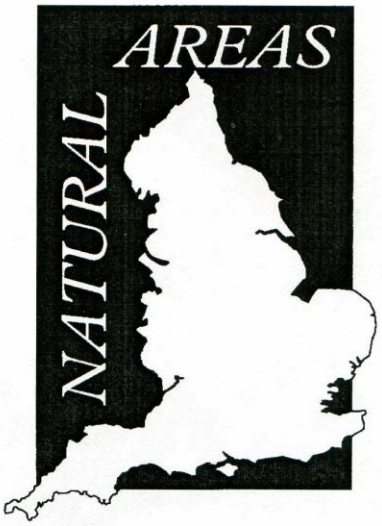
ENGLISH NATURE

No. 206

Identifying and describing farm character and structure in the Natural Areas

A guidance manual



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English Nature Research Reports

IDENTIFYING AND DESCRIBING FARM CHARACTER AND STRUCTURE IN THE NATURAL AREAS:

A Guidance Manual

A Methodology Refined Under Contract No: F80-32-08

English Nature Research Report 206

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1.0 # INTRODUCTION

1.1 In September 1995, English Nature commissioned a pilot study to characterise farming in four Natural Areas. The study aims were to:

- devise and test a methodology to describe and characterise farming and agricultural change sin each Natural Area;
- to assess opportunities to achieve nature conservation objectives.

English Nature Research Report 207 outlines the findings of the study.

1.2 The aim of this guidance manual is to enable those involved in Natural Areas to gain a greater understanding of farmed areas, how farming has changed and the nature conservation implications of these changes. This information ca be of benefit when devising Natural Area objectives. Also, guidance is available on developing understanding of the relationship between the various components of the nature conservation resource and agricultural policy and practice (Tilzey, 1996 - guidance note and ENRR Y).

1.3 This guidance manual sets out a number of stages and uses as its basis parish summary statistics summarised at a Natural Area level. We are grateful to MAFF who commissioned the collation of June parish summaries for 1975, 1984 and 1994. The June census material gives a good snap shot of farming in an area and enables comparison between years. Sample June parish-summary information accompany this report.

1.4 June Census data can readily be used as an introduction to the way an area is farmed, and how the farming industry is changing. It is excellent as a means of assessing land use and change at a broad level, and as a trigger for more detailed research in smaller areas or through other sources of data or study. Equally it has its limitations, and NA wide analysis may disguise different trends happening on a more localised basis.

Structure of Report

1.5 This report is a guidance manual. We set out how to carry out an analysis, and show you the results by reference to a worked example. We take you through how to analyse these data sets, and what you can draw from them. In addition to the MAFF data, our analysis drew on a wide range of other published agricultural data and on information already known to the EN teams in each of the NAs. In each area, we also made contact with key individuals involved in agriculture and nature conservation, who were identified by EN staff. We explain how to undertake such analysis, and we relate the methodology to an upland and a lowland example of the results.

1.6 We recognise that there is no magical way to present the results. The examples we set out should be taken as indications of the sorts of things which your Team might wish to identify. This methodology should be taken as a starting point. There may be areas of interest in your own particular NA which warrant considerably greater investigation than the level of detail in the examples set out in this report.

1.7 We anticipate that this work can be carried out by EN staff without recourse to external consultants. However, local agricultural colleges, FWAG, NFU and CLA contacts, and local farmers may all assist in determining trends. We anticipate an input of about 5 days work for each NA: 2-3 days analysis, 2-3 days consultation.

1.8 The report is structured as follows:

- **Section 2, National Trends**. To set the changes which different NA's might reveal in context, we have briefly reviewed some of the national trends over the last twenty years. We point to the sources of reference, and the findings we have made. By reading this section you should get a good feel of how to investigate further if needed.

- **Section 3, The Methodology In Outline.** We cover the use of June Census statistics, the other useful sources of reference, and the limitations to a study of this kind. We provide guidance on seeking outside opinion of the provisional findings.

- **PART B. The Methodology In Practice : Lincolnshire Wolds.** This part of the report describes current resources and farming practices in one Natural Area, then describes trends and changes over the twenty year study period, setting out direct and indirect potential effects on nature conservation interests. We take you through an example , in this case the Lincolnshire Wolds, in order to illustrate the way we approached the analysis and the conclusions you can draw from the evidence.

- **PART C. Exmoor And The Quantocks.** This sets out another example without indicators and instructions.

- **PART D. References.**

1.9 The source MAFF data supplied by EN at the start of the project is included as appendices to the report.

2.0 NATIONAL TRENDS

Modern Agriculture In Context

2.1 Today's farming character has evolved rapidly over a relatively short period of time. Farming practices were transformed by the enclosure acts, and subsequent industrialisation of Great Britain. Technological advances have resulted in massive changes since the 1940's.

2.2 Any study of the changes in farming would not be complete if some of the trends were not set in political context. In the early part of this century, farming was in recession and much land was abandoned during the 1930's. Following the 1939-1945 conflict, however, there was pressure for Great Britain to increase her home consumption and thereby reduce the risk of shortages experienced over that time of war. Government policy and grant aid sought to increase the amount of agricultural production. Coupled with this, technological advances in plant and animal genetics, and the availability and type of mechanical assistance, have enabled farmers to increase production many fold.

2.3 The result of this was that agricultural land use intensified greatly. Large areas were underdrained, old grasslands were ploughed up, and stocking densities increased. Into the 1970's, fields were enlarged to accommodate new machinery, with losses of hedgerows and trees. The fact of English agriculture was transformed.

2.4 Until recently, Government and EC policy continued to be geared towards increasing production. By the mid 1980's however, faced with surpluses in some agricultural commodities and a Common Agricultural Policy (CAP) threatening to be economically unsustainable, policy has changed towards production level control (through subsidy payments and fiscal encouragement) and incentives for environmental improvement practices.

2.5 Hence the period investigated by this study, 1975-1994, covers a marked swing in the thrust of policy. In 1976, the Government White Paper "Food From Our Own Resources"[1] encouraged increased home production, but by 1987 it was recognised that the need had moved towards fostering the diversification of the rural economy[2]. Policy guidance since that time has followed a similar vein[3]. The Government now recognises a need to continue efforts to reform the CAP, with payment directed more towards the encouragement of environmentally beneficial and sustainable farming[4].

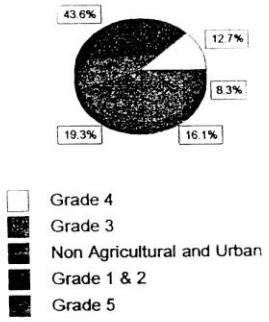
Note. *In reaching these conclusions we have referred to the texts of various Government policy publications. You will find these referred to at Part F. It is unlikely to be a worthwhile task to trawl through the reams of policy documents to identify these changes. There are a number of good texts which detail the changing face of national farm policy.*

2.6 In this context, changes over the 1950's and 60's seem likely to have continued through to the mid 1980's, after which changing Government policy may have influenced the trends. In this introductory section, we provide a brief analysis of some of the major trends, drawing on MAFF and other published sources as noted.

English Agriculture Today

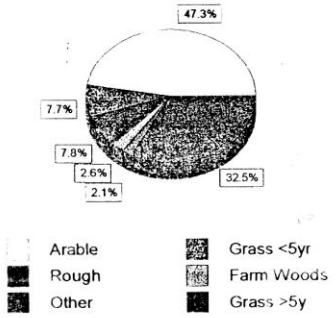
2.7 England is a strong agricultural nation. Some 80.7% of her area is agricultural land[5]. Significant areas are of very good or good quality agricultural land. The Ministry of Agriculture, Fisheries and Food (MAFF) system of Agricultural Land Classification (ALC) divides farmland into five grades according to inherent versatility for agricultural use - and some 59.7% of the country (74.3% of all agricultural land) is Grade 1, 2 or 3 (excellent to moderate quality) as shown in the pie chart below.

Figure 2.1 : Land Quality of England (source: Agriculture In The UK 1995)



2.8 As a consequence, much of the country is in arable or ploughed grassland uses. As shown below, some 55% of agricultural land is ploughed.

Figure 2.2 : Land Use In England



2.9 There are 150,000 farms in England, directly employing some 430,000 workers.

Figure 2.3 : Basic Agricultural Statistics

Statistic	Number
Farm Holdings	153,426
Farm size average	61ha
Employment	430,900
Percentage of land owned	63%
Percentage of holdings > 50ha	35%
Percentage of full-time holdings	56%

Note. *We have referred to annual publications by MAFF. These are the "Agriculture in the UK" glossy books, and the PSM statements which set out county and national June Census return results. These are available in A3 black and white, or a little later they come out in a green bound book "The Digest of Agricultural Census Statistics". Both cost about £15 - £20 and provide not only the most recent data but, for many trends, they set out the results of the previous ten years. They provide an excellent starting point for national analysis.*

2.10 **Land Use Trends Since 1979**

In 1979 the total farmland area of England (excluding common rough grazing) totalled 9,469,551ha. This area fell to 9,354,314ha by 1994[6], a decline of 12%. The decline is the result many developments, including, urban development, roads, leisure uses and forestry (excluding farm woodlands which are included in the figures above).

2.11 In addition to the overall decline in farmland area, there have also been significant changes to cropping practices:

- the total grassland area (excluding rough grazing) fell from 4,239,907ha in 1979 to 3,743,049ha in 1994, a decline of almost 12%. The decline was chiefly the result of the greater profitability of arable crops compared to livestock enterprises;

- the area of grassland less than 5 years of age fell from 996,320ha in 1979 to 723,311ha in 1994, a decline of 27%. The fall in the area of short-term grassland was the result of the substitution of traditional grass leys for potentially more profitable break crops in arable rotations;

- the area of grassland older than 5 years of age fell from 3,228,225ha in 1979 to 3,019,738ha in 1994, a decline of 7%. This decline was not as marked as for shorter term grassland, as most long term grassland is located away from traditional cropping areas;

- the area of rough grazing (excluding commons) fell from 758,201 in 1979 to 721,626ha in 1994, a decline of 5%. The decline has chiefly been the result of conversion to grassland and forestry plantings in upland areas;

- the area of woodland on farms rose from 161,374ha in 1979 to 245,303ha in 1994, an increase of 52%. The rise reflects the encouragement of woodland planting on farms over the last twenty years;

- the total area of tillage (crops and bare fallow) rose from 4,178,388ha in 1979 to 4,361,933ha in 1984. However, this area fell to 3,831,355ha in 1994, due in part to the introduction of set-aside. If set-aside is added to the 1994 arable area, the increase in the total arable area between 1979 and 1994 would have been 15%;

- the total number of cattle fell from 8,192,820 in 1979 to 6,780,041 in 1994, a fall of 17%. Over the same period, the total number of sheep and lambs rose from 14,001,596 (1979) to 20,045,276 (1994), a rise of 43%. The fall in the number of cattle is a reflection of the lower profitability of cattle compared to arable enterprises in the lowlands and sheep enterprises in the uplands.

2.12 **Management Practices**

- Since 1975 there has been a decrease in the number of individual agricultural machinery pieces. For example, UK wheeled tractor registrations fell from 34,487 in 1975 to 19,349 in 1994[7], a fall of 44%. This is despite an increase in sales during the early 1990's;

Note. *For many of the management trends, the MAFF June Census statistics are inadequate. Farmers do not complete this sort of data on the Census forms, and therefore it is not possible to extract the changes. As will be seen from the references made in the next part of the study, we found it necessary to refer to a number of different sources. Many organisations are, in our experience, very willing and able to help in providing data or simply giving verbal advice on how farming has changed (eg the Fertiliser Manufacturers Association).*

- The fall in the number of pieces of machinery may partly be explained by the increase in power and size of remaining machinery. For example, between December 1984 and December 1987 the number of English tractors with less than 60kW of power fell by 7%, while the number of tractors greater than 60kW rose by 20%[8];

- Between the cropping years 1975/76 and 1994/95 the amount of nitrogen fertiliser used in the UK rose by 28%, from 1.059 million tonnes to 1.356 million tonnes[9]. However, in 1985/86 the amount used was 1.572 million tonnes, 22% more than in 1994/95. The fall since the mid-80s was due to the introduction of set-aside, greater awareness over the use of fertilisers and the need to cut costs;

- The use of chemical sprays in agriculture shows similar trends to nitrogen fertiliser. For example, in 1974 9,757 tonnes of active ingredients were used on cereals in the UK. This increased to 15,690 tonnes in 1988, a rise of 61%[10].

- However, usage fell in the 1990s: UK sales of total active ingredients for all uses fell from 24,375 tonnes in 1990 to 22,276 tonnes in 1994, a decline of 9%[11]. The Association believes the fall has been due to formulation technology change, new products, set-aside and the development of Integrated Crop Management, ie sprays are now more accurate and more accurately applied, so that quantities can be reduced;

- Due to its better feeding quality and less dependancy on good weather for quality production, silage has largely replaced hay as the main means of conserving fodder. Between 1976-89, the amount of silage produced in England and Wales rose from 10 million tonnes to over 30 million tonnes, an increase of more than 200%.

- The intensification of farming practices and increased use of silage resulted in a rise in farm pollution incidents over the 1970's and 1980's. Between 1979 and 1988, the number of reported farm pollution incidents in England and Wales rose from about 1,500 to over 4,000, an increase of over 150% (National Rivers Authority). However, stiff penalties for polluters, grants for pollution control measures and guidance to farmers has caused a decline in farm pollution since 1988. Between 1988 and 1995 the number of substantial incidents fell from 4,141 to 2,733, a decline of 34% (Environment Agency)[12].

2.13 **Farm Business Structure**

- Due to tax and restrictive landlord and tenant legislation, the area of tenanted land has fallen significantly over the last 20 years. In 1979 the area of land rented (excluding seasonal lets) was 4,187,912ha. This fell to 3,356,783ha in 1994, a decrease of 20%;

- The number of holdings also fell, due to the pressures on smaller holdings and the advantage of economies of scale for larger farms. In 1981 there were 155,484 holdings in England. By 1994 this number had fallen to 153,426 holdings;

- Between 1984 and 1994, average farm size in the UK grew from 105ha to 110ha, a increase of 5% ;

- Due to economic pressures, increased mechanisation and the decline of livestock enterprises, the number of workers employed in farming has fallen steadily since the 1970s. In 1979 the total labour force (including farmers and their wives) was 517,702. By 1994 this had fallen to 410,809, a decrease of 21%.

Note. *Unless there are very specific changes which need further investigation, such as use of different types of fertiliser in and around the Nitrate Vulnerable Zones, the trends noted above provide a good introduction to what has happened nationally over the last twenty years.*

We have tried to explain the trends that we found. The explanation may not be initially apparent from the changes which can be identified. It is possible that helpful local National Farmers Union or Country Landowners Association staff could assist in the reasons, or a visit to a nearby agricultural college library might identify a book on the subject.

3.0 THE METHODOLOGY IN OUTLINE

The June Census

3.1 The MAFF June Census is intended to be filled in by every farmer in the country. The farmer completes the form for the actual cropping, stocking, employment etc on the farm on 1 June of each year. An example of the Census form is given as Appendix 1 to the report.

3.2 MAFF then collects the data. They group the data into Parish groups. The data does not reflect the actual boundary of the parish, but is based on the place of residence or registration of the entrant. Hence if farmer Giles farms 600 hectares which lies in three parishes, the whole 600ha is allocated to the parish of residence.

3.3 Parish data is then available on a parish by parish basis. However, MAFF will not release data of parishes with only a few farmers where it could be possible to identify individual holdings. Much more common groupings are on a county basis, such as referred to in the "Digest of Agricultural Census Statistics".

Natural Area Census Groupings

3.4 MAFF commissioned ADAS to provide the Census data grouped for all the parishes in every NA in England. This could be a very large grouping: the Greater Cotswolds NA contains almost 400 parishes, for example. They have printed the results for the years of 1975, 1984 and 1994.

