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Recreation



The Impact of Recreation on Upland Access Land

R. S. Gibbs

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THE IMPACT OF RECREATION
ON UPLAND ACCESS LAND

by

R.S. GIBBS

Research Monograph No. 7

Agricultural Adjustment Unit
University of Newcastle upon Tyne,
February, 1976

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JOHN ARNOLD
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February 1976

PREFACE

This is the second report, published by the Agricultural Adjustment Unit, from the research project, financed by the Social Science Research Council, on public access to the countryside. The earlier report (Local Authority Expenditure on Access Land Research Monograph No. 6) dealt with local authority expenditure on one administrative method of providing recreational access to rural land in England and Wales.

This particular study is concerned with the costs of this access to the other land users - farmers, grouse shooters and water authorities. These costs are growing as increasing numbers of people use the uplands for recreation, and the demands of visitors are likely to conflict increasingly with those of the other land users. The magnitude of the costs borne by land-users are an important indicator of the optimum combination of land uses.

The Research Project, which began in January 1974, has now come to an end, though further reports are in preparation.

Plans for further rural development research are also under consideration and the Unit would welcome discussions with interested parties.

February 1976

JOHN ASHTON
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CHAPTER I

INTRODUCTION

Aims and Scopes

In recent years rapidly growing numbers of people have been using the countryside for recreation. Much of this recreation takes place on land which is not specifically set aside for recreation, but which is also used for other purposes - farming, sporting, forestry and water-gathering. Because of this multiple use, costs of varying types and magnitude are imposed by the recreationists upon these other land users, and the aim of this report is to document and estimate the extent of these costs for upland access agreements. The report follows an earlier one which was concerned with the extent of, and expenditure on, access land by local authorities¹.

Under Part V of the National Parks and Access to the Countryside Act, 1949 (hereafter the 1949 Act), a local planning authority in England and Wales is allowed to make an agreement with a land-owner so that the public may have unrestricted access to his land for open air recreation: in return the owner, or persons having an interest in the land, may receive a financial payment and a warden service is provided. These agreements may only be made over "open country" which is defined as "wholly or predominantly of mountain, moor, heath, down, cliff or foreshore", and all agricultural land, except rough grazing, is excluded from this definition. The 1968 Countryside Act broadened the definition to cover also woodlands, and rivers and canals (including their banks). The 1949 Act also gave powers to the local authority, where an agreement was not possible, either to acquire land compulsorily or by agreement, or to make an order, which in effect is an "imposed agreement".

The extent of access land in England and Wales is set out in Table 1, though Wales only accounted for two lowland acquisition sites covering 4.1 hectares. As can be seen most of the area was covered by agreements, though the number of acquisitions was almost the same as the number of agreements.

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1. GIBBS, R.S. and WHITBY, M.C. (1975) *Local Authority Expenditure on Access Land*, Research Monograph No.6, Agricultural Adjustment Unit, University of Newcastle upon Tyne.

TABLE 1 - Access Area by Type of Arrangement
and Type of Site : 1 April 1973.

Type of Arrangement	Type of Site					
	Total		Upland		Lowland	
	Area (ha)	Number	Area (ha)	Number	Area (ha)	Number
Agreement	30,203.0	50	29,223.2	27	979.8	23
Acquisition	5,054.1	47	3,195.7	9	1,858.7	38
Orders	2.1	1	-	-	2.1	1
Total	35,259.5	98	32,418.9	36	2,840.6	62

Source : GIBBS, R.S. and WHITBY, M.C. op. cit., p.18

The access arrangements may be split into two types of site. Upland sites, which accounted for over 90 per cent of the access area, consisted of moorland used for various combinations of sheep grazing, grouse shooting and water-gathering. Their average size was some 900 hectares. Lowland sites were typically of a much smaller size (an average of 46 hectares) than the upland arrangements and were used for grazing or had no productive use, apart from some occasional timber extraction.

The recreation activities tended to vary between the two types of site. On lowland sites, which usually had very high visitor rates, most of the visitors stayed close to their cars and spent their time on informal activities. On the other hand, a high proportion of the visitors on upland access arrangements were ramblers and walkers, though picknicking on the fringes was also important, particularly if there was a nearby car park. Certain activities, such as camping, exercising dogs and horse-riding, were sometimes excluded from particular arrangements.

Survey Method

The method of obtaining information about the effects of public access on other land users was to undertake a survey, using a structured questionnaire,¹ among persons,² or their representatives, who had an interest in the access land. The fieldwork was carried out between February and October 1975.

1. A copy of the questionnaire may be obtained from the Agricultural Adjustment Unit.
2. Including companies and organisations as well as private individuals.

The survey was limited only to upland access agreements, which covered over four-fifths of the total access area. There were two reasons for this. Firstly, the upland agreement sites were selected because the access legislation was designed primarily with these sites in mind and because they formed a homogeneous group in terms of land use and recreation activities. Secondly, all acquisition sites were excluded as local authorities generally acquired land for reasons other than primarily to secure access (for example, to secure greater control over recreation already taking place) and consequently management of the various sites was likely to have changed. The distribution of upland access agreements amongst local authorities is set out in Table 2.

TABLE 2 - Upland Agreements by Local Authority : 1 April 1973

Local Authority	Total		Survey	
	Area (ha)	Number	Area (ha)	Number
Peak District National Park	19,316.5	18	14,540.2	18
Yorkshire Dales National Park	4,675.5	1	4,675.5	1
Lancashire	4,527.0	7	1,102.8	3
Dartmoor National Park	704.2	1	704.2	1
Total	29,223.3	27	21,022.7	14

Source : Derived from GIBBS, R.S. and WHITBY, M.C. op. cit., Appendix II.B

From this group, covering four-fifths of the total access area a further selection was made. This was on a non-random basis, and the aim was to cover each of the four local authorities involved. In the Peak District a 50 per cent random sample was taken because of the large number of agreements. In Lancashire only the three most recent agreements, all in the Forest of Bowland Area of Outstanding Natural Beauty, were selected: the other four "early" agreements made between 1955 and 1957 were excluded as it appeared that very few visitors actually used them. The single Yorkshire Dales upland agreement was included as it covered a very large area, while the one upland agreement in Dartmoor was of interest because, unlike other upland agreements, the owner had not attempted to prevent public access prior to the agreement. Table 2 compares the area and number of agreements selected for survey with the total extent of upland agreements.

Interviews were then carried out for these selected sites with persons having an interest in the land. A complete survey was not possible though, within the financial and time constraints, as many people as possible were interviewed, and eventually this amounted to just under half (47 per cent) of the whole survey population¹. Selection for interview was not undertaken by random sample as a full list of persons and their interests was not available at the outset. However, there were two main aims behind the selection procedure. The first was to ensure that a high proportion of landowners were interviewed, and eventually, as Table 3 shows, 80 per cent were covered. The other interests included those of tenants, lessors and common rights. The second aim in

TABLE 3 - *The Survey Population and Numbers Interviewed*

	Total	Number Interviewed
<u>By Type of Interest</u>		
Landowner	15	12
Other	<u>62</u>	<u>23</u>
	77	35
<u>By Land Use Interest</u>		
Farming	56	19
Farming and Grouse Shooting	3	3
Grouse Shooting	13	8
Grouse Shooting & Water-gathering	1	1
Water-gathering	<u>2</u>	<u>2</u>
	75 ¹	33
<u>By Local Authority</u>		
Dartmoor	15	1
Lancashire	26	13
Peak District	28	17
Yorkshire Dales	<u>8</u>	<u>4</u>
	77	35

1. Two members of the whole survey population did not exploit a land use interest.

1. The survey population is the total number of different persons having an interest. All but four of the total (77) had an interest in one agreement only: each of these four had an interest in two agreements.

the selection process was to ensure that at least one person, who exploited, as opposed to owned an interest in each land use (farming, grouse shooting and water-gathering) found on each particular agreement, was interviewed: only in two cases out of 30 was this not achieved. The number of persons having various land use interests who were interviewed is set out in the middle section of Table 3. The bottom section of this Table sets out how the persons interviewed were distributed amongst the four authorities involved. The low proportion for Dartmoor was due to the fact that there was not sufficient time to interview persons other than the landowner, but the owner was able to answer questions pertaining to the grazing rights. The resulting sample is therefore by no means random but, it is hoped, has covered the range of situations found in the original population.

