

Do walkers stay on footpaths? An observational study of Cwm Idwal in the Snowdonia National Park

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Abstract: Access to the countryside of England and Wales is at present being extended through new powers created by the Countryside and Rights of Way Act (2000). This has for the first time introduced a statutory right of open access to areas designated on maps as mountain (land situated above 600m), moor, heath, down or registered common land. This paper considers the behaviour of visitors in relation to whether they choose to exert their 'right to roam' at Cwm Idwal, a popular mountain area located within the Snowdonia National Park in north Wales where access to open countryside is *de facto* (through custom). The study used an observational technique to establish the distribution and group size of visitors over a pre-defined observation area. The results showed that visitors predominantly stayed on paths with only 9.5% of groups of size twelve deviating from linear access routes.

Introduction

This paper is concerned with visitor behaviour in relation to access to the countryside. Access is a very broad term and its meaning varies depending on the context in which it is used. However it can broadly be considered as a 'right to enter'. For countryside recreation this can be considered a 'right to enter the countryside'. In England and Wales the public have access to the countryside through a number of mechanisms:

- **rights of way** (PROW) comprising of a legally defined network of footpaths, bridleways, restricted byways and byways open to all traffic. PROW are by their nature linear access.
- **de jure** (in law) access such as areas defined as common lands or areas with a management agreement that specifies a right of access. This is a form of area access.
- **voluntary access** whereby landowners allow free access to their land. This can be as part of an agri-environment agreement such as Countryside Stewardship or land owned by organisations such as the National Trust or the Forestry Commission. Voluntary access can be linear (permissive paths) or area.
- **de facto** (through custom) access where access is tolerated by a landowner but where walkers often assume they have a right of access. Such access is normally based upon traditions and has no legal protection and can be terminated at any time. It can be linear or area access.

As such access into the countryside can be considered to be linear (along predefined routes on the ground) or non linear (where the visitor has the 'freedom to roam' off of linear access routes without fear of committing a trespass).

After years of campaigning by pressure groups (Curry 1994, Keirle 2002, Shoad 1997, 1999) new rights of access for England and Wales are being introduced through the Countryside and Rights of Way Act (2000). Once implemented this Act of Parliament will create *de jure* access to 'open countryside', considered within the Act to be land that consists wholly or predominantly of:

- mountain (land situated above 600m)
- moor
- heath
- down
- registered common land

The Countryside Agency and the Countryside Council for Wales are required by the Act to prepare draft maps of such areas, to consult with the public and, following consideration of objections, publish a definitive map of open access land for given areas. The process of drafting maps and consulting is now ongoing and it is hoped that open access can be granted to areas defined by the Act by 2005 (Countryside Council for Wales 2002). Such access is for the purposes of open air recreation on foot and excludes many activities such as cycling, horse riding, camping, paragliding and vehicular access.

Once areas are designated under the Act as access areas the visiting public will have the freedom to stray off of defined linear access routes and roam at will across open countryside.

Issues associated with open access

During the long history of debate about the rights and wrongs of creating a legal 'right to roam' over certain types of countryside, much concern has been raised as to the potential impacts that such a right would have. In particular landowners, often represented by bodies such as the Moorland Association, the National Farmers Union and the Country Landowners Association, have raised concerns about the impacts of access on land management and on the conservation value of land. These concerns include:

- the impact of dogs on livestock
- the ability of landowners to run shoots across their land
- the issue of liability associated with access
- the potential increase in crime
- the impact of access on conservation, in particular on ground-nesting birds (Country Landowners Association 1996).

The Act attempts to alleviate these concerns with specific provisions being made to address them. For example, the issue of dogs worrying lambs has been addressed by a requirement for dogs to be on a lead of fixed length between the period beginning 1st March and ending 31st July. The conservation issue has been addressed within the legislation by giving the relevant authority the power to exclude or restrict access during any period if it is satisfied that the exclusion or restriction is for the purpose of conserving flora, fauna or geological or physiographical features. However there is still some remaining concern about the impact that access will have on conservation, in particular ground nesting birds. Such notions are based upon the assumption that walker numbers will increase once designation of access areas has occurred and that walkers will exert their 'right to roam' and wander at will across areas designated for open access. To date however, there is little research concerned with visitor behaviour in open access areas and in particular as to whether walkers will stay on linear access routes such as footpaths and bridleways when they have the option to exert their 'right to roam'. This paper uses an observational methodology to study this aspect of visitor behaviour in Cwm Idwal in the Snowdonia National Park, a popular mountain area with traditional de facto rights of access.

