Public Perception Survey of Wildness in Scotland

Report for Loch Lomond & The Trossachs National Park Authority,
Cairngorms National Park Authority & Scottish Natural Heritage

In Association With Research Now

July 2012

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

CAIRNGORMS
NATIONAL PARK AUTHORITY

LOCH LOMOND & THE TROSSACHS NATIONAL PARK

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Executive Summary

Introduction

Loch Lomond and the Trossachs National Park Authority (LLTNPA), working in partnership with the Cairngorms National Park Authority (CNPA) and Scottish Natural Heritage (SNH) commissioned a survey to further develop their understanding of the public perception of wildness in Scotland and to support future wildness mapping by providing a set of weights which can be used to combine the various attributes associated with the Scottish public's perception of 'wildness'.

The Study has focussed on the following four attribute categories:

- the **naturalness** of the land cover and wildlife;
- the presence of **man-made structures** and features;
- **remoteness** from roads and railway stations; and
- the **terrain**.

Methodology

Three sample groups were identified for inclusion within the research:

- 1006 responses from a nationally representative sample of the Scottish population, contacted via an online panel and asked to complete the survey on-line (ie the '*main sample*');
- a face-to-face booster survey which obtained responses from 210 National Park residents (ie the '*residents sample*'); and
- a (self-selecting) subset of 656 Scottish-based members of various relevant organisations (John Muir Trust, Scottish Mountaineering Council, etc) which were invited to participate (via the on-line version of the survey) (ie the '*organisation members*').

The survey covered use of the outdoors, perceptions of wildness, the importance of wild areas in Scotland and basic demographics.

In addition to the questionnaire, visual stimuli were provided to illustrate the various attributes being described.

Key Results

Use of the Outdoors

Overall, 38% (n=387) of respondents in the *main sample* indicated that they visited the outdoors at least once a week, while only 6% (n=65) indicated that they never make such visits. Both the *residents sample* and *organisation members* visited the outdoors more frequently, with 54% of the *residents sample* and 81% (n=531) of *organisation members* visiting at least once a week.

Of those in the *main sample* who had visited the outdoors within the last 12 months, the main activities participated in included low level walking (87%), sightseeing/visitor attractions (52%), and family days out (51%).

Perceptions of Wildness

Respondents were introduced to the four key wildness attribute categories outlined above. 29% of the main sample felt these captured the essence of wildness 'Very Well', with a further 66% indicating that they captured wildness 'Quite Well'.

Respondents identified the following additional aspects which contribute towards their perceptions of wildness:

- a lack of people, not meeting other people in the area, a sense of loneliness and isolation (n=71);
- wildlife (n=66);
- natural or unspoiled beauty and beautiful scenery (n=37); and
- the weather (n=29).

A 'Best/Worst' experiment was used to enable the respondents to rank the wildness impacts of a set of 25 individual attributes. Mathematical analysis of this set of responses suggested that attributes such as the presence of native wildlife, noticeable features in the landscape (such as cliff faces and boulder fields) and perceived naturalness of vegetation all achieve high 'wildness' scores, while attributes such as the presence of built-up areas, energy infrastructure (eg wind turbines, pylons, dams etc) and recreational infrastructure (eg 4-wheel drive tracks, hiking paths, ski lifts and field sports) all have a strong negative impact on perceived wildness.

The presence of native wildlife appears to contribute most to the *main sample's* and the *residents sample's* perceptions of wildness and came fifth in the ranking of *organisation members, who felt that* the complete absence of visible man-made features was the most important wildness factor. Note that since the experiment combined all 'native wildlife' into a single attribute, additional research would be required to estimate the wildness impacts of different types of native wildlife.

At the other end of the scale, built-up areas (small towns and villages) reduces perceived wildness by the most for both the *main sample* and the *organisation members*, while energy infrastructure in the landscape has the biggest negative impact on the perception of wildness for the *residents sample*.

Additional analysis of the range of wildness scores within each main attribute category was used to derive weights which can be used in future to combine any measures of wildness which have been calculated using the broad attribute categories considered here.

Importance of Scotland's Wild Areas

72% of the *main sample*, 83% of the *residents sample* and 93% of the *organisation members* considered that it was 'Very Important' that Scotland had wild areas.

60% of the *main sample*, 55% of *residents sample* and 92% of the *organisation members* stated that they felt wild areas were under threat in Scotland.

77% of the *main sample*, 82% of the *residents sample* and 93% of *organisation members* stated that it was 'Very Important' to protect wild areas in Scotland.

86% of the *main sample*, 80% of the *residents sample and* 97% of *organisation members* felt that further action is necessary to preserve wild land in Scotland.

The most popular types of action to preserve wild land, identified by over a third of respondents in the *main sample*, were:

- the introduction of specific 'wild land' designation;
- effective planning control for wind turbines;
- effective planning control for buildings;
- effective planning control for telephone masts and pylons; and
- species re-introductions.

When asked to indicate how important it is to promote economic development in rural areas of Scotland, 31% of the *main sample*, 50% of the *residents sample* and 32% of *organisation members* felt it was very important to promote economic development in rural areas of Scotland.

Comparing the mean scores for the importance of protecting wild areas and promoting economic development shows that, across all three sample groups, respondents placed a greater level of importance on the protection of wild areas than economic development.

Conclusions and Recommendations

The study has confirmed the validity of the four main attribute categories identified by previous research, but has suggested that these categories should be given different weights within the public's overall perception of wildness.

The analysis of the results from the 'Best/Worst' choice process used in the study has produced robust estimates of the average 'wildness' impacts of a set of 25 individual attributes.

In addition, the analysis has suggested that there are non-trivial differences in the wildness scores given to these attributes by the different population groups surveyed here.

In particular, the *organisation members* included in this research tended to assign more-extreme wildness scores across all of the categories, while the *residents sample* tend to assign less negative wildness impacts to attributes such as 'modern structures', 'recreation infrastructure' and 'built-up areas' than the other two groups.

These differences should be borne in mind when endeavouring to understand the attitudes of different sub-groups. However, it is recommended that the results from the *main sample* reported here should provide the default values for general future wild-land mapping in Scotland.

Older built structures (defined here as '*bothies, abandoned cottages, crofts, castles and stone walls'*)) actually appear to have a positive wildness score (ie score more-highly than the 'average' wildness attribute) for all three sample groups. Care is therefore required when combining built structures within wildness mapping. Additional research would be required to determine the wildness impacts of the various different sub-categories within this 'older built structures' attribute.

The attribute described in this study as 'Energy Infrastucture' (which therefore includes a combination of wind-turbines, electricity pylons and hydroelectric dams) was given very high negative wildness scores (second only to 'Built up Areas, Small Towns and Villages' in the *main sample*.). It would therefore be useful to consider further research to enable this combined attribute to be separated into its different components, especially if the resulting wildness values are to be used as part of the consideration of future planning processes for wind turbines, pylons and/or hydroelectric schemes.

Finally, the best-worst (most wild/least wild) approach used here could be extended to include additional monetary trade-offs (eg increases to taxation or visitor charges to protect or enhance particular attributes). Such additional research could facilitate a monetary valuation of the features which add to the general public's perception of Scotland's wildness and would add important additional evidence for the protection (or creation) of these features.

1 Introduction

1.1 Introduction

1.1.1 Loch Lomond and the Trossachs National Park Authority (LLTNPA), working in partnership with the Cairngorms National Park Authority (CNPA) and Scottish Natural Heritage (SNH) commissioned a survey to further develop their understanding of the public perception of wildness in Scotland.

1.1.2 A technique for mapping 'wildness' has been developed by Leeds University which identifies the geographical extent and intensity of wildness. This approach has been used to map wildness in the Cairngorms and Loch Lomond and the Trossachs National Parks. This technique can produce maps based on any individual wildness attribute, but can also combine these to create an overall wildness map. The result is a range of wildness maps which can better inform management and planning for different stakeholder groups or for different purposes such as planning, access, habitat restoration, etc.

1.1.3 SNH undertook a previous study conducted in 2008[1] into the public's perceptions of wild land which aimed to quantify consumer opinion regarding the wildness of Scotland and of the Cairngorm National Park. This previous research was not designed to provide weighting for the different attributes required for the wildness mapping. This current research is therefore designed to extend the previous research by providing these attributes weights for the ongoing wildness mapping.

1.1.4 In addition to this public perceptions research, an event was held with various public bodies and 'expert' organisations where the perceptions of wildness, and measurement of each wildness attribute's impact upon perceptions was also assessed. Results from this event can be found on the SNH website[2].

1.2 Aims and Objectives

1.2.1 The overall project aim was to provide quantitative data on the public's perception of wildness, wild land, and perceived naturalness of land cover in Scotland.

1.2.2 The specific objectives included:

- identifying what people understand to be 'wild land';
- identifying which elements of the landscape and the land-cover people consider to be natural or wild and which they consider to be not, or less wild; and
- identifying the impact of human artefacts in the landscape (eg wind turbines, hill tracks, etc).

[1] Market Research Partners (2008) 'Public Perceptions of Wild Places and Landscapes in Scotland'. Commissioned Report No. 291 (ROAME No. F06NC03).

[2] http://www.snh.org.uk/pdfs/publications/commissioned_reports/Report%20No291.pdf

1.2.3 In addition, the results of this research will be used to support the wildness mapping already undertaken for Loch Lomond and the Trossachs National Park and the Cairngorms National Park, and underway for Scotland, by providing a set of weights which can be used to combine the various attributes associated with the Scottish public's perception of 'wildness' into single combined wildness maps. The attributes which need to be combined in this way are:

- the **naturalness** of the land cover and wildlife;
- the presence of **man-made structures** and features;
- **remoteness** from roads and railway stations; and
- the **terrain**.

1.2.4 The research also aims to explore the weighting of the above attributes in relation to each other.

2 Methodology

2.1 Survey Administration

2.1.1 One of the key considerations for the survey design was the various sampling requirements. These included:

- a main sample which is nationally representative of the Scottish population, (which will be referred to as the '*main sample*' throughout);
- a booster survey of National Park residents, (referred to as the '*residents sample*' throughout); and
- a comparison group made up of members of various outdoors, wildlife, environmental, and conservation type organisations in Scotland who may have different views about (and awareness of) the issues surrounding wildness than general public at large. (This sample group will be referred to as the '*organisation members*' throughout).

2.1.2 A mixed method approach was designed in order to target sufficient numbers of respondents within each of the desired sample groups. This included an online survey utilising an online panel designed to be representative of the Scottish population and members of various organisations, and a face-to-face booster survey of residents of Scotland's two National Parks.

Online Survey

2.1.3 An online questionnaire was designed to be distributed to both a representative sample of the Scottish population and to members of various selected organisations. Using an online approach allowed the incorporation of visual stimuli to support and illustrate some of the terms and concepts being considered.

2.1.4 An online panel was accessed via Research Now, where all members have registered to complete such surveys. Demographic information is also held on panel members allowing the sample to be structured so that it is representative of the Scottish population. Quotas were set for gender, age, socio-economic group, urban/rural location and Local Authority.