3.5 Examples of the returns are contained in Appendices 2 and 3. The Census data as presented takes the form of a series of comparable data. For example, in Appendix 2 (Lincolnshire Wolds) at table 1 is shown how the land tenure in the NA has changed. In 1975 some 52,975ha's were rented, but by 1994 this had fallen to 37,344ha.

3.6 Some of the calculator work has been done for you. For example, table 1a shows what the % of rented land is for each year.

3.7 Using this as a starting point, therefore, it becomes possible to see how an area is changing. Again using the Lincolnshire Wolds data, tables 2 and 2a show:

- grassland areas falling sharply, with falls of 36.5-69.6% over twenty years;
- cropping areas increasing by 2.1% over the twenty year period;
- farm woodland increasing by 109.5%;
- set aside introduced between 1984 and 1994 and now covering (1994 figures) some 11.5% of the total agricultural area.

3.8 This is the stage where interpretation can begin, and where further research or knowledge might be needed. You might wish to calculate the growth of the arable, cultivated areas. The arable area under "crops and fallow" appears to have fallen in the Lincolnshire Wolds NA since 1984. It must be added to the "set aside" category, however, showing an overall increase. Total arable areas will also include most grassland of under 5 years. Reference to the Common Agricultural Policy subsidy payment rules indicates that most grasses under 5 years are likely to be eligible for Arable Area Payments and might, therefore, be converted to cereal or other arable cropping.

3.9 This is a simple example of the type of analysis to undertake. The next part of the report leads you through the Lincolnshire Wolds data.

Plans And Graphs To Accompany The Data

3.10 The data comes with a colour plan which shows the distribution of the predominant farm type in each parish. These are reproduced as black and white examples (for cost reasons) in this report, but will be in colour with your own data set.

3.11 The graphs are a pictorial representation of the basic analysis undertaken in the data sets and compliment the data.

3.12 The plans are of much greater use. The Lincolnshire Wolds plan (in Appendix 2) is the easiest to follow. It shows the predominant farm type by parish. Hence if there are eight farms in the parish of Thorganby, for example, and five or six are cereals, the relevant square will be yellow (light on the black and white copy). The plan therefore indicates where in the area are the stock and other farm types.

PART B : THE METHODOLOGY IN PRACTICE : THE LINCOLNSHIRE WOLDS

4.0 # DESCRIPTION OF FARMING : LINCOLNSHIRE WOLDS NATURAL AREA

Note. *Our analysis starts with a look at the physical resources of the area. The type of farm enterprise is often the result of the blending of the physical characteristics of any district, for example soil type and utility, climate and altitude (dictating growth), relief and access to markets together with other factors. Small fields, identifiable off a 1:25000 scale Ordnance Survey plan, might indicate soils which are either unsuitable for arable copping or which very over short distances. Farmers tend to leave boundaries where soils change markedly across an area, as this limits their agricultural options.*

Analysis of the physical characteristics draws requires information from sources additional to the Census return or the MAFF analysis. We have referred to soil maps for the area, as these were readily available to us. In your own analysis you might rely more upon local knowledge for the generalised level of analysis which makes a worthwhile start to understanding the farming of an area.

Climatic data and land quality data have been set out by MAFF for the NA generally. See for example tables 10 and 11 of Appendix 2. ALC plans on a regional basis are available from MAFF. A description of the ALC grades is given in Appendix 4.

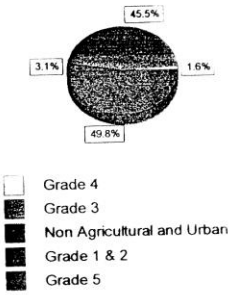
Physical Characteristics

4.1 The largely chalk and limestone geology of the NA has been heavily influenced by glaciation, with extensive deposits of boulder clay. This has resulted in a range of good agricultural soils[13,14]; to the north the main soils are the **Swaffham Prior** and **Hunstanton** associations, which are deep well drained soils over chalk suitable for cereals, sugar beet, potatoes and root vegetables. As the land rises to the main body of the Lincolnshire Wolds, the main associations are well drained calcareous **Andover 1** and **Panholes** soils, also suitable for cereals, potatoes and some root vegetables, and the more flinty **Carstens** soils, which are suitable for cereals and stock rearing. To the south the geology is more complicated, with sandstones, ironstones and clays present. This has resulted in a greater range of soil types, such as the well drained sandy **Cuckney 2** and **Cannamore** soils (suitable for a range of arable crops and root vegetables) and further areas of Andover 1 and Swaffham Prior soils.

4.2 Climatically the area is suitable for arable cropping. The area has average warmth (measured in accumulated daily temperatures above 0^0C between January and June) although below average rainfall, reflecting its eastern location. The mean Fields Capacity period, that period when soils are replete with water and during which vehicular access to the land will usually cause soil structure damage, is at 150 days. Thus spring crops are a possibility.

4.3 The Agricultural Land Classification of the Lincolnshire Wolds Natural Area reflects the high quality of its farmland; 50% is classified as Grades 1 and 2 (defined as excellent and very good quality agricultural land respectively, with few limitations on cropping) compared to just 17% for England and Wales and a further 46% classified as Grade 3 (defined as good quality land with moderate limitations to cropping). Only 2% of the NA comprises poor quality Grade 4 land, with the remaining area covered by non-agricultural uses. The majority of the NA is therefore good, ploughable land typical of eastern counties. This is shown below:

Figure 4.1 : Land Quality By Grade



Agricultural Land-Use

4.4 In 1994, 82% of the NA was arable. This reflects the good quality land of the area. The breakdown within the NA is compared to the breakdown for the United Kingdom[15]:

- 82.4% (71,809ha) arable (UK - 26.2% including bare fallow);
- 9.8% (8,528ha) grassland older than 5 years (UK - 30.8%);
- 2.7% (2,377ha) grassland less than 5 years old (UK - 8.3%);
- 0.9% (787ha) rough grazing (UK - 26.4%);
- 4.1% other land-use types (4,410ha).

Note. *Here we have again referred to the "Agriculture In The UK" series for national comparison. As the figures are now provided, you may not need more detailed national comparison.*

Farm Types

4.5 Out of 635 holdings in the NA in 1994:

- 40% were part-time;
- 42% were full-time cropping farms;
- 7% were full-time cattle and sheep farms;
- 6% were full-time pig and poultry farms;
- 6% were other full-time farms.

The "other" farm types include full-time dairy farms, horticultural units and mixed farms. Part-time farms are defined by the MAFF Census Branch, in their analysis of census data, as those holdings with an estimated labour requirement of not more than 200 Standard Man Days (**SMDs**). 1 SMD is equivalent to 8 labour hours per year. The distinction between full and part-time farms throughout this report is based on this MAFF definition.

Farm Tenure

4.6 In 1994, 57% (49,780ha) of the NA's agricultural area was owner-occupied and 43% (37,344ha) rented. The proportion of owner-occupied land is less than the 1994 national average for England of 64% owner-occupied and 36% rented.

Farm and Enterprise Size

4.7 In 1994 farms greater than 100ha in size were the most common size category in the NA:

Table 4.2 : Farm Sizes

Farm Size Category	Number of farms in each category as a percentage of all farms
Less than 5ha	18%
5ha to <20ha	17%
20ha to <50ha	13%
50ha to <100ha	14%
100ha and greater	38%

Note. *The matter of the numbers of part-time units caused us some considerable debate. Tables 6, 6a, 7 and 7a (appendix 2) give good data. However, MAFF Census data relates part-time holdings to those with less than 200 Standard Man Days of labour need. Table 9 is therefore confusing in that it refers to a 0-249 SMD category. For the level of detail needed for a good basic understanding of the area, there is no need to analyse the figures in greater depth than tables 7.*

4.8 Farm labour inputs (measured by **SMDs**) provide valuable information about the size and intensity of farming enterprises. Although the MAFF Census Branch define a full-time farm as one with a labour requirement greater than 200 SMDs, other sources assume full-time workers provide labour worth about 250 SMDs annually (Nix 1995). These figures may be used as general indications of the number of full-time workers needed by an enterprise. However, the figures should not be interpreted too strictly. There may be some farms with labour requirements of less than 200-250 SMDs, but due to their individual circumstances are still able to employ a full-time farmer or worker. Likewise, some farms with large labour requirements may employ relatively few persons, relying on over-time or increased mechanisation for operations to be completed.

4.9 The SMD data suggests that 41% of farms in the NA (260 farms) were too small to provide full-time employment, which is confirmed by the analysis of farm types above 40% (255 farms) of which were part-time. Most of the remaining farms have a labour input of in excess of 2 full-time workers, with a significant number (10%) of farms employing more than 7 workers.

Table 4.3 : Enterprise Size by SMD

Holding Size by SMDs	Approx. No. Of F/T Workers	Percentage
0-249 SMDs	0-1	41
250-499 SMDs	1-2	14
500-999 SMDs	2-3	20
1000-1999 SMDs	3-7	15
2000+ SMDs	>7	10

Labour Force

4.10 The NA's agricultural workforce totalled 2,138 people in 1994. 67% were full-time; 21% part-time; and 12% casual workers. The 1995 Census Guidance Notes, which assist farmers in completing the census form, define a full-time worker as one whose main occupation is farming and who devotes about 40 hours a week to carrying out work on the holding (67%). Casual workers are defined as those who are not regular workers, ie not employed on the holding for some part of each month throughout the year (12%). Part-time workers are those workers who are not full-time workers or casual workers (21%).

Summary of Farm Types in the Lincolnshire Wolds Natural Area

4.11 From the above analysis it is possible to draw a number of general conclusions about the main farm types in the NA:

1) Cropping farms are the main farm type and dominate farming in the northern and central part of the NA;

2) There is a small number of cattle and sheep farms, most of which are located in the southern part of the NA;

3) There is a significant number of pig and poultry farms throughout the NA (the national average for England is 0.8%, the NA contains 6%);

4) A large number of farms are part-time;

5) Just over half of farms are owner-occupied;

6) Almost 40% of farms are greater than 100ha.

5.0 # CHANGES IN FARMING IN THE NATURAL AREA, 1975 TO 1994 : LINCOLNSHIRE WOLDS

The Lincolnshire Wolds has been chosen because it is a relatively simple area, being mainly of arable cropping with few different farm types. The example in the next section is much more complex. The Exmoor area, for example, has recorded problems of overgrazing. In contrast, the common land of the Quantocks suffers from a lack of grazing. By amalgamating the data for these two areas, these contrary trends could be missed or diluted.

This section analyses the changes in agriculture over the period 1975-1994, looking firstly at the main structural changes to the industry within the NA, followed by the changes within farming enterprises. The causes of these changes and their effects on nature conservation are also considered.

In reading our findings it is important to recognise that the parish census data does not provide a comprehensive guide to changes in farming. For example, unimproved chalk grassland and improved grassland may both be categorised as grassland older than 5 years, despite their very different nature conservation interest. The Census also excludes common land. Nevertheless, the census data still provides a general indication of the changes that have taken place.

Here we go through what has changed. This is where other data becomes essential if the reasons and implications of change are to be understood.

Summary of the Principal Structural Changes 1975-1994

5.1 Land Use. Principal changes are as follows:

- the total arable area, including set-aside, has increased by 19% (11,305ha), from 60,504ha to 71,809ha. This increase would appear to be largely due to the decline in the area of grassland; grassland less than 5 years old fell by 70% (5,440ha), from 7,817ha to 2,377ha, while the area of grassland older than 5 years fell by 37% (4,902ha), from 13,430ha to 8,528ha. The increase in the arable area reflects the good quality of soils in the NA and the higher profitability of arable cropping compared to livestock enterprises. The decline in short-term grassland also indicates a change in rotation practices, from traditional rotations which include grass leys to continuous arable cropping;

- although still only covering 1% of the NA, the area of rough grazing increased by 220ha (39%), from 567ha to 787ha. This may be because of the neglect of marginal land on steep slopes and along wet river valleys. However, the area of rough grazing was even greater in 1984, with 1,117ha. This decline in rough grazing since 1984 may be in part due to the 110% increase in farm woodlands, from 765ha in 1975 to 1,602ha in 1994. The increase in the woodland area will have been encouraged by grants and policies encouraging the planting of new woodlands. The direct link between these two changes cannot be shown from the analysis or any other source and will have to be established by new survey.

Note. *This is a good example of what the data can tell you which might be highly beneficial in setting your objectives. We see a decline in rough grazing, which it would be fair to associate with steep sides to the Wolds which are often areas of high nature conservation interest or potential. Hence these areas are of potential interest to EN. Yet they are apparently declining rapidly. Is this because of tree planting, or the plough, or because they have been sold to nature conservation or other non-farming interests? The Census data highlights a trend which may be worthy of more specific and detailed analysis. We examine the implications later in the section.*

5.2 Farm Holdings. The total number of holdings in the NA fell by 17.4%, from 769 in 1975 to 635 in 1994.

- the number of full-time holdings fell by 119 (24%), from 499 to 380 farms;
- the number of part-time holdings fell overall by 6%, from 270 to 255 farms. However, despite the overall fall since 1975, part-time farms actually increased since 1984, when there were only 229 farms.

5.3 Farm Size. There has been a decline in the number of farms in all size categories in the NA since 1975. The greatest falls have been in farms between 5ha-<20 ha (down 22%) and in farms greater than 100ha (down 21%), although the latter category still remains the most common in the NA. The fall in all sizes of farm reflects the economic pressures on farming over the last twenty years; many farmers have left the industry or have amalgamated for economies of scale. There has also been a trend to sell farms in lots in order to maximise their capital values, usually resulting in their break-up. However, despite their overall decline, farms less than 5 ha and farms between 5ha-<20ha actually increased in number after 1984, by 35% and 6% respectively. This reflects the increase in number of part-time farms over the same period.

Table 5.1 : Farm Size Changes

Size (ha)	1975	1984	1994	% Change 1975-1994
<5	122	85	115	-6%
5-<20	135	99	105	-22%
20-<50	102	96	85	-17%
50-<100	105	98	90	-14%
100+	305	254	240	-21%
Total	769	632	635	-17%

5.4 Employment. The total agricultural workforce decreased by 39% between 1975-1994:

- full-time workers fell by 42%, from 2,473 to 1,429;
- part-time workers fell by 19%, from 550 to 446; and
- casual workers fell by 44%, from 470 to 263 (casual workers include contractors).

The decline in the number of the full-time workforce is probably the result of a number of factors. These include:

- the fall in the number of farms;
- economic pressures to reduce labour costs;
- increased farm mechanisation;
- a movement away from livestock to less labour intensive arable enterprises;
- increasing use of contractors on some farms; and
- the introduction of set-aside.

Note. *Agricultural labour forces are declining generally, but it is important to understand the scale of this. The human side of changing farming practices, and the scaling back of labour resources, should be understood and appreciated in any liaison with farmers. There will be many cases where reducing labour availability has had significant personal effects. Again it is worth exploring other texts to find reasons for some of the trends.*

The only agricultural workers to have increased in number during the period were part-time farmers (up 19%, from 215 to 255) and family workers (up 31%, from 193 to 253). The increase in family workers indicates many farms would appear to be increasingly dependent on family labour (part and full-time). This may suggest an ageing farming community (as more children are now old enough to work on the farm), as well as financial pressures. The falling numbers may reflect the changing community mixes, with decreased local employment and increased commuting[16].

5.5 Labour inputs. There was an increase in the number of farms with labour inputs between 250 to 1999 SMDs:

- 250-499 SMD holdings increased by 88%, from 48 farms to 90 farms;
- 500-999 SMD holdings increased by 279%, from 33 farms to 125 farms; and
- 1000-1999 SMD holdings increased by 19%, from 80 farms to 95 farms.

