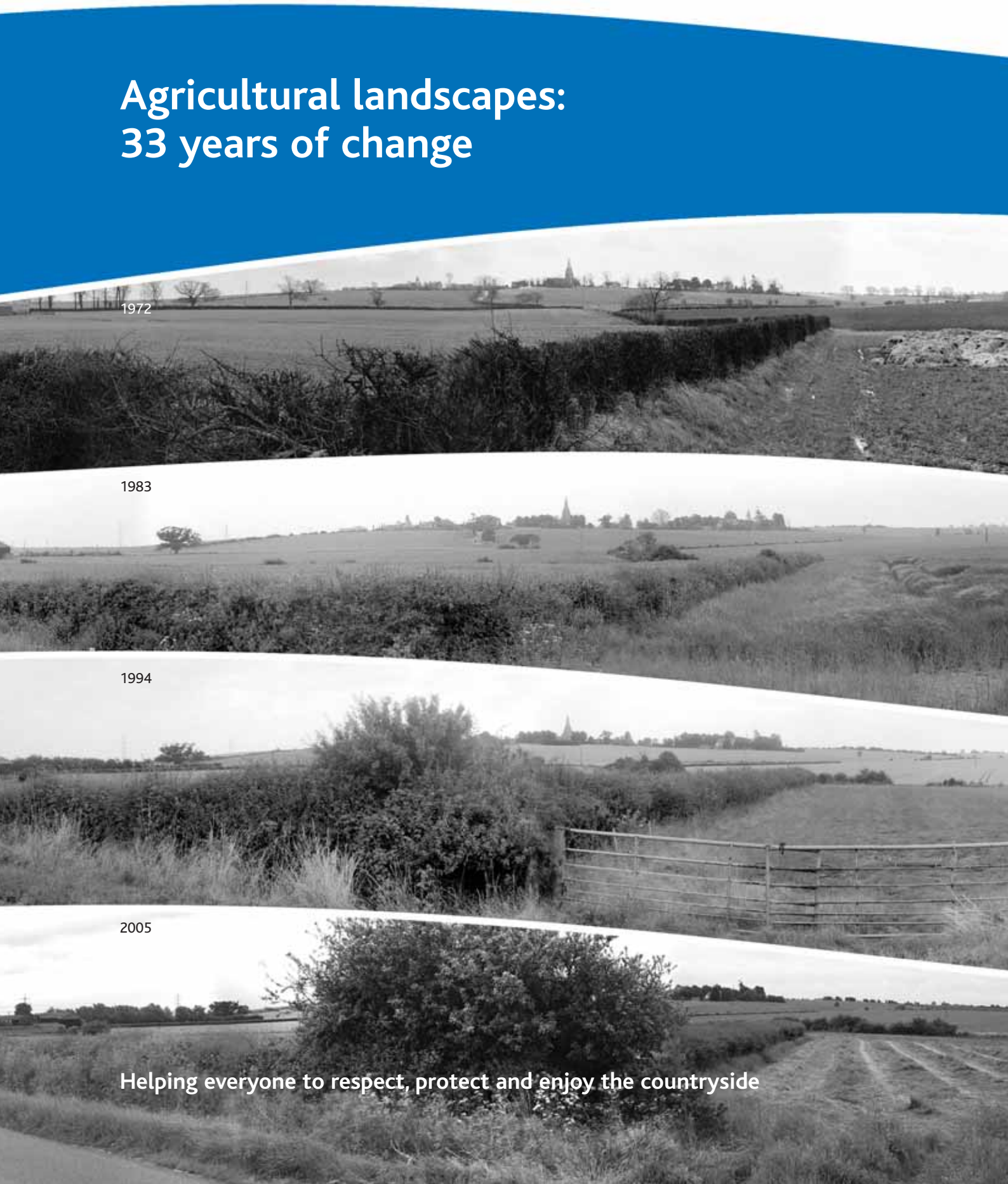
Rural Development Service

ENGLISH NATURE

The Countryside Agency
Landscape Access Recreation

Agricultural landscapes: 33 years of change



Helping everyone to respect, protect and enjoy the countryside

The Countryside Agency

The Countryside Agency is the statutory body working to make the quality of life better for people in the countryside and the quality of the countryside better for everyone. It is a non-departmental body sponsored by the Department for Environment, Food and Rural Affairs (Defra).