2.1.5 The same questionnaire was made available to members of selected organisations. These organisations were informed about the research and asked to invite their Scottish based members to complete the questionnaire. A link was sent to members directly from the organisations and/or included on the organisations website/online newsletter/etc. The following organisations were sent information on the survey:

- Scottish Mountaineering Club;
- Mountaineering Council of Scotland;
- John Muir Trust;
- Royal Society for the Protection of Birds (RSPB);
- Ramblers;
- National Trust for Scotland;
- Scottish Wildlife Trust;
- Woodland Trust;

- Trees for Life; and
- Scottish Wild Land Group.

2.1.6 Security was added to the online questionnaire so that, once a panel member or organisation member had completed the survey, they could not re-access it and make multiple submissions.

Booster Survey with National Park Residents

2.1.7 As the online panel approach was unlikely to include many respondents that happened to live within the two National Parks, a face-to-face booster approach was used to survey the views of this group. The questionnaire was, therefore, adapted to be suitable for a face-to-face interviewer administered approach. A mixture of on-street and household interviews were conducted over a three week period in February 2012.

2.1.8 Various sample points were selected within the boundaries of each National Park, generally located in the largest towns and villages within the two Parks. Quotas were set for gender and age, to help ensure this booster was broadly representative of the resident populations of each park.

2.1.9 Interviews were conducted over a mix of weekdays and weekends, covering early mornings and evenings to ensure that employed residents were not under-represented in this booster survey.

2.2 Questionnaire Design

2.2.1 One questionnaire was designed to be used across all administration methods and with each target sample. Topics covered use of the outdoors; perceptions of wildness, to include coverage of the four key wildness attributes; the importance of wild areas in Scotland; as well as basic demographics.

2.2.2 A copy of the questionnaire is provided in Appendix A.

Best / Worst Scaling

2.2.3 In order to assess respondents perceptions of wildness and to provide weighted ranking between the various attributes, a best/worst scaling approach was used.

2.2.4 Respondents were provided with an introduction to this section of the questionnaire, including the provision of an overview of the four key attributes and provided with the opportunity to identify others that they considered important when considering wildness.

2.2.5 Various sub-divisions within the four key attributes were identified (these are listed in Appendix C). These were then mixed across 25 best/worst ranking tables so that each table contained a mix of sub-divisions from each of the four attributes. A 'block design' method was used to minimise the input of each participant. This required each respondent to complete five of the best/worst ranking scenarios, chosen systematically from a total set of 25 scenarios.

2.2.6 An example of one of the scenarios is provided below while an example picture card is provided in Figure 2.1:

Table 2.1 Example Scenario

Scenario A1		Picture Card
A	No visible man-made features	1
B	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10
C	Moorland, actively managed by burning	21
D	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	14
E	Native wildlife may be present in landscape, eg deer, eagle, red squirrel, wild cat, pine marten	16

2.2.7 For each scenario respondents were required to identify:

- the 'most wild';
- the 'least wild';
- the 'next/second most wild'; and the
- the 'next/second least wild'.

2.2.8 Before being presented with these scenarios, respondents were taken through an example.

Visual Stimulus Material

2.2.9 To support the best/worst scaling scenario options presented to respondents, considerable time and effort was spent in identifying a range of pictures and images which could be presented as examples of each option. Particular care and attention was taken to ensure that each image selected only showed the key attributes and did not contain any biasing factors. For example:

- four or five images were shown for each option presented so that respondents were not simply commenting on perceptions created by one single image;
- all images were subject specific, for example pictures of moorland did not contain any traces of plantation forests, manmade artefacts such as tracks/fences, etc
- any wildlife/domestic livestock or manmade objects/tracks in the pictures were displayed at an equal distance so that no one element dominated the picture unduly and so that no one image dominated the selection presented; and
- the weather was neutral throughout so that perceptions were not biased by particularly dominant cloud coverage, snow or other inclement weather.

2.2.10 Figure 2.1 provides an example of the Picture Cards used to support and illustrate the attribute descriptions, whilst the full range of Picture Cards can be found in Appendix B. These Picture Cards were provided as A4 showcards for the face-to-face survey method used to capture the *residents sample*, and were shown as full screen images within the online version of the questionnaire used to capture the *main sample* and the *organisation members*.

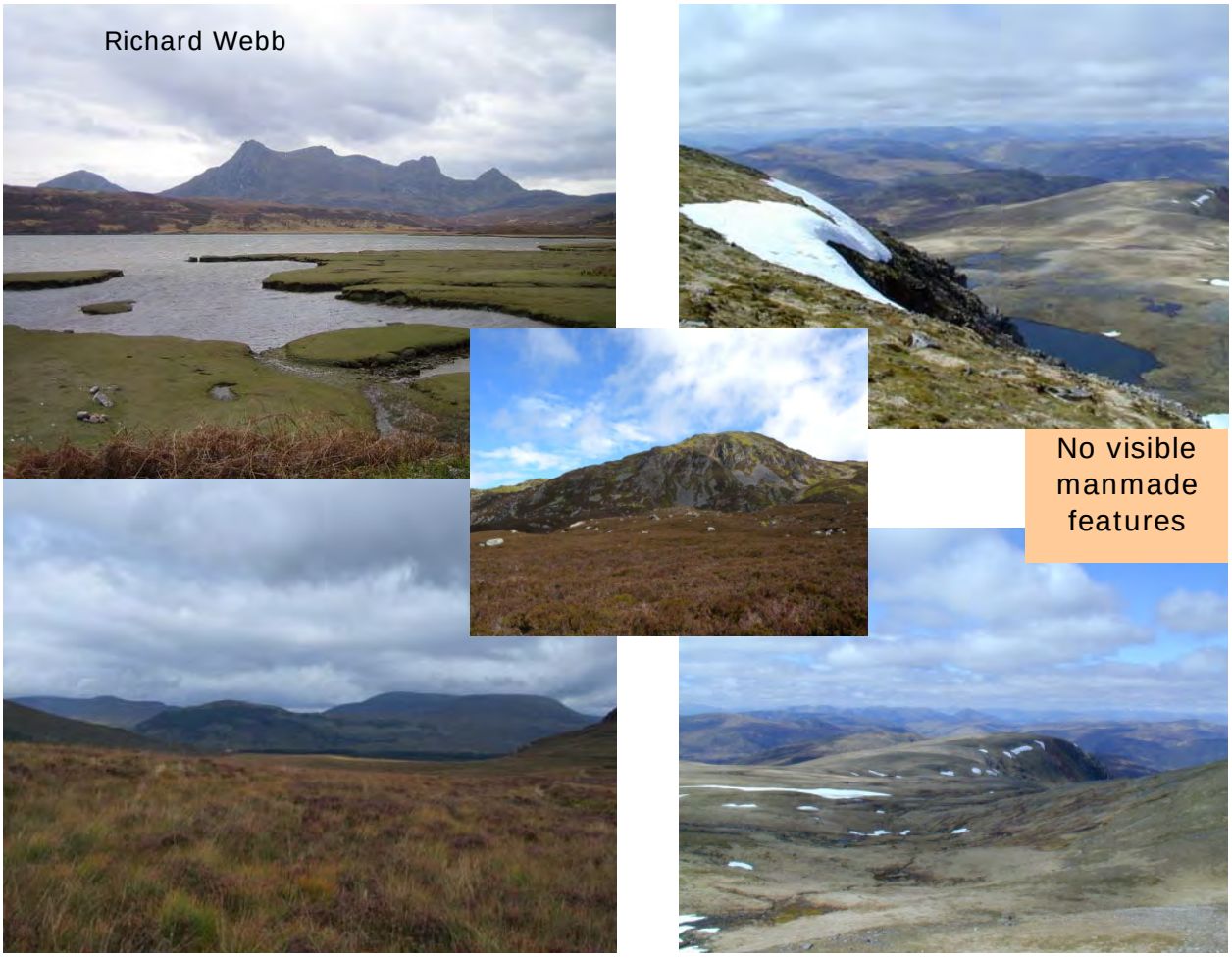


Figure 2.1 Example Picture Card

2.3 Analysis

2.3.1 The results have been disaggregated by:

- Sample Type:
  - the *main sample* (ie the online panel sample representative of the Scottish population);
  - the *organisation members* (ie the sample invited via the relevant organisation's); and
  - the *residents sample* (ie the booster sample of National Park residents).
- for the *main sample* only, market segmentation is provided by:
  - gender;
  - age;
  - urban/rural location; and
  - socio-economic group.

2.3.2 Only those differences between sample types and market segments that show a statistically significant difference have been identified separately in the reporting.

2.3.3 A mathematical behavioural choice model was used to analyse the results of the various best/worst scenarios where respondents identified and ranked the most to least wild. For this, each preference on the best-worst scale for a given scenario was converted into an equivalent choice3. Statistical analysis of this nature is based on the concept of utility theory (the degree of satisfaction provided by the alternatives on offer). Individuals are assumed to choose the alternative which is 'best' (or 'wildest') and therefore maximises satisfaction or 'utility', where utility is taken to be a construct of the choice alternative (the attributes of wildness). By comparing the relative influence of one attribute against another, through the parameters which result from the statistical models, it is possible to infer its relative value (or contribution to wildness).

2.3.4 Estimated models have been subject to a full set of diagnostic tests to ensure they are statistically robust. This includes an examination of their overall level-of-fit, precision in parameter estimation and consideration of correlation between attributes and alternatives.

2.3.5 A more detailed and technical description of the analysis methods used is provided in Appendix D.

2.4 Research Caveats and Reporting Conventions

2.4.1 It is important to note that this research was designed to test people's perception of wild land, and as such, there will be exceptions to the results expressed here.

2.4.2 It is also important to note that, respondents were only able to comment based on those images and scenarios shown, and based on their own personal experience.

2.4.3 Where sample sizes were small, some demographic categories have been grouped for analysis purposes, these include:

- **age** (ie age 75+ has been grouped with age 60-74);
- the initial six-way **urban rural** classification has been reduced to two categories (ie urban and rural); and
- socio-economic group was combined to two categories (ie ABC1 and C2DE).

2.4.4 The urban/rural classification of the respondent's home was self-reported, ie was based upon their own assumptions of where they live. Therefore, results may not be exactly equivalent to the 'official' Scottish Government classification.

2.4.5 For clarity, it was considered that the *main sample* (ie the online panel sample representative of the Scottish population) should be the most important for analysis purposes. As such, the *residents' sample* and *organisation members* are provided mainly for comparison purposes. Further, any dissagregation by the various market segments has only been conducted on the *main sample*, and is only discussed where statistically significant differences exist between the categories.

[3] As respondents progress through a best-worst scaling task in a given scenario, alternatives selected at previous stages are removed from the 'choice' set available at subsequent stages in the statistical analysis.

2.4.6 Where the proportion of respondents equals less than 1%, this is indicated in tables by '<1%'. Where no respondents have selected a response option this is indicated by '-'. This enables the reader to distinguish between low non-zero response frequencies and true zero values.

3 Sample Profile

3.1 Sample Size

3.1.1 As outlined above, three separate samples were collected within this research. Table 3.1 provides details of the total sample sizes achieved for each.

