

THE LAND PATTERN OF AREAS OF OUTSTANDING NATURAL BEAUTY IN ENGLAND AND WALES

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(Accepted 12 March 1979)

ABSTRACT

Anderson, M.A., 1980. The land pattern of Areas of Outstanding Natural Beauty in England and Wales. *Landscape Plann.*, 7: 1–22.

The 33 Areas of Outstanding Natural Beauty (AONBs) in England and Wales cover approximately the same percentage of the land surface as the National Parks, but little work has been undertaken on their characteristics or the effectiveness of their designation.

This article presents the results of an investigation of land use and land quality in AONBs, and compares them with the pattern for the National Parks, and for England and Wales. The investigation was made by point sampling on the agricultural land classification maps of England and Wales.

The land pattern of AONBs is shown to reflect fairly closely that of England and Wales as a whole and to show marked differences from the National Parks. In particular, the importance of good and medium quality land in AONBs is compared with the preponderance of poor land in National Parks, and the relatively high proportion of woodland in AONBs is noted. The implications of the findings for planning authorities, who are charged with the duty “to preserve and enhance natural beauty” in AONBs, are discussed, and the diversity of AONBs is emphasized.

INTRODUCTION

The 33 Areas of Outstanding Natural Beauty (AONBs) in England and Wales cover 14 478 km² of attractive countryside or 9.6% of the total land surface. The 10 National Parks are slightly less extensive (9.0% of England and Wales) but they are much more widely known and a considerable amount of research has been carried out on many aspects of their history, landscape and use. AONBs, on the other hand, have been virtually ignored by researchers, with the result that books and articles on countryside planning, nature conservation, and rural land use pay scant attention to their designation and its effect on landscape or planning. Mention of AONBs

scape and land use pattern, tends to confirm these statements. To be able to make them with certitude, however, it is necessary to make a closer quantitative study of individual AONBs. The author found that while in general the statements hold true, the details that emerge show a considerable variety amongst AONBs themselves, and a greater contrast with the National Parks than might have been expected.

Areas of Outstanding Natural Beauty are designated by the Countryside Commission in conjunction with Local Planning Authorities, under the terms of Section 87 of the National Parks and Access to the Countryside Act (1949). The designation orders are finally agreed and signed by the relevant Minister, at present the Secretary of State for the Environment, and thus the designation has a statutory force. The purpose of designation is "to preserve and enhance natural beauty" and there is no provision in the Act for the promotion of enjoyment by the public in AONBs — unlike in the National Parks where this is specified as part of their function. The administration of AONBs is in the hands of Local County and District Planning Committees.

SURVEY OF LAND USE AND LAND QUALITY

As their name implies, all AONBs have been chosen for the attractiveness of their landscape — a quality which, in spite of numerous attempts, has so far not been satisfactorily quantified. It is practicable, however, to measure some of the physical elements that make up the pattern of the landscape, and the writer has done this in a survey of land use and land quality in AONBs and National Parks in England and Wales.

Data sources

The Land Service of the Ministry of Agriculture, Fisheries and Food (MAFF) has published a complete set of maps delineating the quality of agricultural land in England and Wales in the nineteen-sixties and outlining the areas of land under urban and miscellaneous uses. These maps have been produced on the Ordnance Survey Outline Edition, scale 1:63360 (1 inch to 1 mile). The land use features of the base map show clearly through the over-printed land quality colours and it was therefore considered that the same maps could be used to investigate both land use and land quality provided certain limitations were borne in mind.

The most important limitation on the measurement of land quality from maps at this scale is that the complexities of the land quality pattern cannot be delineated, and so the lines that divide one grade from another are often only an approximation (MAFF, 1968). Similar difficulties occur when looking at the detailed classification of land use. Many of the features have to be symbolized and as a result some land uses, such as roads, are greatly exaggerated in area. On the other hand, considerable care has been taken by the Ordnance Survey to show as accurately as possible the boundaries of built-

up and associated land, including urban features in the countryside like isolated dwellings. In spite of these limitations, the maps do provide a uniform and systematic source of information and, as such, provide a useful data base for studying and comparing sizeable areas such as National Parks and AONBs.

Definition of terms

The Land Service of MAFF was primarily concerned with the quality of land for agricultural purposes, and the maps produced were intended as a basic tool for providing information and advice to the Department of the Environment and local authorities. Agricultural land was therefore classified into five grades according to the degree to which the physical characteristics of climate, relief and soil posed long-term limitations on agricultural use. Less permanent social, economic and technical factors were not considered. In general terms, land in Grades 1 and 2 is good quality land, and in Grades 4 and 5 is poor or very poor land. Medium quality land is classified as Grade 3, a categorization that covers a wide range of physical types (MAFF, 1968).

Land that is not in agricultural use has been shown on the maps in two separate categories. Major urban areas are delineated, and these include within them land which, though in agriculture at the time of the Land Service survey, was scheduled for development within a few years. Hamlets, isolated dwellings and transport land outside towns are not differentiated from their surrounding land qualities. All remaining land is classified as "land primarily in non-agricultural use", and this includes forest and woodland, airfields, institutions, public open space outside towns (including golf courses and many coastal and clifftop areas) and inland water (excluding rivers). The quality of the land in the urban and non-agricultural categories is not given on the maps and necessarily has had to be recorded in this survey as "un-identified".