Many of these changes are probably a result of increased farm mechanisation, the overall decline in the number of farms and fewer labour intensive livestock enterprises. In addition, some smaller holdings may have intensified farming in order to remain viable.

5.6 Tenure. The area of rented land fell by 30% from 52,975ha to 37,344ha, probably due to tenancy laws and inheritance tax rules which discouraged landlords from letting land. It is too early to assess whether the new Farm Business Tenancies (introduced in September 1995) and the current 100% inheritance tax relief on let land will reverse the decline of the tenanted sector. One impact of the decline will have been reduced opportunities for new entrants to farming, which may possibly be reflected in the increase in the number of family workers on the NA's farms.

Summary of Principal Changes to Farm Types

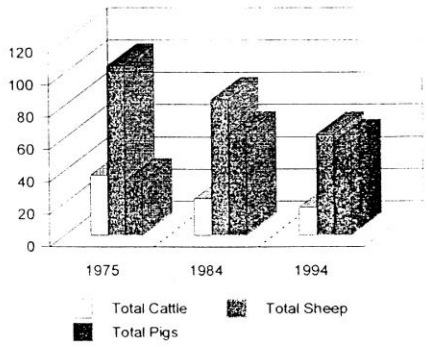
5.7 Cropping Farms. Full-time cropping farms remain the most common farm type in the NA, despite falling in number by 14% from 308 farms to 265 farms. However, as the total arable area increased by 19% over the same period, the remaining cropping farms would appear to have increased in size, probably for economies of scale and to reduce the impact of set-aside.

5.8 There have also been significant changes in the types of crop grown in the NA, with wheat replacing barley as the main crop in the area due to its better price and yield. The wheat area increased by 72% from 17,995ha to 30,889ha, while the barley area fell by 60% from 26,284ha to 10,486ha. Other crops that have increased in area include beans and peas (up 103% from 1,783ha to 3,627ha) and oilseed rape (up 1,185% from 461ha to 5,928ha), the planting of both of which were largely encouraged by high levels of subsidy. Sugar beet areas are unreliable - the factory at Brigg has been closed but the Bardney factory improved.

5.9 Cattle and Sheep Farms. Full-time cattle and sheep farms fell overall by 18% from 55 to 45 farms between 1975-1994, reflecting the movement to arable enterprises in the NA. However, despite this overall decrease, cattle and sheep farms increased from 31 farms in 1984 to 45 farms in 1994. This increase of 14 farms since 1984 was despite the fall in the grassland area and may be the result of mixed farms becoming specialist livestock units; the number of mixed farms fell by 13 over the same period and between 1975-1994 fell by 86% from 35 farms to 5 farms. Such farms may have had to specialise due to economic pressures and the marginal nature of their arable land.

5.10 The overall decline in the number of livestock farms (including the few dairy farms) is reflected in the 53% fall in the total number of cattle and calves (37,495 cattle to 17,505 cattle) and the 40% fall in the total number of sheep and lambs (105,053 sheep to 62,687 sheep). This decline in cattle and sheep numbers represents a 50% fall in the NA's total grazing livestock units (**LUs**), from 30,647 LUs to 15,380 LUs. As the total forage area fell by 46% over the same period (21,814ha to 11,692ha), stocking levels fell slightly from 1.4LU per ha to 1.3LU per ha. Care is needed in this analysis, however. A general tend towards early lambing may mean that a greater proportion of lambs have been sold before the June Census date and are not, therefore, recorded in the statistics. Nevertheless, the decline in sheep numbers is contrary to the national trend over the period.

Figure 5.2 : Livestock Number Changes (in thousands)



Note. *Again we highlight the potential limitations of the Census data. The data does, however, indicate trends worthy of more detailed pursuit. The Census form is completed on 1 June every year. In lowland areas, many farms lamb in the January to February period and may well have sold lambs by 1 June. This was much less the case in 1975.*

5.11 Dairy Farms. Although the number of dairy holdings fell by 57% (35 farms to 15 farms), the remaining dairy farms increased their stocking rate by 10% from 89 cows/farm to 98 cows/farm.

5.12 Pig and Poultry Farms. The number of full-time pig and poultry farms fell by 8% from 38 farms to 35 farms, reflecting the economic pressures on the industry. However, the total number of pigs rose by 72% (33,666 to 57,800) over the same period, while total poultry numbers rose 33% (385,269 to 513,783). This suggests that the remaining farms have increased the intensity or size of their enterprises since 1975. The increase in pig numbers may also be a reflection of the increasing popularity of outdoor pig enterprises, due to their usually higher welfare standards and lower capital requirements compared to intensive farming methods, and known to be operated within the NA. The NA's well drained soils and low rainfall are well suited to such enterprises.

5.13 Part-time Farms. The 11% increase in part-time farms since 1984 has already been noted and they now make up 40% of farms in the NA. The increase may be the result of some farmers having to supplement their income with off-farm employment. It may also be a consequence of an increase in hobby farms.

Effects on Nature Conservation

5.14 The changes in agriculture in the NA over the last 20 years will have had a number of direct and indirect impacts on nature conservation.

Note. *At this point we start to interpret what the changes might mean for nature conservation.*

The bald Census statistics give trends but not answers. It is therefore necessary to go to other studies to find reasons for some of the changes.

5.15 Direct Effects. These will include:

- *increase in the arable area.* 10,342ha of grassland has been lost since 1975, most of which will have been converted to arable use. Hedges and walls may also have been removed and the remaining field boundaries neglected. Improved drainage and greater irrigation may also have lowered the NA's water-table, leading to a reduction in ponds and marshes. The trend may now be reversing, however. CRC noted[17] that new incentives for conservation and extensification are having positive effects. Whilst water abstraction is predicted to increase by 13% in the 10 years to 2002, levels (at 0.7% of total licenced abstraction) do not give rise to concern[18];

- *more intensive cropping practices.* The arable area may be used more intensively. For example, the decline in the use of grass leys indicates permanent arable cropping, with increased chemical use as a result. The increasing area of winter crops, especially of winter wheat, will also have led to an increase in inputs and reduced the area of winter stubble available for seed-eating birds. However, the introduction of set-aside, with its range of management options, will have introduced a number of opportunities for nature conservation on many intensive arable holdings. Of particular concern is the damage of arable practices on archaeological features;

- *decline in livestock numbers.* Despite the small increase in the number of cattle and sheep farms since 1984, the number of livestock in the NA has fallen dramatically between 1975-1994. This may mean that some of the remaining grassland may be used less intensively, with beneficial consequences where it had originally been overgrazed or managed intensively. However, on other grassland sites the fall in livestock numbers may result in undergrazing, leading to scrub encroachment. Small, fragmented areas of tough pasture are unlikely to be grazed without encouragement;

- *increased stocking on dairy farms.* On the few remaining dairy farms, the increase in stocking rates may have resulted in increased grazing pressure and greater risk of pollution;

- *increase in pig and poultry numbers.* The increase in pig and poultry numbers may result in the increased risk of water pollution;

- *woodland planting.* The 110% (837ha) increase in the area of farm woodland (twice the national average) may have benefitted wildlife, providing the sites for the new planting were not valuable habitats beforehand (such as rough grazing) and the new woodlands receive sympathetic management. However, farm woodlands still only cover 2% of the NA. Cobham Resource Consultants (1993) reported misguided planting of grass slopes and wide verges, with negative results.

5.16 Indirect Effects. These will include:

- *decreased labour.* The fall in the number of full-time workers and farmers may have led to less labour availability for the management of wildlife habitats, such as the sympathetic management of hedgerows, ponds and woodlands. Conversely, there may have been an increase in those sympathetic to nature conservation, especially from the increasing number of part-time and hobby farmers. Some full-time farms may also be sympathetic to conservation schemes, such as Countryside Stewardship, where they allow them to reduce costs and receive a regular source of income;

- *decrease in rented land.* The fall in the area of rented land may reflect the fragmentation of large estates, many of which maintained valuable habitats for their sporting potential, such as small woodlands. It is unclear whether such land will receive such beneficial management when farmed by smaller holdings.

6.0 STRATIFICATION OF FARM TYPES : LINCOLNSHIRE WOLDS NA

Note. *As part of a wider survey (reported in ENRR 205) we then identified types of farmers for interview. In summarising the results of the study, we produced a table summarising key changes in farming, their possible effect on the environment, and their importance to the NA.*

We anticipate that each Local Team might desire a much more thorough breakdown than this, for help in setting objectives and action plans.

6.1 The analysis of farm census data in the previous section allows farms to be categorised according to their impact on nature conservation over the last 20 years. This will allow those farms most vulnerable to change, or which present the greatest opportunities for nature conservation, to be identified and targeted.

6.2 By examining the impact of changes on different farm types between 1975-1994, it is possible to score farm types according to their importance to nature conservation issues. These categories are given in:

Summary of Effects on Main Farm Types

Farm Type	Farming Change	Possible Impact on Environment	Importance to NA
Cropping	increase in arable area	loss of grassland, removal or neglect of field boundaries and ponds	
	more intensive cropping, more drainage and irrigation, increase in autumn sown crops	more fertilisers and sprays, fewer arable weeds, less winter stubble, lower water-table	
	set-aside	opportunities for conservation	
	fall in number of full-time workers	neglect of wildlife habitats and beneficial activities	HIGH
Cattle & Sheep	fall in number of cattle and sheep	reduced grazing pressure on some remaining grassland, especially small areas within arable farms	
		Undergrazing and scrub encroachment in other areas	HIGH
Pigs & Poultry	increase in pig and poultry numbers	greater risk of water pollution. Disposal of effluents may increase nutrient input to grassland	MEDIUM/ LOW

Dairy Farms	increased stocking rates on few remaining farms	more intensive grassland use greater risk of water pollution	LOW
Part-time	increase in part-time farms and farmers	neglect or damage of wildlife features on some farms increased opportunities for wildlife on other farms	MEDIUM

6.3 Within the general farm types described above, those farms most vulnerable to change or offering greatest potential for enhancement may be further categorised and identified. From the analysis of farm census data these farms would appear to be as follows:

- *Cropping Farms Less Than 100 Hectares*
  The trend towards fewer but larger farms in the NA, coupled with the fall in the number of farms in the <100ha size category, suggests that the smaller cropping farms may be particularly vulnerable to economic change. Some small farms may have intensified their activities. Equally, small cropping farms may be attracted by the regular income provided by conservation schemes (such as Countryside Stewardship), which may also help reduce their fixed costs and provide the capital expenditure necessary for a return to mixed or livestock faming. These farms therefore offer potential to stem negative changes and to maximise positive benefits;

- *Cropping Farms Greater Than 100ha*
  Although the number of large cropping farms has declined over the period they may not be feeling the economic pressure to the same degree as smaller cropping farms. Therefore, whilst they may not be suffering from change, they offer higher levels of opportunity for enhancement. These farms cover a large part (by area and number) of the NA;

- *Large Estates*
  The decline in the rented area and the fall in the number of farms larger than 100ha suggests that a number of estates may have fragmented, with consequences for the habitats previously under their ownership and management. Furthermore, the decline in labour inputs on the largest holdings suggests that some estates may have had to reduce their labour force, which may have led to the neglect of wildlife habitats and beneficial activities;

- *Cattle and Sheep Farms*
  The large fall in the number of grazing livestock has important implications for the NA's remaining calcareous grassland and policies intended to increase the NA's grassland area. It is probable that cattle and sheep farms retained their livestock enterprises largely because their land was unsuitable for cropping or because they were too small to be viable as arable enterprises. As they probably occupy the more marginal land in the NA, along with other pressures on livestock enterprises (eg long-term falling prices, BSE), they may be under significant economic pressure. However, for similar reasons such farms may be attracted by the regular income of conservation schemes;

- *Part-time Farms*
  The increase in part-time holdings since 1984 may have led to the neglect of features important to wildlife, as part-time farmers may no longer have the resources to properly maintain them. Other part-time farmers may have a strong interest in nature conservation and may be attracted by less intensive farming methods and conservation schemes.

PART C : EXMOOR AND THE QUANTOCKS

7.0 DESCRIPTION OF FARMING : EXMOOR AND QUANTOCKS NATURAL AREA

Physical Characteristics

7.1 The geology of the NA is based on a combination of mudstones, siltstones, sandstones and slates. This combination has resulted in a range of soil types [19]. To the west the main soils are the **Denbigh 1** and **Manod** associations, which are well drained fine loamy or silty soils suitable for stock rearing in the uplands, with dairying and some cereals in the lowlands. Towards the centre of the NA Manod soils are still common, together with the loamy, permeable upland soils of the **Hafren** and **Lydcott** associations, both suitable for rough grazing and for stock rearing on improved land. To the east, Denbigh 1 soils are again common, while, on the Quantocks, Manod soils are common, together with **Rivington** soils (well drained loamy soils suitable for dairying and arable) and **Larkbarrow** soils (very acid soils characterised by heathland).

7.2 The Agricultural Land Classification of the Exmoor and Quantocks Natural Area reflects the moderate to poor quality of its farmland; 33% is classified as Grade 3 land (defined as land with moderate limitations on cropping), with a further 34% as Grade 4 land (land with severe limitations on cropping) and 19% as Grade 5 land (land with very severe limitations). Other land makes up only 14% of the NA. No data is available for the NA on the areas of, and breakdown between, the sub-grades of Grade 3, except for specific sites within the NA which may have been subject to detailed survey. Overall the land quality is poor in comparison to the national average.

Agricultural Land-Use

7.3 In 1994:

- 63% (69,017ha) of the NA's farmland was grassland older than 5 years;
- 14% (15,161ha) was rough grazing;
- 10% (10,937ha) was grassland less than 5 years old;
- 9% (9,597ha) was arable, including set-aside;
- other land-use types together made up 4% of agricultural land (4,446ha).

Farm Types

7.4 Out of 1,860 holdings in the NA in 1994:

- 55% were part-time;
- 32% were full-time cattle and sheep farms;
- 10% were full-time dairy farms;
- 3% were other full-time farms.

The "other" farm types include pig and poultry, cropping, horticultural and mixed farms. From cross reference, part-time farms comprise a mixture of all farm types, including cattle and sheep (LFA and non-LFA):

- most dairy farms are full-time;
- about one third (20) cereal and cropping farms are part-time;
- some 45% (485) of cattle and sheep farms are part-time;
- two thirds (20) of pig and poultry farms are part-time;

- most mixed farms (65/70) are part-time;
- all the "other types" are part-time.

Farm Tenure

7.5 In 1994 75% (82,407ha) of the NA's agricultural area was owner-occupied and 25% (26,751ha) rented. The proportion of owner-occupied land is greater than the 1994 national average for England of 64% owner-occupied and 36% rented.

Farm and Enterprise Size

7.6 In 1994, 65% of farms in the NA were under 50ha, and 87% under 100ha.

Table 7.1 : Farm Sizes

Farm Size Category	Number of farms in each category as a percentage of all farms
Less than 5ha	16%
5ha and <20ha	26%
20ha and <50ha	23%
50ha and <100ha	23%
100ha and greater	13%

7.7 Farm labour inputs (measured by SMDs) provide valuable information about the size and intensity of farming enterprises. A full time farm worker is usually assumed to be able to provide labour worth between 250-300 SMDs annually. This figure may be used as a general indication of the number of full-time workers needed by an enterprise. However, the figure should not be interpreted as a strict rule. There may be some farms with labour requirements of less than 250 SMDs, but due to their individual circumstances are still able to employ a full-time farmer or worker. Likewise, some farms with large labour requirements may employ relatively few persons, relying on overtime or increased mechanisation for operations to be completed.

7.8 The SMD data suggests that 55% of farms in the NA (1,015 farms) were too small to provide full-time employment, which is confirmed by the analysis of farm types in paragraph 5.4, 55% (1,015 farms) of which were part-time. Most of the remaining farms have a labour input ranging from 1-3 full-time workers (see below). It is possible that this is met by a number of part-time workers, but the data does not enable such accurate analysis.