Table 3.1 Sample Size

Sample Type	Respondents	Percent (%)
Main Sample (ie Online Survey: Scottish Representative Sample)	**1006**	**54**
Organisation Members (ie Online Survey: Invited via Organisations)	**656**	**35**
Residents Sample (ie Face-to-face Park Residents Booster Survey)	**210**	**11**
Loch Lomond and the Trossachs National Park	104	50
Cairngorms National Park	106	50
Total	**1872**	**100**

3.2 Sample Profile

3.2.1 The *main sample*, ie that achieved from the online survey of panel members, was designed to be representative of the Scottish population in terms of:

- gender;
- age;
- urban/rural geography;
- socio-economic group; and
- Local Authority.

3.2.2 Likewise, the *residents' sample* was designed to be representative of the populations within each National Park in terms of gender and age.

3.2.3 No controls or restrictions were placed upon *organisation members* in terms of demographics and profile. These respondents are, therefore, not necessarily representative in any way. Our analysis suggests that this sample contains more of the following sub-groups than the general population:

- males;
- the 45-74 age-bands;
- those living in rural locations; and
- those from the higher socio-economic groups.

3.2.4 Appendix E provides breakdowns of the profile of each of the three different samples.

4 Use of the Outdoors

4.1 Most 'Wild' Place Visited

4.1.1 The most-frequently mentioned 'wild' places that respondents to the *main sample* reported having visited included:

- the highlands and islands regions (n=257);
- various mountain ranges, glens and lochs (n=179);
- the two national parks, ie Loch Lomond and the Trossachs area and the Cairngorms area (n=142);
- Rannoch Moor (n=33);
- Ardnamurchan and Knoydart peninsulas (n=19);
- Galloway area and forest (n=11); and
- the west coast of Scotland (n=8).

4.1.2 A few respondents, however, mentioned various wildlife parks, zoo's, etc as being the most 'wild' places they had visited.

4.1.3 Responses were similar for both the *residents sample* and the *organisation members*, though the *organisation members* showed a tendency to identify specific mountain summits etc.

4.2 Organisation Membership

4.2.1 Of the *main sample*, a total of 813 (81%) respondents indicated that they were not a member of any relevant organisation. For the remainder (n=193, 19%), the most common memberships included:

- National Trust for Scotland (n=100);
- Royal Society for the Protection of Birds (n=50);
- World Wildlife Fund (n=34); and
- Scottish Wildlife Trust (n=21).

4.2.2 Table 4.1 provides a breakdown of organisation memberships by the three sample types.

Table 4.1 Organisation Membership

Organisation	Main Sample (%)	Residents Sample (%)	Organisation Sample (%)
John Muir Trust (JMT)	<1%	<1%	65%
Mountaineering Council of Scotland	1%	-	25%
National Trust for Scotland (NTS)	10%	3%	34%
Ramblers Association Scotland	1%	-	5%
Royal Society for the Protection of Birds (RSPB)	5%	7%	22%
Scottish Mountaineering Club (SMC)	1%	-	4%
Scottish Wild Land Group	<1%	-	4%
Scottish Wildlife Trust (SWT)	2%	<1%	16%
Trees for Life	1%	-	4%
World Wildlife Fund (WWF)	3%	1%	9%
Other	4%	9%	34%
Not a member of any groups	81%	82%	13%
Total (N)	1006	210	656

4.2.3 A total of 88 respondents (13%) in the organisation sample indicated that they were not a member of any group. No information was collected to identify how these 88 respondents had found their way into the on-line survey, but we suspect many will either have been pointed to at by organisation members or have followed links to the survey from SNH's website or from the public access areas of some of the participating organisations' websites.

4.3 Visits to the Outdoors

4.3.1 Overall, 38% (n=387) of respondents in the *main sample* indicated that they visited the outdoors at least once a week, while only 6% (n=65) indicated that they never make such visits.

4.3.2 As would be expected, the *organisation members* visited the outdoors more frequently, with 81% (n=531) indicating that they visit at least once a week, while very few (<1% (n=4)) stated that they never visit the outdoors.

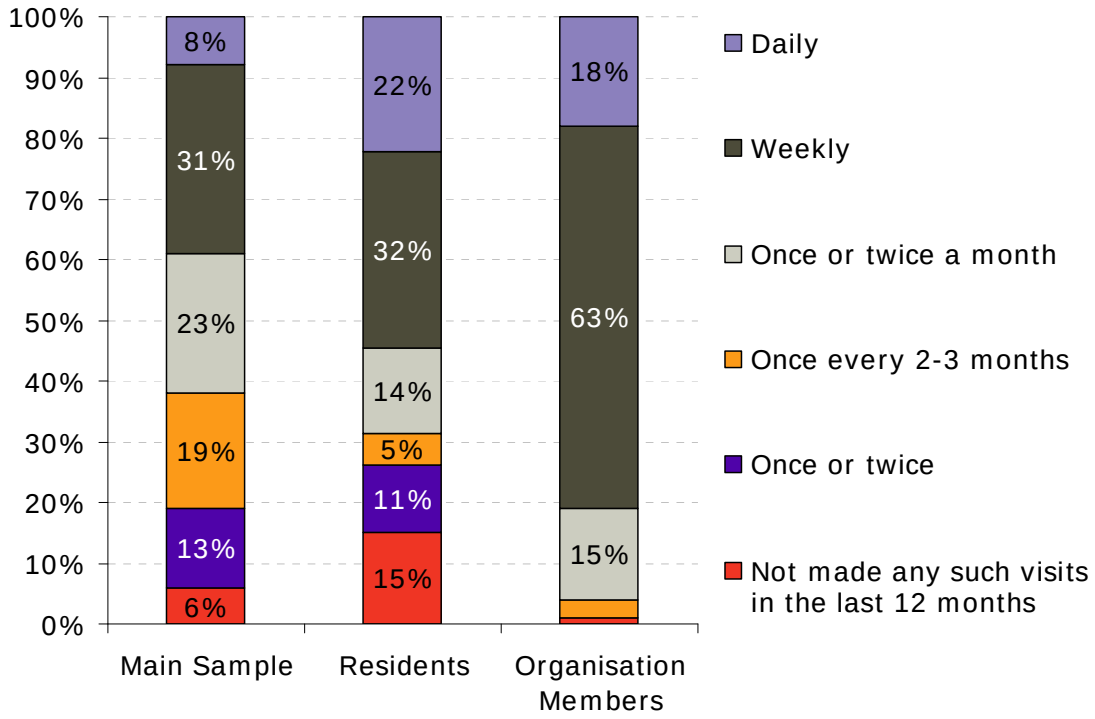


Figure 4.1 Frequency of Visits to the Outdoors in the Last 12 Months

4.3.3 Within the *main sample*, the youngest age group indicated that they were less frequent visitors to the outdoors than all other age groups. With 28% (n=65) stating that they visit at least once a week compared to 40% (n=93) for those aged 60+ and 42% for each age group 30-44 (n=113) and 45-59 (n=116).

4.3.4 Likewise, those living in urban areas were less frequent visitors than those living in rural areas, with 32% (n=181) of those from urban areas visiting at least once a week compared to 46% (n=206) of those from rural areas.

4.3.5 Slight differences were also noted between the frequency of visits of the two socio-economic groups, with those from ABC1 being more frequent visitors compared to those from C2DE and those from C2DE indicating that they had not visited the outdoors in the last 12 months. 41% (n=214) of those from ABC1 indicated that they visited at least once a week, compared to 35% (n=173) of those from C2DE. Meanwhile, 9% (n=43) of those from C2DE indicated that they had not visited in the last 12 months compared to 4% (n=22) of those from ABC1.

4.3.6 Those respondents that had made at least one visit to the outdoors in the last 12 months were asked to identify the various activities that they had participated in. Table 4.2 provides a breakdown of all activities respondents indicated they had participated in.

Table 4.2 Outdoor Activities Participated in within the Last 12 Months

Activity	Main Sample (%)	Residents Sample (%)	Organisation Sample (%)
Walking (Low Level)	87%	83%	94%
Hill Walking	26%	37%	87%
Rock Climbing	2%	6%	11%
Cycling (road based)	19%	20%	45%
Mountain Biking (off-road)	6%	7%	34%
Horse Riding	5%	3%	3%
Fishing	9%	16%	8%
Watersports	4%	8%	17%
Snowsports	3%	10%	24%
Swimming	13%	13%	15%
Birdwatching	17%	23%	48%
Other Wildlife/Nature Watching	19%	18%	50%
Running/Jogging	14%	10%	25%
Camping	20%	15%	48%
Sightseeing/Visitor Attractions	52%	22%	56%
Picnicing	37%	20%	28%
Family Day Out	51%	22%	32%
Other	5%	11%	16%
None/Nothing/Can't Remember	<1%	1%	-
Total (N)	941	178	652

4.3.7 Common 'other' activities across the samples included dog walking, photography and golf, while organisation members also listed conservation activities and work and various sailing and sea kayaking activities.

Visiting the Outdoors for Work Purposes

4.3.8 Respondents were also asked whether they regularly visit the outdoors for work purposes. The majority of respondents in the *main sample* stated that they do not (n=901, 90%), compared to only 10% (n=105) who do.

4.3.9 Although still in the minority, the proportions of the *residents sample* and *organisation members* is higher than the *main sample*, with 20% of the *residents sample* and 25% of *organisation members* indicating that they regularly visit the outdoors for work purposes.

4.3.10 In addition, within the *main sample*, a higher proportion of men (13%, n=62) than women (8%, n=43) and those aged up to the age of 60 (10-13%) compared to those aged 60+ (4%,

n=10), indicate they visit the outdoors for work. This could be because fewer women are in employment and that the older age groups contains many retired respondents.

Frequency of Visits to the National Parks

4.3.11 Respondents were asked how often they visit:

- Loch Lomond and the Trossachs National Park;
- Cairngorms National Park; and
- Other National Parks in the UK.

4.3.12 Very few respondents within the *main sample* visit any National Parks very often; only 7% (n=65) indicated that they visit Loch Lomond at least monthly, 3% (n=32) visit the Cairngorms with the same frequency, and 4% (n=34) indicated that they visit other UK National Parks. Figure 4.2 details the frequency with which the *main sample* visit each National Park.

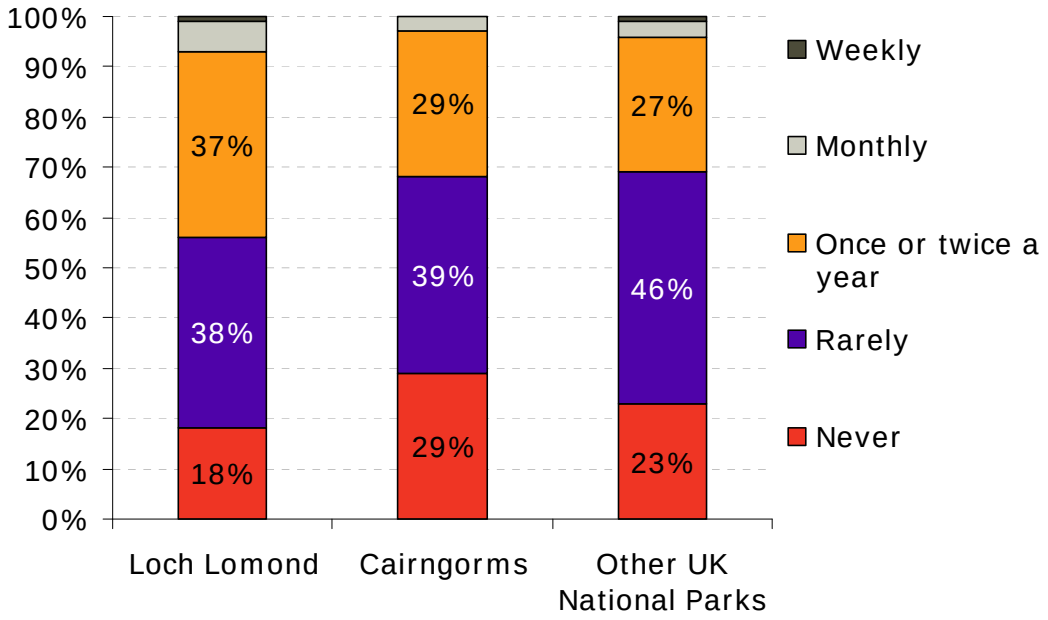


Figure 4.2 Frequency of Visits to National Parks (Main Sample)

4.3.13 As would perhaps be expected, *organisation members* tend to visit the National Parks with a little more frequency; 16% visit Loch Lomond at least monthly and 46% at least once a year; 23% visit the Cairngorms at least monthly and 56% at least once a year; and 5% visit other UK National Parks at least once a month and 38% at least once a year.