Description of the study site

The Cwm Idwal valley is a popular walking site located within the Snowdonia National Park in North Wales. It is managed as a National Nature Reserve

(NNR) by the Countryside Council for Wales for its botanical, geological and geomorphological interest. It is an open mountain environment with an altitudinal range from 300 to 700 metres. The site was until recently grazed by sheep such that it is largely free from scrub and heather making walking off of paths reasonably easy. The site is popular with walkers, climbers and educational groups and is served by a car park located at Ogwen Cottage and by lay-bys on the A5 road. Access onto the site is via a network of well-established paths which run from the car park and the road upwards into the mountains. The principle paths have been treated for erosion by surfacing them with pitched stone. The site has no formal access agreements but access off linear routes is a traditional and accepted practice. Figures obtained from stile counters indicate that 77,190 visitors used the site between January and October 2002. A study of the use of the NNR by education groups (Wilkinson 2001) found that 634 education groups visited the site between 25th July and 31st October 2001, and that the average group size was fifteen. The site was chosen for the study because of its high visitor numbers, its tradition of open access and because the topography allowed for a high observation station to be established allowing observation of a wide area.

Methodology

An observation point located at the base of the cliffs of Clogwyn y Tarw (SH 6495 5960) was chosen as it afforded a good view of a large area of the bottom of the Cwm, including the main metalled path from Ogwen Cottage to Llyn Idwal. The range of vision was established by placing a red flag at the observation point and walking around the area to establish the zone in which the red flag could be seen. Boundaries of this zone once established were fixed using GPS. Co-ordinates of the boundary could then be plotted on a 1:25,000 base map. Figure 1 shows the survey site, observation point and linear access routes. A pilot study indicated that the majority of users passed through the survey area within fifteen minutes, and accordingly observations were taken at fifteen minute intervals.

Observations were recorded on a 1:25,000 scale base map that had the observation zone and linear access routes marked onto it. At fifteen minute intervals each individual observed was marked onto the base map as precisely as possible, with a code alongside to indicate the size of the group. Due to the nature of the landscape several locations within the observation zone were obscured by local topography. To compensate for this recording was begun at the allocated time and observation continued for a short time afterwards and any visitors who had been obscured were recorded during this time. In order to standardise results a five-minute cut-off point was used after which no further observations were taken. Where visitors remained stationary over several time

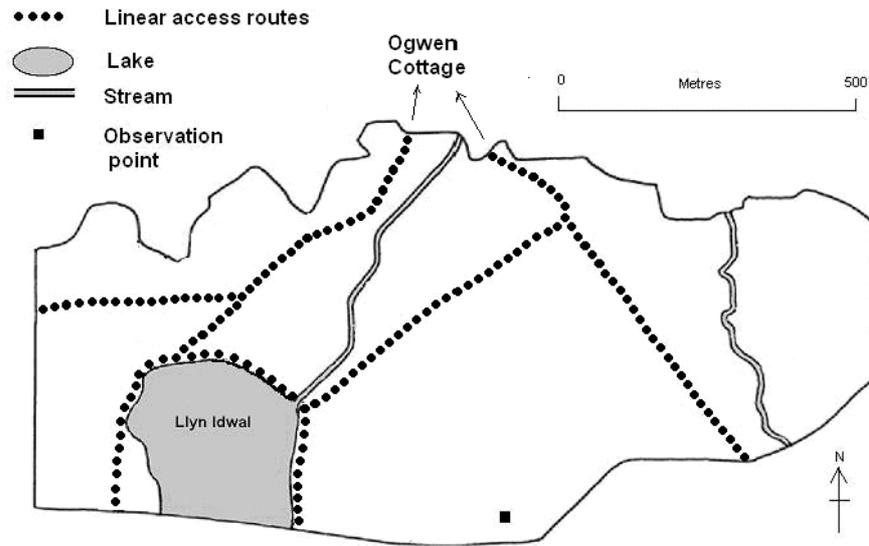


Figure 1. Map of the observation zone showing linear access routes and the observation point.

periods they were not recorded again until they moved on. The Countryside and Rights of Way Act (2000) does not entitle a person to a right of access to areas defined for open access under the Act if they are engaged in an activity which is organised or undertaken for any commercial purpose (Schedule 2 section 2 (l)). Accordingly for the purpose of this study an attempt was made to segregate organised parties from the 'private' walker. From observation this can be difficult but for this study an organised group was recorded as having twelve or more individuals. Such groups were recorded and analysed separately. A pilot study was undertaken on 12th

January 2002 and the full survey carried out on the 3rd of February 2002 and the 3rd of March 2002 between 11.30am and 16.30pm.