Data from other surveys and reports have also been used in writing this report, and reference to these is given in the appropriate places.

Land Use

On upland access agreements there were three land uses - grazing, grouse shooting and water-gathering - apart from recreation. The extent of each use is set out in Table 4 and, as can be seen, multiple use was predominant.

TABLE 4 - Land Use on Upland Access Agreements : 1 April 1973

	Total		Survey	
	Area (ha)	Number	Area (ha)	Number
Farming/Grouse shooting	18,612.2	16	16,333.7	10
Farming/Grouse shooting/ Water-gathering	9,906.8	10	3,984.8	3
Farming	704.2	1	704.2	1
Total	29,223.2	27	21,022.7	14

Outline of Report

Chapter II defines in detail what is meant by the costs of public access in this study. Chapters II to V set out the costs of public access, for each land use. Chapter VI summarises these costs.

CHAPTER II

THE COSTS OF PUBLIC ACCESS

Types of Access

On all the upland agreement sites surveyed various types of access - legal and illegal - existed prior to the agreements being made. These types of access can be classified into four groups :

- (a) Right-of-way - here there was a legal right to walk along a footpath or bridle-way.
- (b) Permission from landowner or tenant - in some cases the landowner or tenant, if asked, allowed the public access, though it was likely to be restricted at certain times of the year. This group also included a "concessionary" or "permissive" footpath: in this situation the landowner marked a footpath, though it was not a legal right-of way.
- (c) Trespass - illegal access to the land often occurred when visitors strayed from rights-of-way.
- (d) *De facto* - the landowner, by tradition, made no attempt to prevent public access.

The occurrence of the combinations of these groups is set out in Table 5.

TABLE 5 - Access Prior to Agreements

Type of Access	Number of Agreements
Right-of-way and Trespass	8
Right-of-way, Permission and Trespass	4
<i>De facto</i>	1
Trespass	1
Total	14

These findings are supported by another survey, carried out for the Forest of Bowland access agreements, which showed that 40 per cent of the parties interviewed had walked across the access areas before the agreements came into effect¹.

Prior to the agreements the survey indicated that there were two costs imposed upon the other land users. Firstly, there were some, in most cases grouse shooters, who attempted to prevent illegal access (trespass): this usually involved patrolling by gamekeepers, particularly at weekends. Secondly, there was damage and disturbance caused through public access, though in most cases the other land users reckoned that it was not of any substantial importance.

It is highly probable that, even without an agreement, these non-agreement costs would have increased as growing numbers of people visited the countryside and public access, either of a legal or an illegal nature, would very likely have increased. For example, in one small survey of farmers in Teesdale and Weardale, 30 per cent of the farmers had experienced trespassers in 3½ years between January 1969 and June 1972. Of these over half had reported an increase during this period, while under five per cent said there had been a decrease².

Costs and Visitor Numbers

In analysing the costs of access agreements, a distinction can be made between gross and incremental costs. Gross cost is defined as the cost borne by all the other land users (farmers, grouse shooters and water authorities) as a result of public access, while the incremental (or agreement) cost refers to the cost which occurs solely due to the access agreement coming into operation. This distinction is necessary because it was found from the survey that public access had taken place, and cost to other land users incurred, prior to the agreements coming into effect. As a result not all the cost which has occurred since an agreement was made is attributable to the agreement, as without the agreement non-agreement cost would nevertheless have occurred.

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1. *Forest of Bowland AONB : Recreation Survey 1973*, Lancashire County Council, p.21.
 2. *North Riding Pennines Study : Study Report*, North Yorkshire County Council, February 1975, p. 97.

One approach is to consider how the numbers of visitors have changed after the agreement came into effect as the total damage on a site will arise partly from visits due to the agreement and partly from those visits which would have taken place anyway. Allowance must be made for the underlying growth in visitor numbers since this will mean that "before" and "after" comparisons cannot be treated as "with" and "without" situations. The argument may be stated in mathematical notation as follows :

$$V_1 = V_0(1 + r)^t + I_1$$

where V_1 = the number of visitors to the site after the agreement.

V_0 = the number of visitors before the agreement.

r = the underlying rate of growth of visiting.

t = the number of years between observations before and after the agreement.

I_1 = the incremental visits due to the agreement.

It is not at all easy to put actual values to V , I and r because data on visiting upland access agreements is virtually non-existent, while there is only a limited amount on outdoor recreation in general. For the underlying rate of growth of visiting (r) it could be assumed that it is of the order of about 10 per cent per year: this implies that the access sites would have experienced an annual increase in the number of visitors of 10 per cent without the agreement¹.

Some idea of the proportionate values of V and I can be gained from a survey for the three Forest of Bowland agreements in Lancashire undertaken seven to nine months after the agreements came into effect. This indicated that 40 per cent of the visitors had walked over the access areas prior to the agreements coming into effect². At first sight it would appear that the incremental number of visits (I_1) would equal 60 per cent of all visits (V_1), and that the increase due to the agreement was of the order of 150 per cent. However, this does not take into account

1. This was estimated from visitor data reflecting similar types of visitors to upland access agreements. For the period 1970-73 the average annual increase in membership of the Ramblers Association was 10.8 per cent, while for the number of visitors per site to ancient monuments and historic buildings in England it was 11.3 per cent. Sources : COUNTRYSIDE COMMISSION (1974) *Digest of Countryside Recreation Statistics*; DEPARTMENT OF ENVIRONMENT *Ancient Monuments: Admission Figures and Receipts*, Directorate of Ancient Monuments and Historic Buildings.

2. *Forest of Bowland AONB : Recreation Survey 1973*, Lancashire County Council, p. 21.

the underlying growth in visiting (r) which is estimated to be 10 per cent assuming that the Forest of Bowland follows the national trend. Unfortunately, the survey gave no indication of the dates of the previous visits, and consequently of t . Assuming that it was one year, then

$$\begin{aligned} I_1 &= 100 - 40 (1 + .1)^1 \\ &= 56 \end{aligned}$$

Thus the incremental number of visitors was 56 per cent of the total number of visitors, implying an increase of 140 per cent. This is not a particularly meaningful result as the previous visits would have been spread out over a number of years, with the effect of reducing V_0 and increasing t , while for a longer time period r might also vary. The former is useful in showing the relationship between gross and incremental visits, and implicitly gross and incremental costs.

Three further assumptions have been made in the calculation. Firstly, the frequency of visiting by pre-agreement visitors has not changed as a result of the agreement. Secondly, the sample chosen was representative with regard to the population of pre-agreement visitors. But any population is continually replacing itself, so that a proportion of the pre-agreement population would have disappeared (due to death or moving to other regions) between the time when previous visits of the pre-agreement visitors were made and the survey. A third assumption is that the incremental visitors do not cause significantly different per capita amounts of damage than the non-agreement visitors.

Another factor, which is not linked directly to visitor numbers, but which would have an effect on the gross cost, would be the warden service. Its impact would be to lower the gross cost by making the damage done by non-agreement visitors lower than it would have been without an agreement. As the incremental cost is the difference between the gross cost and the projected non-agreement cost then the effect of the warden service would be to lower the incremental cost.