Table 7.2 : Enterprise Size by SMD

Holding Size by SMDs	Approx. No. Of Workers	Percentage
0-249 SMD	0-1	55%
250-499 SMD	1-2	16%
500-999 SMD	2-3	20%
1000-1999 SMD	3-7	8%
2000+ SMD	>7	2%

Labour Force

7.9 The NA's agricultural workforce totalled 3,900 people in 1994. 59% of this workforce were full-time workers, 28% part-time workers and 13% casual workers (including contractors). The 1995 Census Guidance Notes define a full-time worker as one whose main occupation is farming and who devotes about 40 hours a week to running the holding (59%). Casual workers are defined as those who are not regular workers, ie not employed on the holding for some part of each month throughout the year (13%). Part-time workers are those workers who are not full-time workers or casual workers (28%).

Summary of Farm Types in the Exmoor and Quantocks Natural Area

7.10 From the above analysis it is possible to draw a number of general conclusions about the main farm types in the NA:

1) Cattle and sheep farms are the main farm type in the NA, accounting for 58% of all farm types. Almost half of these farms are part-time in nature;

2) There is a small number of dairy farms throughout the NA. Dairy farms dominate the better quality lands in the west and east of the NA, such as around Ilfracombe and The Quantocks;

3) A large number of farms are part-time. Part-time farms are numerically greatest in the cattle and sheep, and "other" sections, although cover farms of all farming type;

4) Three quarters of farms are owner-occupied;

5) The majority of full-time farms have a labour requirement of between 1-3 workers.

8.0 CHANGES IN FARMING IN THE EXMOOR AND QUANTOCKS NATURAL AREA, 1975 TO 1994

8.1 This section analyses the changes in agriculture over the period 1975-1994, looking firstly at the main structural changes to the industry within the NA, followed by the changes within farming enterprises. The causes of these changes and their effects on nature conservation are also described.

8.2 In reading our findings it is important to recognise that the parish census data does not provide a comprehensive guide to changes in farming. For example, improved and unimproved grassland may both be categorised as grassland older than 5 years, despite their very different nature conservation interest. The Census also excludes common land, which covers large areas of the NA. Nevertheless, the census data still provides a general indication of the changes that have taken place.

Summary of the Principal Structural Changes Between 1975 and 1994

8.3 Land Use. Principal changes are as follows:

- The total agricultural area within the NA has increased by 5005ha (5%) over twenty years. The Countryside Commission[20] estimate that in the Exmoor National Park (ie part of the NA) between the 1970's and 1980's the following changes took place, based on the Park area of 692.8sq km (the NA is twice the size at 1335km^2):

Table 8.1 : Changes In Net Land Use

Increases	Area (km^2)	Decreases	Area (km^2)
Cultivated land and improved pasture	+ 12.9	Upland Heath	- 5.3
		Other woodland	- 5.3
Coniferous Forest	+ 6.3	Moor and rough pasture	- 4.7
Development	+ 0.2		
Open Water	+ 1.6	Bracken	- 4.6
Net change	+ 21.0	Net change	- 19.9
Overall change	+ 1.1		

Within these global figures, the Commission estimate an increase of 11.2km^2 of cultivated land gained from improved pasture, with 5.3km^2 of upland heath lost to heather mosaics and grass moor and rough pasture losses of 4.7km^2 to improved pasture. There was much greater movement into and out of different land types over the period, the net figures reflecting only a small portion of the changes in the period;

- Grassland older than 5 years has increased by almost 10,000ha (17%), from 59,191ha to 69,017ha. This increase would appear to be partly due to the 33% decline of grassland less than 5 years old, which fell from 16,208ha to 10,937ha. Short term grassland has often been associated with mixed farms (due to grass leys planted between arable crops) and with dairy farms (due to short term intensive rye grass leys), both of which have declined in number in the NA;

- Rough grazing fell by 4.2% between 1975-1994, from 15,821ha to 15,161ha. This loss is likely to have been through agricultural improvement to grassland or to farm woodland planting, which increased by 113% from 1,592ha to 3,384ha. However, it is interesting to note that despite the overall decline, rough grazing actually increased to 15,161ha by 1994 after having an area of 13,233ha in 1984. It is possible that this may be due to the impact of conservation schemes eg ESA and CS[21]. It may also be because land improved with government grants in the 1970's and early 1980's may have become too expensive to maintain, resulting in its reversion to rough grazing. Additionally, as this accounts for almost half of the increase in agricultural land over the period, it may be land lost to ungrazed heath and moor;

- The area of arable land fell by 12%, from 10,863ha to 9,597ha. This decline may be due to the marginal nature of arable land in the NA and the reversion to grassland encouraged by conservation schemes.

8.4 Farm Holdings. The total number of holdings in the NA fell from 1,686 in 1975 to 1,656 in 1984, then increased to 1,860 holdings by 1994. The overall increase has been 10% and there has been a swing towards part-time holdings:

- full-time holdings fell by 19% from 1,042 to 845 farms, a fall of 197;

- part-time holdings increased by 58% from 644 to 1,015 farms, an increase of 371.

8.5 Farm Size. There has been an increase in the number of small farms. For example, farms less than 5ha increased by 59%, from 192 farms to 305 farms, while farms between 5ha-<20ha have also increased by 33% (see **Table 13.2**). This increase in small farms suggests an increase in the number of part-time and "hobby" farms. In contrast, the total number of medium size farms between 20ha-<100ha has fallen by 7%, with the 20ha-<50ha category falling the most sharply by 12%. The movement towards fewer medium sized farms may be due to economies of scale, coupled with the trend of lotting farms on sale to maximise capital values. Such factors may conversely be behind the small 3% increase in the number of farms of 100ha or more, with lotted land either farmed as a part-time unit (hence increase in their number) or amalgamated with other land to create larger units.

Table 8.2 : Farm Size Changes

Size (ha)	1975	1984	1994	% Change 1975-1994
<5	192	176	305	+59%
5-<20	362	396	480	+33%
20-<50	477	433	420	-12%
50-<100	427	406	420	-2%
100+	228	245	235	+3%
Total	**1,686**	**1,656**	**1,860**	**+10%**

8.6 Employment. The total agricultural workforce increased by 18% between 1975-1994 to 3900 people, although the net full-time workforce increased by just 1%. Within the full-time workforce:

- full-time spouses and family workers increased by 450% from 122 to 547;
- full-time farmers fell by 11%, from 1,419 to 1,264; and
- full-time hired workers fell by 33%, from 738 to 492.

Most of the increase in the total workforce is due to part-time workers (55% - 692 to 1,072), and casual workers (63% - 323 to 525). The increase in part-time workers may be a reflection of the pressures to reduce labour, together with the increase in part-time holdings, and increased use of part-time farming labour.

8.7 Labour Inputs. As with the Greater Cotswolds, there was a sharp decline in the number of farms with a labour requirement of more than 3 workers, particularly in the decade 1975-1984. This may reflect increased mechanisation and less intensive labour practices (eg, increased use of vehicles, milking parlour advances, tractor power increases etc.).

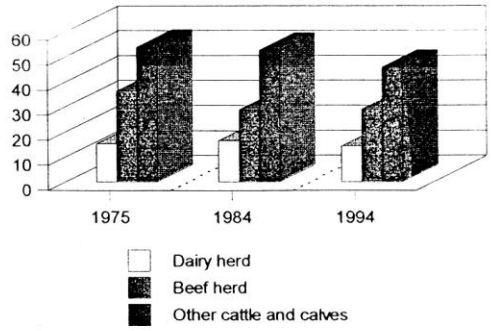
8.8 Tenure. The area of rented land fell by 22% from 34,355ha to 26,751ha, including seasonally let land, probably due to tenancy laws and inheritance tax rules which discouraged landlords from letting land. It is too early to assess whether the new Farm Business Tenancies (introduced in September 1995) and the current 100% inheritance tax relief on let land will reverse the decline of the tenanted sector. Successive generations may have been forced to work on the family farm due to the difficulty in getting their own holding, which may also have resulted in hired workers being laid off on the family farm to accommodate them; and is reflected in the increased number of family workers in the NA.

Summary of Principal Changes to Farm Types

8.9 Cattle and Sheep Farms. Cattle and sheep farms remain the most common full-time farm type in the NA, despite falling in number from 650 farms to 595 farms in 1994. This fall is probably due to the economic difficulties facing farming. However, in 1984 the number of stock farms had actually fallen lower to 544, only to increase in number over the following 10 years. This increase would appear to be due to farms switching away from other enterprises such as dairying and mixed farming.

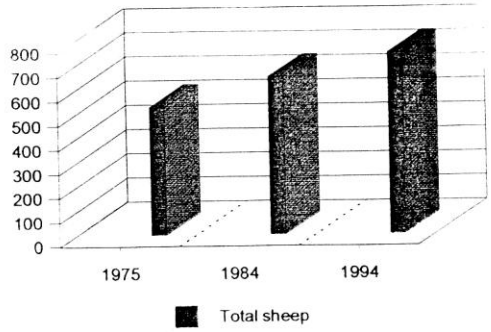
8.10 There has also been a 7% decrease in the number of beef suckler cows in the NA, from 20,877 cows to 19,350 cows, while the number of other cattle older than 1 year has fallen by 14%, from 21,045 to 18,130. This decrease in beef cattle numbers may be due to the national decline in beef consumption, the impact of BSE and the fall in the number of stock farms in the NA. There may be other, not discernible factors, such as farmer age.

Figure 8.3 : Changes In Cattle Numbers (in thousands)



8.11 Total sheep numbers have risen by 42%, from 530,190 to 750,206. This increase may have been encouraged by subsidies paid on a headage basis, improved market conditions for lamb and the smaller capital investment associated with sheep (compared to cattle). Improvement of agricultural land, the increasing use of winter housing, more away-wintering and higher lambing rates will also have led to the increased numbers. Lambs per ewe increased from 1 to 1.1 between 1975-1994, a lambing rate increase of 10%, based on the number on the farms at the June Census date.

Figure 8.4 : Sheep Number Changes (in thousands)



8.12 Dairy Farms. The number of dairy farms fell by 34%, from 273 farms to 180 farms, with dairy cow numbers falling by 6%, from 15,180 cows to 14,213. This decline may be due to the financial pressures on smaller dairy units, such as the imposition of milk quota in 1984 and the high capital costs required for buildings (for which most grant aid has ceased), parlours and pollution control equipment. As noted earlier, those farms which left dairying may have become cattle and sheep farms, due to the lower capital investment required for these enterprises. However, the herd size on the remaining farms would appear to have increased. In 1975 there was an average of 56 dairy cows/farm, which by 1994 had increased to 79 cows/farm, an increase of 41% in average herd size. This would appear to suggest that at least some dairy farms have intensified their activities.

8.13 Part-time Farms. The 58% increase in the number of part-time farms in the NA has been noted earlier and they now make up 48% of farms. The increase may be the result of some farmers having to supplement their income with off-farm employment. It may also be a consequence of an increase in hobby farms, as those with urban based employment move into rural areas.

Effects on Nature Conservation

8.14 The changes to agriculture in the NA over the last 20 years will have had a number of direct and indirect impacts on nature conservation.

8.15 Direct Effects. These will include:

- *Enclosing of heath and moor.* One of the most significant impacts is likely to come from the increase in the area of farmed land by 5000ha (5%). This land appears (from the analysis) most likely to be in grassland, although it is not possible to categorise the farming enterprises occupying the land. It is considered most likely to be cattle and sheep, on full or part-time holdings.

  Numerous earlier studies have looked at this problem. Lord Porchester reported in 1977[22] the average rate of moorland conversion between 1947 and 1976 as 128ha per annum across Exmoor. This rate was reported to have slowed by the mid 1980's[23] but in their study, ITE noted huge increases in the losses in the years after the UK joined the EEC. They drew on earlier studies of a sample of farms which confirmed the increasing losses over the period 1947-1976[24]. As noted by the Countryside Commission (1991), there are wide fluctuations within and between land use types which cannot be identifed from the bald data;

- *Changes in Grazing Management.* Miller et al (1984) reported difficulties in recording an increase in seasonal grazing intensification. They concluded that the effects of grazing pressure varies very widely across a moor, dependant upon vegetation cover, with increased grazing generally leading to heather losses. If grazed by sheep, there may be knock-on effects of increased bracken and low-lying gorse invasion. The statistics do not permit identification of trends in, for example, increased use of continental (larger) sheep breeds, earlier lambing (and therefore increased grazing earlier in the season), increased winter feeding on the hill, and localised increased grazing pressure. Changes in common grazing and bracken burning are also having effects[25];

- *Woodland Planting.* The planting of 1792ha of farm woodland, from 1,592ha to 3,384ha, may have benefitted wildlife, providing the sites for the new planting were not valuable habitats beforehand and the new woodlands receive sympathetic management. However, farm woodlands still only cover 3% of the NA. For wildlife benefit, the woodlands should be broadleaved. The change over the period has been steady. The Countryside Commission (1991) record that within the National Park part of the NA, there was a gain of 7.3sq km of non-coniferous woodland in the 1970's - 1980's period, counterbalanced by a 12.6 sq km loss. In recent years, farm woodland planting is likely to have been to broadleaf or mixed stands due to grant aid encouragement;

- *Changes to land use.* The increase in the area of grassland older than 5 years may have been partly due to the improvement of rough grazing (bracken and grass moor), some of which may have included valuable moorland or heathland. However, the subsequent increase in the area of rough grazing since 1984 suggests some previously improved land may be returning to rough grazing, perhaps due to economic difficulties in maintaining improved land or due to the impact of conservation schemes. The decline in the area of short term grassland may also suggest that on some farms grassland is being used less intensively. The Countryside Commission (1991) note the changes between the enclosed and unclosed farmland;

- *Changes to cattle and sheep farms.* The fall in beef cattle numbers may have mixed implications for nature conservation; on some farms there may be less grazing pressure on grassland, while on others undergrazing may result in scrub encroachment. The impact of the increase in sheep numbers is also not clear; increased use of winter housing and away wintering may have reduced the impact of greater sheep numbers, especially during the critical winter grazing period. Conversely, increased breed sizes and earlier lambing may have negative ecological impacts, coupled with more widespread use of supplementary winter feeding and access to feeding on the hills. Furthermore, the statistics may underestimate the increase; the Census records a snapshot at the beginning of June, by which time some lambs (from a trend to earlier lambing) may have been sold and are not, therefore, recorded.

  ESA entry (65% take up) has recently encouraged a swing back towards spring calving, with reduced summer grazing pressures. Where cattle fields are subsequently 'cleaned' by sheep grazing, some species of grass are avoided and are now burned by farmers, with negative effects.

  Some rough grazing may have been improved to accommodate the increased sheep numbers, while existing grassland may also have been improved. However, it is interesting to note that the total number of all livestock units in the NA only increased by 3% (from 98,126 units to 101,114 units), suggesting the grazing pressure of more sheep may have been at least partly compensated by reduced cattle grazing. Moreover, as the total forage area (all grassland and rough grazing) increased by 4% between 1975-1994, the number of livestock units in the NA actually remained constant at 1.1 livestock units per forage hectare. This suggests that the impact of changes to stocking probably varied from farm to farm, with overgrazing on some holdings and undergrazing on others. Other sources suggest this is indeed the case, with English Nature stating overgrazing is damaging parts of Exmoor (EN information sent to CPM and LUC), while according to the Quantock Hills Management Plan[26] undergrazing is leading to scrub encroachment on heathland (both within the NA).