For the purposes of this study it was considered that detailed land use information was not required, but that more categories than those of agricultural, major urban and non-agricultural were needed in order to make it possible to compare results with other available figures, particularly those for England and Wales as a whole (Anderson, 1977). It was decided to follow as closely as possible the definitions used and refined over many years by Best (see, for example, 1976). Thus the definitions of land use employed in this study were based on a combination of the categories of Best and the Land Service.

These were as follows:

Agriculture:	all land graded 1 to 5 by the Land Service.
Forest and woodland:	all land classified as "non-agricultural" by the Land Service that is shown as woodland on the base map or is in small parcels with no other use assigned to them. (A check with the Second Land Utilization Survey showed this assumption to be reasonable.)

Urban develop- ment:	major urban areas defined by the Land Service; isolated dwellings and rural transport land shown on the base map.
Inland water:	lakes or reservoirs.
Miscellaneous:	the remaining non-agricultural land.

Measurement method

The aim of the study was to ascertain as accurately as possible the proportions of land that were of different qualities and in particular uses in AONBs, National Parks and England and Wales as a whole. Before the main study was carried out a pilot survey was undertaken with the purpose of deciding which measurement method would produce results for both land use and land quality with the highest degree of accuracy in relation to the time and effort involved. The Mendip Hills AONB was chosen for this exercise and three methods were tested: complete measurement by planimeter; line sampling; and point sampling. As a result it was decided to conduct the main survey using point sampling. This process does not record fragmentation but it does enable both land use and land quality information at each point to be recorded at the same time, and the possibility of error was found to be greatly reduced compared with the other methods. This is in general agreement with previous work on areal measurement (see, for example, Thomas, 1970; Baxter and Lloyd, 1972; Gachechiladze, 1977).

Calculations on accuracy and sampling density showed that a sample of 3000 points would yield a standard error of approximately 0.25% on a proportion of 2.0%, and of 0.9% on 50.0%. This was considered to be an acceptable level of error, and is in line with the work of other researchers (see,

TABLE I

Land quality in Areas of Outstanding Natural Beauty, National Parks, and England and Wales

Area	Land quality grades* (%)					
	1	2	3	4	5	Uniden- tified
National Parks	0.0	0.3	10.4	24.5	53.1	11.7
Highland England and Wales	0.4	4.9	27.4	25.4	26.1	15.8
Highland AONBs (15)	1.0	5.0	38.4	19.8	17.6	18.2
England and Wales	2.1	12.2	38.2	16.3	11.8	19.4
All AONBs	1.6	9.9	42.2	16.3	8.4	21.6
Lowland AONBs (18)	2.1	13.2	44.9	13.9	1.9	24.0
Lowland England and Wales	3.8	17.1	48.4	8.7	1.0	21.0

Source: point sample.

*Rural transport land and isolated dwellings, which are not differentiated within each land quality grade on the Land Service maps, have been included in all Land Quality tables within the grade in which they occur, and in Land Use tables either as a separate category or as part of Urban Development.

TABLE II
Land use in Areas of Outstanding Natural Beauty, National Parks, and England and Wales

Area	Land use (%)					
	Agri- culture	Forest and woodland	Major urban	Rur. transp. and isolated dwellings*	Miscell- aneous	Inland water
National Parks	87.7	8.4	0.7	0.6	2.1	0.5
Highland England and Wales	82.5	7.1	5.6	1.7	2.9	0.2
Highland AONBs (15)	80.8	7.7	2.4	1.0	8.1	—
England and Wales	79.1	6.9	8.2	1.5	4.2	0.1
All AONBs	77.1	11.3	2.3	1.3	7.9	0.1
Lowland AONBs (18)	74.6	13.7	2.3	1.5	7.7	0.2
Lowland England and Wales	77.7	6.4	9.5	1.3	5.0	0.1

Source: point sample.

*Rural transport land and isolated dwellings (see footnote to Table I).

for example, Haggett, 1965). Approximately 3000 points were therefore recorded for each area surveyed, irrespective of size, thus achieving a similar level of reliability throughout (Kalton, 1966).

Altogether 46 point sampling exercises were carried out (33 AONBs, 10 National Parks, England and Wales, and highland and lowland England and Wales). The division of England and Wales into highland and lowland zones followed the method used by Best and Swinnerton (1974, p. 107). Estimates of the proportions in each land quality and land use category for the individual areas surveyed were then calculated, together with the means of these estimates for the grouped AONBs and National Parks. The resulting data are set out in Tables 1–IV (the appropriate 95% confidence limits have been omitted), and they are shown graphically in Figs 2–5. Chi-squared tests in-