4.4 Resident's Employment within the National Parks

4.4.1 The survey also endeavoured to determine the extent to which National Park residents work within the Parks and to identify the relevant industry sectors. For brevity, all Park residents identified across all three samples are considered together here.

4.4.2 Of those that were in employment (either full/part-time employment or self-employed), 73% (n=112) stated that their normal place of work lay within one of the Scottish National Parks boundary's. The remaining 29% (n=45) of employed residents were employed outwith the National Parks.

4.4.3 Of those that were employed within the boundaries, 32% (n=35) were employed in catering/leisure/tourism, 13% (n=14) were employed in construction, manufacturing & distribution, and 12% (n=13) were employed in public sector services.

4.4.4 The full disaggregation by economic sector is shown in the table below.

Table 4.3 All Residents Employment Sector Within the National Parks

Business Sector	Number	Percent (%)
Agriculture	2	2
Forestry	3	3
Catering/Leisure/Tourism	35	32
Energy and Water	4	4
Finance and Business	4	4
Construction, Manufacturing and Distribution	14	13
Transport and Communication	6	5
Public Sector Services	13	12
Other	29	26
Total (N)	110	100

5 Perceptions of Wildness

5.1 Appropriateness of Wildness Attributes

5.1.1 Respondents were introduced to the four key wildness attributes:

- the **naturalness** of the land cover and wildlife;
- the presence of **man-made structures** and features;
- **remoteness** from roads and railway stations; and
- the terrain.

5.1.2 On the whole, main sample respondents felt that the attributes capture what they think of as wild either quite or very well. Overall, 66% (n=660) felt these captured wildness quite well, with a further 29% (n=290) indicating they captured it very well. Only 5% (n=56) of the respondents suggested that these attributes did not capture wildness very well.

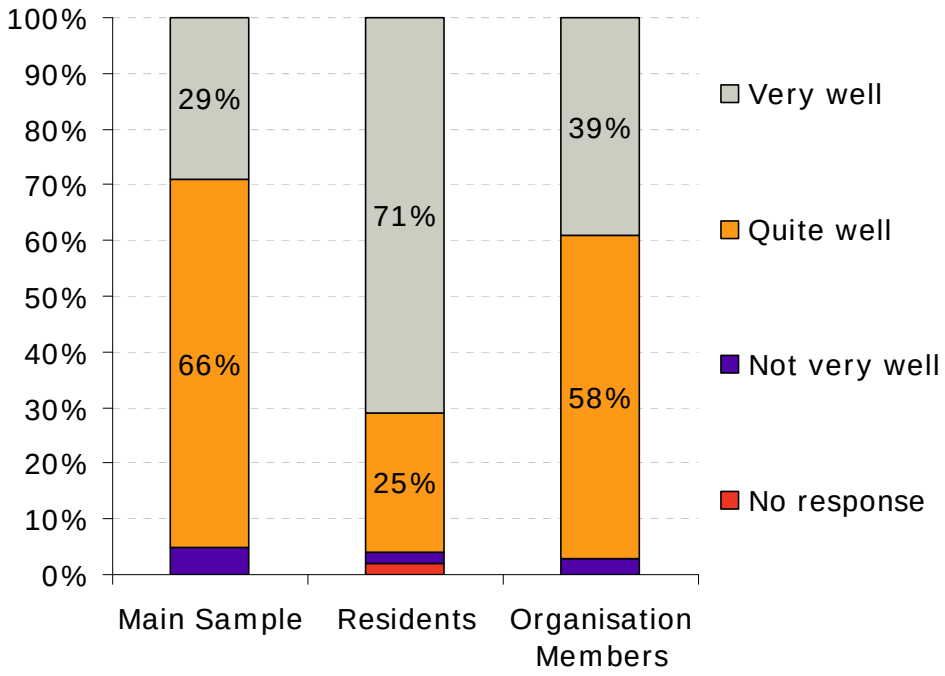


Figure 5.1 Ability of the Four Main Attributes to Cover Wildness

5.1.3 The only difference between the main sample and both the *organisation members* and the *residents samples* was that greater proportions considered that the attributes captured their views very well, with 39% (n=255) of *organisation members* and 71% (n=149) of the *residents sample* stating this. There was little difference however, in the proportions who stated that they felt the attributes were not very well aligned with their own views, with 3% (n=18) of *organisation members* and 2% (n=5) of the *residents sample* reporting this view.

5.1.4 There were no statistically significant differences in results within the *main sample* by the various market segments (ie gender, age, urban/rural location and socio-economic group).

5.1.5 Respondents were also asked to identify any additional aspects that contribute towards their perceptions of wildness. Common responses from the *main sample* included:

- a lack of people, not meeting other people in the area, a sense of loneliness and isolation (n=71);
- wildlife (n=66);
- natural or unspoiled beauty and beautiful scenery (n=37);
- the weather (n=29);
- type of vegetative cover (n=17); and
- fresh/open air (n=9).

5.1.6 Similar responses were also given by the *residents sample* and *organisation members*, albeit that *organisation members* were more likely to mention the need for a lack of specific human artefacts and energy infrastructure such as wind turbines, roads, tracks and paths, etc.

5.2 Attribute Weighting by Attribute Type

5.2.1 Responses to the best-worst experiment were analysed under a choice modelling framework, which allows a weight to be estimated for each attribute investigated in the study. Importantly, the approach adopted allows for the scale between any two attributes to be robustly identified due to the 'trade-off' nature of the scenarios presented.

5.2.2 The scores are calculated relative to each other, with no real 'absolute'. We have therefore expressed each set of scores relative to the average attribute score (ie averaged over all 25 attributes) for the relevant set of respondents. A wildness score close to zero for a given sample therefore represents attributes which obtained close to the average score in the analysis of that sample, while attributes which tended to be selected as 'Most Wild' achieve a large positive score and those which were usually selected as 'Least Wild' will have a large negative score. Note that attributes with small negative scores may still contribute 'positively' to wildness, they just contribute less than the 'average' attribute in the ranking for that sample – ie a negative weight does NOT necessarily mean that that attribute decreases the public's perception of wildness. Similarly, a small positive wildness score does not necessarily mean that this attribute adds to the perception of wildness – rather it is just 'rather unimportant' from a wildness perspective.

5.2.3 Any differences between the three samples mentioned in the following sections is statistically significant at the 95% confidence level.

Perceived Naturalness

5.2.4 Table 5.1 and Figure 5.2 show how the three different groups believe that the different sorts of perceived naturalness affects wildness.

5.2.5 The key feature of these values are that the *organisation members* give more weight to this category than the other two sample groups, with higher positive wildness scores for natural landscapes and more negative wildness scores for 'evidence of farming' and 'highly managed' landscapes.

Table 5.1 Impact of Perceived Naturalness

Sub-Attribute	Wildness Value		
	Main Sample	Residents Sample	Organisation Members
Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	1.43	1.30	1.94
Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	0.69	0.89	1.01
Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	-0.16	-0.17	-0.32
Area has evidence of farming, including drainage, ploughing and arable crops	-0.94	-0.75	-2.19
Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	-1.43	-1.07	-3.12

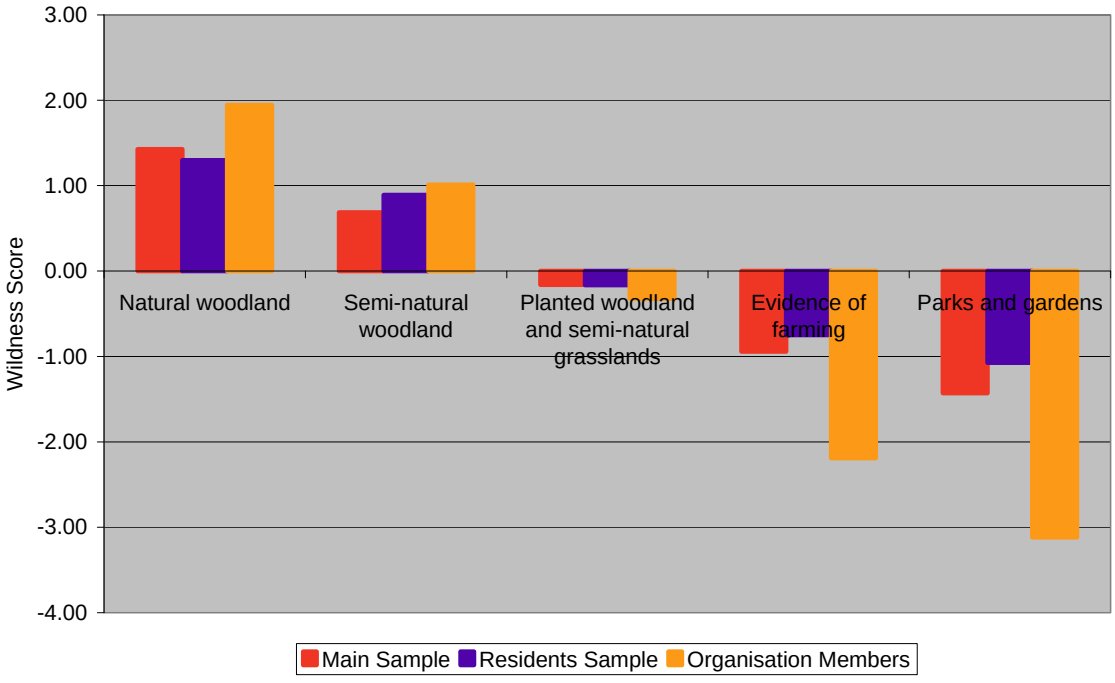


Figure 5.2 Wildness Scores for Perceived Naturalness by Sub-Sample

Man-Made Artefacts

5.2.6 Table 5.2 and Figure 5.3 show how the three different groups believe that the different types of man-made artefacts affect wildness.