Results

A total of 1,347 visitors were recorded during the two survey days. The spatial distribution of observed visitors can be seen in Figure 2. From this visual representation of the data it can be seen that the majority of visitors observed were on some form of linear access route. In particular, the bulk of visitors were found using the public footpath from Ogwen

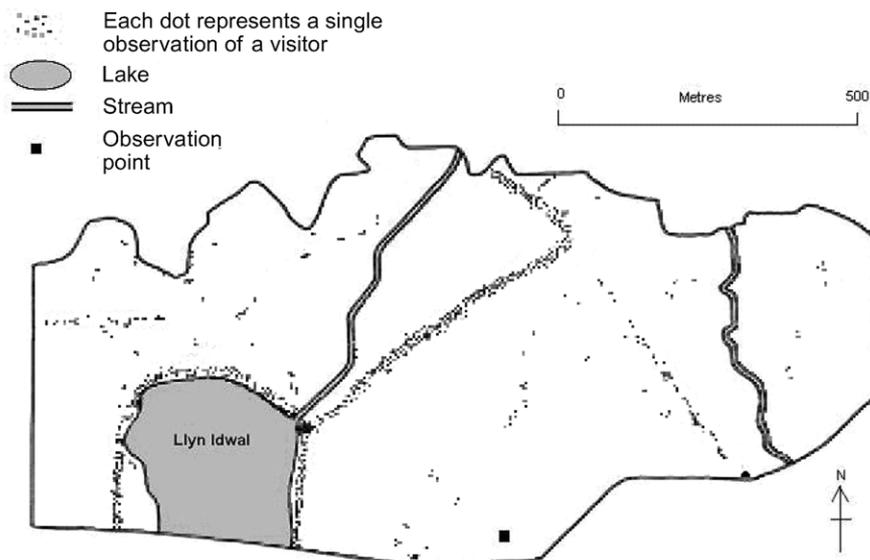


Figure 2. The spatial distribution of observed visitors.

Cottage to Llyn Idwal. Once at the lake more visitors chose to use the more clearly defined path to the east of Llyn Idwal than the path to the west of it. There were considerably fewer visitors using the other paths recorded on the map.

In terms of visitor distributions it was found that for visitors not in large groups (in groups of twelve or less), 90.5% of visitors were observed using linear access routes. For groups of thirteen or more visitors, the level of use of linear access routes was less, with 83.9% of groups using these routes. Therefore 9.5% of visitors observed that were not in large groups were walking 'cross country' and roaming away from managed access routes. For groups of thirteen and over this figure rises to 16.1%.

Figure 3 shows the number of visitors observed by group size and number of individuals. It can be seen that groups of size four or less predominate with a modal group size of two. Groups of thirteen and over made up only 2.3% of observations although these groups did account for 16.7% of individuals counted. These figures compare closely with the pattern of group size obtained from questionnaires for the 1994 National Parks Visitor Survey (Table 1) with the differences that more people on their own were observed in the Cwm Idwal study and there were fewer large groups.

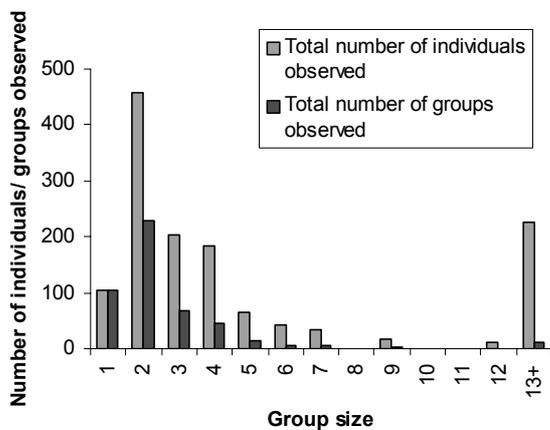


Figure 3. The number of individuals and groups observed by groups size.