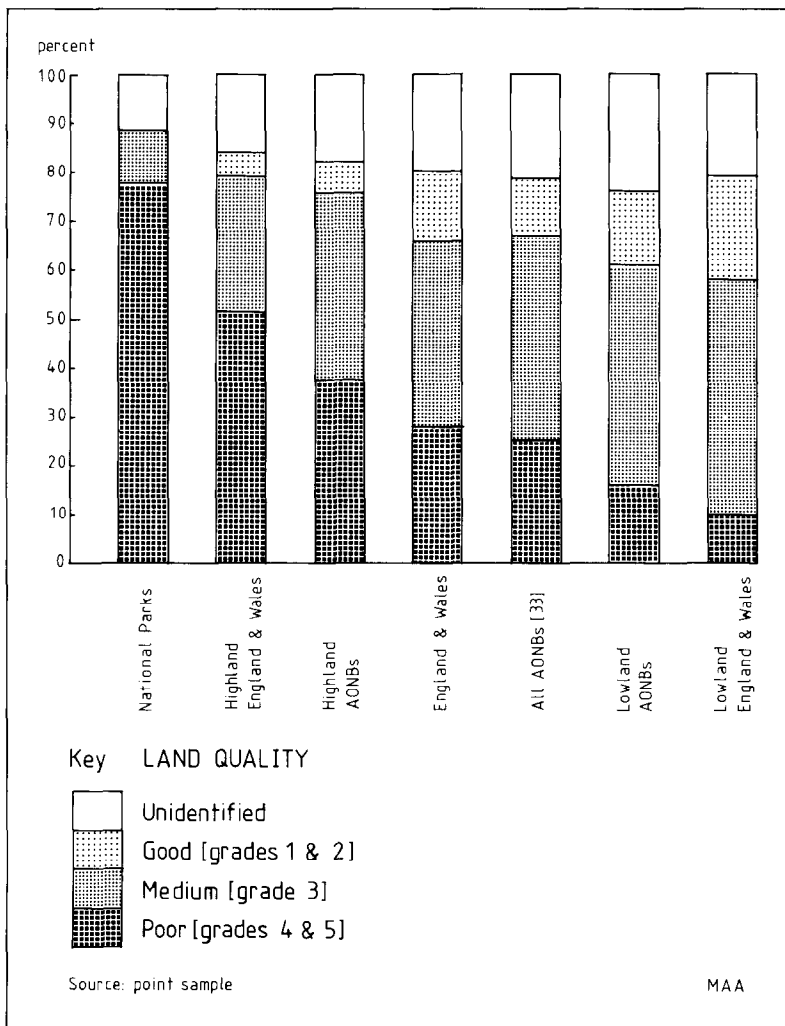


Fig. 2. Land quality in England and Wales, and designated areas.

licated that there are significant differences between the main data sets in Tables I and II, but where one set of data contains another within it, such as the National Parks in highland England and Wales, some caution must be exercised when direct comparisons are being made.

Analysis 1: the land pattern of England and Wales, AONBs and National Parks

One of the main questions the survey tried to answer was whether any of the areas looked at was similar to any others, and if not, to what extent

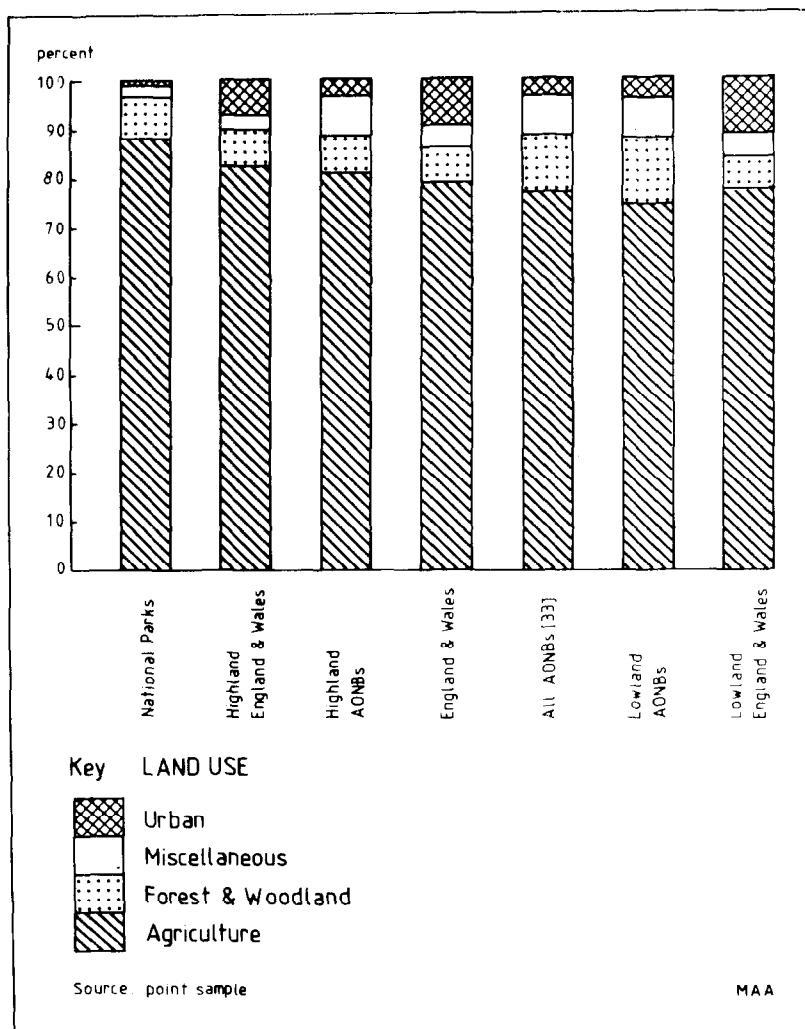


Fig. 3. Land use in England and Wales, and designated areas.

they differed. It will be remembered that, in the literature, it is often stated that AONBs are broadly similar in character to National Parks while at the same time including less wilderness land and more improved farmland than they do. A first glance at Figs 2 and 3 tends to confirm this general picture. It can be seen that both AONBs and National Parks have more than 75% of their land in agricultural use, but whereas an average of 77% of the land in National Parks is of poor quality — the “wilder land” — over 50% of AONBs is of good or medium quality — “improved farmland” — and only about 25% is poor land.

