first, because they had different origins, so that the boundaries only approximated to each other; second, because WGS agreements can extend to woodland parcels smaller than 2ha, so that there are a number of areas mapped as having an agreement that do not appear to have woodland in them according to NIWT. Thus for the purposes of the CQC Project, the analysis proceeded as follows:
- (a) The *Magic* WGS data and the NIWT IFT map were intersected using a GIS, to identify the parcels and parts of parcels shown on the IFT map that were covered by a WGS agreement. The areas outside the NIWT IFT template that were covered by WGS Agreements were also identified.
 - (b) The linked NIWT-WGS map was then used to estimate the area of the different interpreted forest types with and without an agreement, by Countryside Character Area. Those parcels with an agreement start year before 1999 were selected, and used to assess trends against the statements in the Character Area Profiles.
- 4.13 The proportional area of established woodlands covered by a WGS agreement is a crude indicator of the extent of positive management, because it assumes that all wooded land in an area is eligible for the scheme. This is not the case, however, since woodland owned by public bodies is excluded from the scheme. Unfortunately there is no single comprehensive source of information

²⁷ <http://www.magic.gov.uk/default.htm>

on the extent of land holdings in public ownership that could be used to determine the area of potentially eligible woodland and so it is difficult to make a judgement about whether the uptake of WGS is high or low for a particular Countryside Character Area.

- 4.14 The problem of determining the extent of eligible land can partly be resolved using the Forestry Commission legal boundary data for 2001. Since the Commission represents the largest owner of woodlands in England, by identifying the parcels in FC ownership an estimate for the upper limit of the area eligible can be made for each CCA. This information was used to calculate an approximate 'distance to target' measure for the management of established woodlands, based on the proportion of such woodland eligible in a given area, and the uptake observed for the period between 1990-1998 (Figure 4.3a).
- 4.15 A similar type of analysis to determine the extent of WGS agreements by Character Area was undertaken for the woodland parcels shown on English Nature's Ancient Woodland Inventory (AWI). Once again the proportional area covered by a WGS Agreement was determined, together with the stock of the ancient woodland on land not owned by the Forestry Commission (Figure 4.3.b)

