Chilterns Land Use Survey 2005 - 2007

Background to the Survey
This document summarises the results of three land use surveys carried out between 2005 and 2007 by the Chilterns Conservation Board, the body responsible for protecting and enhancing the Chilterns Area of Outstanding Natural Beauty (AONB).

Introduction
The Chilterns is a beautiful area of rolling chalk hills, woodlands, streams and quiet valleys with brick and flint cottages. In 1965, 324 square miles (833 km²) of the Chilterns were designated by the government as an AONB. This recognises that the Chilterns countryside is amongst the finest in the country, on a par with National Parks. The main aim of the AONB is to conserve and enhance the natural beauty of the area so that the landscape of the Chilterns is protected for future generations to enjoy.

Why do we need to measure change?
As with other AONBs and National Parks, the natural beauty of the Chilterns’ landscape is a product of centuries of traditional land use such as farming and forestry. In recent years these industries have been in decline with increased competition from world markets. This has led to changes in land use and the appearance of our countryside. These changes are likely to continue with recently introduced environmental grant schemes, changes to the agricultural support system and increased pressure on land for development and leisure.

What will the information be used for?
The only statutory duty of the Chilterns Conservation Board is to produce a Management Plan for the AONB. Although the effects of land use change on the landscape are widely appreciated, in the past there has been little data available to measure the extent and location of the changes. This survey provides data on such changes.

Objectives of the survey
- To provide data on the current extent of land use and land cover
- To identify the rate and type of land use and land cover changes
- To determine how such changes vary between different landscape types
- To assess the impact of such changes on landscape character
- Where possible, to identify the drivers of land use and land cover change

Data from land use surveys in 2006 and 2007 show:
- An increase in the cropping of arable land and a decrease in set-aside and uncropped arable land.
- Over 20% of grazed grassland was used by horses, ponies and donkeys.
- More than half of cropped land used for growing wheat.
**Description of the survey**

In 2005, the first year of the survey, 49 one kilometre map squares were randomly selected across the AONB, representing approximately 6% of the land area. This was increased to 105 squares in 2006, representing 12.5% of the AONB. The squares used for the survey are representative of the different landscape types found in the Chilterns.

A list of codes representing different types of land uses/land cover categories included:

- Cropped arable land
- Uncropped arable land (set aside etc)
- Agricultural grassland
- Other farmland (yards, buildings etc.)
- Equestrian (paddocks, stables, arenas, etc.)
- Leisure (golf courses, sports pitches etc)
- Rough/unmanaged (rough grassland, bracken etc.)
- Woodland and scrub
- Built-up
- Transport (roads, railways, rights of way etc)
- Open water
- Other unclassified

Within each 1km square visited, all the parcels of land that were accessible or visible from public rights of way were given a land use code. A very high percentage of land use was recorded due to the extensive rights of way network.

**Photographic survey**

In addition to gathering map data, photographs were taken in each square from various viewpoints to enable interpretation of how changes in land use and land cover affect landscape.

**Using the data**

In order to produce statistics on land use in the Chilterns, data from the survey were entered into a Geographical Information System (GIS) to allow measurement of different areas and year-to-year comparison. (see below)
**Related survey work - Chilterns Hedgerow Survey**

In the summer of 2006 and 2007, Defra grant money was used to survey hedges in a number of the land use survey squares. For more details contact the Conservation Board Office 01844 355523.