Closer study of these figures (which should be seen in conjunction with Tables I and II) reveals other interesting points of similarity and difference. Fig. 2 shows land quality presented in terms of the decreasing proportion of poor land (Grades 4 and 5), which declines steadily down through the sequence from the National Parks, which average a massive 77%, to lowland England and Wales with less than 10%. On a complementary basis, the amount of good land (Grades 1 and 2) increases through the sequence, the National Parks having virtually none, but lowland England and Wales having 21%. All AONBs together form a slight break in this sequence with 11% good land compared to 14% for England and Wales. The amount of medium quality land in National Parks is very low even compared with highland England and Wales; the amount then increases through the sequence to 48% in the lowlands.

The results of the land use survey (Fig. 3 and Table II) show a similar pattern to that of land quality, although the picture is less dramatic. Agricultural use falls steadily from an average of 87% in the National Parks to 74% in lowland AONBs, the trend only being reversed at the very end where lowland England and Wales has over 77%. The interest in Fig. 3 really lies in the three land uses other than agriculture. Forestry is a minor land use in the lowland zone where the proportion is less than for urban development, but by contrast the lowland AONBs stand out markedly in their forest coverage. In the highland zone the picture is much less well defined. The National Parks and AONBs both have more than the average amount of forest land, but the differences between them are not very great. It is clear that the miscellaneous uses are more important in AONBs than in any of the other areas. As will be discussed later, this is in large part due to the coastal location of 16 of them (see Fig. 5). The urban component is noticeably greater in England and Wales as a whole than it is in either National Parks or AONBs. This is not surprising, for not only does the national figure include all the major conurbations and other urban land, but also, when amenity areas are being designated, settlements that fall on or near the boundary are deliberately excluded.

National Parks clearly show the most extreme types of environment of the areas surveyed. Agriculture takes up a greater proportion of the land than in the other areas, but much of these great expanses are only nominally in agricultural use, as a large part of them is, in reality, very extensive rough grazing — a reflection of the poor quality of the land.

AONBs show a far less extreme pattern. In fact it is interesting to see that their land quality reflects closely the pattern of England and Wales as a whole and bears virtually no relation to that of the National Parks (AONBs are, of course, included within the overall figures, but so are the National Parks). Similarly, the lowland AONBs show a land quality profile not very dissimilar to that for the lowlands alone. There is more poor and less good quality land in the AONBs, but the contrast is not nearly so marked as might have been expected, and it is less than that between lowland and highland AONBs. Highland AONBs differ from those in the lowlands by having three times more poor quality land, but the quantity of medium and good quality land in highland AONBs still gives them a distinctly lowland bias when they are compared with the general highland pattern, and even more so when they are compared with the National Parks.

In conclusion, the most significant facts for AONBs that emerge from Figs 2 and 3 are the relatively high proportions of good and medium quality land, and the importance of forestry and the miscellaneous uses. These will now be considered further.

Analysis 2: the land pattern of AONBs

The first point to be made about AONBs themselves is how varied they are, so much so that it has not been possible to group them on any definitive quantitative basis from the survey. There appears, for example, to be no such thing as "an average AONB", although six of them might be so termed when their individual survey results are compared with the mean value for all AONBs. Anglesey, Cornwall, East Devon, the Kent Downs, North Devon and the Sussex Downs have all their land use and land quality proportions within the standard deviations for the means for AONBs. Nevertheless, when a chi-squared test was carried out on these results it was found that there were still very significant differences between them (for land quality $\chi^2 = 3566$ with 25 degrees of freedom; for land use $\chi^2 = 1010$ with 20 degrees of freedom). This is to be expected as the standard deviation of the mean for each factor measured tended to be large because of the wide range of results recorded within each category over the total of the 33 AONBs (see Tables III and IV). However, there is no particular value in having AONBs that are "average", nor any real expectation that they should be, except that the generalized statements made about them tend to imply that they do conform to a fairly recognizable pattern. It is therefore considered more useful to look at the characteristics of AONBs in wider terms.

It immediately becomes apparent from the survey results presented in Fig. 4 that a very high proportion of the land in AONBs is in Grades 1–3. In agricultural terms these grades have the most potential for development in response to economic, technical and political pressures on farmers; Grades 1 and 2 are considered the best land in terms of the number and diversity of crops they will support; Grade 3 covers a much wider variety