There is no "before" and "after" visitor data at all for the other agreements though indications can be given of the incremental number of visitors. For the early Peak District agreements it is likely that the incremental number was large as these were new recreational sites being set up in an area where there was a relative shortage of access land. That situation is similar to the Forest of Bowland agreements where it was suggested above that the proportion of incremental visits was 56 per cent of the gross number. However, it is probable that on the more recent agreements in the Peak District the incremental effect would have been substantially less as these sites would have tended to divert visitors from the large area of existing access land. The Yorkshire Dales agreement does not seem to have had a very large incremental effect¹

1. DENMAN, D.R. *et al.*, (1967) *Commons and Village Greens*, Leonard Hill, p. 45.

For the four early agreements in Lancashire and the one in Dartmoor it appears that the incremental effect was zero. For these five agreements there was *de facto* access prior to the agreement being made, and it seems that there was little, if any, publicity to encourage the public to use these access areas: thus it is unlikely that the agreements had any effect on the numbers of visitors.

Shortage of data has prevented precise measurement of non-agreement and incremental costs. It also precludes the full use of these concepts in the rest of the report. The limited data for the Forest of Bowland do indicate a possible upper limit to the proportion of incremental costs in gross costs for new agreements.

CHAPTER III

THE IMPACT OF RECREATION ON FARMING

This chapter describes the cost imposed by public access upon farmers and attempts to assess them in financial terms. There is a short introduction on the types of farming and farmland affected by upland agreements. Then the various costs are described in general terms, and the impact of the agreements on these costs is assessed; finally, the cost of public access to farmers is estimated.

Types of Farming

Under the 1949 Act access agreements could only be made over land which, in terms of agricultural quality was rough grazing or Grade 5 land using the Ministry of Agriculture's classification¹. This was because the Act's definition of land over which agreements could not be made - "excepted land" - included "agricultural land, other than such land which is agricultural land by reason only that it affords grazing for livestock" (Section 60(5)(a)). Thus land used for cropping or pasture was excluded, and only the poorest quality agricultural land was directly affected. Of the 23 farmers interviewed, all except one used their access land for sheep grazing. The exception used his for cattle grazing, while four others also grazed cattle to a limited extent in addition to their sheep grazing. Some ponies were also grazed on the Dartmoor agreement.

Livestock rearing, with some fattening, was the main type of farming carried on by farmers who had land covered by access agreements. In a few cases there was also some milk production. Under the Ministry of Agriculture's farm classification scheme² most, if not all, would fall into the "Livestock Rearing and Fattening - mostly Sheep" category. Typically such farms would be large in area, though only a low proportion of the land (the inbye) would be enclosed and used for pasture or for hay cutting. The major proportion would be rough grazing, though on particular farms some of the rough grazing was outside the agreement. Thus, this chapter will concentrate on the effects of public access on the rough grazing part of the farm though mention will also be made of the effects on inbye.

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1. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (1966), *Agricultural Land Classification*, Agricultural Land Service, Technical Report No. 11
 2. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD *Farm Classification in England and Wales*, HMSO.

Types of Cost

seven farmers - all in the Peak District - said that they suffered from dog-worrying at present. A number of farmers mentioned that they would have come without their dogs if it was thought might have been affected by public access:

- (a) Damage to walls and fences
- (b) Worrying of livestock by dogs
- (c) Straying
- (d) Shepherding
- (e) Stocking rates
- (f) Inbye trespass
- (g) Farm management.

Damage to walls and fences was a problem reported by almost all the farmers. The main situation in which such damage occurred was when visitors were walking off an access area they often tended to take the most direct route back to the road or car, even if this meant climbing over walls, and they would not make the effort to make a detour to an official access point. There was also damage to internal walls. Prior to the agreement, a footpath would constrain the public and stiles would be provided for crossing internal walls. However, because an agreement allows unconstrained access, the public are likely to cross walls or fences at points where there was no stile. A third case in which damage to walls occurred, though of less importance, was one in which stones were deliberately taken off walls and rolled downhill, a problem mentioned by two of the farmers interviewed.

Prior to the agreement, over half the farmers said they had not suffered any damage to their walls and fences. Since the agreement two-thirds of the farmers reckoned that wall and fence damage had either started or increased, while the remainder thought there had been no change.

The costs resulting from such damage were two-fold. Firstly, there was the cost of repairing it, either by the farmer or an employee, or by a contractor. This could be very expensive if a contractor was employed, and most farmers undertook the work themselves. One estimated that 20 man-days a year were spent on repairing his walls while another spent only one day. Secondly, wall and fence damage could result in sheep straying which led to extra costs in sorting out animals at gathering times and the danger of injury or death to sheep on unknown ground.

The worrying of sheep by dogs is a great fear of the sheep farmer because of the extent of damage which can be done by dogs and the difficulty in preventing it. In the Peak District dogs were required to be on a lead, while for the Forest of Bowland and Yorkshire Dales agreements dogs were completely prohibited. Only

seven farmers - all in the Peak District - out of 19 reported that they suffered from dog-worrying at present, but the proportion of damage which could be attributable to dogs being exercised by recreationists was likely to be low. A number of farmers mentioned that stray dogs - those which had come without their owners - were often the major source of the trouble.

There appeared to be two reasons why the Forest of Bowland and Yorkshire Dales agreements did not have such damage. Firstly, these two areas are much further away, than the Peak District, from any large towns or conurbations, from where stray dogs are most likely to come. Secondly, the provisions have been less restrictive in the Peak District, and less generally obeyed, compared with the two other areas. In the Peak District all of the 15 respondents (including the grouse shooters), excepting two, reckoned that the provisions were not obeyed in general. In contrast, 11 respondents in the Forest of Bowland and the Yorkshire Dales agreements thought they were generally obeyed, while only five were of the opposite opinion.

Out of eight Peak District farmers replying to this question, five reckoned that dog-worrying had either increased or started since the agreements. In summary it appears that the worrying of sheep by dogs accompanying visitors to access areas only occurred for the Peak District agreements and even then it was not an important cost to the farmer.

Another problem faced by farmers through public access was that of straying which could be caused by dog-worrying, walls and fences being broken down or by gates being left open. The main cost imposed by this was sorting out stray sheep at gathering times, of which there were about six a year, and transporting them back to the owner's farm. For example, two farmers covered by the same agreement reported that at every gathering they each had to collect around 100 strays. Another cost was that, as many hill flocks were heafed or hefted, the risk of stray sheep falling into gullies and ravines on unfamiliar terrain would be increased¹.

Half of the farmers suffered from straying and just over half had reported an increase since the agreement. Prior to the agreement, only one-quarter had suffered from straying. It would appear from the comments farmers made that most of the straying was a consequence of public access rather than of other causes, and that the problem had increased since the agreements.

It was thought that because of the greater risk of disturbance to the sheep, farmers would have to spend more time on general shepherding duties. In fact, half of the farmers reported that they had to spend more time on shepherding, and under half thought they had had to increase this since the agreement. It appeared therefore that public access made farmers spend more time on shepherding, and a number had had to increase this since the agreement.

1. ROSSITER, J.P. (1972) *An Analytical Study of the Public Use of Private Land for Outdoor Recreation in England 1949-1968*. Unpublished Ph.D. Thesis, Department of Land Economy, University of Cambridge, p. 127.

Despite all these problems, and the number of visitors, only one farmer reckoned that his stocking rate had been affected. In this case the farm was situated in a particularly popular area. Other farmers made the comment that physical restrictions were the major determinant of the stocking rate, implying that the number of visitors had little influence on the stocking rate.

Cattle were grazed by only six farmers, and in only two cases did the farmers consider they had been detrimentally affected in that straying had increased and they needed more management. Cattle, however, are much less timid than sheep and thus less susceptible to disturbance. The farmers who were affected were again situated in an area which received a high number of visitors.

The second most prevalent problem faced by farmers was that of trespassing over inbye, even though it was excluded from access agreements, because it was regarded as "agricultural land". However, most of the farmers suffered from trespass over it by visitors walking onto or off the access area without using the official access footpaths. All the problems found on the access area could occur - such as straying, wall damage and stock-disturbance. Half of the farmers claimed they had this problem prior to the agreement, and three-quarters were of the opinion that it had increased after the agreement, the latter view being supported by Rossiter's findings¹.