Table 5.2 Impact of Man-Made Artefacts

Sub-Attribute	Wildness Value		
	Main Sample	Residents Sample	Organisation Members
No visible man-made features	1.41	1.10	2.90
Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles and stone walls	0.63	0.54	0.42
Moorland, actively managed by burning	-0.03	0.00	-0.28
Plantation forests in landscape (non-native conifers)	-0.30	-0.67	-1.13
Long line features in landscape, eg roads, railways and/or vehicle tracks	-1.08	-1.46	-1.63
Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	-1.30	-1.11	-2.43
Physical evidence of recreation (eg 4-wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	-1.51	-1.11	-2.55
Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	-1.60	-1.98	-2.75
Built-up areas, eg small towns and villages	-2.41	-1.75	-3.70

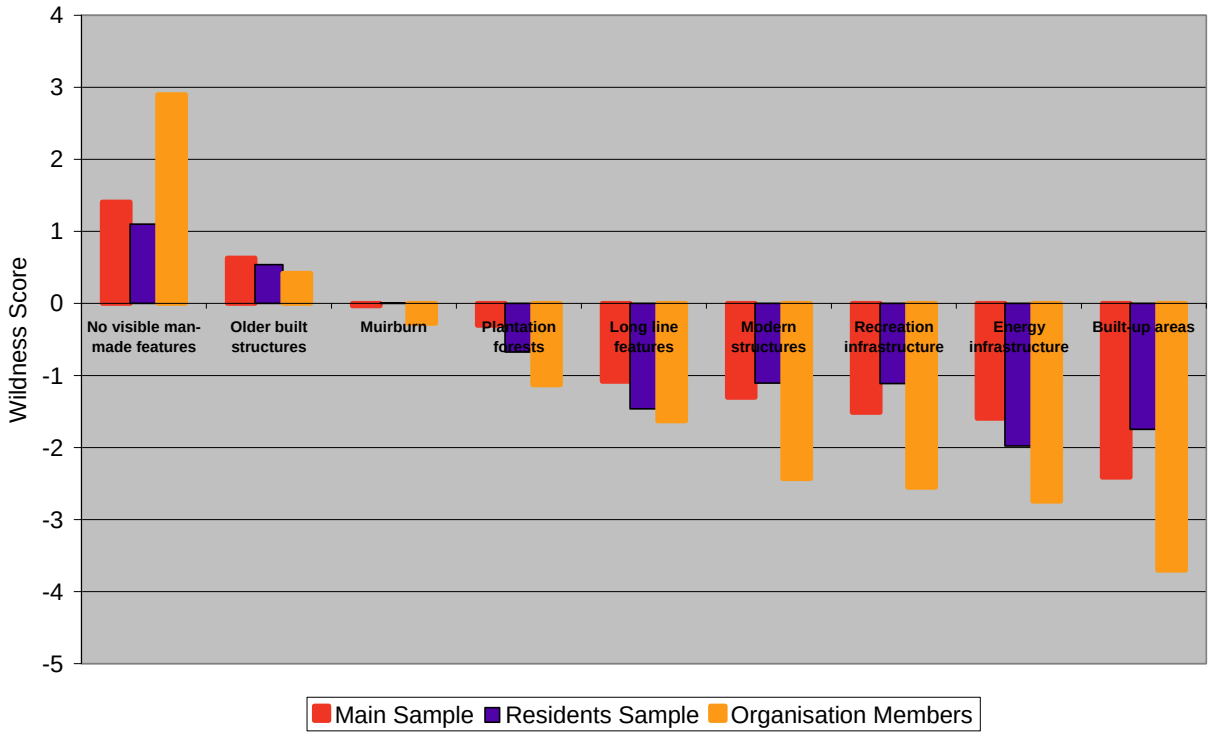


Figure 5.3 Wildness Scores for Man-Made Features by Sub-Sample

5.2.7 The key features of these values are that:

- *organisation members* give more weight to man-made features (ie associate greater positive wildness scores to the absence of visible man-made features and more negative scores to features which detract from wildness) than the other two groups;
- older built structures (defined as '*bothies, abandoned cottages, crofts, castle and stone walls*') actually have a positive wildness score (ie score more-highly than the 'average' attribute) for all three sample groups; and
- the *residents sample* assign less negative wildness impacts to 'modern structures', 'recreation infrastructure' and 'built-up areas' than the other two groups.

Wildlife

5.2.8 Table 5.3 and Figure 5.4 show how the three different groups scored the two attributes associated with wildlife.

Table 5.3 Wildness Values for the Wildlife Attributes

Sub-Attribute	Wildness Value		
	Main Sample	Residents Sample	Organisation Members
Native wildlife may be present in landscape, eg red deer, eagles, red squirrel, wild cat, and/or pine marten	1.73	1.61	2.09
Domestic livestock may be present in landscape, eg cattle and sheep	-0.25	-0.94	-0.86

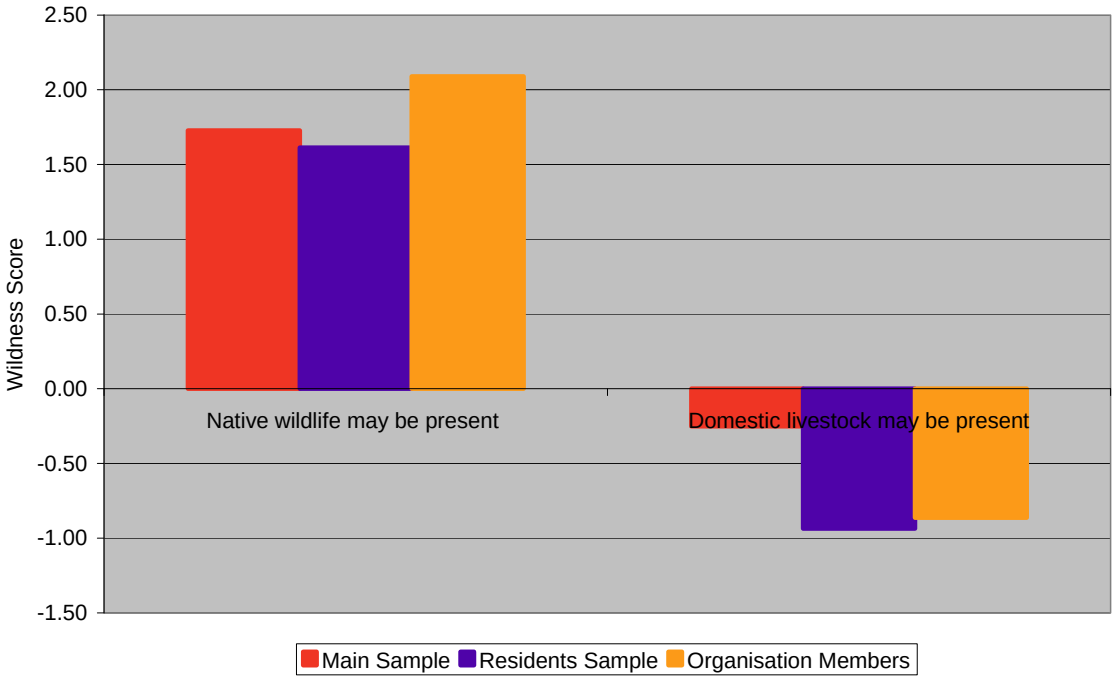


Figure 5.4 Wildness Scores for Wildlife Attributes

5.2.9 All three groups show a similar pattern, with a high positive wildness score for native wildlife and a small negative score created by the potential presence of domestic livestock. Note that since the experiment combined all 'native wildlife' into a single attribute, additional research would be required to estimate the wildness impacts of different types of native wildlife.

Remoteness

5.2.10 Table 5.4 and Figure 5.5 illustrate the wildness score allocated to different levels of 'remoteness' for the three sub-samples.

Table 5.4 Wildness Values for Different Levels of Remoteness

Sub-Attribute	Wildness Value		
	Main Sample	Residents Sample	Organisation Members
5 hours walk from the nearest road or railway station	0.32	0.77	1.99
4 hours walk from the nearest road or railway station	0.28	0.45	1.57
2 hours walk from the nearest road or railway station	-0.14	0.34	0.96
1 hour walk from the nearest road or railway station	-0.29	-0.15	0.22
Roadside (estimated by extrapolation)	-0.44	-0.65	-0.52

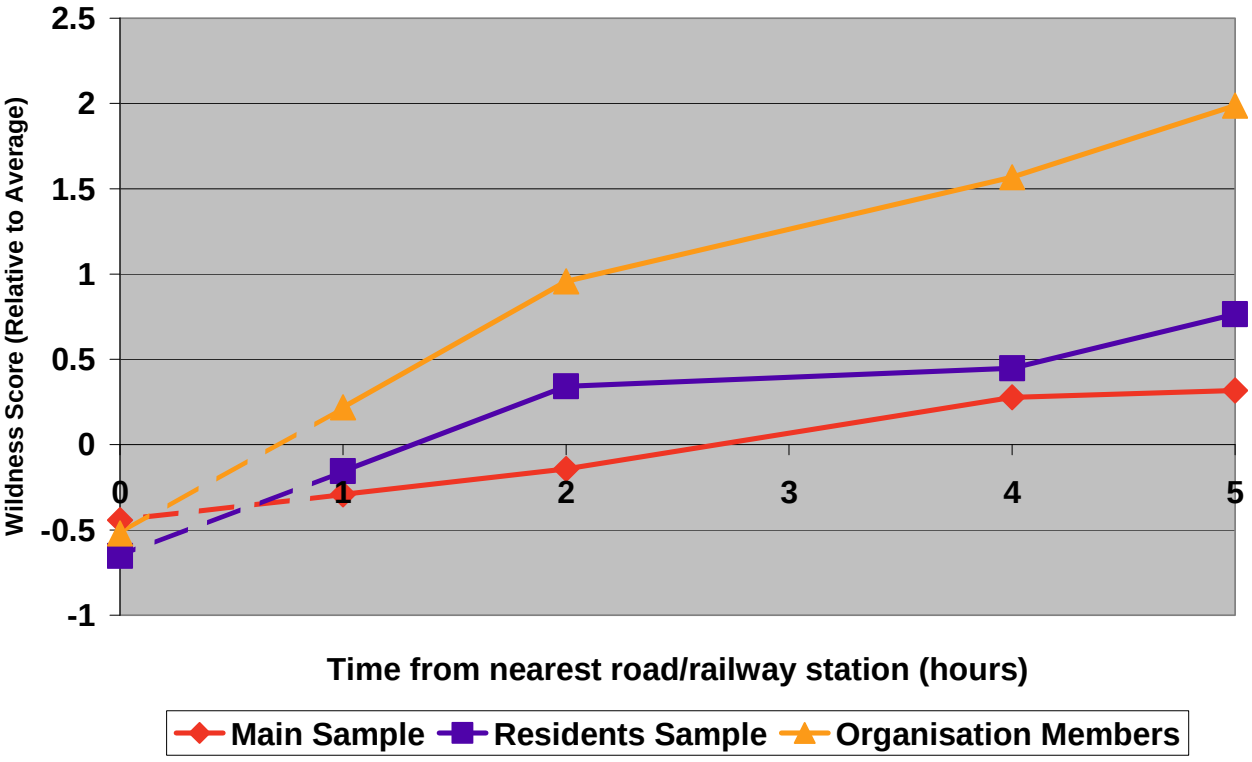


Figure 5.5 Wildness Scores for Remoteness by Sub-Sample

5.2.11 As expected, the perceptions of wildness for each sub-sample increases as the distance of location from the nearest road or railway station increases.