TABLE III

Land quality in Areas of Outstanding Natural Beauty

AONB (alphabetical order)	Size (km ²)	Land quality grades* (%)					
		1	2	3	4	5	Uniden- tified
Anglesey	215	—	5.8	31.3	23.6	20.1	19.1
Arnside and Silverdale	75	—	—	27.3	25.8	15.4	31.6
Cannock Chase	68	—	—	12.7	12.7	—	74.5
Chichester Harbour	75	28.7	31.9	9.7	7.5	—	22.1
Chilterns	800	0.1	7.4	61.3	5.2	0.1	25.9
Cornwall	932	—	6.8	39.8	17.6	20.1	15.6
Cotswolds	1507	0.3	1.9	72.5	11.6	0.6	13.1
Dedham Vale	57	0.4	35.1	50.5	4.5	—	9.5
Dorset	1036	0.7	3.2	59.7	15.2	7.5	13.6
East Devon	267	3.4	4.1	53.6	15.7	1.5	21.7
East Hampshire	391	—	1.1	67.1	14.5	1.0	16.2
Forest of Bowland	803	—	—	12.1	35.4	46.4	6.1
Gower	189	6.2	4.8	38.7	8.7	27.1	14.5
Isle of Wight	189	—	2.4	40.5	34.4	6.1	16.6
Isles of Scilly	16	1.3	12.0	26.7	2.3	30.5	27.2
Kent Downs	845	0.6	17.9	50.0	7.5	0.2	23.8
Lincolnshire Wolds	560	—	53.9	37.0	4.6	—	4.4
Lleyn	155	—	—	23.0	37.4	33.2	6.4
Malvern Hills	104	0.2	6.4	51.1	12.6	5.6	24.1
Mendip Hills	202	3.8	1.1	43.0	27.7	7.8	16.5
Norfolk Coast	450	2.8	12.6	49.3	8.2	—	27.0
North Devon	171	—	1.3	48.4	23.3	8.0	19.1
Northumberland Coast	129	—	5.6	64.1	3.3	1.1	25.8
North Wessex Downs	1738	2.1	21.8	58.1	5.1	1.2	11.6
Quantock Hills	99	0.6	3.9	38.2	11.8	22.3	23.3
Shropshire Hills	777	—	4.3	30.6	31.2	21.0	12.8
Solway Coast	107	—	—	52.5	25.8	14.3	7.4
South Devon	332	—	7.5	63.6	13.1	1.5	14.2
South Hampshire Coast	78	—	30.9	19.6	13.7	4.2	31.6
Suffolk Coast and Heaths	391	0.3	4.7	28.5	32.8	0.1	33.5
Surrey Hills	414	—	0.5	34.9	15.0	0.2	49.4
Sussex Downs	981	—	3.3	50.9	19.1	1.7	25.0
Wye Valley	325	2.5	17.5	30.7	20.2	0.5	28.7

Source: point sample.

*Including rural transport land and isolated dwellings (see footnote to Table I).

of land types than the two better grades, and cropping is therefore comparatively more restricted. Even so, Grade 3 land will grow a good range of plants from the less demanding horticultural crops, through a majority of

TABLE IV

Land use in Areas of Outstanding Natural Beauty

AONB (alphabetical order)	Date**	LAND USE (%)		
		Agriculture	Forest and woodland	Major urban
Anglesey	1967	80.2	5.9	3.5
Arnside and Silverdale	1972	67.7	19.1	5.3
Cannock Chase	1958	24.6	44.5	2.6
Chichester Harbour	1964	76.2	1.3	6.6
Chilterns	1965	72.5	18.6	2.9
Cornwall	1959	83.4	4.2	2.1
Cotswolds	1966	85.2	8.9	2.2
Dedham Vale	1970	89.8	6.1	2.4
Dorset	1959	84.7	6.9	2.6
East Devon	1963	77.0	9.1	2.4
East Hampshire	1962	82.1	11.5	2.3
Forest of Bowland	1964	92.4	5.0	0.2
Gower	1956	84.5	6.1	2.0
Isle of Wight	1963	81.1	9.6	1.5
Isles of Scilly	1976	72.3	—	5.2
Kent Downs	1968	73.7	18.4	2.2
Lincolnshire Wolds	1973	93.9	2.3	0.6
Lleyn	1957	92.0	1.3	1.2
Malvern Hills	1959	74.9	17.0	4.6
Mendip Hills	1972	82.3	9.1	1.5
Norfolk Coast	1968	71.1	7.8	2.4
North Devon	1960	79.7	5.0	2.6
Northumberland Coast	1958	73.5	1.4	1.9
North Wessex Downs	1972	87.0	7.9	1.7
Quantock Hills	1957	76.3	19.1	1.1
Shropshire Hills	1959	86.1	11.1	0.4
Solway Coast	1964	92.0	0.1	1.3
South Devon	1960	83.0	4.7	4.1
South Hampshire Coast	1967	67.7	22.2	1.8
Suffolk Coast and Heaths	1970	65.3	14.2	1.5
Surrey Hills	1958	49.4	25.4	2.0
Sussex Downs	1966	74.1	18.3	1.1
Wye Valley	1971	70.3	24.4	2.0

Source: point sample.

*Rural transport land and isolated dwellings.

**Date of confirmation of order.

Rural transport and isolated dwellings*	Miscellaneous	Inland water
0.6	9.7	
0.8	7.2	
0.8	27.4	
1.6	14.2	
1.6	4.3	0.1
0.9	9.3	
1.7	2.0	
0.7	1.0	
1.6	4.1	
1.3	10.2	
1.6	2.4	
1.5	0.7	0.2
1.0	6.4	
2.3	5.5	
0.5	22.0	
2.5	3.2	
1.6	1.5	
1.6	3.9	
1.0	2.5	
1.1	3.2	2.7
1.8	16.8	
1.3	11.5	
0.6	22.5	
1.3	2.0	
0.5	3.1	
1.0	1.3	
0.6	6.0	
1.8	5.4	
1.8	7.6	
1.1	17.8	
1.2	22.0	
0.9	5.6	
1.1	2.3	



Fig. 4. Land quality in Areas of Outstanding Natural Beauty.