Finally, only one farmer had claimed that public access on the access land had affected his farming methods: in this case there had been interference with stock breeding.

The data discussed so far on the costs to farmers is summarised in Table 6, where it can be seen that the incidence of damage - the number of farmers reporting an item of cost - was highest for walls and fences, and trespassing on inbye. The survey also showed that all the farmers, except one, reported a minimum of two cost items. Data on increases in cost items since the agreements is similarly summarised. Again inbye trespassing and wall and fence damage were the items which appear to have increased the most.

TABLE 6 - *Proportion of Sample Reporting Farming Cost Items by Type of Cost.*

	Proportion of Sample Reporting Cost Items (per cent)	Proportion of Sample Reporting Increase in Cost Items (per cent)
Wall/fence damage	86	65
Dog-worrying	37	26
Straying	50	38
Shepherding	50	42
Stocking rates	5	n.a.
Inbye trespass	87	75
Farm management	5	n.a.

n.a. = not asked

1. ROSSITER, J.P. op. cit., p. 111

Only a proportion of the increase can be attributable to the agreement for, as was argued earlier, it was likely that increases would have occurred without the agreement. However the data given by the farmers in replying to the questions did not give any indication as to what proportion of the increase was due to the agreement.

The data presented in Table 6 has also been analysed by the three main groups of agreements in Table 7. For each group, the number of cost items reported by all the farmers in that group were totalled and expressed as a proportion of the total potential number. It can be seen that there is a clear distinction between the Forest of Bowland and the two other areas; for the incidence of cost items this would reflect the fact that the actual extent of damage was substantially lower in the Forest of Bowland. For the increase in cost items the Forest of Bowland has an even lower figure, though this would probably be due to the fact that the agreements only recently became effective.

TABLE 7 - *Proportion of Sample Reporting Farming Cost Items by Local Authority Area.*

	Proportion of Sample Reporting Cost Items (per cent)	Proportion of Sample Reporting Increase in Cost Items (per cent)
Forest of Bowland	37	27
Yorkshire Dales	56	64
Peak District	64	65

It is interesting to compare these data for upland access agreements with those for an urban farming situation. In 1969-72 the Ministry of Agriculture carried out a survey of farming on part of the urban fringe of London, and this included data on the types of "trespass damage", which was defined as "damage arising from direct acts of interference with agricultural activities".¹ Damage to or theft of crops, and rubbish dumping were the most prevalent items being reported on 34 and 33 per cent of the holdings respectively, while damage to fencing and gates affected just under 30 per cent. The other two items of significance were damage to fixed equipment (17 per cent of holdings) and dog-worrying of livestock (12 per cent). In total 60 per cent of the farms in the sample had experienced trespass damage in the previous three years².

1. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (1973) *Agriculture in the Urban Fringe*, Agricultural Development and Advisory Service, p. 6.

2. Ibid, p.7, and p.24, Diagram 1.

Level of Cost

Very little quantitative information was obtained from the survey about the value of the costs to the farmers, but there are two other possible approaches to estimating the value. The first would be to consider the levels of compensation paid to the farmers by the local authority; the other would be to see whether the value of land - for rent or sale - had been affected by public access. More attention will be paid here to the former approach.

Under an access agreement the local authority may make payments to the farmers to compensate them fully for costs imposed upon them through allowing public access. Each payment is negotiated between the local authority and the farmer, though for central government grant aid, it must be approved by the Valuation Office to make sure that it is not in excess of that properly payable. If this system works efficiently then the levels of compensation should reflect the gross cost to the farmer of public access, assuming that no account is taken of the non-agreement cost.

It may be argued that the provision of the warden service should also be considered as part of the compensation received by the farming interest. This is because the wardens can be seen to a certain extent as being something positive that is received by those granting access. If this is so their part of the cost of the warden service should be added to the financial compensation. However, this has not been attempted because while the warden service is mainly preventative by enforcing the by-laws and checking damage, it does virtually nothing towards compensating the farmer for damage which has been done.

Various systems and methods of paying compensation have been used by the local authorities for upland agreements. Prior to the mid 1960's compensation was limited to a lump sum paid after five years on the basis of a claim put in by the farming interest. Of the 14 agreements (13 in the Peak District, one in the Yorkshire Dales) covered by these provisions, only one claim, for the Yorkshire Dales agreement, was ever put to the local authority. In this case the landowner claimed £2,492, but only received £490 from the local authority. This was equivalent to a payment of £0.09 per hectare per year, and it covered damage to the grouse shooting interest as well as to the farming interest¹. There was a general feeling that this low rate of claims was due to the unsatisfactory nature of the compensation provisions which made it hard for the farmers to establish a claim and which meant that farmers had to wait a substantial time before receiving payment². Another interpretation of the low rate of claims was that the costs to the farmers were small, and not worth claiming for.

1. ROSSITER, J.P. op. cit., p. 172.

2. COUNTRYSIDE COMMISSION (1970) *Access to Open Country : Model Clauses for an Access Agreement.*

Because of dissatisfaction with the retrospective compensation provisions, and the feeling that farmers were not being fully compensated, there was a movement towards making annual payments. The Peak Park Planning Board, in 1965, introduced annual flat-rate payments, based on the length of wall and number of ewes for new agreements, though farmers were not allowed to make any additional claims. These flat-rate payments have recently been increased, and it is interesting to note that they will be extended to those agreements which are at present covered by the lump sum provisions. An annual payment was also considered for the Yorkshire Dales agreement, when this was being re-negotiated after its termination in 1965¹, but for some reason the lump sum provisions were retained. In 1970 the Countryside Commission introduced the Model Clauses² which recommended all local authorities to make annual payments: so far the only upland agreements negotiated using the Model Clauses have been for the Forest of Bowland, though the Peak Park Planning Board have been using their own form of model agreement for some time.

In the four agreements (referred to as the "early" Lancashire agreements) made by Lancashire County Council in the mid 1950's with various water authorities there was no provision for compensation: this appeared to be because the land was primarily used for water-gathering, with sheep grazing and grouse shooting being of very limited value, and the number of people likely to use these areas were very few.

The payments made to farmers are set out in column 4 of Table 8. Within each local authority groups of agreements have been distinguished according to the provisions for compensation and the dates for which these provisions were effective (column 2). Columns 6 and 9 express the payments as a proportion of the returns from farming. Two measures for farming returns have been employed. The first is Net Farm Income which is the total gross output, adjusted for valuation changes, less the fixed and variable input, excluding the labour of the farmer and his wife: it represents the return to the farmer and his wife for their own manual labour and management, and the return on tenant's capital invested in the farm. The second is Net Product which is the gross output less purchased inputs, such as feeds, seeds, machinery and power (i.e. it includes net farm income plus hired labour and rent).

The type of farms from which the returns were derived are livestock rearing and fattening farms in Northern England, where sheep was the main enterprise. These have been described in more detail at the beginning of this chapter. Data was available on farm returns up to 1973/74, but thereafter estimates of future returns have had to be made. The returns have been expressed on the

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1. ROSSITER, J.P. op. cit., pp. 176-177.
 2. The Countryside Commission recommended local authorities to use the model clauses which the Commission had prepared as the basis for making agreements. The aim was to encourage more agreements to be made and local authorities were specifically encouraged to raise compensation payments and to pay them annually.