The Agency is changing as the result of Defra's Rural Strategy 2004 and the Natural Environment and Rural Communities Bill, which gained Royal assent in March 2006. The new Act sets out the creation of:

- Natural England – a single new body that will integrate the Landscape, Access and Recreation division of the Countryside Agency with English Nature and most of Defra's Rural Development Service (RDS). Natural England will work for people, places and nature, with responsibility for enhancing biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being; and contributing to the way natural resources are managed – so that they can be enjoyed now and by future generations.
- Commission for Rural Communities – a single body that will act as a rural advocate, expert adviser and independent watchdog, with a particular focus on disadvantage. Currently operating as a division of the Countryside Agency, the Commission will become an independent body.

These changes will come into effect in October 2006, at which point the Countryside Agency will cease to exist.

We may be changing, but our skills, knowledge and enthusiasm will continue to benefit people in rural England. To find out more about our work, and for information about the countryside, visit our website: www.countryside.gov.uk

Acknowledgements

The authors wish to thank the many farmers who have co-operated with them in the course of the 33 years of this study, often giving up time to speak to them at particularly busy periods; the professional colleagues who have assisted with various aspects of the study over the years; also the various members of the Countryside Commission (now Countryside Agency) involved at different times, in particular on this occasion advisers from the Future Landscapes, Land Management and Library Services teams. The Countryside Agency would also like to thank the Rural Development Service and English Nature for their contribution.

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Report of a study undertaken during 2005 on behalf of the Countryside Agency's Landscape, Access and Recreation Division, by Richard Westmacott BSc, MLA, and Tom Worthington BSc Hons Agric Sci of Reading Agricultural Consultants.

The opinions expressed in this report are those of the consultants.

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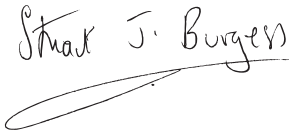
July 2006

Foreword

This is the fourth study to look at the changes that have occurred in England's lowland landscapes. First carried out in 1972, and repeated in 1983 and 1994, the New Agricultural Landscapes work gives a unique insight into the visual effects of changes in farming methods and agricultural policies over a third of a century.

The farmed landscape has seen fundamental changes during the course of this study, due to greater labour efficiency, mechanisation and specialisation. The then Countryside Commission believed that the first report revealed 'deeply disturbing facts about the nature and scale of changes taking place in the appearance of much of the English countryside'. Later studies, however, have shown that the pace of change has slowed and this latest report suggests that the lowlands seem to be experiencing greater stability. I was particularly delighted to note that the quality and size of many hedgerows have improved and that the widespread removal of this distinctive feature of the English landscape has all but ceased.

There are, though, a number of potential changes on the horizon associated with anticipated changes in land management, particularly in upland areas into which this study will need to extend in the future. This publication therefore presents us with an invaluable visual record of the lowland landscape in the first decade of the 21st century, against which future changes can be compared. It also provides an important part of the legacy of the Countryside Agency (and of the Countryside Commission) which will now be carried forward by Natural England. I look forward to reading the 2016 report!



Dr Stuart Burgess
Chairman
The Countryside Agency
July 2006

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Introduction

This is the fourth report of a study which was initiated in 1971, when the Countryside Commission asked the authors to study the impact of modern farming methods on the countryside. The brief for the study was to find out *'how agricultural improvement can be carried out efficiently but in such a way as to create new landscapes no less interesting than those destroyed in the process'*. The fieldwork for the study was carried out in 1972, with seven study areas being chosen '*as broadly representative of different physiographic regions and farming systems throughout lowland England and Wales*'. The characteristics of the study areas were as set out in Table 1 and their locations indicated in Fig. 1.

In that first study the following surveys were carried out:

- All farmers in the study area were questioned as to the changes they had made and planned to make to the landscape; the reasons for these; the landscape maintenance work they carried out; their attitude to landscape conservation and enforcement of landscape maintenance conditions; their attitude to game; and their attitude to countryside access and to planning restrictions;
- a visual survey of the landscape using Tandy's Isovist technique. This identified the landscape elements (eg. buildings, trees, hedges,