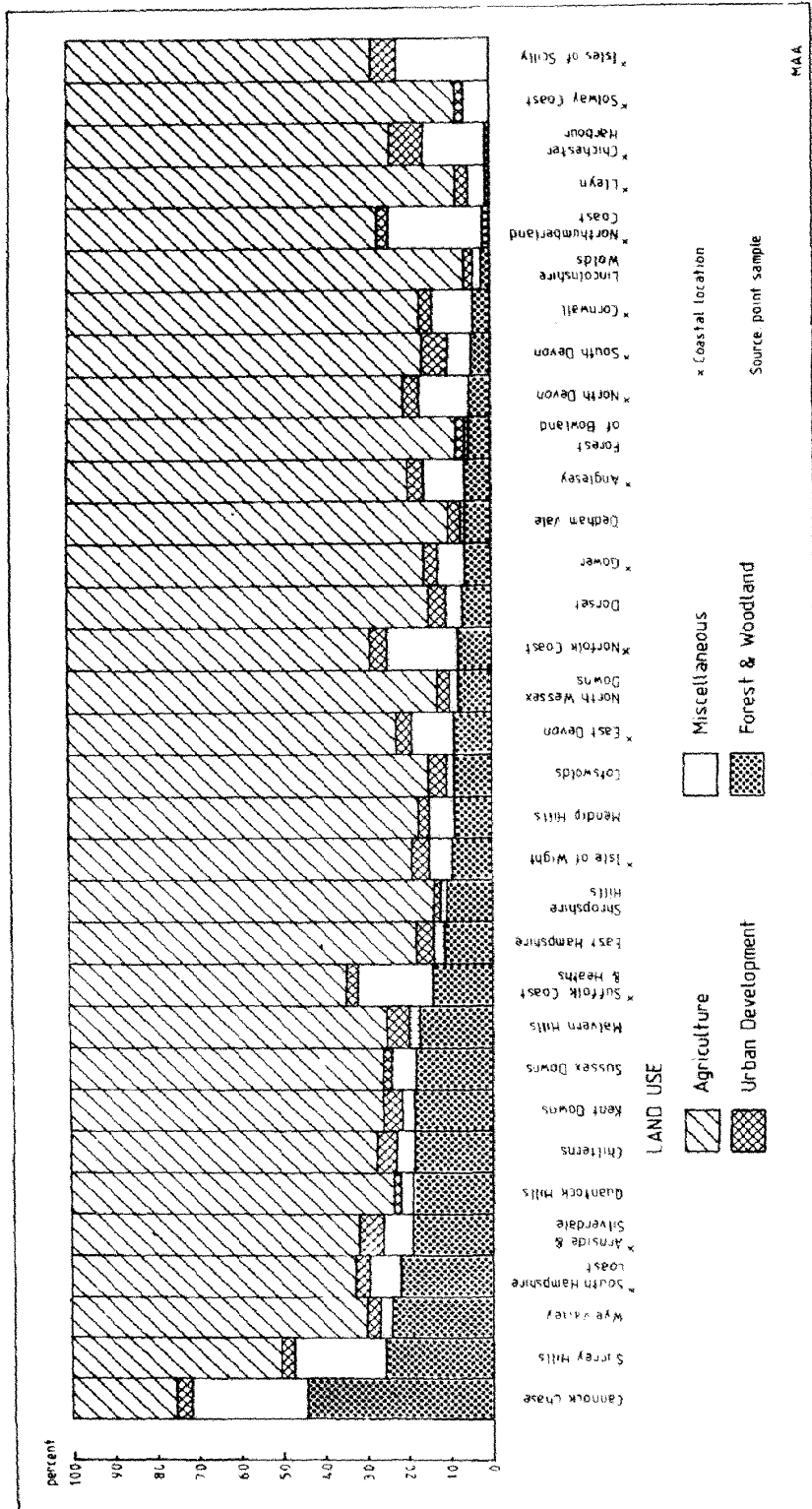


Fig. 5. Land use in Areas of Outstanding Natural Beauty.

cereals and grass, to forage crops and good permanent pasture (MAFF, 1968). The MAFF grading is largely based on physical criteria and the range of crops that can be produced. It has been argued, however, that these definitions are too narrow and that in terms of output potential there may well be nothing to choose between land in Grades 1, 2 and 3 (Boddington, 1978). Twenty out of the 33 AONBs have 50% or more of their land in these first three grades and only four have less than 30%. Generally speaking the preponderance of this land is in Grade 3, but eight AONBs have more than the national average (14%) of good quality land.

At the other end of the scale, a few AONBs have an extensive amount of land in Grades 4 and 5. The poor qualities of this type of land impose severe restrictions on farming and generally only low output enterprises are possible, mainly grass or rough grazing, but some oats, barley and forage crops are grown in the better parts of Grade 4 land (MAFF, 1968). The survey showed that three AONBs have more than 50% poor land (Forest of Bowland, Llyn and the Shropshire Hills). The majority of AONBs have between 15 and 40% poor land, but eight have less than 10%.

Agriculture is the predominant land use in all AONBs except Cannock Chase where it occupies only 24.5% of the land. The remainder there is largely forestry (44.5%) and miscellaneous uses (27.5%), plus 3.5% urban development. The picture presented by Cannock Chase shows in an exaggerated form the importance of forestry and miscellaneous uses in AONBs.

The land use diagram (Fig. 5) indicates that 11 AONBs have more than twice the national average (6.9%) for forestry and a further nine have the same or more than average. It is apparent from this that some, at least, of the scenic attractiveness of these areas must be due to their wooded nature, particularly as it would seem that most of the woodlands in AONBs are deciduous or mixed in their species and tend to be in fairly small scattered blocks or along river valleys. The exceptions to this norm are to be found among the most wooded AONBs, such as Cannock Chase, the Quantock Hills and the Suffolk Coast and Heaths where there are large conifer plantations, and in a few others such as Anglesey and the Forest of Bowland, where one or two large blocks of conifers make up most of the total of wooded land.