5.2.12 The graph also suggests that the *organisation members* perceive that increasing remoteness generates a greater level of wildness (relative to the other attributes) than the *main sample* or the *residents sample*.

5.2.13 Given the observed relationships and the high degree of statistical significance of the relevant parameter estimation, it is likely that the relevant lines could be extrapolated beyond five hours, if necessary.

Terrain

5.2.14 Table 5.5 and Figure 5.6 show how the three different groups believe that the different sorts of terrain affects wildness.

5.2.15 The key feature of these values are that the *organisation members* give much higher wildness scores to the three 'most-rugged' categories of terrain than the other two groups.

Table 5.5 Impact of Terrain

Sub-Attribute	Wildness Value		
	Main Sample	Residents Sample	Organisation Members
Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	1.60	1.12	2.80
Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	1.49	1.09	2.51
Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	1.37	1.23	2.27
Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	0.60	0.73	0.75
Landscape is of low altitude with no noticeable natural features, and is very easy to move around	-0.07	-0.01	-0.45

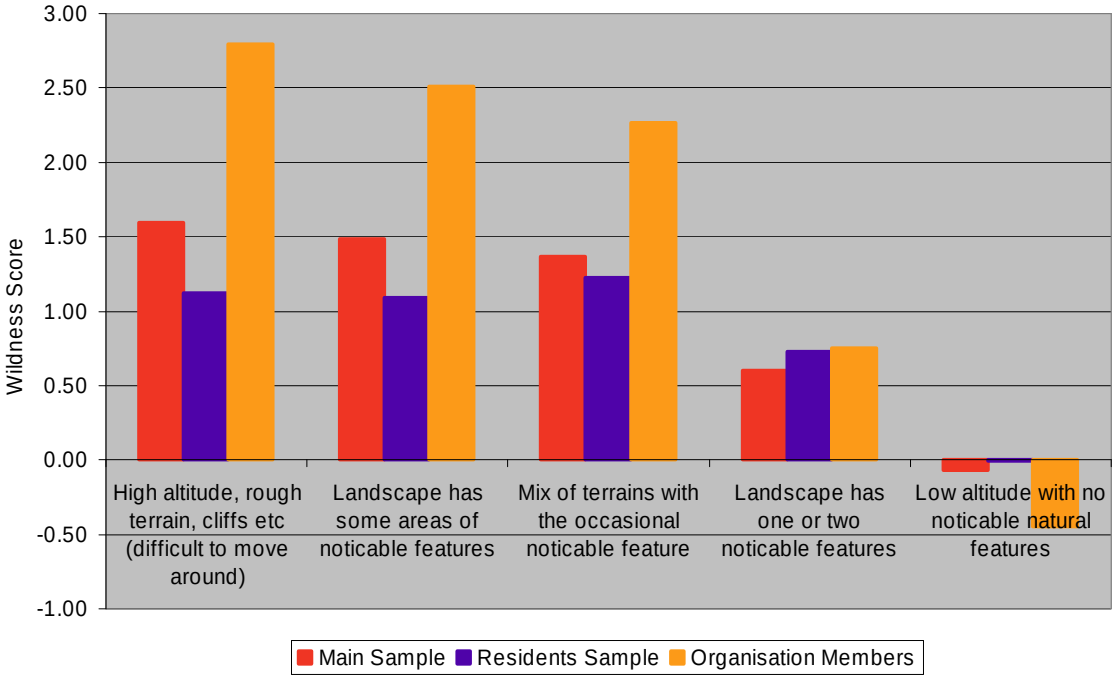


Figure 5.6 Wildness Scores for Terrain by Sub-Sample

5.3 Attribute Weighting for all Attributes

5.3.1 Table 5.6 shows the ranking of the wildness scores given to each of the 25 attributes by the three sub-groups.

Table 5.6 Overall Attribute Rankings

Attribute	Main Sample Ranking	Residents Sample Ranking	Organisation Members Ranking
Native wildlife may be present in landscape, eg red deer, eagles, red squirrel, wild cat, and/or pine marten	1	1	5
Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	2	4	2
Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	3	6	3
Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	4	2	7
No visible man-made features	5	5	1
Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	6	3	4
Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	7	7	9
Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	8	10	12
Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	9	9	11
5 hours walk from the nearest road or railway station	10	8	6
4 hours walk from the nearest road or railway station	11	11	8
Moorland, actively managed by burning	12	13	14
Landscape is of low altitude with no noticeable natural features, and is very easy to move around	13	14	16
2 hours walk from the nearest road or railway station	14	12	10
Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	15	16	15
Domestic livestock may be present in landscape, eg cattle and sheep	16	19	17
1 hour walk from the nearest road or railway station	17	15	13
Plantation forests in landscape (non-native conifers)	18	17	18
Area has evidence of farming, including drainage, ploughing and arable crops	19	18	20

Attribute	Main Sample Ranking	Residents Sample Ranking	Organisation Members Ranking
Long line features in landscape, eg roads, railways and/or vehicle tracks	20	23	19
Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	21	21	21
Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	22	20	24
Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	23	22	22
Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	24	25	23
Built-up areas, eg small towns and villages	25	24	25

5.3.2 The presence of native wildlife appears to contribute most to the *main sample's* and the *residents sample's* perceptions of wildness and came fifth in the ranking of *organisation members, who felt that* the complete absence of visible man-made features was the most important wildness factor.

5.3.3 At the other end of the scale, built-up areas (small towns and villages) reduces wildness by the most for both the *main sample* and the *organisation members*, while energy infrastructure in the landscape has the biggest negative impact on the perception of wildness for the *residents sample*.

5.3.4 These graphs show that the top three attributes which contribute to perceptions of wildness and the bottom three attributes which contribute least to wildness are as listed in Table 5.7.

Table 5.7 'Top 3' and 'Bottom 3' Attributes

Contribution to Wildness	Main Sample	Residents Sample	Organisation Members
Most Positive	Native wildlife may be present in the landscape	Native wildlife may be present in the landscape	No visible man-made features
2nd Most Positive	Landscape has noticeable features	Natural broadleaf or coniferous woodland	Landscape has noticeable features
3rd Most Positive	Landscape has some area of noticeable features	Mix of terrains with the occasional noticeable feature	Landscape has some area of noticeable features
…..	…..	…..	…..
3rd Most Negative	Physical evidence of recreation	Long line features	Energy infrastructure in the landscape
2nd Most Negative	Energy infrastructure in the landscape	Built up areas	Heavily managed (eg parks and gardens)
Most Negative	Built up areas	Energy infrastructure in the landscape	Built up areas

5.3.5 Figure 5.7 illustrates the attributes which have above average wildness scores, while Figure 5.8 shows the attributes which tend to 'reduce' wildness for each of the three samples. NB The caveats in paragraph 5.2.2 above (about attributes whose wildness scores are close to zero) should be particularly borne in mind here.