  A recent study by ADAS (1991)[27] suggests that in some situations, decreasing stocking rates can improve margins on sheep farms;

- *Changes to Dairy Farms.* The decline in the number of dairy cows may have had the same mixed consequences for nature conservation as has the fall in number of beef cattle. The increase in average herd size suggests that on at least some farms there may have been an intensification of grassland use, including the more widespread use of silage cutting, the introduction of forage maize and greater risk of water pollution.

8.16 Indirect Effects. These will include:

- *decreased labour.* The fall in the number of full-time workers and farmers may have led to less labour availability for the management of wildlife habitats, such as:

  a) active shepherding to prevent the over or undergrazing of moors and heaths;

  b) regular controlled burning of heather;

  c) sympathetic management of hedgerows and woodlands.

  Conversely, the growth in the number of part-time and hobby farms, and the use of family labour, may have led to a net increase in the number of occupiers sympathetic to nature conservation;

- decrease in rented land. The fall in the area of rented land may reflect the decline of large estates, many of which maintained valuable upland habitats for their sporting potential. It is unclear whether such land will receive such beneficial management when farmed by smaller holdings.

9.0 STRATIFICATION OF FARM TYPES : EXMOOR AND QUANTOCKS NA

9.1 The analysis of farm census data in the previous chapter allows farms to be categorised according to their impact on nature conservation over the last 20 years. This will allow those farms most vulnerable to change, or which present the greatest opportunities for nature conservation, to be identified and targeted.

9.2 The majority of the farmed area of the NA is grassland (87%), of which the majority is rough grazing or >5 years. Over half of farm types are part-time, with cattle and sheep (32%) and dairy (10%) making up the majority of full-time farm businesses. One of the greatest difficulties in defining farm stratifications for the NA is the movement between enclosed and moor/heath, which is reported to greatly exceed the net increase over the twenty year study period (Countryside Commission 1991). It is not possible to identify which farm types occupy this land area.

9.3 By comparing the impact on different farm types it is possible to separate farm types according to their impact on nature conservation issues. These categories are given below:

Summary of Farm Type Effects

Farm Type	Farming Change	Possible Impact on Environment	Importance to NA
Cattle & Sheep	Increased enclosed farmed area	Loss of heath and moor	VERY HIGH
	Fall in cattle numbers, increase in sheep numbers	Qualitative change in grazing of grassland. Over or undergrazing in certain areas	HIGH
	Increase in long-term grassland, return of some rough grazing	Loss of some rough grazing in some areas, reversion to rough grazing in others	HIGH
	Loss of short-term grassland	Less intensive grassland use	LOW
	Fall in number of full-time workers	Neglect of wildlife habitats and beneficial activities	MEDIUM

Dairying	Fall in number of dairy cows Increased stocking on some remaining units	Where not replaced by beef cattle, qualitative change to grazing more intensive grassland use, more risk of pollution	MEDIUM/ LOW
Part-time	Increase in part-time farms and farmers	neglect of wildlife features on some farms Increased opportunities for wildlife on other farms	HIGH LOCALISED /MEDIUM

9.4 As well as categorising the general farm types, those farms most vulnerable to change within these categories may be identified. These would appear to be as follows:

- *Cattle and Sheep Farms > 100ha*
  There has been a small increase in the number of such farms. It is not possible to identify from published statistics the extent to which these farms are responsible for the increased area of enclosed land. There will undoubtedly be such areas, and therefore they offer opportunities for enhancement.

- *Cattle and Sheep Farms 20-50ha*
  The 12% decline in the number of farms between 20-50ha suggests that cattle and sheep farms within this category may be under economic pressure. Such farms may find it difficult to remain viable. As a result many farms may have had to either:

  a) lay off hired workers or become part-time, in order to supplement income with work elsewhere. Both may lead to neglect of wildlife habitats; or

  b) increase farm area to remain viable; and/or

  c) increase stocking levels.

  However, farms in this category may also be attracted to conservation schemes, such as the Exmoor ESA, due to the regular income they provide and the opportunity they present in reducing costs through less intensive farming;

- *Large Estates*
  The decline in the rented area suggests that a number of estates may have fragmented, with consequences for the habitats previously under their ownership and management. Furthermore, the decline in labour inputs on the largest holdings suggests some estates may have had to reduce their labour force, which may have led to the neglect of management beneficial to wildlife;

- *Dairy Farms*
  The NA's remaining dairy farms may have intensified their enterprises to increase output, leading to more intensive grassland use. Smaller dairy farms, with their more limited resources, may be particularly vulnerable to financial pressures to intensify grassland use;

- *Part-time Farms*
  The increase in part-time holdings may lead to the neglect of features important to wildlife, as part-time farmers may not have the resources required for maintenance. Other farmers may have a strong interest in nature conservation and may be attracted by less intensive farming methods and conservation schemes, thus offering greater enhancement opportunities.

PART D : REFERENCES

10.0 # REFERENCES

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25 **Somerset County Council (December 1989),** "*Quantock Hills Management Plan*" Somerset County Council, Taunton

26 **Cornwell-Smith, M.J. (February 1991),** "*Flock Performance and Stocking Rate Models-Exmoor*" ADAS, Bristol

APPENDIX 1
Example of June Agricultural Census Form

NOTES FOR GUIDANCE

Agricultural and Horticultural Census: 1 June 1995

PLEASE READ THESE NOTES BEFORE COMPLETING THE FORM

LAND

Questions on land must be completed except where all the land has gone out of agriculture. In such a case 'Change in Area of Holding' on the final page should be completed.

Items 1 to 35 **Seasonally Let Land** is land which is let free of charge, or in return for rent in money or kind for 364 days or less.

Include details at items 1 to 35 of land on your holding which is seasonally let for:-

(i) grazing
(ii) cropping
(iii) use in any livestock production systems

Exclude:-

(i) seasonally let land on any other holding used by you for the above - such land should be returned by the occupier of that holding. Land let for 365 days or more should be returned by the tenant. See also note on return of livestock.

Items 5 & 6 **Grassland.** *Include* land actively farmed for grazing, conserved forage for livestock feed, or herbage seed production. *Exclude* grazed woodland (see item 8), rough grazing (see item 7), Set-Aside (see item 34), all other land (see item 9) and commercial and non-comercial orchards (see items 207 to 216)

Item 7 **Rough Grazing.** *Include* mountain, heath, moor, down or other rough land used for grazing, whether enclosed by boundary fences or not, on which you have sole grazing rights. *Exclude* common rough grazing, woodland used for grazing and marshland. Enter woodland used for grazing at item 8.

Item 8 **Woodland.** Give the total area of woodland (other than orchards) forming part of the holding, including woodland used for commercial or amenity purposes, planted to trees under the farm woodland schemes and any woodland used for grazing. *Exclude* Set-Aside land - see item 34.

Item 34 **Set-Aside Schemes.** Enter the total area of land set aside under an official payment scheme. *Include* the area of any crops grown on Set-Aside land in this figure. Total Set-Aside land must be included in items 1 and 34 but NOT in any other item.

Item 9 **All other land.** *Include* land which remains part of the holding but which has been converted to nature trails, golf courses and other recreational uses. Also *include* land which is let for other than cropping or grazing purposes but which has not been permanently removed from agricultural use. *Exclude* Set-Aside land - see item 34.

Item 1 **Total Area.** Enter total area of all pieces of land which make up your holding *including* Set-Aside land entered at item 34. For seasonal lettings see above note (items 1 - 35).

Items 2 & 3 **Land Rented and/or Owner Occupied.** The sum of items 2 and 3 must equal the total entered in item 1. The area of land rented or owned should be assessed as follows:

Item 2 **Rented.** *Include* land let or leased to you for 365 days or more in return for rent in money or kind (see note above on seasonal letting). Also *include* land which is let to you or used by you rent free. *Exclude* common grazing land and marshland.

LAND (continued)

Item 3 **Owned.** *Include* land of which you are the sole legal owner or which you own jointly with others. Land for which you are not the legal owner but in which you have a beneficial interest, or which you hold in trust for others, whether in your sole name or jointly with co-trustees, should also be included here *unless* it is to be included on another trustee's return. Such land must be returned by only one trustee.

CROPS

Items 11 to 37 and 170 to 249 **Crops.** *Include* under the appropriate crop any area of headland and ditches, land (other than bare fallow item 32) being prepared for sowing or planting, together with land already sown on 1 June, and crops grown for seed. In the case of mixed cropping divide the total area occupied amongst the crops grown. *Exclude* ponds, paths, roads, coppices and undersown crops. Crops grown on Set-Aside land should be entered at item 34. Any cereal crops not intended for combining should be entered at item 28.

Item 15 **Mixed Corn.** *Include* mixtures of any grain crops or any of these with beans, peas, etc., sown together and intended for combining. Enter any not intended for combining at item 28.

Items 28 & 31 **Other Crops.** *Include* the total area of crops not named separately and the total area of any crops grown on less than 500 square metres. Any cereal crops not intended for combining should be entered at item 28.

PERSONS WORKING ON THE HOLDING

Items 50 to 55 **Farmers, growers, partners and directors and their wives or husbands**

Include only farmers/growers, partners and directors, and their wives or husbands who work on the holding (including managerial and office work).

Exclude those who have only a financial interest in the holding. Whole-time implies a person whose main occupation is farming and who devotes about 40 hours per week to running the holding. Enter each person only **once** on the form. If you are making returns for several holdings do not enter any person on more than one form. In the case of married couples both working on the holding, enter only one of them as a farmer/grower, partner or director; the other should be entered at item 52 or 55 as appropriate.

Farms run by individuals or partners. There can be only one principal farmer/grower or partner who, if working on the holding, should be entered at item 50 or 51. The wife or husband of the principal farmer/grower, if working on the holding, should be entered at item 52.

(continued overleaf)

NOTES FOR GUIDANCE CONTINUED OVERLEAF

RESTRICTED - COMMERCIAL

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

Agricultural and Horticultural Census: Return for 1 June 1995

Notice requiring information to be completed and sent back by 8 June 1995

I

Agricultural Census Branch
Rm 124, Foss House, Kings Pool,
1 - 2 Peasholme Green, York. YO1 2PX
Telephone: York (01904) 455284 or 641000

Under the Agricultural Statistics Act 1979 (as amended by the Agriculture (Amendment) Act 1984), the Minister of Agriculture, Fisheries and Food requires you to complete this form in respect of the land you occupy. **This is a legal requirement.** Under Section 4 of the 1979 Act, penalties may be imposed on any person who knowingly or recklessly gives false information, or who without reasonable excuse fails to provide information. Please return the form by **8 June 1995** in the enclosed reply paid envelope.

This enquiry is made to obtain up to date statistics of agriculture and horticulture in England. The results will provide the government with the information necessary to formulate agricultural policy and to meet certain of the United Kingdom's obligations to the European Community. They are also used extensively by the industry itself.

Notes for your guidance are enclosed and should be read carefully before you complete the form. The information you give should relate to the position on **1 June 1995** except where otherwise stated on the form. Please note that the form should be completed in metric units - conversion tables from imperial units are provided in the yellow retention copy enclosed.

No information you give on the form may be published or otherwise disclosed without your prior written consent, except as specified in Section 3 of the 1979 Act.

S J Holding, Statistician

In correspondence please quote your holding number

FOR OFFICIAL USE ONLY

B.R.	163	
I.C.	164	
L.S.	165	
M	167	
I.M.	168	

↑

166 Total recorded area shown above in hectares (1 hectare = 2.471 acres)

PLEASE CHECK THESE IMPORTANT POINTS FIRST

TOTAL AREA If the **total area** of your holding is not as printed on the address label above please give the correct area in box 169 opposite and account for the difference on page 6. *Exclude* land on which the keep is let to you on a seasonal basis - see enclosed NOTES FOR GUIDANCE.

hectares

169 •

POSTCODE If no postcode is shown on the address label above or if it is incorrect please enter the correct postcode in box 908 on page 6.

HELP If you need any help with completion of this form, please write to the above address, (or telephone our Help Desk on York (01904) 455284 or main switchboard on York (01904) 641000) quoting your holding number.

RETENTION COPY Enclosed is a yellow copy of this form for your retention. Census forms are kept for a limited period. Requests for copies cannot normally be met; you may find it useful to complete and hold your retention copy.

RESULTS Provisional results will be published in a Statistics Notice at the end of August 1995 and final results will be available in December 1995. Enquiries to: Mrs Lynne Thom, Room 133B, Foss House, Kings Pool, Peasholme Green, York Y01 2PX on York (01904) 455332

AFTER COMPLETING THE FORM PLEASE SIGN THE DECLARATION AT THE FOOT OF PAGE 6

AREA OF HOLDING AND MAIN LAND USES (enter all areas to the nearest 0.1 hectare) JUNE 1995

- see enclosed NOTES FOR GUIDANCE
- growers of horticultural/protected crops may find it useful to complete pages 4 and 5 first

CROPS AND FALLOW

				hectares
Cereals for combining	Wheat		11	•
	Barley	Winter Barley	12	•
		Spring Barley	13	•
	Oats		14	•
	Mixed corn		15	•
	Rye		16	•
	Triticale		33	•
Maize			17	•
Potatoes - all crops *including* seed			19	•
Sugar beet not for stockfeeding			20	•
Hops			21	•
Horticultural crops - *exclude* mushrooms (to agree with item 249 on page 4)			22	•
Field beans			23	•
Peas for harvesting dry - human consumption or stockfeed			27	•
Other crops for stock-feeding	Turnips and swedes		24	•
	Fodder beet and mangolds		25	•
	Kale, cabbage, savoy, kohl rabi and rape		26	•
	Other crops (not grass) used for stock-feeding. Enter total area in box 28 and specify each crop and its area below:-		28	•
Rape grown for oilseed - *exclude* oilseed rape grown on land set-aside under an official payment scheme		winter	29	•
		spring	36	•
Linseed - *exclude* linseed grown on land set-aside under an official payment scheme			30	•
Flax			37	•
Other crops not for stockfeeding (see enclosed NOTES FOR GUIDANCE). Enter total area in box 31 and specify each crop and its area below:-			31	•
Bare Fallow - *exclude* Set-Aside Land			32	•
TOTAL Crops and bare fallow			35	•

GRASSLAND AND OTHER LAND

			hectares
Grassland and rough grazing - *include* clover, sainfoin and lucerne	Grassland sown in 1991 or later	5	•
	All other grassland - *exclude* rough grazing	6	•
	Rough grazing on which you have sole grazing rights (see enclosed NOTES FOR GUIDANCE). Put grazed woodland in item 8.	7	•
Woodland - *include* grazed woodland on the holding		8	•
Set-Aside Schemes Enter the total area of land Set-Aside under an official payment scheme, including any used to grow non-food crops.		34	•
All other land *excluded* above, e.g. paths, roads, yards, buildings, gardens, ponds, derelict land, recreational land		9	•
TOTAL Area of your holding (to agree with sum of items 35, 5 to 8, 34 and 9 above)		1	•
Of the above total area	How much is **RENTED** by you? - *exclude* seasonally rented land (see item 42)	2	•
	How much is **OWNED** by you?	3	•

GRASS GROWN FOR SEED

		hectares
Area of grass already included in items 5 and 6 expected to be harvested for **seed** this year	40	•

IRRIGATION - *exclude* watercress

		hectares
Total area of outdoor crops on your holding irrigated DURING 1994 SEASON - *exclude* liquid manure spreading	43	•

SEASONAL USE OF LAND

		hectares
Land currently let out for 364 days or less, **TO ANOTHER PERSON** for cropping, hay-making or grazing. (This land should be *included* in items 1 to 37)	41	•
Land currently rented in for 364 days or less, **FROM ANOTHER PERSON** for cropping, hay-making or grazing. (*Do not include* this land in items 1 to 37)	42	•

PERSONS WORKING ON THE HOLDING

- *include* principal farmers and all other persons normally engaged on the holding at 1 June 1995
- *include* each person once only
- *include* persons engaged by you as trainees under an official scheme **only if** they are paid AWB rates or more otherwise see item 48 below
- see enclosed NOTES FOR GUIDANCE