Examination of Fig. 5 shows that it is the group of 16 coastal locations that contribute the high proportions of miscellaneous land uses in AONBs. In fact all of them have more than the average (4%) for England and Wales. The inland AONBs present a different picture. Only Cannock Chase and the Surrey Hills, with their relatively large areas of heath and common, have more than 20% miscellaneous uses, then there is a drop to 6% for the Mendip Hills (where inland water makes a significant contribution) and the Sussex Downs where there are large blocks of parkland as well as commons and golf courses. The Chilterns and Dorset both have proportions of miscellaneous uses around the national average. In the Chilterns there are downs

and commons as well as Whipsnade Zoo, but in Dorset it is the coastal strip — notably Chesil Beach — that makes the largest contribution in this respect.

The case of Dorset AONB, which is classified here as “inland” because the truly coastal AONBs in general only extend a few miles back from the sea, points to the importance of beaches, cliffs, sand dunes and marshes in the miscellaneous land uses of the coastal AONBs. Nearly all of them have a “miscellaneous” strip of varying composition above the shoreline, and golf courses and areas of rough grassland also often contribute to the total. It should be noted that where areas of tidal sands and mudflats are within the AONB boundary (for example, at Chichester Harbour, Gower and the Norfolk Coast), but are not shown as land on the MAFF maps, they have not been included in this survey.

DISCUSSION

It has been said (C. Hall, unpublished data, 1976) that the landscape of AONBs has greater appeal to people in England and Wales than that of the National Parks. The generally rolling countryside of AONBs with their farmland of crops and pasture set off by trees, and with villages and farms nestling in the valleys, or the coastal areas of cliffs, beaches and bays, is far more to the national taste than the wilder rugged pasture and moorlands of the upland National Parks. The landscape of AONBs is not immutable however, and the results of this survey provide a quantified basis from which some of the pressures for change, usually in the direction of more intensive uses, can be assessed.

Agriculture is the most important land use in AONBs, and the actions of land owners, particularly farmers, can have a very significant effect in changing the landscape. Farmers react in response to elements in the economic, technical and political atmosphere dependent on the type of land they farm and their own attitudes and interests. The high proportion of Grade 3 land in AONBs is significant here because it is on this land that intensification of production is likely to take place, and where the response to pressures can be most effective most quickly. This is the sort of land where hedges and copses have disappeared and where pasture has been ploughed up with resulting changes to the overall landscape. The smaller proportions of good land are not so important in this respect, as intensification has usually occurred there already and any change is only marginal in its landscape effect (Westmacott and Worthington, 1974).

The proportion of poor land, particularly that in Grade 4, is subject to the type of agricultural changes that are occurring in the National Parks where improvement and enclosure of pasture and rough grazing has caused considerable concern (see, for example, DOE, 1977). The area of poor land in AONBs is not nearly so extensive, and is much more fragmented than in National Parks, so that the overall effect of change is less significant. But in individual AONBs these areas make important contributions to the

landscape and intensification of their use could significantly change the local character.

The areas of poor quality land are important also for nature conservation. In the original concept of AONBs, as set out in "The Report of the National Parks Committee" (M.T.C.P., 1947), they were called "Conservative Areas" and their purpose was closely tied in with that of National Nature Reserves, the hope being expressed that the general conservation of landscape over extensive areas would help to protect the special areas designated as Nature Reserves. AONBs now include within their borders 142 of the 546 key sites in England and Wales graded 1 and 2 by the Nature Conservancy Council (Ratcliffe, 1977). More than 50 of the AONB sites are lowland grass, heath and scrub. This type of land tends to be of low priority agriculturally, but its conservation value can be altered irretrievably and often very rapidly by the introduction of other uses such as forestry or recreation, as well as by agricultural improvement. Equally its value can decrease through neglect or inappropriate management (Davidson and Wibberley, 1977).

The importance of trees in the landscape of AONBs has already been stressed. The majority of these woodlands are in private hands although there are some large Forestry Commission holdings in a few areas such as Cannock Chase, the Wye Valley and the Quantock Hills. Forestry, like agriculture, is subject particularly to economic pressures which affect decisions of landowners on the species grown, the type of management undertaken and on the replanting of wooded areas. Private owners are helped to maintain their woodlands through various schemes operated by the Forestry Commission, but on the whole the emphasis is on the commercial rather than the landscape value of trees. Similarly, licences, which must be obtained before trees are felled, are issued subject to commercial criteria, although they do also have some regard to recreation and landscape interests. The removal of trees to convert the land to other uses, usually agriculture, or the replacement of hardwoods by conifer plantations, can have a very noticeable effect on the landscape character of an AONB, and will almost certainly, in addition, alter the recreational and wildlife value of the site involved.