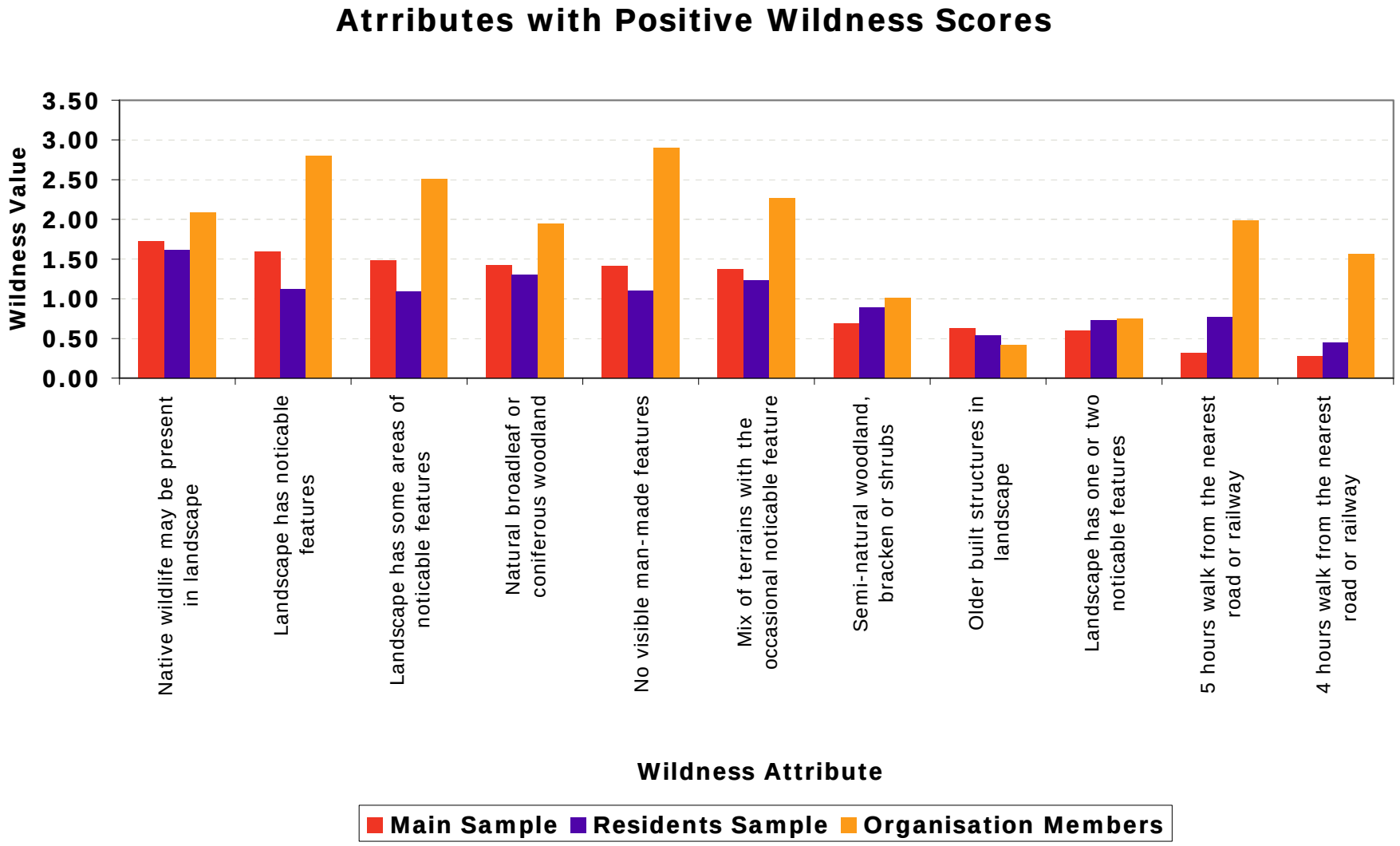


Figure 5.7 Attributes with Above-Average Wildness Scores by Sample Type

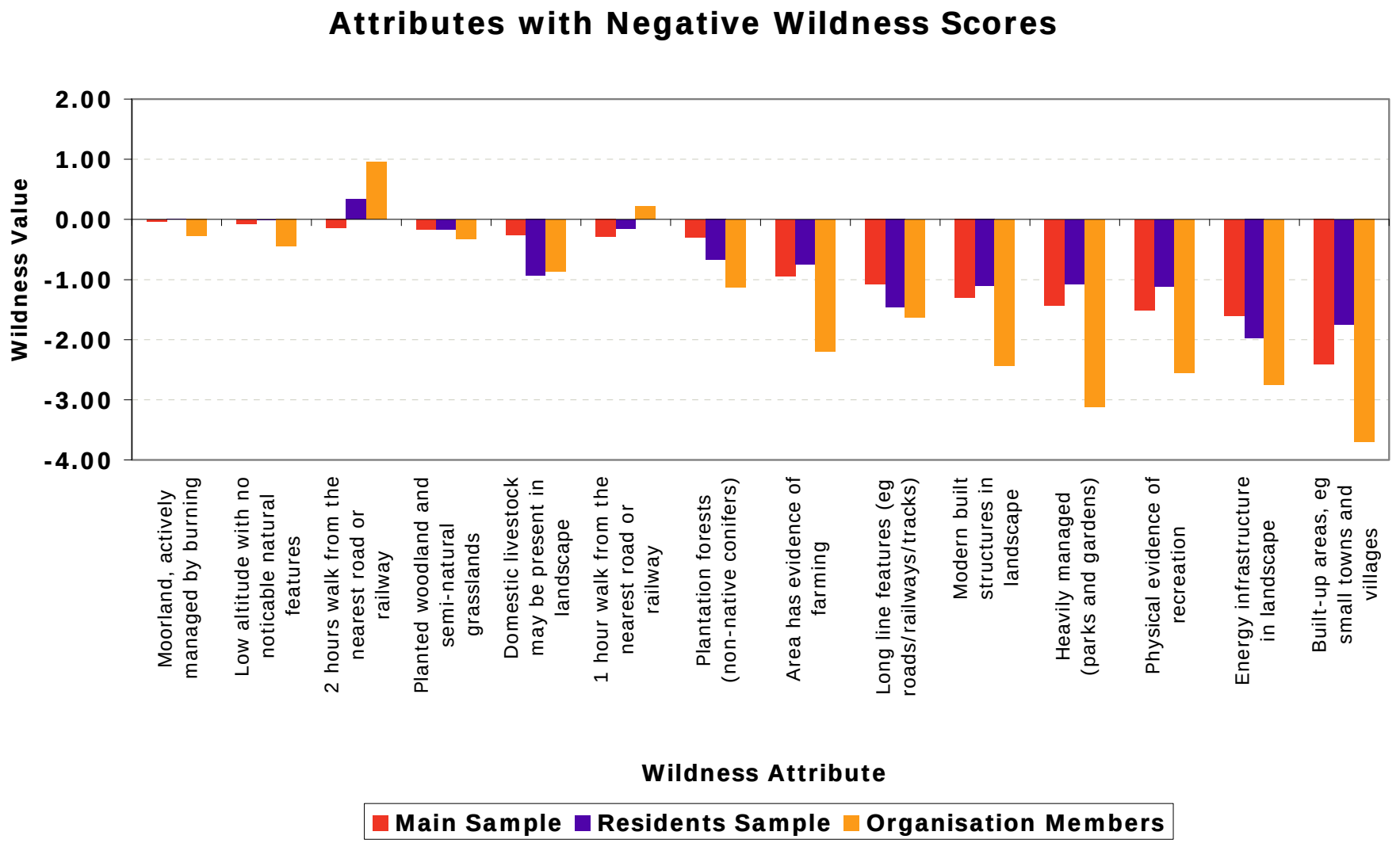


Figure 5.8 Attributes with Below-Average Wildness Scores by Sample Type

mvaconsultancy

5.4 Allocating Weights to the Five Attribute Categories

5.4.1 In order to determine the relative importance of the different categories of attribute (terrain, perceived naturalness of the vegetation, man-made features, remoteness and wildlife), it is necessary to consider the range between the 'most wild' and 'least wild' attribute within these categories.

5.4.2 This range gives an indication of the difference in wildness scores created by moving from the least-wild to the most-wild version of each attribute type.

5.4.3 Table 5.8 lists the attributes which achieved the top and bottom wildness scores within each attribute category, based on the results described in the previous section.

Table 5.8 Top and Bottom Attributes in each Category

Attribute Category	Least Wild Attribute	Most Wild Attribute
Terrain	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around
Perceived Naturalness	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces
Man-made Artefacts	Built-up areas, eg small towns and villages	No visible man-made features
Remoteness	Roadside (calculated by extrapolation)	5 hours walk from the nearest road or railway station
Wildlife	Domestic livestock may be present in landscape, eg cattle and sheep	Native wildlife may be present in landscape, eg red deer, eagles, red squirrel, wild cat and/or pine marten

5.4.4 The corresponding range in the average wildness scores allocated to these attributes by the three sub-groups are shown in Table 5.9 and illustrated in Figure 5.9. These ranges indicate which of the **categories** of attributes have the **most influence** on the wildness of the relevant landscape, with the attribute categories with the largest ranges being the most-important for determining the overall perceived wildness of the location (ie categories which show little difference in the range of wildness scores between the top and bottom are less important than categories which exhibit a wide range).

Table 5.9 Range of Wildness Scores for each Attribute Category

Attribute Category	Main Sample	Residents Sample	Organisation Members
Terrain	[-0.1, 1.6] = **1.7**	[-0.0, 1.1] = **1.1**	[-0.5, 2.8] = **3.2**
Perceived Naturalness	[-1.4, 1.4] = **2.9**	[-1.1, 1.3] = **2.4**	[-3.1, 1.9] = **5.1**
Man-made Artefacts	[-2.4, 1.4] = **3.8**	[-1.7, 1.1] = **2.8**	[-3.7, 2.9] = **6.6**
Remoteness	[-0.4, 0.3] = **0.8**	[-0.6, 0.8] = **1.4**	[-0.5, 2.0] = **2.5**
Wildlife	[-0.3, 1.7] = **2.0**	[-0.9, 1.6] = **2.5**	[-0.9, 2.1] = **3.0**

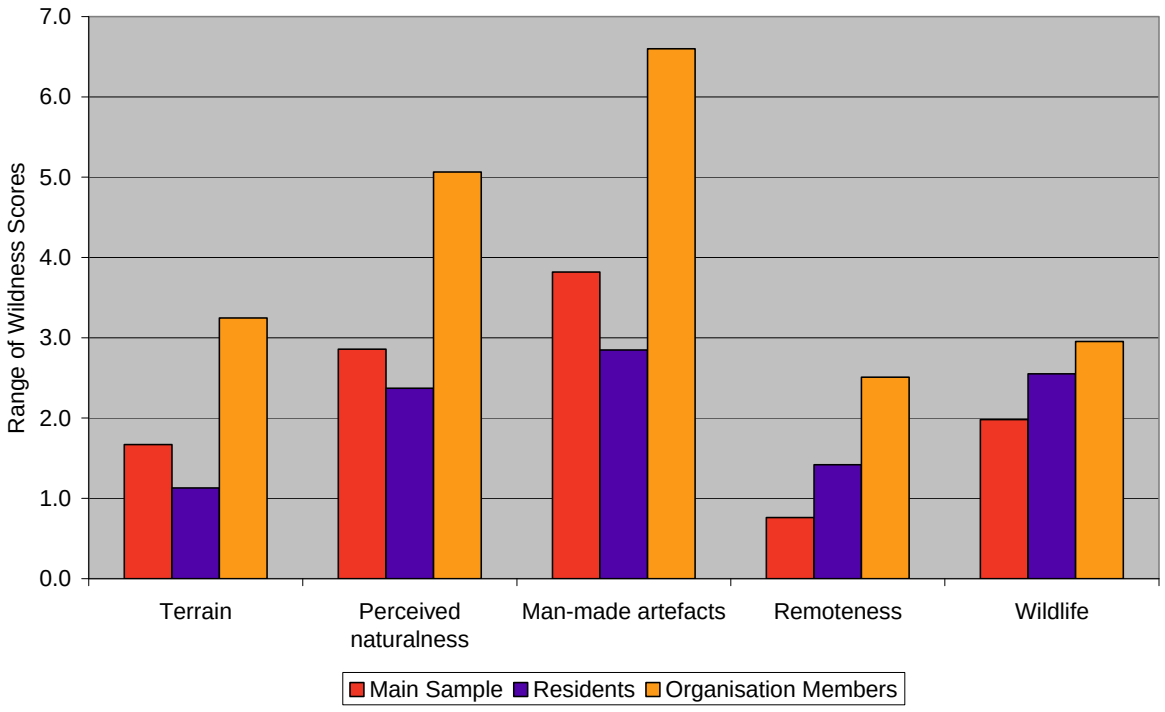


Figure 5.9 Range of Wildness Scores for each Attribute Category

5.4.5 As noted previously, the *organisation members* consistently assign a larger range of values than the other two groups, due to a combination of higher positive wildness scores for attributes such as 'No visible man-made features' which add to their perception of wildness and more negative wildness scores for the attributes which they perceive to reduce wildness.

5.4.6 The *main sample* and the *organisation members* show the same overall pattern, with the 'Man-made Artefacts' attributes and 'Perceived Naturalness' having the highest and 2nd highest range of wildness values respectively and 'Remoteness' having the smallest range of values. The values from the *residents sample* exhibit a slightly different pattern, with 'Man-made Artefacts' again having the largest range but the other categories having broadly similar wildness score ranges.

5.4.7 These ranges give an indication of the relative importance of the different **categories** of attribute for determining overall perceived wildness. For example, within the 'Man-Made Artefacts' category of the *main sample*, wildness scores can range from -2.4 (for Built Up Areas) to 1.4 (for 'No man-made features) (giving a range of 3.8), while the difference between 'Roadside[4]' (with an Wildness score of -0.4) and 'five hour's walk from the nearest road' (with a wildness score of 0.3) is only 0.7. In other words, the level of man-made artefacts in the landscape is 'more important' from an overall wildness perspective than the distance from the nearest road.

5.4.8 The values listed in Table 5.9 above can therefore be used to **combine** any measures of wildness (or wildness mapping) which have been calculated based on these broad attribute categories. In other words, the weights in Table 5.9 can be used to combine a location's scores for terrain, perceived naturalness, man-made artefacts, remoteness and/or wildlife, provided that these scores have been constructed using measures which are broadly consistent with the individual attribute descriptions used in this research.

5.4.9 The weights in Table 5.9 can also be used to combine **any subset** of the attribute categories. For example, the weights shown in Table 5.9 can be used to combine maps of terrain, perceived naturalness, man-made artefacts and remoteness, even though the level of 'Wildlife' may not be available for different locations.

[4] Calculated by extrapolation using the 1-hour walk and 2-hour walk values

6 Importance of Scotland's Wild Areas

6.1 Importance of Wild Areas

6.1.1 Respondents generally considered that it was very important that Scotland had wild areas. Almost three quarters of the *main sample* (72%, n=718) stated this, with only 3% (n=34) stating that it was not at all important.

6.1.2 However, a greater proportion of the residents sample and the *organisation members* stated that they considered that it was very important that Scotland has wild areas (83%, n=174 and 93%, n=609, respectively).