TABLE 8 - Payments to Farming Interests

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dates Effective	Number of Agreements	Annual Payment per Hectare	Annual Average Payment per Hectare	Annual Average Net Farm Income per Hectare of Rough Grazing	(5) as per cent of (6)	Annual Average Net Product per Hectare of Rough Grazing	(5) as per cent of (8)
			£ (current price)	£ (constant price) ⁵	£ (constant price) ⁵		£ (constant price) ⁵	
<u>Peak District</u>								
Early agreements	1953-	12	-	-	n.c.	-	n.c.	-
Later agreements (old rates)	1964-73	4 ²	0.09	0.13	6.47	2.0	9.66	1.4
Later agreements (new rates) ¹	1973-78	4 ²	0.17	0.14	8.72	1.6	11.07	1.3
<u>Yorkshire Dales</u>								
First agreement	1960-65	1	0.04 ³	0.02	3.73	2.1	4.15	1.9
Second agreement	1968-	1	-4	-	n.c.	-	n.c.	-
<u>Lancashire</u>								
Early agreements	1955-	4	-	-	n.c.	-	n.c.	-
Forest of Bowland	1972-77	3	0.86	0.69	8.72	7.9	11.07	6.2
<u>Dartmoor</u>	1964-	1	-	-	n.c.	-	n.c.	-

n.c. = not calculated as no annual payment made.

1. Excluding the "consideration" payment.
2. Excluding two agreements which only received one part (for walls) of the flat rate payment, and did not receive the other part (for sheep).
3. It was not possible to separate the payment for farming from that for grouse shooting: it is assumed that it would have been divided equally between the two, and the figure given here refers to that for farming.
4. No claim had been made by the landowner at the time of writing.
5. 1973/74 = 100

Source : Net Farm Income and Net Product derived from MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
Farm Incomes in England and Wales, H.M.S.O.

basis of the rough grazing area rather than the total area of the farm: this was because the effects of the agreements were limited largely to this part of the farm. To obtain the farm returns derived from the rough grazing part of the farm, the proportion of the adjusted, as opposed to the actual, farm area in rough grazing was calculated. This proportion was then applied to total farm returns, and the resultant sum expressed in terms of the actual area of rough grazing.

The data were expressed in constant prices using the retail price index as the deflator because the results from using current, as opposed to constant price, data will underestimate the real proportion of payments to returns, when the index is rising, as it has done throughout the period particularly in more recent years. Again assumptions had to be made concerning the future retail price index for the years after 1974/75. Because the agreements lasted more than one year (column 2) all the constant data have been averaged, though the payments data in column 4 are fixed annual sums.

As can be seen in the four groups of agreements where payments have been made they were only a small proportion of the returns from the rough grazing part of the farm. The proportion was largest for the Forest of Bowland agreements though the survey indicated that the amount of damage was lower than for the Yorkshire Dales and the Peak District agreements. One of the reasons for this discrepancy was probably because the Forest of Bowland agreements were negotiated using the Model Clauses which encouraged local authorities to make higher payments.

It is also interesting to note that in the Peak District the proportions of compensation to farming returns have gone down in the second period under review, despite the fact that the flat rates of compensation were increased to take inflation into account. However, this conclusion depends to a certain extent on the accuracy of the future estimates of farm returns and the retail price index.

Throughout the period under review the rough grazing part of the farm contributed on average almost 60 per cent of total farm returns, and thus it appeared that payments would only be a very small proportion of total farm returns.

It is also worth considering the farmers' attitudes towards the adequacy of the compensation provisions. It can be seen from Table 9 that almost three fifths of the farmers interviewed regarded the compensation provisions as adequate. Indeed, even where the farmers received no compensation the majority still regarded this situation as adequate.

TABLE 9 - Adequacy of Compensation Provisions

	Compensation Paid	No Compen- sation Paid	Total
Adequate	7	5	12
Not Adequate	6	3	9
Total	13	8	21

Thus the evidence from the compensation payments to the farmers indicates that although a number of farmers (40 per cent of the sample) felt the compensation was inadequate nevertheless the amounts paid out represent only a small fraction of the total returns from farming. It seems unlikely that fully acceptable compensation would amount to much more.

The other possible approach in trying to estimate the value to farmers of the cost of public access is to consider changes in sale and rental values. For agreements where no compensation payment was made one would expect sale and rental values to be reduced if public access was creating a cost. No attempt was made to analyse sale values, partly because there have only been a very few sales of farms with access agreements. With regard to rental values there were nine tenant farmers in the survey who did not receive any compensation payment from the local authority. None of these believed they had had their rent reduced when the agreement was made, nor did they reckon that their rent had been reduced or any increases abated because of public access. However, eight of these tenants rented their farms from two landowners who both stated that the rents did in fact take into account the effects of public access: one of them estimated that the rent was between 5 and 10 per cent lower than it would have been without public access. The evidence from rental values appears to be somewhat inconclusive, though it would suggest that the effects of access are not large.

Gross Cost

In assessing the gross cost to the farming community a minimum can be established by using the compensation payments actually made to the farming interests on upland agreements - in 1973/74 these amounted to £1,522. However, this should be considered a lower limit because on a number of agreements it appears that compensation payments will be made in the future and backdated to 1973/74 to cover agreements for which no payment was made in that year. Also on the six "later" agreements in the Peak District for which flat-rate payments were made in 1973/74 the increased rates which apply to them were not paid in that year and will also be backdated to cover 1973/74. For these reasons the actual payments are likely to be an underestimate.

To arrive at the medium estimate, the total area of the Peak District, Yorkshire Dales and Dartmoor agreements (24,696.2 hectares) has been multiplied by the payment per hectare for the Peak District "later" agreements at the new rate (£0.17 per hectare). This is added to the payment for the Forest of Bowland to arrive at a gross cost of £5,142. It is assumed that there was a zero cost for the "early" Lancashire agreements as it appeared that few people actually used these access areas. This estimate of gross cost compares closely with what would have been the cost to landowners if all the upland access land had been rented and all landowners had had their rent reduced by five per cent. The total rental value

without public access, at £3.17 per hectare¹, would have been £92,638, and a five per cent reduction would amount to £4,632.

An upper limit has been estimated by multiplying the total area of upland agreements by the highest payment per hectare in 1973/74 - £0.86 for the Forest of Bowland agreements.

These estimates of gross cost are summarised in Table 10. As can be seen the range between the upper and lower limits is wide, though it seems likely that the actual gross cost would be closer to the lower rather than the upper limit.

TABLE 10 - *Gross Cost to Farming Interests : 1973/74*

Estimates	Total	Total per hectare
Lower	1,523	0.05
Medium	5,142	0.18
Upper	25,015	0.86

The estimates of gross cost can be compared with those for an urban farming situation, where a survey carried out by the Ministry of Agriculture included data on the financial cost of trespass damage. From these data an estimate of the annual cost of such damage, in 1973/74 prices, was derived, and this amounted to £0.70 per hectare for all the farmers in the survey area². While the figure might not be completely accurate, it is a reliable indicator of the extent of the financial cost to an urban farmer of the cost of public access.

Conclusion

This chapter has examined the impact on farming of public access on upland access agreements. The farmers who were interviewed reported that the two main items of cost were that of damage to walls and fences and trespassing on inbye land, while extra shepherding and an increase in sheep straying were two other significant items. The compensation payments by local authorities to the farming interests were considered in order to obtain some idea of the financial cost to the farming interests. It was shown in all cases that the payments as a proportion of the returns to farming were small, but it seemed that the payments made by local authorities in 1973/74 were unlikely to reflect the full cost to the farming interests. For this reason estimates were made of the limits of the gross cost, and these ranged from £0.05 per hectare to £0.86 with the actual cost likely to be closer to the lower rather than the upper limit.

1. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (1974) *Farm Rents* Agricultural Development and Advisory Service, Technical Report 19/5. The figure is the weighted average rent of "upland" for six counties in northern England.
2. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (1973) op. cit., estimate derived from p.24, Diagram 2 and inflated to 1973/74 prices by the retail price index.

CHAPTER IV

THE IMPACT OF RECREATION ON GROUSE SHOOTING

Grouse shooting took place on all upland agreements, except for Dartmoor, though the quality of shooting varied from one area to another. In recent years the rental and sale values of shooting have risen rapidly, and in financial terms the returns from shooting are generally higher than those from farming on upland access land. The first part of this chapter analyses data from the survey and from other reports on the effects of public access, while the second part considers compensation paid to the grouse shooting interests.