FARMERS, GROWERS AND WORKERS

				number
Principal farmer/grower or partner - if working on the holding		Whole-time	50	
		Part-time	51	
Wife or husband of principal farmer/grower or partner - if working on the holding			52	
Other partners and directors - if working on the holding		Whole-time	53	
		Part-time	54	
Wives or husbands of other partners and directors - if working on the holding			55	
Salaried managers			56	
Other family workers (see enclosed NOTES FOR GUIDANCE)	Regular whole-time	Male	57	
		Female	58	
	Regular part-time	Male	59	
		Female	60	
Hired workers (see enclosed NOTES FOR GUIDANCE)	Regular whole-time	Male	61	
		Female	62	
	Regular part-time	Male	63	
		Female	64	
Seasonal or casual workers - hired or family		Male	65	
		Female	66	
TOTAL Farmers, Growers and Workers			69	

YOUTH TRAINING

		no. of trainees
Persons engaged by you as trainees under an official scheme and not paid AWB rates or more	48	

LIVESTOCK

JUNE 1995

● see enclosed NOTES FOR GUIDANCE

CATTLE AND CALVES

					number
Cows and heifers in milk	Mainly for producing milk or rearing calves for the **dairy herd**			70	
	Mainly for rearing calves for **beef**			71	
Cows in calf but not in milk	Intended mainly for producing milk or rearing calves for the **dairy herd**			72	
	Intended mainly for rearing calves for **beef**			73	
Heifers in calf (first calf)	Intended mainly for producing milk or rearing calves for the **dairy herd**	2 years & over		74	
		Under 2 years		75	
	Intended mainly for rearing calves for **beef**	2 years & over		76	
		Under 2 years		77	
Bulls for service	2 years old and over			78	
	1 year old and under 2 years			79	
All other cattle and calves	**2 years old and over**	Male - *exclude* bulls for service		80	
		Female	Intended for slaughter	81	
			For dairy herd replacements	94	
			For beef herd replacements	95	
	1 year old and under 2 years	Male - *exclude* bulls for service		83	
		Female	Intended for slaughter	84	
			For dairy herd replacements	85	
			For beef herd replacements	86	
	6 months old and under 1 year	Male - *include* bull calves for service		87	
		Female		88	
	Under 6 months old	Intended for slaughter as calves		89	
		Others	Male - *include* bull calves for service	90	
			Female	91	
TOTAL Cattle and calves				92	

	tick
Please tick this box if ALL the cattle entered at 92 above belong to someone else, and you are only providing grazing	93

HORSES AND PONIES

	number
Horses and ponies owned by the occupier or occupier's family	125
Horses and ponies **not** owned by the occupier or occupier's family	131
TOTAL Horses and ponies	132

GOATS

		number
Breeding females	Dairy	139
	Non Dairy	142
Other goats and kids		143
TOTAL Goats		144

FARMED DEER

	number
Farmed Deer (see enclosed NOTES FOR GUIDANCE)	96

PIGS - weights are liveweight

		number
Breeding pigs	**Sows in pig**	100
	Gilts in pig	101
	Other sows - either being suckled or dry sows being kept for further breeding	102
	Boars being used for service	103
	Gilts 50 kg and over not yet in pig but expected to be used or sold for breeding	104
Barren sows for fattening		105
All other pigs (not entered above)	110 kg and over	106
	80 to under 110 kg	107
	50 to under 80 kg	108
	20 to under 50 kg	109
	Under 20 kg - *include* suckling pigs/piglets	110
TOTAL Pigs		111

SHEEP AND LAMBS

		number
Ewes, Shearlings and ewe lambs tupped/mated to produce lambs between 1st June 94 and 31 May 95. (Actual number at 1st June 95)	To be retained or sold for further breeding	113
	Intended for slaughter	116
Female sheep not yet used for breeding, already put or to be put to the ram in 1995	1 year and over	114
	under 1 year	112
Rams and ram lambs used or to be used for service in 1995		115
Other sheep 1 year and over		117
Lambs under 1 year old		118
TOTAL Sheep and lambs		119

FOWLS - *do not include* the same birds under more than one heading and *exclude* game birds

			number
Hens and pullets kept mainly for producing eggs for eating	**Growing pullets** - from day old to 18 weeks of age		121
	Birds in the laying flock	Pullets over 18 weeks of age in first laying season	123
		Hens (moulted) - *include* those in moult	124
Fowls for breeding	**Breeding hens** (all ages) **laying eggs**	to hatch layer chicks	133
		to hatch table chicks	134
	Cocks and cockerels of all ages kept for breeding		126
Table chicken under 7 weeks			127
Table chicken 7 weeks and over			128
TOTAL Fowls			137

TURKEYS

	yes/no
Do you expect to keep turkeys on your holding in the next 12 months? Please answer YES or NO.	135

OTHER POULTRY

	number
Ducks of all ages	129
Geese of all ages	130
All other poultry - *include* turkeys and guinea fowl	138

HORTICULTURE (enter all areas to the nearest 0.1 hectare)

JUNE 1995

- *include* crops against the principal item if named, or at item 200, 225, 235 or 243 if the crop is not separately named or the area of each individual crop is less than 500 square metres
- see general notes for crops in enclosed NOTES FOR GUIDANCE

VEGETABLES GROWN IN THE OPEN FOR HUMAN CONSUMPTION

- *include* land rented out to processors etc.

			hectares
Brussels Sprouts		170	•
Cabbage - summer and autumn		172	•
All other cabbage - *include* spring cabbage		173	•
Cauliflower - summer and autumn maturing only. *Exclude* crops over-wintered in the field for spring harvest; *include* winter cauliflowers in item 200.		174	•
Calabrese - green sprouting broccoli often marketed as broccoli. *Exclude* over-wintered purple and white sprouting broccoli.		175	•
Carrots		178	•
Parsnips		181	•
Beetroot - red beet, not sugar beet or fodder beet		182	•
Onions	For salad	185	•
	Dry bulb - *include* previous autumn plantings	186	•
Broad beans		187	•
Runner beans - both pinched and climbing		190	•
French beans		192	•
Peas for harvesting dry			Enter in item 27
Green peas for fresh market		195	•
Vining peas for processing e.g. freezing, canning		196	•
Self blanching field celery		197	•
Lettuce - not under glass		198	•
Sweetcorn		199	•
All other vegetables- *include* watercress and rhubarb here, also *include* mixed areas (see enclosed NOTES FOR GUIDANCE). Enter total area in box 200 and specify each crop and its area below:-		200	•
TOTAL Vegetables grown in the open		201	•

GLASSHOUSE AREA

		hectares
Total area under glass or plastic structures - *exclude* lights, cloches and low plastic tunnels (see note A and questions on page 5)	205	•

BULBS AND FLOWERS GROWN IN THE OPEN

		hectares
TOTAL Bulbs and flowers grown in the open	244	•

JANUARY VEGETABLES, FLOWERS & BULBS

		yes/no
Do you expect to have more than 0.5 hectare of vegetable, flowers and/or bulbs in the 1995/96 growing season? Please answer YES or NO.	248	

ORCHARDS

			hectares
Orchards, not grown commercially - *include* orchards from which no fruit is sold for any purpose		207	•
Orchards, grown commercially - include orchards from which fruit is sold, including, pick your own sales and sales for juicing or other processing purposes - *include* orchards of young, non-bearing trees, but not fruit stock - see item 230	**Dessert apples** Cox's Orange Pippin and other Cox clones	208	•
	Dessert apples All other varieties	209	•
	Cooking apples Bramley's Seedling	210	•
	Cooking apples All other varieties	211	•
	Cider apples and perry pears	212	•
	Pears *other* than perry pears	213	•
	Plums	214	•
	Cherries	215	•
	Other top fruit - *include* nuts	216	•

SMALL FRUIT AND GRAPES

Strawberries	Open grown only	218	•
	Under cloches or low tunnels	219	•
Raspberries		220	•
Blackcurrants	For market	221	•
	For processing	222	•
Gooseberries		223	•
Blackberries		217	•
Wine grapes		224	•
Other small fruit		225	•
TOTAL Orchards, small fruit and grapes (items 207 to 225 above)		226	•

HARDY NURSERY STOCK

			hectares
Fruit trees, bushes and canes, strawberries for runner production and other fruit stock for transplanting		230	•
Field grown	**Roses** - *include* stock for budding	231	•
	Shrubs, conifers, hedging plants and Christmas trees - not roses	232	•
	Ornamental trees and trees for amenity purposes	233	•
	Perennial herbaceous plants - not for cut flowers	234	•
Other hardy nursery stock and mixed areas - *include* land used for container-grown plants		235	•
TOTAL Hardy nursery stock		236	•

TOTAL HORTICULTURAL CROPS

- *exclude* mushrooms

		hectares
Sum of items 201+ 205+ 244+ 226+ 236 (to agree with item 22 on page 2)	249	•

PRODUCTION OF CONTAINER GROWN NURSERY STOCK

			number
In the last 12 months, how many plants were produced	**For sale in final pots of:** less than one litre	237	
	For sale in final pots of: 1 to under 2 litres	238	
	For sale in final pots of: 2 to under 4 litres	239	
	For sale in final pots of: 4 litres and over	245	
	For growing on as liners	246	
TOTAL Container grown nursery stock Note: area occupied by this item to be *included* in 235 above		247	

GLASSHOUSE AND PROTECTED CROPS

JUNE 1995

- GLASSHOUSE AND PLASTIC COVERED STRUCTURES

NOTE A

- *Include* any fixed or mobile structure of a height sufficient to allow persons to enter in an upright position and which is glazed or clad with glass, rigid plastic, film plastic or other glass substitutes.
  In the case of mobile structures return only the area covered by the structures themselves and not the total area of the sites that could be covered by moving the structures.
  Give the total area of glasshouse floor space, not the area of benches or beds.
- *Include* area of bedding plants and plants in propagation for growing on or for sale to growers and gardeners in item 270
- *Exclude* lights and cloches or low plastic tunnels.

GLASSHOUSE AREA

square metres

Area used for vegetables and fruit (Exclude vegetable and friut plants in propagation for growing on or for sale to growers and gardeners, these should be included in item 270 below.)		260	
Area used for flowers and foliage for cutting and all other plants		270	
Area of unused glasshouse		273	
TOTAL Area of glasshouses and plastic covered structures		274	
Glass and plastic covered structures erected or demolished since 1 June 1994	Erected	275	
	Demolished	276	

NOTE B
The land on which the sheds or buildings stand should be returned at item 9 - other land.

MUSHROOMS - grown as a protected crop

Kilograms (kgs)

In the last 12 months what was your total production? (see NOTE B)	278	

CHANGE IN AREA OF HOLDING

JUNE 1995

- **If your current total area is different** from the area printed on the front of the form (page 1, box 166) then, please -
  a) enter the correct total area in box 169 (on page 1)
  b) account for the difference by entering the changes below using a separate sheet if necessary

- SEASONALLY LET LAND should **NOT** be recorded as being given up or taken over

LAND GIVEN UP

		day	month	year
Date of change	292			

Show day, month, year as two digit numbers e.g. 1 June 1995 = 0 1 0 6 9 5

			hectares
Area of land given up	For farming by another person	291	•
	For non-agricultural use	294	•
Land given up officially designated as Less Favoured	Area of severely disadvantaged land	295	•
	Area of disadvantaged land	296	•

Name and address of new occupier

..... Postcode .....

LAND TAKEN OVER

		day	month	year
Date of change	282			

Show day, month, year as two digit numbers e.g. 1 June 1995 = 0 1 0 6 9 5

			hectares
Area of land taken over	Previously farmed by another person	281	•
	From non-agricultural use	284	•
Land taken over officially designated as Less Favoured	Area of severely disadvantaged land	285	•
	Area of disadvantaged land	286	•

Name and address of previous occupier

..... Postcode .....

CHANGE OF NAME AND/OR ADDRESS

Please give any necessary correction to the name shown on page 1 in BLOCK LETTERS

Title	901	Initials	902
Surname	903		

Please give any necessary correction to the address shown on page 1 in BLOCK LETTERS

Address	904	
	905	
	906	
	907	
Postcode	908	

OTHER HOLDINGS IN THE SAME OCCUPANCY

Please list here any other holding reference numbers under which you make agricultural census returns

DECLARATION

- **Before signing this declaration please check that the appropriate entries have been made on all pages.**

I declare the particulars given in this return to be correct to the best of my knowledge and belief.

Signature of Occupier .....

Name (PLEASE PRINT) .....

Telephone Number ..... Date 1995

The present occupier should complete and sign this return even if he or she has only recently taken over the holding and the name given on the form is not his or hers. If an accredited agent signs the form the name of the occupier should also be shown.

APPENDIX 2
MAFF Composite Data and Plan for Lincolnshire Wolds

Census Data for the Lincolnshire Wolds 1975-1994

		Percentage of Total Parishes
Number of Nil Parishes	17	14%
Number of 920 Parishes	17	14%
Total Number of Parishes	123	100%

920 Parishes are those that were amalgamated prior to 1988 due to disclosure problems.
A high percentage of 920 or nil parishes may lead to unduly large inter-annual changes.

PROJECT NO : CPM 1236
CS NO : 25
DATE : 17/11/95
INITIALS :
VERIFIED AS ACCURATE : GB 11/95

Census Data for the Lincolnshire Wolds 1975-1994

1. Agricultural Land Tenure

	1975	1984	1994	% Change 75-84	% Change 75-94
Rented Land	52,975 ha	45,099 ha	37,344 ha	-14.9%	-29.5%
Owned Land	34,224 ha	42,092 ha	49,780 ha	23.0%	45.5%
Total Agricultural area	**87,199 ha**	**87,191 ha**	**87,124 ha**	0.0%	-0.1%

2. Agricultural Land-Use

	1975	1984	1994	% Change 75-84	% Change 75-94
Grassland < 5 years	7,817 ha	3,082 ha	2,377 ha	-60.6%	-69.6%
Grassland > 5 years	13,430 ha	9,249 ha	8,528 ha	-31.1%	-36.5%
Rough Grazing	567 ha	1,117 ha	787 ha	96.9%	38.8%
Crops & Fallow	60,504 ha	71,206 ha	61,774 ha	17.7%	2.1%
Farm Woodland	765 ha	1,176 ha	1,602 ha	53.7%	109.5%
Other Land	4,116 ha	1,361 ha	2,021 ha	-66.9%	-50.9%
Set-Aside	0 ha	0 ha	10,035 ha	0.0%	Incalculable
Total Agricultural Area	**87,199 ha**	**87,191 ha**	**87,124 ha**	0.0%	-0.1%

Census Data for the Lincolnshire Wolds 1975-1994

1a. Agricultural Land Tenure

	1975	1984	1994
Rented Land	60.8%	51.7%	42.9%
Owned Land	39.2%	48.3%	57.1%
Total Agricultural area	100.0%	100.0%	100.0%

2a. Agricultural Land-Use

	1975	1984	1994
Grassland < 5 years	9.4%	3.5%	2.7%
Grassland > 5 years	16.2%	10.6%	9.8%
Rough Grazing	0.7%	1.3%	0.9%
Crops & Fallow	72.8%	81.7%	70.9%
Farm Woodland	0.9%	1.3%	1.8%
Other Land	0.0%	1.6%	2.3%
Set-Aside	0.0%	0.0%	11.5%
Total Agricultural Area	100.0%	100.0%	100.0%

Census Data for the Lincolnshire Wolds 1975-1994

3a. Cereals

	1975	1984	1994	% Change 75-84	% Change 75-94
Wheat	17,995 ha	31,723 ha	30,889 ha	76.3%	71.7%
Barley	26,284 ha	18,857 ha	10,486 ha	-28.3%	-60.1%
Other Cereals (including triticale)	1,370 ha	357 ha	395 ha	-73.9%	-71.2%
Total Cereals	**45,649 ha**	**50,937 ha**	**41,770 ha**	11.6%	-8.5%