**Survey Findings - Results from 105 squares surveyed in 2006 and 2007**

<table>
<thead>
<tr>
<th>Land Use Categories</th>
<th>2006 %</th>
<th>2007 %</th>
<th>change in ha extrapolated to whole of AONB</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropped arable land</td>
<td>29.2</td>
<td>30.3</td>
<td>897</td>
<td></td>
</tr>
<tr>
<td>Uncropped arable land (including set-aside, field margins, game cover, etc.)</td>
<td>6.1</td>
<td>5.1</td>
<td>-849</td>
<td></td>
</tr>
<tr>
<td>Agricultural grassland</td>
<td>22.4</td>
<td>23.2</td>
<td>638</td>
<td></td>
</tr>
<tr>
<td>Other farmland (yards, tracks, buildings, hedges, etc.)</td>
<td>0.6</td>
<td>0.7</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Equestrian (paddocks, yards, stables, arenas, gallops etc.)</td>
<td>5.6</td>
<td>4.8</td>
<td>-655</td>
<td></td>
</tr>
<tr>
<td>Leisure (golf courses, sports pitches, airfields, associated buildings)</td>
<td>2.3</td>
<td>2.5</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Rough/unmanaged (rough grassland, bracken, marsh, tall herb, etc.)</td>
<td>3.3</td>
<td>2.1</td>
<td>-1041</td>
<td></td>
</tr>
<tr>
<td>Wooded (woodland and scrub not within grounds of buildings)</td>
<td>18.7</td>
<td>19.1</td>
<td>356</td>
<td></td>
</tr>
<tr>
<td>Built-up (resid. incl gdns, commercial, institutional, military; incl grounds)</td>
<td>6.1</td>
<td>6.3</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Transport (roads, railways, bridlepaths, footpaths and associated verges)</td>
<td>3.5</td>
<td>3.5</td>
<td>-26</td>
<td></td>
</tr>
<tr>
<td>Open water</td>
<td>0.2</td>
<td>0.2</td>
<td>-40</td>
<td></td>
</tr>
<tr>
<td>Other, unclassified</td>
<td>1.7</td>
<td>1.9</td>
<td>167</td>
<td></td>
</tr>
</tbody>
</table>

On the arable land, the most common crops were wheat (15%), barley (5%) and oil seed rape (5%). Maize, field beans and oats covered approximately 1% each. Some land was recorded as uncropped arable land. This is likely to comprise not only formal 'set-aside' land, but also land taken out of production and managed in 'Good Agricultural and Environmental Condition' to qualify for farm subsidy, the Single Payment Scheme.

Sheep were the most frequently recorded farm livestock, followed by beef cattle and dairy cattle. However, there was evidence of a number of holdings rearing less traditional types of livestock, including deer, alpacas and ostriches.

![View from The Ridgeway, near Princes Risborough](image1)

![An example of some recorded changes](image2)
Conclusions
The results on land use changes derived from the survey data provide measurable data on the prevalence of several types of change. Whilst some of these only affect small areas, and are not apparent in the summary statistics presented here, their impact on the landscape has the potential to be high.

These changes include:
- A small increase in production on agricultural land between 2006 and 2007. This is most noticeable on arable land, although there is evidence that the area of agricultural grassland is also increasing. This reflects the increase in cereal prices between autumn 2005 and autumn 2006 (when planting decisions would be made for the following year’s harvest.) Future world commodity prices will continue to be the driving force behind cropping decisions and it is possible that the results of the 2008 survey will see another increase in the amount of cropped land as cereal and oilseed prices remain high in the light of world shortages.
- The establishment of small-scale livestock enterprises, including those rearing non-traditional species. This is often accompanied by the subdivision of large fields with new fences.
- The conversion of agricultural land for equestrian use, either as informal pony paddocks in the vicinity of houses, or larger areas associated with livery stables and riding schools.
- The use of land for other leisure uses, for example the extension of golf courses and driving ranges.
- The extension of gardens and grounds, either small scale garden extensions, or the use of large areas of former agricultural land to create new grounds. The latter is often accompanied by the planting of belts of trees, creation of new ponds, landscaping works and the fencing of pony paddocks. This can change the nature of the countryside from rural to suburban altering the landscape’s character.
- The conversion of farm yards and associated buildings. Whilst the area affected is small, the landscape impact can be high, especially where yards are used for storage of vehicles or scrap.
- The renovation/replacement of existing dwellings, both intensification of housing development within villages and the replacement of single isolated houses by new larger houses, often with associated landscaping.

The findings of the survey work to date highlight the importance of engaging with new entrants to land ownership in order to ensure that the natural beauty and character of the Chilterns’ landscape is conserved. The Landowners’ Guide is a valuable first step in this process, but the Board needs to consider other ways of influencing land management.

Future Work
The survey will be repeated annually in the same 105 squares for the foreseeable future. In areas where significant change has been identified, work will be undertaken to identify drivers of change.

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