Types of Cost

It has been argued that public access, including dogs, would disturb and destroy grouse particularly during the breeding season when the birds would be most sensitive to such damage. The effects of this would be seen in declining shooting bags and poorer breeding performance. However, there were a number of factors which suggested that little disturbance is caused to grouse populations by public access.

In the first place, research on an intensively visited area in Scotland has shown that grouse have become accustomed to, and are to a large extent undisturbed, by large numbers of people¹. Secondly, only a small proportion of the visitors actually bothered to walk away from the footpaths, because of the difficulty of walking through the heather. In fact, on one moor the heather beside the footpaths was deliberately left unburnt so that it became long and straggly, and difficult to walk through. In the survey almost three-quarters of all respondents reckoned that a "high" (70 to 80 per cent) proportion of visitors kept to the paths and tracks. These results were similar to those of Picozzi who estimated that only five per cent of visitors left the path on grouse moors in the Peak District, while in the Cairngorms another survey showed that the proportion was 15 per cent, despite easy walking conditions². It is clear therefore that most visitors kept to the paths and tracks, thus ensuring that much of the access area would be undisturbed.

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1. WATSON, A., BAYFIELD, N. and MOYES, S.M. (1970), Research on human pressures on Scottish mountain tundra, soils and animals. *Proceedings of the Conference on Productivity and Conservation in Northern Circumpolar Lands*, Edmonton, Alberta, October 1969, IUCN Publications, New Series 16, Morges, Switzerland, pp. 259-260; this is quoted in NETHERSOLE-THOMSON, D. and WATSON, A. (1974). *The Cairngorms: Their Natural History and Scenery*, Collins pp. 114-115.
 2. PICOZZI, N. (1971) Breeding Performance and Shooting Bags of Red Grouse in Relation to Public Access in the Peak District National Park, England. *Biological Conservation*, Vol. 3 No. 3 p. 214.

Thirdly, it could be argued that public access, notably during the nesting season, could be beneficial in that winged predators, particularly crows would be scared off by visitors. However, it was mentioned in the course of the survey that gamekeepers found it more difficult to control vermin because of public access as they had to take greater precautions when shooting and catching vermin.

The provisions with regard to dogs and their effectiveness has been discussed previously on pages 13 and 14. Only two out of nine shooters reported grouse damage by dogs prior to the agreement. Since the agreement only one shooter, not one of the original two, reported any increase in such damage. It appeared that dogs did not cause any extensive damage, which is further supported by Picozzi's observation that very few dogs ran far onto the moors away from the paths¹.

Three other factors suggest that the impact of public access will be small. Firstly, out of the twelve grouse shooters surveyed, only one considered that his grouse bags had been detrimentally affected by public access. Secondly, Picozzi showed that in the Peak District there was no real difference between breeding performance on agreement and non-agreement moors, and he also concluded that "there was no evidence that increased public access had led to a new sustained decrease in grouse bags"². Finally it should also be noted that there are other factors - the standard of moor management, the 12-year population cycle, and the effect of weather - which must be taken into account when considering population changes³. For example, Picozzi reckoned that the decrease in grouse bags over the last 30 to 35 years was partly due to poor heather management⁴. Thus, the overall conclusion is that public access in general has not led to a decline in breeding performance and grouse populations.

However, it does appear that other costs have been imposed upon the grouse shooters. Wanton damage to shooting cabins and butts, and poaching, were problems with which the majority of

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1. PICOZZI, N. op. cit. p. 214.
 2. Ibid, p. 213.
 3. For further information, see PHILIPS, J. (1974), *The Management and Economics of Grouse Species in Relation to Complementary and Competing Land Uses*, British Association for the Advancement of Science Meeting, Stirling; WATSON, A. (1974) *Population Control by Social Behaviour in Scottish Red Grouse*. British Association for the Advancement of Science Meeting Stirling; PICOZZI, N. op. cit. p. 214.
 4. PICOZZI, N., op. cit., p. 214.

grouse shooters had to contend prior to an agreement as Table 11 shows. It could be argued that agreements would contribute to an increase in poaching and damage, as gamekeepers can no longer automatically eject potential vandals or poachers as they now had a legal right to be on the land. Table 11 also shows that there was some increase in wanton damage, though on the other hand two shooters experienced a decrease. With regard to poaching the amount has remained very much the same. Thus it seems that damage to property and poaching have been caused by public access, but that these have hardly increased since the agreements.

TABLE 11 - *Wanton Damage and Poaching*

Number of Grouse Shooters with Problem	Wanton Damage	Poaching
<u>Prior to Agreement</u>		
Yes	6	8
No	3	3
<u>Since Agreement</u>		
Increase	4	2
Same	3	8
Decrease	2	1

Fires can be a serious problem on moorland as it is relatively easy for the roots of the heather to be burnt, and it takes a long time for the heather to be re-established. At times of high fire risk grouse shooters would get keepers to undertake extra patrols, and on one moor an extra person was employed to watch out for fires. They are also difficult to extinguish because large numbers of people are needed and because of the problems of getting water to remote areas of moorland. On the one hand, it is argued that most fires are caused by a human agency and that public access would necessarily increase the probability of a fire being started, though under the byelaws for an access agreement the public are not allowed to light any fires on access areas. On the other hand, supporters of public access have argued that the risk of a fire spreading would be reduced by the alarm being raised earlier than it would otherwise be, and that the public and wardens would help in fighting small fires¹.

Two-thirds of the shooters had experienced fires prior to an agreement, but there was little evidence that the number of fires had increased. Of twelve shooters surveyed, only two reported that there had been an increase. When fires did occur assistance was provided by the warden service not only by raising the alarm quickly

1. ROSSITER, J.P. op. cit., pp. 125-126.

through the use of their personal radios, but also in fighting the fire. Two shooters also mentioned that they had received assistance from the warden service in fighting fires on non-agreement moors.

In times of high fire risk, the local authority was allowed to close the access areas under Section 69 of the 1949 Act. It appeared that this power had not been used in the Peak District. However, this had been done a number of times for the Yorkshire Dales agreement, and once (in 1974) for the Forest of Bowland agreement, and the shooters reported that closure had worked satisfactorily.

Closure for public access was also allowed under the agreement for a maximum number of days each year for shooting to take place. The advantage of this to the shooters was that on these days the boundaries of the moor were patrolled by wardens so that it should have been difficult for anyone to disrupt the shoot. The warden service might also be more successful than a gamekeeper or a shooter in dissuading visitors from using a public right-of-way which, although in the shooting area, would in no way be affected by the closure of the access area. Prior to the agreements, just under half of the shooters reported that shoots were disrupted, and since the agreements the proportion had not changed significantly. The majority of those mentioning this problem regarded it as only of minor importance.

It appeared, however, that the shooters could suffer from the restrictions placed on shooting. They were not allowed to shoot on certain days which might have been more popular from a shooting viewpoint¹; they had to fix the shooting days in advance and were unable to change them suddenly; and there was the possibility that the number of days per year for shooting, allowed under the agreement, might have been less than the maximum possible for the moor.

The survey showed that half of the shooters closed their moors for the maximum number of days, which was 30 for the Forest of Bowland and Yorkshire Dales agreements, and varied between 10 and 12 for the Peak District. Even for the "30-day" agreements, the proportion of days on which the moor was closed was still half. For the six which used their allowance to the full, four stated that they would have liked to shoot more days, though two of them added that this would only have been the case in a good season. In fact, a few did shoot on extra days though in these cases the moor was not officially closed. The inability to arrange shoots freely and the restriction on certain days was regarded as a disadvantage by five out of the nine shooters. Thus the agreements seem to have imposed some restrictions on the shooters.

The final cost imposed upon the shooters by visitors was that of the time spent by gamekeepers dealing with public access.