Table 1. A comparison of group size as recorded by the 2002 Cwm Idwal observation survey and the 1994 All Parks Survey (Snowdonia).

Group size	Cwm Idwal observation survey 2002	All Parks Visitor Survey (Snowdonia figures) 1994)
1	21.4	5
2	47.1	42
3	14.0	16
4	9.5	15
5	2.7	7
6 and over	5.3	14

When it comes to analysing visitor behaviour in terms of where visitors were observed (on linear access routes or in 'open countryside') some interesting results are apparent. Figure 4 shows the percentage of groups of given sizes and individuals within group size categories observed off of linear access routes (i.e. observed in 'open countryside'). This shows that the number of visitors in groups of size thirteen and over make up 51.2% of visitors walking off of linear access routes. The graph also shows that there appears to be a relationship between group size and the propensity to walk off of linear access routes for group sizes of twelve or less. To test the strength of this relationship, a chi-squared test (Siegel & Castellan 1988) was carried out. For this test groups of size five to twelve were amalgamated into one group and groups of thirteen and over were not included in the calculation. This is because it was considered that as groups of thirteen and over made up such a large proportion of those observed away from linear access routes that it would skew the data. Groups of twelve and over are therefore considered separately. The result can be seen in Table 2. This shows a highly significant relationship between group size and location observed.

The chi-squared test demonstrates that there is a relationship between group size and propensity to walk off linear access routes for groups of size twelve or less. However, this may just be because more groups of a smaller size were observed. To ascertain the true relationship it is necessary to establish the proportion of walkers on and off the linear access routes for the differing group sizes. The proportion P can be worked out by the equation $P = 100(A \div B)$ where A is the number of groups of a selected group size observed on or off a linear access route and B is the total number of groups of a selected group size seen anywhere on the study site. The results of this calculation can be seen in Figure 5. This graph clearly indicates that the propensity to walk off linear access tracks is greatest for groups of thirteen and over (45.45%) and that a relationship exists between group size and propensity to walk off of linear access routes for group sizes of 12 and less.

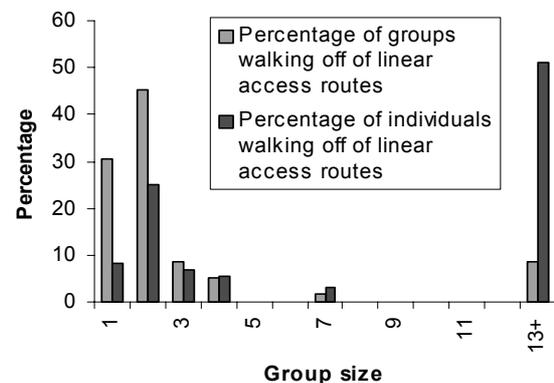


Figure 4. The percentage of groups and individuals seen walking off of linear access routes.

Table 2. Chi-squared test for group size, and location observed.

Null hypothesis	Chi-squared	Degrees of freedom	Significance	Accept or reject null hypothesis
Ho: there is no relationship between group size and location of visitors on and off linear access routes	19.15	4	$p = 0.001$	Reject Ho

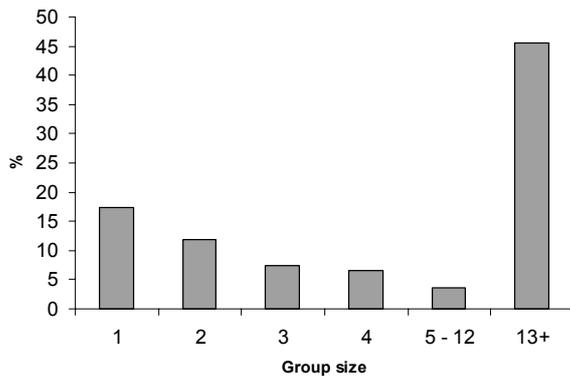


Figure 5. The proportion of groups of given size observed off of linear access routes.

Discussion

The Countryside and Rights of Way Act (2000) once it is fully implemented will create new access rights over many areas. The impacts that this access will have on land management, conservation, erosion and the local economy will depend on the relative increase or decrease in the recreational use of areas and the behaviour of visitors. This study was concerned with the second of these factors.