Table 1: Characteristics of the study areas

County	Area	Farming Type	Soil Type	Landscape Character
Cambridgeshire	Prickwillow 1,750 acres	Intensive arable (vegetables, rootcrops, cereals)	Fen peat on clay	Flat *Cover* – almost none
Huntingdonshire	Leighton-Bromswold 4,982 acres	Extensive arable (cereals)	Boulder clay	Rolling *Cover* – sparse
Dorset	Piddlehinton 4,415 acres	Extensive arable (cereals), dairying and mixed	Chalk	Downland *Cover* – sparse
Somerset	Crewkerne 1,661 acres	Dairying	Mixed greensand, gault clay and chalk	Rolling *Cover* – good distribution
Herefordshire	Preston on Wye 3,136 acres	Mixed	Loam	Rolling *Cover* – good distribution
Yorkshire	Myton on Swale 2,561 acres	General cropping	Sandy/silty loam, some subject to blowing	Flat – slightly rolling *Cover* – moderate
Warwickshire	Grandborough 2,053 acres	Livestock rearing, dairying and mixed	Clay	Flat *Cover* – good distribution

woodland) forming the horizon within a distance of one mile from the observation point, and of horizons more distant than one mile, and calculated them as a proportion of the 360˚ of view;

- individual trees were mapped by species, age and condition, and their frequencies in different boundary types (eg. parish, farm, roadside) were calculated;
- hedges were mapped and evaluated subjectively for visual importance and habitat value;
- wildlife habitats were identified and assessed subjectively for their extent, condition, value, management and potential value.

The report of the study, *New Agricultural Landscapes*[1], (hereinafter referred to as NAL72) was published in 1974 and, in addition to the factual findings of the surveys identified above, included discussion of the various components of the lowland agricultural landscape; discussion of farmers' motives in making changes to, and managing and conserving, landscapes; made predictions of possible future changes in the landscapes of every study area; and also set out suggested policies for landscape improvement within each. The Countryside Commission was sufficiently concerned by the findings of the report that it published a

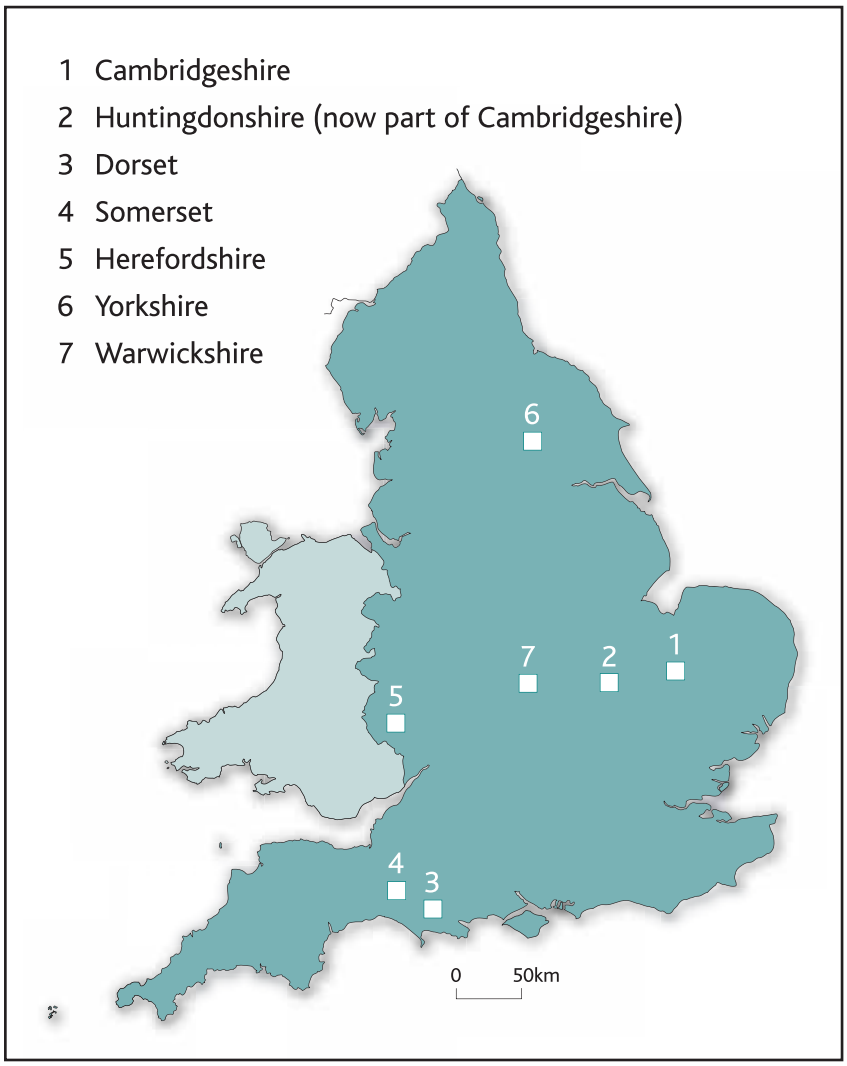

Figure 1: Locations of study areas.