1. For example, for two of the Forest of Bowland agreements not more than four of the shooting days may be a Saturday or Bank Holiday.

The survey found that all the keepers prior to the agreement had to spend some of their time in the general management of public access, and that all of them still had to do this even after the agreement. It was expected that legalising public access and introducing a warden service would have led to a decline in this proportion of the keepers' work, but overall there was no change reported. Half of the shooters stated that the amount was the same, while one-quarter thought that there had been an increase and the other quarter stated there had been a decrease.

In concluding this general discussion on the effects of public access on grouse shooting, it has been argued that grouse populations and grouse bags have been, if at all, only minimally affected, though extra costs have been imposed in terms of wanton damage, poaching, fires and the work of the gamekeepers. It appears that these costs were apparent prior to the agreements, and the effects of the agreements on these has been very small.

A comparison of these cost items by local authority area indicates that the incidence and increase in incidence was substantially greater in the Peak District than for the Forest of Bowland and Yorkshire Dales agreements (Table 12). The major reason for this would appear to be the much higher numbers of visitors to access land in the Peak District.

TABLE 12 - *Proportion of Sample Reporting Grouse Shooting Cost Items by Local Authority Area.*

	Proportion of Sample Reporting Cost Items (per cent)	Proportion of Sample Reporting Increase in Cost Items (per cent)
Forest of Bowland and Yorkshire Dales	56	-
Peak District	81	19

Level of Cost

As with the effect of access on farming, financial payments by the local authority to the grouse shooters, and changes in sale value, rents and rates will now be considered to see whether these can give a more precise quantitative estimate of the amount of damage.

The shooting quality of the four "early" Lancashire agreements was very low as water-gathering was the primary use, and the land was not managed at all for shooting. No compensation was paid here. The shooting quality of the moors in the Forest of Bowland

in general was of high quality and included the Abbeystead Estate, which is considered to be one of the finest grouse moors in England. Yet the survey found that the agreements did not cover the best quality moors, and in fact they only covered the fringes of the main shooting areas. Compensation was paid for these agreements using the basis set out under the Model Clauses and the amount attributable to the shooting interests totalled £1.19 per hectare.

The Peak District has been regarded as an area of only moderate quality for shooting, and no financial payment has ever been made under an access agreement for damage to the shooting interest. When the District Valuer approved the flat-rate payments for sheep and walls he was also of the opinion that the value of the shooting would not be depreciated¹. However, the recently introduced consideration payment of £0.10 per hectare, paid under the new rates of payment to the landowners only, has been regarded by some owners as compensation for shooting damage, though officially it is to cover all other claims for damage (excluding sheep and walls) and to act as an incentive payment.

The shooting on the Yorkshire Dales agreement was of high quality. At the time of writing, no compensation for shooting had been claimed under the terms of the present agreement. Compensation had been paid at the end of the first agreement which terminated in 1965, though it covered a much smaller area than the present agreement. The compensation payment amounted to £0.09 per hectare per annum but it was not possible to say what amount was attributable to damage to the grouse shooting interest.

In Table 13 is presented the data on the compensation paid to shooting interests and on the rents which tenants in these areas might pay if the shooting rights were let. Data on rental values for grouse shooting is not collected systematically and thus should be treated with caution. The dates given after them refer to the years for which they are valid, and the different rents for 1974 reflect the different qualities of the moors - the Peak District and the early Lancashire agreements being assumed to be of low quality, while the Yorkshire Dales and the Forest of Bowland agreements of high quality. As can be seen the payments were only a very small proportion of the annual rent for the Yorkshire Dales agreement, but formed a significant sum in the case of the Forest of Bowland agreements.

Thus, the payments as a proportion of the annual rental values indicated that in all areas, except the Forest of Bowland, public access has had little effect on shooting. One of the reasons for the high proportion in the Forest of Bowland was that the agreements were negotiated using the Model Clauses, which encouraged higher levels of payments, while the Model Clauses were not used for any of the other agreements.

1. ROSSITER, J.P. *op. cit.* pp. 103-106.

TABLE 13 - Payments to Grouse Shooting Interests

	Dates Effective	Annual Payment per Hectare £	Annual Rent ³ per Hectare £	Payment as per cent of Annual Rent
<u>Peak District</u>	1953	-	1.25 (1974)	-
<u>Yorkshire Dales</u>				
First agreement	1960-65	0.04 ¹	3.00 (1960-1964)	1.3
Second Agreement	1968-	- ²	7.00 (1974)	-
<u>Lancashire</u>				
Early agreements	1955-	-	1.25 (1974)	-
Forest of Bowland	1972-77	1.19	7.00 (1974)	17.0

1. It was not possible to separate the payment for farming from that for grouse shooting: it is assumed that it would have been divided equally between the two, and the data given here refers to that for grouse shooting.
2. No claim had been made by the landowner at the time of writing.
3. Derived from JACKSON, J.D. (1974) *Grouse and Forestry*, paper to Forestry and Grouse Symposium, Hampshire.

All the six owners of shooting rights interviewed, excepting one who did not know, reckoned that the sale value of the shooting interest had been detrimentally affected by the access agreement. One of them thought it was of the order of 10 per cent, while at the end of the first Yorkshire Dales agreement the Agent considered the shooting sale value had been reduced by some 25 to 30 per cent¹. It appeared from the interviews that prospective purchasers might make much of the fact that an estate had an access agreement over it, and that the public had a legal right of access, even though the actual effect of the agreement might be minimal. However, as with farm sale values no attempt was made to analyse shooting sale values as there were no data available. It also appeared that rents to shooting tenants had not been reduced when the agreements had been made. Similarly none of the shooters seemed to have had a rate rebate,² although one was in the process of applying for a rebate when interviewed. These data on changes in shooting values seem to imply that the agreements have had little effect.

Gross Cost

In calculating the gross cost to the grouse shooting interests, three bases have been used to provide a range of costs. A lower estimate was established by using the actual payments made to the grouse shooting interests - in 1973/74 this amounted to £1,316. However, the survey showed that there were costs to grouse shooters in the Peak District and Yorkshire Dales, but no payment was made to them in 1973/74. Thus the second method (the medium estimate) was to inflate, using the retail price index, the Yorkshire Dales payment for 1960-65 (£0.04 per hectare) to 1973/74 values (£0.08) and multiply this by the area of the Yorkshire Dales and Peak District agreements. To this is added the payment for the Forest of Bowland agreements, to arrive at a gross cost of £3,235. For this estimate it was assumed there was no cost for the early Lancashire agreements.

The third method, to achieve an upper limit, was to multiply the highest rate of payment - in this case £1.19 per hectare for the Forest of Bowland agreements - by the grouse shooting area: the gross cost on this basis totals £33,942.

These calculations are summarised in Table 14. As with the gross cost to the farming interests, there is a wide range between the upper and lower limits, and also the medium estimate tends more towards the lower estimate.

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1. ROSSITER, J.P. op. cit., p. 99.
 2. Shooting is only rated when it is the primary use or the shooting rights are separated from the agricultural rights.

TABLE 14 - *Gross Costs to Grouse Shooting Interests : 1973/74*

Estimates	Total	Total per hectare
Lower	1,316	0.05
Medium	3,235	0.11
Upper	33,942	1.19

Conclusion

In summary it seems that public access has had virtually no effect on grouse populations, and consequently on grouse bags. However, it does appear that costs of managing grouse moors are higher because of public access. The keepers have to spend some of their time dealing with the public, while wanton damage to shooting cabins and butts, and fires are all due to public access. These costs were apparent prior to the agreements and in general it seems that the agreements have had virtually no effect on these costs. This evidence is supported by data on the value of shooting and compensation paid under the agreements, which suggested that generally the value of shooting had not been depreciated by public access.