3b. Other Crops

	1975	1984	1994	% Change 75-84	% Change 75-94
Potatoes	2,917 ha	2,389 ha	1,689 ha	-18.1%	-42.1%
Sugar Beet	0 ha	3,807 ha	4,068 ha	Incalculable	Incalculable
Hops	0 ha	0 ha	0 ha	0.0%	0.0%
Horticultural Crops	8,067 ha	4,533 ha	3,959 ha	-43.8%	-50.9%
Field Beans & Dry Peas	1,783 ha	939 ha	3,627 ha	-47.3%	103.4%
Oilseeds	461 ha	7,517 ha	5,928 ha	1529.5%	1185.1%
Other Crops & Fallow (including maize)	1,627 ha	1,085 ha	733 ha	-33.3%	-54.9%
Sub-Total	**14,855 ha**	**20,269 ha**	**20,004 ha**	36.4%	34.7%
Total Crops & Fallow	**60,504 ha**	**71,206 ha**	**61,774 ha**	17.7%	2.1%

Census Data for the Lincolnshire Wolds 1975-1994

3c. Horticultural Crops

Vegetables

	1975	1984	1994	% Change 75-84	% Change 75-94
Brassicas	746 ha	359 ha	178 ha	-51.9%	-76.1%
Carrots, Parsnips, Beetroot & Onions	64 ha	121 ha	127 ha	87.3%	97.2%
Peas & Beans	622 ha	3,966 ha	3,558 ha	538.1%	472.5%
Lettuce & Celery	3 ha	2 ha	0 ha	-46.4%	-100.0%
Other Vegetables	4 ha	28 ha	27 ha	667.6%	629.7%
Total Vegetables grown in the open	**1,438 ha**	**4,475 ha**	**3,890 ha**	**211.2%**	**170.5%**

Fruit

	1975	1984	1994	% Change 75-84	% Change 75-94
Top Fruit	8 ha	2 ha	0 ha	-77.5%	-100.0%
Small Fruit	42 ha	40 ha	37 ha	-4.8%	-11.9%
Total Fruit	**50 ha**	**42 ha**	**37 ha**	**-16.4%**	**-26.0%**

Other Horticultural Stock

	1975	1984	1994	% Change 75-84	% Change 75-94
Hardy Nursery Stock	53 ha	1 ha	29 ha	-98.5%	-44.8%
Bulbs & Flowers grown in the open	51 ha	13 ha	2 ha	-73.5%	-96.0%
Area under glass or plastic	2 ha	2 ha	1 ha	-11.1%	-44.4%
Total Other Stock	**105 ha**	**16 ha**	**32 ha**	**-84.9%**	**-69.5%**

Census Data for the Lincolnshire Wolds 1975-1994

4. Agricultural Employment

	1975	1984	1994	% Change 75-84	% Change 75-94
Full-time Farmers, Partners & Directors	668	589	494	-11.8%	-26.0%
Part-time Farmers, Partners & Directors	215	196	255	-8.8%	18.6%
Spouses & Other Family Workers	193	225	253	16.6%	31.1%
Managers & Hired Workers	1,947	1,389	873	-28.7%	-55.2%
Seasonal or Casual Workers	470	425	263	-9.6%	-44.0%
Full-Time Workforce	2,473	1,959	1,429	-20.8%	-42.2%
Part-Time Workforce	550	440	446	-20.0%	-18.9%
Seasonal or Casual	470	425	263	-9.6%	-44.0%
Total Agricultural Workforce	**3,493**	**2,824**	**2,138**	-19.2%	-38.8%

Census Data for the Lincolnshire Wolds 1975-1994

5. Livestock Numbers

	1975	1984	1994	% Change 75-84	% Change 75-94
Dairy Herd	3,120	2,353	1,472	-24.6%	-52.8%
Beef Herd	7,569	4,518	3,932	-40.3%	-48.1%
Breeding Herd Replacements	4,303	1,782	1,934	-58.6%	-55.1%
Other Cattle > 1yr	10,212	6,243	4,542	-38.9%	-55.5%
Calves <1yr	12,291	7,786	5,625	-36.7%	-54.2%
Total Cattle & Calves	**37,495**	**22,682**	**17,505**	-39.5%	-53.3%
Breeding Ewes	46,484	36,289	28,313	-21.9%	-39.1%
Lambs under 1 year	55,179	45,571	32,941	-17.4%	-40.3%
Other Sheep	3,390	2,255	1,433	-33.5%	-57.7%
Total Sheep & Lambs	**105,053**	**84,115**	**62,687**	-19.9%	-40.3%
Breeding Pigs	3,821	6,465	5,028	69.2%	31.6%
Other Pigs	29,845	56,584	52,772	89.6%	76.8%
Total Pigs	**33,666**	**63,049**	**57,800**	87.3%	71.7%
Laying Flock	295,313	133,913	143,333	-54.7%	-51.5%
Breeding Flock	44,154	50,270	39,345	13.9%	-10.9%
Table Chickens	45,802	175,185	331,105	282.5%	622.9%
Total Fowls	**385,269**	**359,368**	**513,783**	-6.7%	33.4%

Census Data for the Lincolnshire Wolds 1975-1994

6. Full & Part-Time Holdings

	1975	1984	1994	% Change 75-84	% Change 75-94
Full-time Holdings	499	403	380	-19.2%	-23.8%
Part-time Holdings	270	229	255	-15.2%	-5.6%
Total Number of Holdings	769	632	635	-17.8%	-17.4%

7. Farm Types

	1975	1984	1994	% Change 75-84	% Change 75-94
Dairy	35	17	15	-51.4%	-57.1%
Cattle & Sheep	55	31	45	-43.6%	-18.2%
Pigs & Poultry	38	26	35	-31.6%	-7.9%
Cropping	308	299	265	-2.9%	-14.0%
Horticulture	28	12	15	-57.1%	-46.4%
Mixed	35	18	5	-48.6%	-85.7%
Part-time	270	229	255	-15.2%	-5.6%
Total Number of Holdings	769	632	635	-17.8%	-17.4%

Census Data for the Lincolnshire Wolds 1975-1994

6a. Full & Part-Time Holdings

	1975	1984	1994
Full-time Holdings	64.9%	63.8%	59.8%
Part-time Holdings	35.1%	36.2%	40.2%
Total Number of Holdings	**100.0%**	**100.0%**	**100.0%**

7a. Farm Types

	1975	1984	1994
Dairy	4.6%	2.7%	2.4%
Cattle & Sheep	7.2%	4.9%	7.1%
Pigs & Poultry	4.9%	4.1%	5.5%
Cropping	40.1%	47.3%	41.7%
Horticulture	3.6%	1.9%	2.4%
Mixed	4.6%	2.8%	0.8%
Part-time	35.1%	36.2%	40.2%
Total Number of Holdings	**100.0%**	**100.0%**	**100.0%**

Census Data for the Lincolnshire Wolds 1975-1994

7b. Holdings by EC Farm Type (Based on SGM)

	1994
Cereals	195
General Cropping	205
Horticulture	20
Pigs & Poultry	25
Dairy	5
Cattle & Sheep (LFA)	0
Cattle & Sheep (Lowland)	65
Mixed	50
Other types	70
Total Number of Holdings	635

Census Data for the Lincolnshire Wolds 1975-1994

8. Holdings by Areas of Crops & Grass

	1975	1984	1994	% Change 75-84	% Change 75-94
Less than 5 ha	122	85	115	-30.3%	-5.7%
5 ha & < 20 ha	135	99	105	-26.7%	-22.2%
20 ha & < 50 ha	102	96	85	-5.9%	-16.7%
50 ha & < 100 ha	105	98	90	-6.7%	-14.3%
100 ha & over	305	254	240	-16.7%	-21.3%
Total Number of Holding	**769**	**632**	**635**	-17.8%	-17.4%

9. Holding Sizes by Standard Man Day Labour Inputs

	1975	1984	1994	% Change 75-84	% Change 75-94
0 - 249 SMD	385	229	260	-40.5%	-32.5%
250 - 499 SMD	48	92	90	91.7%	87.5%
500 - 999 SMD	33	94	125	184.8%	278.8%
1000 - 1999 SMD	80	104	95	30.0%	18.8%
2000 + SMD	223	113	65	-49.3%	-70.9%
Total Number of Holding	**769**	**632**	**635**	-17.8%	-17.4%

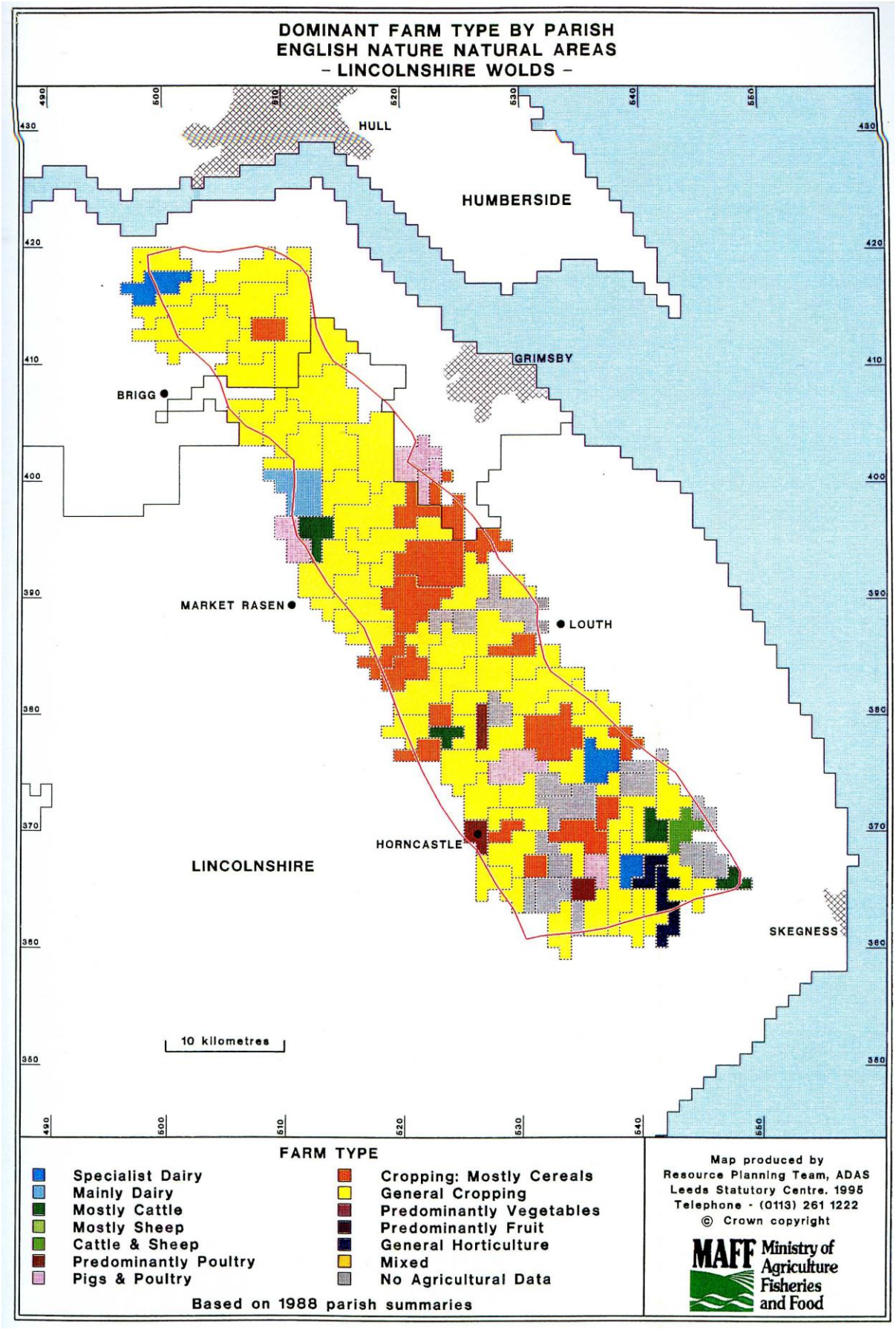
Physical Data for the Lincolnshire Wolds

10. Meteorological Data

	Mean	Maximum	Minimum	Mean for England
Average Annual Rainfall (mm)	689	765	603	908
Accumulated Temp. above 0°C	1339°C	1421°C	1233°C	1344°C
Moisture Deficit of wheat (mm)	99	116	85	87
Moisture Deficit of potatoes (mm	89	111	70	77
Field Capacity Days	153	178	121	190
Altitude above sea level (m)	68	160	0	122

11. Agricultural Land Classification

	Area (Km2)	Percentage	% for Lincolnshire	% for England
Grades 1 & 2	485	49.8%	44.1 %	16.1%
Grade 3	443	45.5%	46.9 %	43.6%
Grade 4	16	1.6%	1.8 %	12.7%
Grade 5	0	0.0%	0.0 %	8.3%
Non-Ag	25	2.6%	4.4 %	10.1%
Urban	5	0.5%	2.8 %	9.2%
Total	974	100.0%	100.0 %	100.0%


DOMINANT FARM TYPE BY PARISH
ENGLISH NATURE NATURAL AREAS
– LINCOLNSHIRE WOLDS –
HULL
HUMBERSIDE
GRIMSBY
BRIGG
MARKET RASEN
LOUTH
HORNCASTLE
LINCOLNSHIRE
SKEGNESS
10 kilometres
FARM TYPE
Specialist Dairy
Mainly Dairy
Mostly Cattle
Mostly Sheep
Cattle & Sheep
Predominantly Poultry
Pigs & Poultry
Cropping: Mostly Cereals
General Cropping
Predominantly Vegetables
Predominantly Fruit
General Horticulture
Mixed
No Agricultural Data
Based on 1988 parish summaries
Map produced by
Resource Planning Team, ADAS
Leeds Statutory Centre. 1995
Telephone - (0113) 261 1222
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MAFF Ministry of Agriculture Fisheries and Food

APPENDIX 3
MAFF Composite Data and Plan for Exmoor and the Quantocks NA

Census Data for Exmoor & the Quantocks 1975-94

		Percentage of Total Parishes
Number of Nil Parishes	4	5%
Number of 920 Parishes	0	0%
Total Number of Parishes	79	100%

920 Parishes are those that were amalgamated prior to 1988 due to disclosure problems.
A high percentage of 920 or nil parishes may lead to unduly large inter-annual changes.