In considering the results, the nature of the site requires consideration. The main paths on the site are surfaced with pitched stone to prevent erosion, thereby facilitating relatively easy access along them. In addition the paths lead from the A5 road and associated car parking, to specific places that the visitor will wish to go to such as Llyn Idwal and Twll Du, and the access it gives to the Glyder range of mountains. Walkers who were observed away from linear access routes were found in three distinct areas: between the cliffs at Clogwyn y Tarw and the main Ogwen Cottage to Llyn Idwal path, between the paths in the north east of the study area in the direction of the road and associated car parking, and finally around the western end of the northern limit of the study area. Most visitors observed deviating from linear access routes appeared to be carrying out specific journeys between a starting point and a destination, be it for rock climbing, partaking in scenic views or simply to take a 'short cut'. It was also noted that visitors found in open countryside were often following 'linear handrails' such as streams or undesignated and un-maintained track ways. This can be seen in Figure 2 where the location of visitors

away from linear access routes appears to conform to predominantly linear patterns.

The finding that large groups (of thirteen or more) were more likely to use open countryside than other groups was interesting and may reflect the nature of the site, which is used by a large number of groups for education activities and outdoor pursuits. The nature of such activities means that groups frequently need to leave linear access routes to view geological or geomorphological features, for navigational training or to access climbing sites. In addition, groups are normally led by an experienced leader who will be familiar with the site and confident in navigation. A group leader may therefore be more likely to deviate from linear access routes and walk across open countryside.

Figure 2 showed that behind groups of size thirteen and above the groups most likely to walk off of linear access routes were single walkers and pairs of walkers. It may well be that single walkers and small groups could potentially be more experienced and confident in their navigational abilities, while climbers usually operate in pairs. Single walkers in particular will not be influenced by other walkers needs and do not need to talk and often walk on their own to seek peace, quiet and solitude. Such walkers are potentially more likely to use open countryside. Larger groups of between three and twelve will often represent groups of friends or family groups and will not necessarily have the 'organised' structure that larger educational groups will have. In such groups the social element plays a large part of a days walking and it is easier to communicate whilst walking on well surfaced paths that allow walkers to walk side by side. The organisation of such groups is likely to be informal and the range of ability of walkers variable. It is therefore often the simplest option for such groups to take the easiest route on the ground, which will normally be formalised linear access routes. The potential composition, motivations, organisation and experience of differing group sizes is suggested in Table 3. Although not the focus of this study the relationship between the variables shown in this table and propensity to walk on or off of linear access routes deserves further study.

What then are the implications of this study on open access areas in general? The main finding is that walkers predominantly stay on linear access routes. Cwm Idwal is a well known walking location in the Snowdonia National Park as well as being a National Nature Reserve. It is one of the most attrac-

Table 3. The potential composition, motivation, organisation and experience of groups according to group size.

Group size	Potential composition	Potential motivation	Organisation	Potential experience of the group
1	<i>Individual</i>	<i>Challenge Peace Seclusion</i>	<i>Informal</i>	<i>High</i>
2	<i>Couple Friends Relations</i>	<i>Challenge Peace Social</i>		<i>Low – high</i>
3 – 12	<i>Friends Relations Group</i>	<i>Challenge Peace Social</i>		<i>Mixed range of experience</i>
12 +	<i>Friends Organised Group</i>	<i>Education /training Challenge Social</i>	<i>Formal</i>	<i>Led by experienced leader</i>

tive and recognised locations within Snowdonia for walking and climbing and as such attracts a large number of visitors many of which have considerable mountain walking experience. The site is open in its nature and walkers are not confined by fences and walls. It also attracts a large number of educational and outdoor pursuits groups. As such it could be considered that Cwm Idwal is a site where the use made of open countryside should be large. However, excluding large groups (size thirteen and above), only 9.5% of visitors were observed not on a linear access route. The implications for other sites is therefore that the use of open countryside is likely to be less than this figure, provided that there are linear access routes that link specific destinations that walkers wish to travel between. If there is a good track to walk on and follow then it appears that walkers will out of choice follow it even though there is a 'right to roam'.

A further implication of this study is in relation to conservation. It can be seen from Figure 2 that the majority of walkers stay on linear access routes and those that do not, tend to be distributed in specific locations and follow 'linear handrails'. In addition, the frequency of use made of open countryside will probably be less than that for linear access routes. Disturbance to conservation interests will therefore

be intensive in quantity, duration and frequency on and alongside linear access routes. However, as the majority of walkers concentrate on such routes, there are will be large areas of sites that will be totally or predominantly undisturbed by walkers.

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