consultation paper setting out '*provisional proposals for dealing with the problems caused by the impact of modern farming on the landscape*'. Subsequently the Commission set up two major initiatives, the 'Demonstration Farms' and 'New Agricultural Landscapes' projects, both seeking to influence farmed landscape development.

The study areas were revisited at 11-year intervals following the initial 1972 study, the landscape again being analysed along similar lines, and some reduced level of survey work being carried out among the farmers. Reports of these further two studies were published as *Agricultural Landscapes: A Second Look*[2] and *Agricultural Landscapes: A Third Look*[3] (hereinafter referred to as NAL83 and NAL94 respectively).

The current study continues this 11-year sequence with an initial, fourth look at the same seven areas. It takes a different approach from the previous studies, as the full original 1970's methodology, whilst pioneering and repeatable, is not consistent with modern survey techniques. Instead, the study is being undertaken in two stages:

1) A repeat of the photographic survey, from the same viewpoints, of virtually all previously-taken photographs, to provide a direct visual comparison of the landscapes which can be traced back over the decades. It provides what may be a unique record of landscape change in the ordinary farmed countryside over a third of a century, and forms the basis of the current report. No contact (other than accidental during the course of the work) has been made with the farmers at this stage, nor has a landscape survey encompassing the elements of the earlier studies been undertaken.

However, the current work does seek to identify, by means of a selection of the photographs taken over the period, the obvious changes that have taken place in each study area both since 1994 and 1972, with commentary on the possible reasons for these. The changes that have been recognised are not definitive records of all those that have, in fact, occurred in each area. Some will have gone un-observed, due to lack of visibility from the various viewpoints. This applies to both removals and additions: for example a low hedge may have been removed but its removal not noticed; equally, a new hedge may have been planted but may have been shielded from view by the crop in front of it. Some of the commentary as to the causes of change is necessarily speculative. This first stage of the repeated study is the focus of this report.

2) A second and separate piece of work will be carried out, surveying a selection of the original seven lowland case study areas and establishing a robust repeatable methodology, according with modern survey techniques. It will retain a core of information that allows comparison as far as possible with earlier reports, but will also draw on modern data sources. This will help to establish a new baseline of information, which will take an integrated approach considering landscape, biodiversity, farmers' views, the impact of agri-environment

schemes and the wider context of the areas, and also consider upland areas. The results will be documented in a complementary NAL report due in 2007.

In the current report, the old county names have been used despite the reorganisation of county boundaries in the interim, for consistency with previous reports in the series. The conclusions and recommendations reached are those of the authors, and should not be assumed to represent Countryside Agency views.

Agriculture and the environment 1972–2005

During the 33 years of this study, we have seen major changes in the Government's view of the balance to be struck between agriculture on the one hand and all the varied environmental concerns on the other. We do not attempt in any systematic way to summarise how these views have been reflected in policy but we do identify a few of the main changes.

When this study commenced in the 1970s government policy was still to encourage maximum agricultural production, as expressed in the1975 White Paper: *Cmnd 6020 'Food From Our Own Resources'*[4]. There was still a government advisory service – the Agricultural Development and Advisory Service – dedicated to this aim. Although there were many critics of the way in which agricultural priorities were affecting the landscape – by definition adversely – farmers could generally justify the removals of hedges and trees and the building of large modern buildings by sound economic arguments. Since they owned the land, the rest of the community had to accept these changes with no right of sanction.

Prior to the commissioning of NAL72, two books pertinent to its aims were published: Jon Weller's *Modern Agriculture and Rural Planning*[5] and Victor Bonham-Carter's *The Survival of the English Countryside*[6]. Weller supported the Government's aim to maximize agricultural production, and proposed that we should aim to become a food-exporting nation. He saw change as essential and hedgerow removal as necessary, but did warn that '*tomorrow will be too late in knowing whether nature has been unbalanced*' (p.245). In contrast Bonham-Carter was '*bewildered and disturbed by the radical changes that seem rapidly to be destroying the countryside*' (p.13) and took issue with Weller's goal to increase agricultural production.