CHAPTER V

THE IMPACT OF RECREATION ON WATER GATHERING

In the inter-war period the water authorities were one of the main opponents of public access to water-gathering grounds on moorland in northern England¹. This was because much of the water was surface-gathered and relatively untreated before entering mains supply, and it was thought that public access would lead to contamination of the water, the greatest risk being that of typhoid. However, the attitude of the water authorities to public access had changed as new filtration plants have been installed, and access agreements covered almost 10,000 hectares of water-gathering grounds.

Two water authority officials interviewed stated that there had been no decrease in water quality. This was not surprising as there are a large number of factors, apart from access, which affect quality². However, two access orders made by Lancashire County Council in the mid 1950's were rejected, after a public inquiry, by the Minister of Housing and Local Government mainly on the grounds of danger to water supplies, though a footpath across the proposed access area was eventually created³.

For one group of agreements (covering Longdendale in the Peak District) negotiations for an agreement were held up until a new treatment plant was installed. This plant, however, would have been installed even if there had been no demand for access, due to the raising of water quality standards.

The water authorities appeared to suffer problems of vandalism, but these were not a significant problem and they had been apparent prior to the agreements. One authority did employ a person who spent half of his time wardening the area on behalf of the water authority to prevent damage and interference to installations. This job had been going on prior to the agreements and had been little affected by the agreements. Another cost to the water authority was the administrative burden of managing these agreements which the authorities considered to have involved a quite substantial amount of staff time. However, it could be argued that without an agreement the authorities would still have had to manage public access.

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1. ROSSITER, J.P. op. cit., documents the attitudes of the water authorities, pp. 22-27, 48-50.
 2. COUNCIL OF THE INSTITUTION OF WATER ENGINEERS (1963) "Draft Report of the Council on the Recreational Use of Waterworks" *Journal of the Institution of Water Engineers*, Vol. 17, No.2 March, p.77.
 3. ROSSITER, J.P. op. cit., pp. 136-148.

Only for one agreement did a local authority make an annual payment to a water authority. This amounted to £0.10 per hectare, and applied to one of the Forest of Bowland agreements, which were negotiated using the Model Clauses. In the Peak District, the District Valuer stated that there had been no depreciation in the value of the land for water-gathering¹. The Peak Park Planning Board did, however, contribute to the cost of providing domestic filters and fencing which became necessary when the Longdendale agreements were undertaken, but has so far made no annual payment. However, it seems probable that the water authorities will receive the consideration payment of £0.10 per hectare, which is to be made to landowners under the new rates of compensation, which have been settled for agreements in the process of re-negotiation.

In summary it has been argued that public access has caused some increase in costs to the water authorities, but these have only been on a limited scale, and the impact of the agreements has been minimal.

In estimating gross costs, the payments made by local authorities to water authorities have again been used in the lower limit. In 1973/74 this amounted to £15.00. For the medium estimate, it was assumed that the water authorities in the Peak District would receive the consideration payment of £0.10 per hectare, and to this is added the payment to the water authority for the Forest of Bowland agreements.

The upper limit was then calculated on the basis of the salary cost of the water authority's warden (£1,000 for $\frac{1}{2}$ man-year) for the Peak District. To this is added the payment for the Forest of Bowland agreements, plus a payment at the same rate (£0.10 per hectare) for the early Lancashire agreements. This sums to a gross cost of £1,357. These estimates are set out in Table 15.

TABLE 15 - Gross Cost to Water Gathering Interests : 1973/74

Estimates	Total	£
		Total per hectare
Lower	15	0.002
Medium	649	0.066
Upper	1,357	0.137

In conclusion, the survey has indicated that the aggregate cost to the water authorities of public access is little, and that the incremental cost was negligible.

ROSSITER, J.P. op. cit., p.106.

CHAPTER VI

CONCLUSION

This report has been concerned with the measurement of the cost of public access to three groups of interests - farmers, grouse shooting and water authorities. Because there was some public access to all the access area prior to the agreements coming into operation, two types of cost were identified. Most attention in the report has been given to the gross cost which is the costs due to all types of public access. The other cost was the incremental cost which was those costs which have been incurred because of the access agreements, but because of the lack of data it was not possible to measure these. The costs measured excluded non-tangible items such as the loss of privacy and the loss of property rights. The costs were measured in financial terms, and not in terms of the cost to the community (the social costs).

The survey was carried out by personal interview with 35 persons, or their representatives, who had interests in the agreements. The farmers reported that their main cost items were damage to walls and fences and trespass on their inbye land. To the grouse shooters it seemed that the need for gamekeepers to spend some of their time dealing with the public, wanton damage to shooting cabins and butts, and fires were the main items. It should be noted that the incremental cost appeared to be higher for the farmers than for the grouse shooters. The main costs to the water authorities were those of wardening and administration, and it seemed that their incremental cost was negligible. Finally, the proportion of the sample reporting cost items was higher for the Peak District agreements than for the Forest of Bowland, while the proportion for the Yorkshire Dales agreement was between these two other groups.

Because the respondents had little information on the financial costs to them of public access, estimates were obtained from financial compensation paid to them by the local authorities. This rested on the argument that compensation paid provides a lower limit to the amount of damage sustained. Data on these payments were available for 1973/74, and totalled £2,853. However, this was regarded as an underestimate because some payments were being raised retrospectively. Taking these factors into account, a medium estimate was made, using more appropriate rates of compensation. This amounted to £9,026, some three times greater than the actual payments.

Finally, an upper limit to the estimates was calculated by multiplying the highest rate of payment to the farming and grouse shooting interests by the total area covered by those land uses. A somewhat different approach was used for the water authorities. The total gross cost for this upper limit was £60,314.

TABLE 16 - Gross Cost to All Interests : 1973/74

Estimates	Farming	Grouse Shooting	Water Authorities	Total	Total per hectare
Lower	1,523	1,316	15	2,854	0.10
Medium	5,142	3,235	649	9,026	0.31
Upper	25,015	33,942	1,357	60,314	2.06
Area (hectares)	29,223.2	28,519.0	9,906.8	29,223.2 ¹	

1. Because of overlap between land uses the areas of each land use do not sum to the total.

The total gross cost to all interests in 1973/74 was £29,223.2 per hectare. This is a very high figure compared with the gross cost to all interests in 1968/69 which was £1.10 per hectare. The increase in the gross cost to all interests is due to the increase in the gross cost to farming and grouse shooting. The gross cost to water authorities has remained relatively constant. The gross cost to all interests in 1973/74 was £29,223.2 per hectare. This is a very high figure compared with the gross cost to all interests in 1968/69 which was £1.10 per hectare. The increase in the gross cost to all interests is due to the increase in the gross cost to farming and grouse shooting. The gross cost to water authorities has remained relatively constant.

Table 16 shows the ranges of the estimates for the gross cost broken down by the land use of the interests. There is a very wide range between the upper and lower limits, though the medium estimate seemed most realistic because of the assumptions used in calculating them.

The table also gives an indication of how the costs were apportioned amongst the interests. It can be seen that the cost to the water authorities was only a very small proportion of the total, while the costs to farming and grouse shooting were of similar magnitude.

In overall terms the medium and lower estimates, when compared with the returns from farming and grouse shooting, imply that the impact of public access is very small. The survey indicated that the incremental cost varied from one group of agreements to another, and also varied between land uses, but overall it was not likely to be substantial.

Land Use	Lower Estimate	Medium Estimate	Upper Estimate
Farming	£1,000	£1,500	£2,000
Grouse Shooting	£1,000	£1,500	£2,000
Water Authorities	£100	£100	£100
Other	£100	£100	£100
Total	£2,100	£3,100	£4,100

This report has reviewed in financial terms what has been the cost to other land users of allowing public access for recreation to take place on their land. It has not presented precise estimates of the costs because of the difficulty of measuring them. It has, however, indicated that they were likely to be small for upland access agreements in general, though there was variation within each area, and from one area to another. The magnitude of such costs is important in setting levels of compensation to land users and assessing the social costs of recreational policies. It is also hoped that the report will influence those collecting data on the impact of recreation on a local basis.

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