The landscape change over which there is the most control in the countryside generally is urban development. Planning legislation can be very firmly exercised, and in most County Development or County Structure Plans there is an explicit presumption against urban development in AONBs except in specified instances (see, for example, East Sussex County Council, 1975). The Countryside Commission has maintained that designation has enabled planning authorities to keep AONBs free at least from major urban developments (Annual Report, 1972/1973) and it is probably true to say that most requests for planning permission in AONBs come from private individuals for small buildings and not from the large developers. Even so, research work in East Devon has shown, surprisingly perhaps, that it is usually easier to gain approval for a planning application in the AONB than

elsewhere in the area investigated (Blacksell and Gilg, 1977). On the other hand, the author's work in East Sussex (which is still in progress) indicates that control of development in all rural areas of the county is relatively strict and is applied with equal force both within and without the AONB. Both these studies have only looked at the situation as it appears from planning application data, and they can assess neither what the absence of designation would have meant nor those applications which were never made because of the designation. However, their results seem to indicate that it is the attitudes of development control officers and planning committees that are ultimately more important in deciding how much urban development will occur in an AONB rather than the mere fact of the designation.

CONCLUSION

The designation "Area of Outstanding Natural Beauty" is a recognition of landscape quality, and not, strictly speaking, a planning matter. Yet the control of landscape in AONBs is left in the hands of the local planning authorities who, except in some very minor instances, have no more powers "to preserve and enhance natural beauty" in AONBs than they have anywhere else in the countryside. This anomaly has recently been stated bluntly by the Countryside Commission itself in the following terms: designation of an AONB "has had no effect on agricultural policy and grants. It commands no priority for forestry grants where forestry can enhance the landscape. It commands no special interest for nature conservation. It brings no priority in the conservation of ancient monuments and historic buildings. It has no direct influence on road policy. In fact, the only special statutory implication of a designation relates to the building of a new reservoir" (Countryside Commission, 1978, para. 38).

In the face of such weak designation, what are the local planning authorities expected to achieve? The Countryside Commission has exhorted planners at least to take positive action to enhance the natural beauty of AONBs by using the grants that are available for countryside work (such as tree planting and removal of eyesores). More recently, the Commission has urged planners to set up AONB Advisory Committees, draw up management agreements with landowners, and for new AONBs, to produce Statements of Intent (National Parks and Countryside Commission Annual Report for 1961, 1962, 1966, 1972/1973, 1973/1974, 1975/1976). In addition, the Commission has drawn special attention to the need for protection of cliffs and shorelines by the additional definition of heritage coasts. Except for three in National Parks, virtually all these heritage coasts are in AONBs, a point which emphasizes the importance of the "miscellaneous" uses in coastal areas already noted in this article. But heritage coasts, even more than AONBs which are at least designated by statute, carry no extra control powers for the planning authorities.

Planning authorities are left, then, with control over urban development (a minimal component) in AONBs and a number of powers under the normal planning legislation which can be used in special circumstances. These powers, such as Article 4 Directions which can bring some agricultural activities under planning control, and Tree Preservation Orders which can stop tree felling, cannot, however, be used on a scale wide enough to encompass all or even a large part of an AONB.

The local authorities' response to the planning of their AONBs can be found in the Structure Plans which each county has now by law to produce. A study of these plans shows the dilemma faced by the planners in trying to reconcile the needs of a prosperous countryside — which inevitably includes encouragement of farmers to keep pace with changing economic and technical circumstances — and the preservation as far as possible of "natural beauty", when neither really comes under planning control. One example, from the Isle of Wight, will suffice to illustrate this point. It is pointed out in the island's Structure Plan that agriculture (like other industries) is constantly changing, giving rise to landscape and amenity changes, "but within the framework of this Plan as much as possible will be done to safeguard the amenities of the countryside commensurate with the prosperity and efficiency of agriculture and the interests of the community at large" (Isle of Wight County Council, 1976, para. 4.28). A similar conflict of interest can be seen with the coastline: "Within the island the relationship of marine recreation and land based facilities will be carefully evaluated to protect the total environment from development which cannot reasonably be assimilated into the area without detriment to its character" (Isle of Wight County Council, 1976, para. 4.42).

Study of Structure Plans shows that most authorities are willing to carry out their statutory duty to preserve and enhance natural beauty, but the fact remains that neither a Local Planning Authority's determination, nor the Countryside Commission's exhortations, can by themselves increase the powers available to control landscape change in AONBs. Perhaps one of the main reasons why so little headway is being made is that so little is known about what is happening in AONBs. To date, they have attracted very little attention from researchers, writers or politicians. Some work has been done on individual AONBs, most notably the East Hampshire Study (Hampshire County Council, 1968), and the Plan for the Chilterns (Chilterns Standing Conference, 1971), but somehow the designation "Area of Outstanding Natural Beauty" has failed to capture either the imagination of the public or the attention of research workers.

In an attempt to remedy this deficiency, the Countryside Commission in 1978 appointed an officer to examine the designation, to consider how far its statutory purposes have been achieved, and to make recommendations for the future. At the same time, in order to stimulate wider debate, the Commission issued a discussion paper (Countryside Commission, 1978).

That paper, perhaps more than anything else, has shown up the paucity of information available on AONBs. It contains virtually no new factual material, and only a subjective assessment of land uses and the pressures bearing on them (Countryside Commission, 1978, para. 4 and annex 5). The Countryside Commission's initiative is very welcome. The gaps in knowledge, however, make it very difficult to keep the ensuing debate on an objective level, as was shown at the Commission's national conference on AONBs in November 1978 when most of the discussion centred, perhaps inevitably, around the financial implications.

With these deficiencies in mind, the present study attempts to provide an objective basis for assessing the importance of certain land uses and the associated quality of land, and it indicates the extent of areas likely to be under pressure. It also highlights the wide differences between individual AONBs and hence the need for further investigation of this diversity before useful general policies can be promulgated.

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