The references cited in NAL72 identify that there was a degree of concern at that time in relation to the impact of agriculture on both the landscape in general and wildlife in particular. The visual impact of modern farm buildings was also of concern and conferences had been held which sought to reconcile the obvious conflicts between intensive

agriculture and wildlife. Publications by the staff of the Nature Conservancy Council quantified the enormous decline in the area and number of the nation's semi-natural habitats.

Following the publication of the first *New Agricultural Landscapes* study, Jon Tinker wrote the lead article in *New Scientist* entitled *The End of England's Landscape*[7].

In the early 1980s popular opinion was stimulated by the publication of books which attacked the priority given to agricultural production, from several points of view. Marion Shoard's book, *The Theft of the Countryside*[8], made a broadly-based argument that agriculture was damaging our heritage of landscape and wildlife without let or hindrance and indeed with official encouragement via government subsidies.

Richard Body's 1982 book, *Agriculture: The Triumph and the Shame*[9], was especially notable in that the author was both a farmer and an MP. He attacked the current system of subsidies for farming on the basis that it was a bad waste of taxpayers' money, did not stop large numbers of small farmers having to leave the industry, and produced high-cost food which was dumped on world markets, thus harming the agricultural economies of developing nations and creating poverty for millions of their citizens.

In 1983 *Agriculture, The Countryside and Land Use* by Bowers and Cheshire[10], both agricultural economists, was published. Like Richard Body they found fault with the current policies for agriculture, and particularly farm subsidies. '*Subsidies have brought about conflict in the countryside, damage to the landscape and wildlife, and even serious environmental pollution. Agricultural policy has persistently encouraged more intensive farming techniques and the maximum production of high-cost food for expensive mountains of European surplus*'. These academics stated that the interests of other users of the countryside '*have at best been regarded as irrelevant and have generally been treated with contempt*'. They illustrated the effects of agricultural changes by reference to a study area in west Berkshire, where they documented the loss of hedges, ancient woodland and ponds, and identified the gentrification of the countryside. They argued that all of these losses of countryside attributes could be laid at the door of agricultural policies and the associated grants and subsidies.

In 1983 Granada Television produced the film *Harvest Gold*[11], which demonstrated both landscape changes and farmer-attitudes that could be thought of as 'typical' or 'extremist', depending on the viewer's own prejudices.

In 1984 Richard Body produced his second book, *Farming in the Clouds*[12], developing the themes first set out in his earlier book. He identified recent adverse changes in the landscape and the wider environment, including wildlife, in the Pang Valley of Berkshire where he and his wife farmed. He made it abundantly clear that he did not blame farmers themselves for the changes that were occurring, but

blamed the policies which encouraged the farmers to make them. He continued to link these agricultural changes with adverse economic impacts on UK consumers and third-world countries alike.

Possibly in an acknowledgement of the nature of the problem, the Environmentally Sensitive Areas (ESA) scheme was introduced by the *Agriculture Act 1986*[13]. This provided that farmers could be paid for carrying out appropriate management of certain key features and habitats, varying from single features such as walls and hedges to large extents of farmed land. This scheme only applied to certain designated areas, not the whole countryside. Participation was entirely voluntary and operated by way of 10-year agreements with a 5-year break clause with the participating farmers.

This was supplemented in 1991 by the Countryside Stewardship scheme which brought environmentally-focussed payments to key habitats and features outside of the ESAs. Priority land types and landscape features were agreed for each county and then appropriate management methods and levels of payment were fixed. Again, participation was voluntary and the scheme operated through 10-year agreements.

In 2005 the former policies which tied grants and subsidies to production, encouraging farmers to aim for maximum yields and livestock numbers, have radically changed. The new Single Payment Scheme removes this linkage, making payments related to the area of land farmed. This is complemented by the Environmental Stewardship scheme, also introduced in 2005, which includes Entry Level Stewardship, a broad and shallow scheme that pays for a basic level of maintenance of landscape and other environmental features. It is anticipated that the majority of farmland will have been entered into Entry Level Stewardship by 2007.

Thus public funding, which at the start of this study series encouraged production and almost always led to a reduction of one or more environmental qualities, has now significantly changed in its approach and is more focused on encouraging farmers to undertake environmental management works.