PROJECT NO : CM 1236
CS NO : 24
DATE : 15-11-95
INITIALS : SD
VERIFIED AS ACCURATE : APK

Census Data for Exmoor & the Quantocks 1975-1994

1. Agricultural Land Tenure

	1975	1984	1994	% Change 75-84	% Change 75-94
Rented Land	34,355 ha	27,361 ha	26,751 ha	-20.4%	-22.1%
Owned Land	69,798 ha	77,560 ha	82,407 ha	11.1%	18.1%
Total Agricultural area	**104,153 ha**	**104,921 ha**	**109,158 ha**	0.7%	4.8%

2. Agricultural Land-Use

	1975	1984	1994	% Change 75-84	% Change 75-94
Grassland < 5 years	16,208 ha	13,710 ha	10,937 ha	-15.4%	-32.5%
Grassland > 5 years	59,191 ha	65,270 ha	69,017 ha	10.3%	16.6%
Rough Grazing	15,821 ha	13,233 ha	15,161 ha	-16.4%	-4.2%
Crops & Fallow	10,863 ha	9,599 ha	8,410 ha	-11.6%	-22.6%
Farm Woodland	1,592 ha	2,223 ha	3,384 ha	39.6%	112.5%
Other Land	478 ha	888 ha	1,062 ha	85.7%	122.2%
Set-Aside	0 ha	0 ha	1,187 ha	0.0%	Incalculable
Total Agricultural Area	**104,153 ha**	**104,921 ha**	**109,158 ha**	0.7%	4.8%

Census Data for Exmoor & the Quantocks 1975-1994

1a. Agricultural Land Tenure

	1975	1984	1994
Rented Land	33.0%	26.1%	24.5%
Owned Land	67.0%	73.9%	75.5%
Total Agricultural area	**100.0%**	**100.0%**	**100.0%**

2a. Agricultural Land-Use

	1975	1984	1994
Grassland < 5 years	15.6%	13.1%	10.0%
Grassland > 5 years	57.1%	62.2%	63.2%
Rough Grazing	15.3%	12.6%	13.9%
Crops & Fallow	10.5%	9.1%	7.7%
Farm Woodland	1.5%	2.1%	3.1%
Other Land	0.0%	0.8%	1.0%
Set-Aside	0.0%	0.0%	1.1%
Total Agricultural Area	**100.0%**	**100.0%**	**100.0%**

Census Data for Exmoor & the Quantocks 1975-1994

3a. Cereals

	1975	1984	1994	% Change 75-84	% Change 75-94
Wheat	657 ha	1,616 ha	1,931 ha	146.0%	194.0%
Barley	5,328 ha	5,282 ha	3,085 ha	-0.9%	-42.1%
Other Cereals (including triticale)	1,728 ha	833 ha	758 ha	-51.8%	-56.1%
Total Cereals	**7,713 ha**	**7,731 ha**	**5,774 ha**	0.2%	-25.1%

3b. Other Crops

	1975	1984	1994	% Change 75-84	% Change 75-94
Potatoes	152 ha	185 ha	195 ha	21.8%	28.1%
Sugar Beet	0 ha	0 ha	0 ha	0.0%	0.0%
Hops	0 ha	0 ha	0 ha	0.0%	0.0%
Horticultural Crops	218 ha	161 ha	203 ha	-26.3%	-7.1%
Field Beans & Dry Peas	161 ha	20 ha	289 ha	-87.6%	79.3%
Oilseeds	6 ha	71 ha	370 ha	1041.9%	5867.7%
Other Crops & Fallow (including maize)	2,612 ha	1,431 ha	1,579 ha	-45.2%	-39.5%
Sub-Total	**3,150 ha**	**1,868 ha**	**2,636 ha**	-40.7%	-16.3%
Total Crops & Fallow	**10,863 ha**	**9,599 ha**	**8,410 ha**	-11.6%	-22.6%

Census Data for Exmoor & the Quantocks 1975-1994

3c. Horticultural Crops

Vegetables

	1975	1984	1994	% Change 75-84	% Change 75-94
Brassicas	20 ha	36 ha	26 ha	83.2%	32.0%
Carrots, Parsnips, Beetroot & Onions	2 ha	2 ha	10 ha	5.9%	488.2%
Peas & Beans	12 ha	4 ha	39 ha	-62.7%	230.5%
Lettuce & Celery	5 ha	7 ha	2 ha	48.9%	-57.4%
Other Vegetables	9 ha	41 ha	76 ha	373.3%	783.7%
Total Vegetables grown in the open	**47 ha**	**90 ha**	**153 ha**	**93.5%**	**229.0%**

Fruit

	1975	1984	1994	% Change 75-84	% Change 75-94
Top Fruit	115 ha	25 ha	21 ha	-78.3%	-81.7%
Small Fruit	20 ha	20 ha	22 ha	0.0%	8.4%
Total Fruit	**135 ha**	**45 ha**	**43 ha**	**-66.5%**	**-68.2%**

Other Horticultural Stock

	1975	1984	1994	% Change 75-84	% Change 75-94
Hardy Nursery Stock	7 ha	19 ha	6 ha	170.0%	-14.3%
Bulbs & Flowers grown in the open	5 ha	5 ha	1 ha	-15.3%	-81.2%
Area under glass or plastic	2 ha	2 ha	0 ha	4.5%	-100.0%
Total Other Stock	**15 ha**	**26 ha**	**7 ha**	**77.1%**	**-51.8%**

Census Data for Exmoor & the Quantocks 1975-1994

4. Agricultural Employment

	1975	1984	1994	% Change 75-84	% Change 75-94
Full-time Farmers, Partners & Directors	1,419	1,354	1,264	-4.6%	-10.9%
Part-time Farmers, Partners & Directors	291	505	729	73.5%	150.5%
Spouses & Other Family Workers	523	846	890	61.8%	70.2%
Managers & Hired Workers	738	612	492	-17.1%	-33.3%
Seasonal or Casual Workers	323	499	525	54.5%	62.5%
Full-Time Workforce	2,279	2,519	2,303	10.5%	1.1%
Part-Time Workforce	692	798	1,072	15.3%	54.9%
Seasonal or Casual	323	499	525	54.5%	62.5%
Total Agricultural Workforce	**3,294**	**3,816**	**3,900**	15.8%	18.4%

Census Data for Exmoor & the Quantocks 1975-1994

5. Livestock Numbers

	1975	1984	1994	% Change 75-84	% Change 75-94
Dairy Herd	15,180	16,547	14,213	9.0%	-6.4%
Beef Herd	20,877	15,907	19,350	-23.8%	-7.3%
Breeding Herd Replacements	15,512	12,858	9,668	-17.1%	-37.7%
Other Cattle > 1yr	21,045	20,869	18,130	-0.8%	-13.9%
Calves <1yr	33,063	31,837	27,778	-3.7%	-16.0%
Total Cattle & Calves	**105,677**	**98,018**	**89,139**	**-7.2%**	**-15.6%**
Breeding Ewes	254,582	306,696	350,525	20.5%	37.7%
Lambs under 1 year	253,261	326,764	378,564	29.0%	49.5%
Other Sheep	22,347	20,120	21,117	-10.0%	-5.5%
Total Sheep & Lambs	**530,190**	**653,580**	**750,206**	**23.3%**	**41.5%**
Breeding Pigs	1,418	1,184	1,479	-16.5%	4.3%
Other Pigs	7,679	7,454	10,160	-2.9%	32.3%
Total Pigs	**9,097**	**8,638**	**11,639**	**-5.0%**	**27.9%**
Laying Flock	37,986	19,787	70,633	-47.9%	85.9%
Breeding Flock	5,065	469	11,237	-90.7%	121.9%
Table Chickens	27,642	27,618	186,922	-0.1%	576.2%
Total Fowls	**70,693**	**47,874**	**268,792**	**-32.3%**	**280.2%**

Census Data for Exmoor & the Quantocks 1975-1994

6. Full & Part-Time Holdings

	1975	1984	1994	% Change 75-84	% Change 75-94
Full-time Holdings	1,042	862	845	-17.3%	-18.9%
Part-time Holdings	644	794	1,015	23.3%	57.6%
Total Number of Holdings	1,686	1,656	1,860	-1.8%	10.3%

7. Farm Types

	1975	1984	1994	% Change 75-84	% Change 75-94
Dairy	273	248	180	-9.2%	-34.1%
Cattle & Sheep	650	544	595	-16.3%	-8.5%
Pigs & Poultry	17	9	10	-47.1%	-41.2%
Cropping	15	25	35	66.7%	133.3%
Horticulture	35	17	20	-51.4%	-42.9%
Mixed	52	19	5	-63.5%	-90.4%
Part-time	644	794	1,015	23.3%	57.6%
Total Number of Holdings	1,686	1,656	1,860	-1.8%	10.3%

Census Data for Exmoor & the Quantocks 1975-1994

6a. Full & Part-Time Holdings

	1975	1984	1994
Full-time Holdings	61.8%	52.1%	45.4%
Part-time Holdings	38.2%	47.9%	54.6%
Total Number of Holdings	**100.0%**	**100.0%**	**100.0%**

7a. Farm Types

	1975	1984	1994
Dairy	16.2%	15.0%	9.7%
Cattle & Sheep	38.6%	32.9%	32.0%
Pigs & Poultry	1.0%	0.5%	0.5%
Cropping	0.9%	1.5%	1.9%
Horticulture	2.1%	1.0%	1.1%
Mixed	3.1%	1.1%	0.3%
Part-time	38.2%	47.9%	54.6%
Total Number of Holdings	**100.0%**	**100.0%**	**100.0%**

Census Data for Exmoor & the Quantocks 1975-1994

7b. Holdings by EC Farm Type (Based on SGM)

	1994
Cereals	40
General Cropping	15
Horticulture	35
Pigs & Poultry	30
Dairy	185
Cattle & Sheep (LFA)	565
Cattle & Sheep (Lowland)	515
Mixed	70
Other types	405
Total Number of Holdings	1,860

Census Data for Exmoor & the Quantocks 1975-1994

8. Holdings by Areas of Crops & Grass

	1975	1984	1994	% Change 75-84	% Change 75-94
Less than 5 ha	192	176	305	-8.3%	58.9%
5 ha & < 20 ha	362	396	480	9.4%	32.6%
20 ha & < 50 ha	477	433	420	-9.2%	-11.9%
50 ha & < 100 ha	427	406	420	-4.9%	-1.6%
100 ha & over	228	245	235	7.5%	3.1%
Total Number of Holding	1,686	1,656	1,860	-1.8%	10.3%

9. Holding Sizes by Standard Man Day Labour Inputs

	1975	1984	1994	% Change 75-84	% Change 75-94
0 - 249 SMD	873	794	1,015	-9.0%	16.3%
250 - 499 SMD	195	344	305	76.4%	56.4%
500 - 999 SMD	157	368	370	134.4%	135.7%
1000 - 1999 SMD	277	132	140	-52.3%	-49.5%
2000 + SMD	184	18	30	-90.2%	-83.7%
Total Number of Holding	1,686	1,656	1,860	-1.8%	10.3%

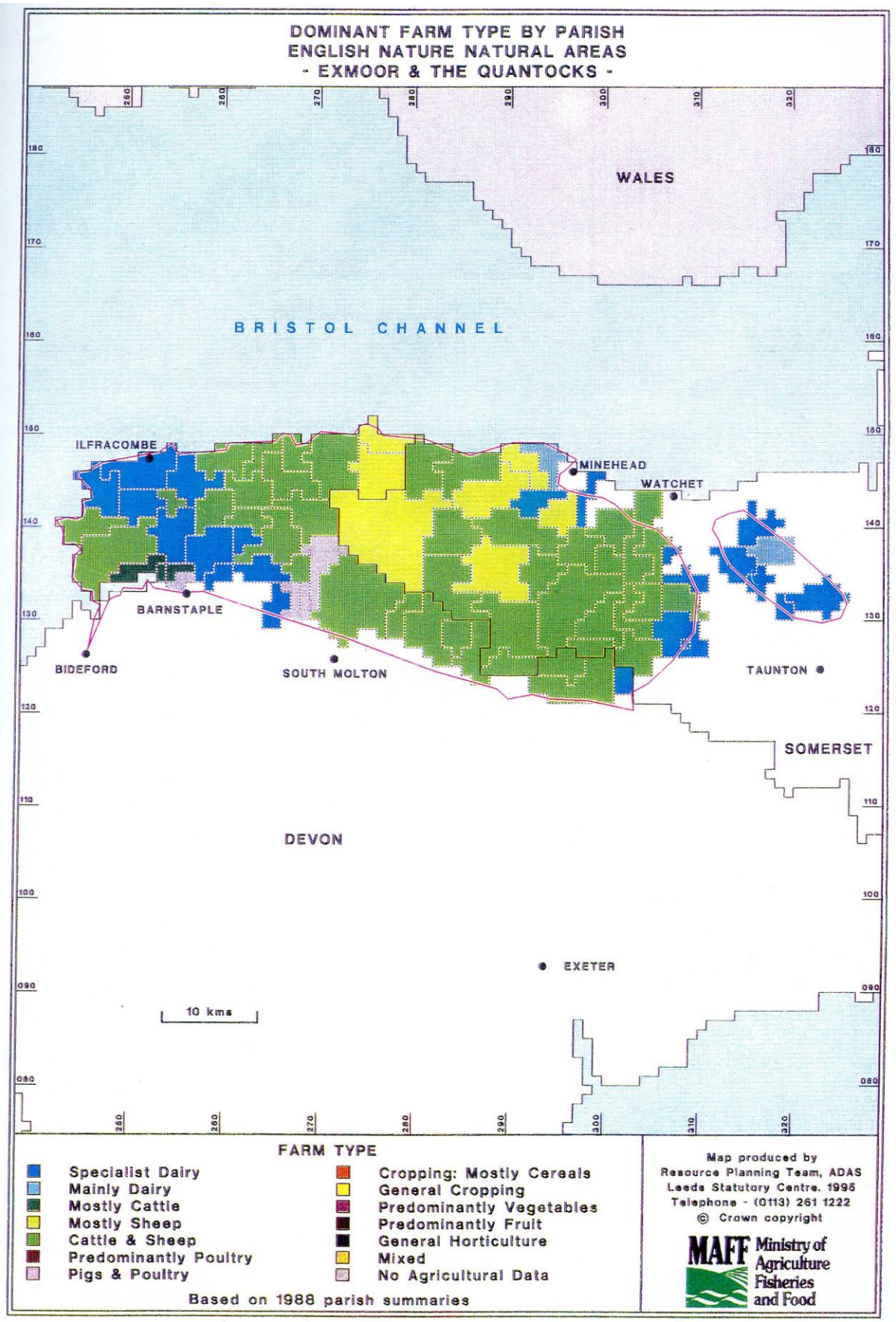
Physical Data for Exmoor & the Quantocks

10. Meteorological Data

	Mean	Maximum	Minimum	Mean for England
Average Annual Rainfall (mm)	1,338	2018	780	908
Accumulated Temp. above 0°C	1306°C	1587°C	634°C	1344°C
Moisture Deficit of wheat (mm)	53	105	-5	87
Moisture Deficit of potatoes (mm	32	98	-34	77
Field Capacity Days	261	367	92	190
Altitude above sea level (m)	235	485	0	122

11. Agricultural Land Classification

	Area (Km2)	Percentage	% for Devon	% for England
Grades 1 & 2	43	3.2%	6.5 %	16.1%
Grade 3	437	32.7%	47.3 %	43.6%
Grade 4	455	34.1%	24.2 %	12.7%
Grade 5	252	18.9%	9.2 %	8.3%
Non-Ag	132	9.9%	8.4 %	10.1%
Urban	16	1.2%	4.4 %	9.2%
Total	1,335	100.0%	100.0 %	100.0%


DOMINANT FARM TYPE BY PARISH
ENGLISH NATURE NATURAL AREAS
- EXMOOR & THE QUANTOCKS -
WALES
BRISTOL CHANNEL
ILFRACOMBE
MINEHEAD
WATCHET
BARNSTAPLE
BIDEFORD
SOUTH MOLTON
TAUNTON
SOMERSET
DEVON
EXETER
10 kms
FARM TYPE
Specialist Dairy
Mainly Dairy
Mostly Cattle
Mostly Sheep
Cattle & Sheep
Predominantly Poultry
Pigs & Poultry
Cropping: Mostly Cereals
General Cropping
Predominantly Vegetables
Predominantly Fruit
General Horticulture
Mixed
No Agricultural Data
Based on 1988 parish summaries
Map produced by
Resource Planning Team, ADAS
Leeds Statutory Centre. 1995
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MAFF Ministry of Agriculture Fisheries and Food

APPENDIX 4
Extract From MAFF ALC Methodology

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

AGRICULTURAL LAND CLASSIFICATION OF ENGLAND AND WALES

Revised guidelines and criteria for grading the quality of agricultural land

OCTOBER 1988

SECTION 2

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

Grade 1 – excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 – very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 – good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 – very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.