It is, therefore, reasonable to assume that the rate of loss of valued landscape features and wildlife habitats which resulted from former policies and their associated grant structure will at least slow significantly, or possibly result in some significant degree of recovery.

As the new Single Payment Scheme had only just been introduced at the time of writing its impacts on different farming sectors and landscape types is as yet unknown, though concern has been expressed that it could have adverse impacts on the landscape – see the Appraisal section of this report. In addition, while Environmental Stewardship is likely to have a positive influence on the landscape, the scale of its impact remains to be seen. There is a risk that uptake, and therefore impacts, of the scheme could be limited, for example by a restricted

budget and due to disillusionment with government schemes among some of the farming community as a result of delays to Single Payments.

While the whole policy, grant and subsidy structure has radically changed, so has the farming industry, and there will inevitably be effects on landscape management as a consequence. It is almost impossible to give clear statistics of the changes due to varying methods of collection and interpretation over the years. However, the main practical changes that have taken place have been considerable reductions in the number of commercial farms and farmers, and in the number of employed workers; a large reduction in dairy cow numbers since 1980; and a large increase in sheep numbers.

The reduction in labour availability has been accompanied by fairly dramatic increases in the rates of work achievable with more powerful and larger machines. Thus the average rate of ploughing suggested by John Nix in Wye College's *Farm Management Pocketbook*[14,15] was about 2ha/day in 1970, but 6ha/day in 2005; fertiliser spreading – 12.5ha/day in 1970 and 30ha/day in 2005: sugar beet harvesting – 0.75ha/day in 1970, 3.5ha/day in 2005.

In addition, and as already indicated above, farmers have moved from a system of deficiency payments (intended to supplement the prices obtained from the market), through payments based on acreages of certain crops grown and number of livestock kept, to today's system of payment which will ultimately reward only those land management practices which are not considered detrimental to the environment.

Perhaps the most important change has been in relative income. Indexing the average UK Farming Income as 100 over the period 1950-59, and using Real Terms, it peaked at 138 in 1973, declined to a low of 34 in the late 1980s, rose to a high of 91 in 1995 and has declined to only 10 in 2000 before rising again to a provisional 34 in 2003 [J Nix, loc cit]. Different sectors have varied widely within this overall index, but the industry as a whole has clearly suffered from a very significant decline in relative and absolute profitability since the start of this study.

Again, it is reasonable to assume that these changes in farming structure and incomes will have some impact on the landscape, for it is the farmers, very largely, who maintain that landscape. It is worth recalling that at the outset of this study series it was possible to take photographs of corn stacks awaiting threshing (Fig. 2); a large commercial farm close to the Cambridgeshire study area still used significant numbers of horses for everyday cultivation; small farmers with intensive arable and vegetable production could make a living from as little as 30-40 acres of land; hand-hoeing of sugar beet was still widespread in the fens; and potatoes were still quite commonly harvested by hand. The contrast between that time and the current highly mechanised farming is enormous.

So far as landscape maintenance tasks are concerned, there often simply isn't the labour available to do the hedge cutting or ditch cleaning that used to occupy the winter months when fieldwork was not possible; or to manage the woodlands or rebuild stone walls. Such work now often has to be bought in from contractors, who will, where appropriate, be using large, high capacity, specialist machines, and represents an added expense for farming businesses that may be near the margin of profitability.

As well as the changes that can be attributed to the changes in policies and grants, and to the changing structure of the farming industry itself, it is inevitable that the passing of the years produces change in the landscape – trees grow or are harvested or die, buildings are constructed or outlive their useful life, farming systems change from grass-based to arable or vice versa, farms change hands and the new occupier has different priorities.

While changes may be noticed by those living in the neighbourhood or with a special interest in the landscape, there are relatively few detailed records of the changes themselves over a period of years, and especially a period of one third of a century. The following chapters set out the major changes seen in the seven study areas covered in this project, with commentary on the nature of the changes themselves and some discussion of possible reasons for change.

Once again it must be stressed that, because no farmers were interviewed at this stage of the NAL05 work, some of the suggested reasons for change may well be incorrect, and some physical changes will have gone un-noticed. Nevertheless it is hoped that facts shown by the photographs themselves will be of interest to those who study landscape change, from whatever motivation.

Figure 2: Corn stacks awaiting threshing could still be seen in the Cambridgeshire fens in 1972 and, on this farm, horses continued in use for everyday cultivation.