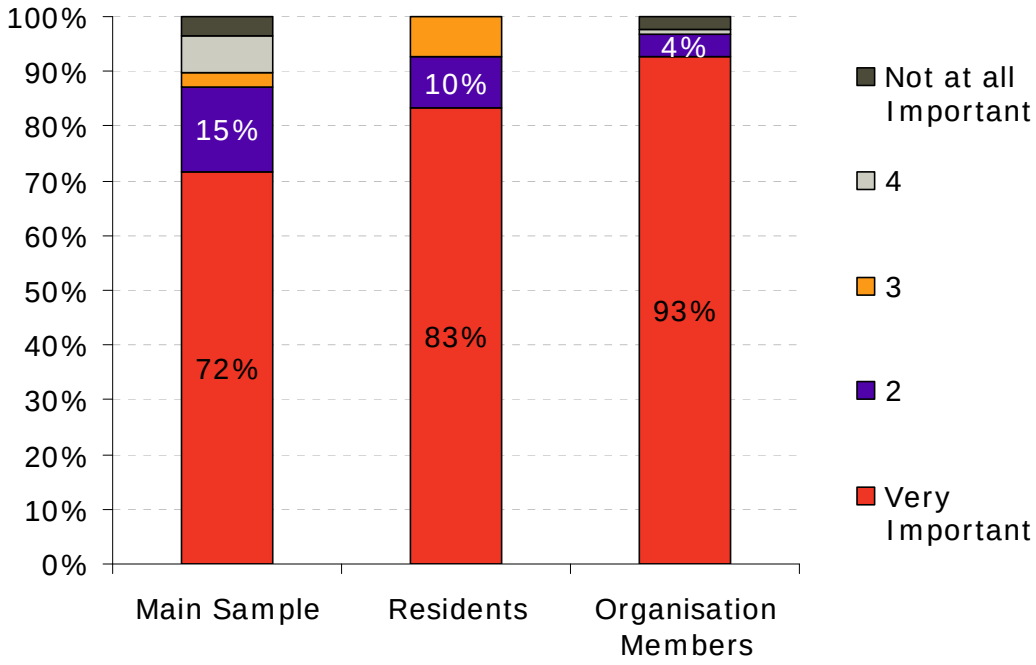


Figure 6.1 Importance of Wild Areas

6.1.3 The *main sample* was also analysed for statistically significant differences by market segment. No statistically significant differences were noted by gender or urban/rural location.

6.1.4 Age does appear to influence the responses to this question, with older respondents significantly more likely to consider that it was very important that Scotland has wild areas than younger respondents.

6.1.5 Respondents who felt that it was important that Scotland has wild areas were asked to explain their answer. The most frequently cited responses from the *main sample* included:

- preservation of wildlife (n=159);
- "*As Scotland has some of the last remaining wilderness in Europe, it's important we look after it and its wildlife*."
- part of Scottish culture (n=143);

- "*It is part of our culture and our heritage. Scotland has landscapes like no other country and it is worrying that more and more the wild areas we have left are being built on or being affected by manmade structures*."
- adds to the diversity of the country (n=126);
- natural beauty has to be preserved (n=112);
- *"To preserve the beauty, attract tourism, if we lose these areas it will be almost impossible to get them back*."
- the wild areas are beautiful (n=93);
- Scotland is known for it's wild areas (n=91);
- "*Because it is a vital part of Scotland's heritage, our country is known for its vast country sides and wildlife, and always should be*."
- "*Because we are famous for our hills, lochs and greenery and most people associate this with open spaces and wilderness*."
- for recreation and sightseeing activities (n=89);
- "*For recreational purposes and in order that people may have a place to wind down after the stress of today's world which seems now to be claiming more people as victims progressively as the strain of living in our modern world gets worse*."
- preservation of heritage (n=81);
- for helping with pollution and health (n=73);
- conservation of wildlife and natural habitat (n=72);
- attracts tourists to the area (n=57);
- "*Scotland has some of the most wonderful areas of natural beauty which brings tourists from around the world and helps with the economy. Too much modernisation would interfere with our animals living wild, our heritage and our ability to encourage increased tourist numbers*"
- animals need natural habitat in which to thrive (n=54); and
- one of the last remaining wild areas in Europe (n=28).
- "*It what makes Scotland special as the rest of the world is turning into concrete jungles Scotland should retain it wild areas as they are part of what makes Scotland special and beautiful*."

6.2 Wild Areas Under Threat

6.2.1 Of the *main sample*, 60% (n=599) of respondents stated that they thought wild areas in Scotland are under threat, with 17% (n=172) stating they did not think they were under threat.

6.2.2 Almost all *organisation members* (92%, n=602) stated that they felt wild areas were under threat in Scotland, while this figure was just over half (55%, n=114) for the *residents sample*. These responses are illustrated in Figure 6.2 below.

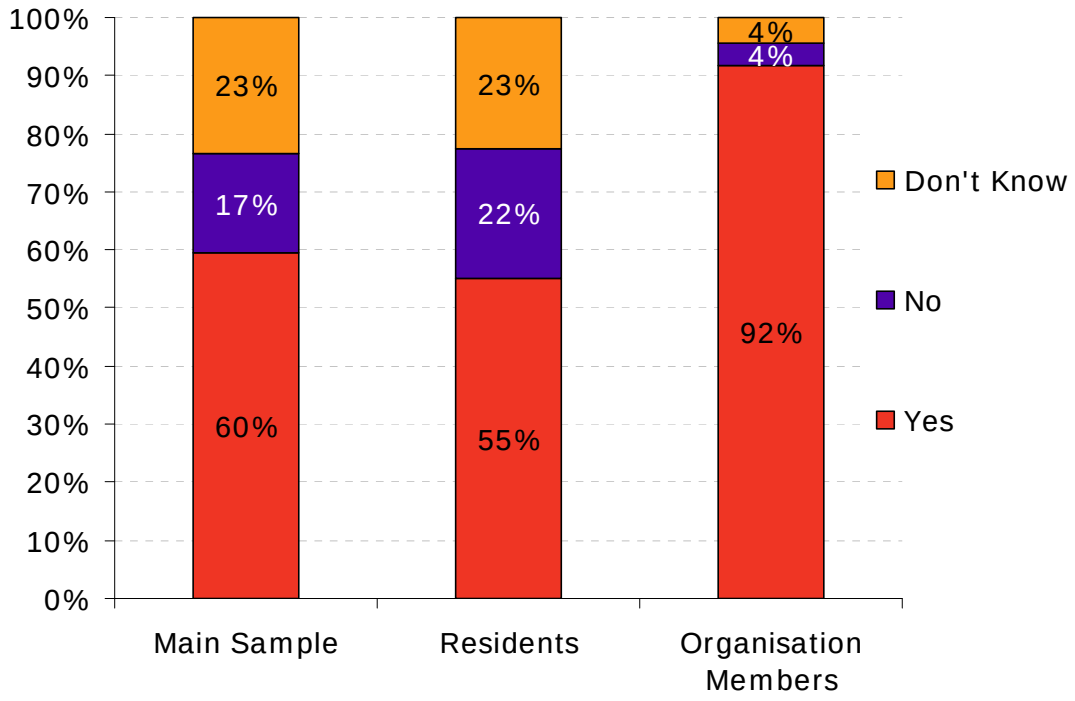


Figure 6.2 Wild Areas Under Threat

6.2.3 The *main sample* was also analysed for statistically significant differences by market segment. There were no statistically significant differences in the sample by age, socio-economic group, and urban/rural location.

6.3 Preserving Wild Areas

6.3.1 Figure 6.3 shows that 86% (n=868) of respondents in the *main sample* felt that action is necessary to preserve wild land in Scotland.

6.3.2 Almost all (97%, n=639) *organisation members* felt that action is necessary while 80% (n=168) of the *residents sample* felt that this was necessary.

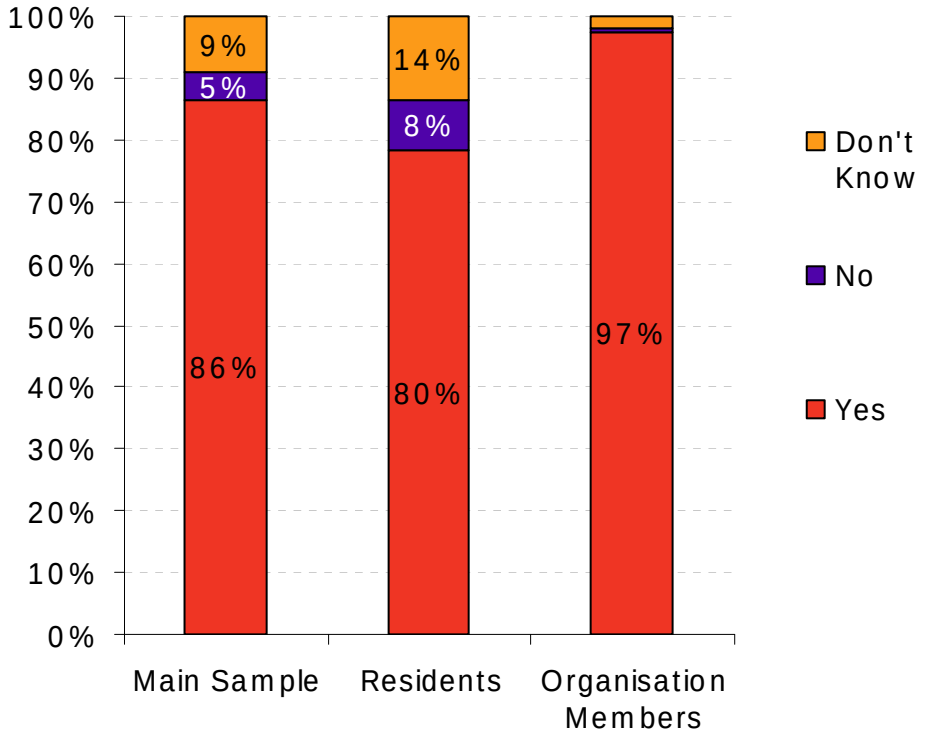


Figure 6.3 Action Required to Preserve Wild Areas

6.3.3 There were no statistically significant differences in the *main sample* by gender, age, socio-economic group, or urban/rural location.

Specific Actions to Preserve Wild Areas

6.3.4 Respondents were provided with a list of potential actions and asked to select the three that they think should be taken to preserve wild areas in Scotland. The responses are summarised in Table 6.1.

Table 6.1 Actions to preserve wild areas

	Main Sample (%)	Residents Sample (%)	Organisation Members (%)
The introduction of specific 'wild land' designation	48	31	54
Effective control over new vehicle hill tracks	14	17	41
Effective planning control for buildings	36	42	19
Effective planning control for wind turbines	37	57	63
Effective planning control for telephone masts and pylons	35	36	43
Make some areas wild again	19	21	28
Species re-introductions	35	24	16
Effective management of farming, forestry and fishing	22	19	18
Fewer purpose built paths, including signage and track removal	4	11	4
Other	2	2	7
None/Nothing	1	2	-
Don't Know	6	2	-
Total (N)	**1006**	**174**	**656**

*Note: Totals do not equal 100% due to multiple responses

6.3.5 Looking solely at the *main sample*, Figure 6.4 below shows that the most popular responses for action to be taken, stated by over a third of respondents, were:

- the introduction of specific 'wild land' designation;
- effective planning control for wind turbines;
- effective planning control for buildings;
- effective planning control for telephone masts and pylons; and
- species re-introductions.

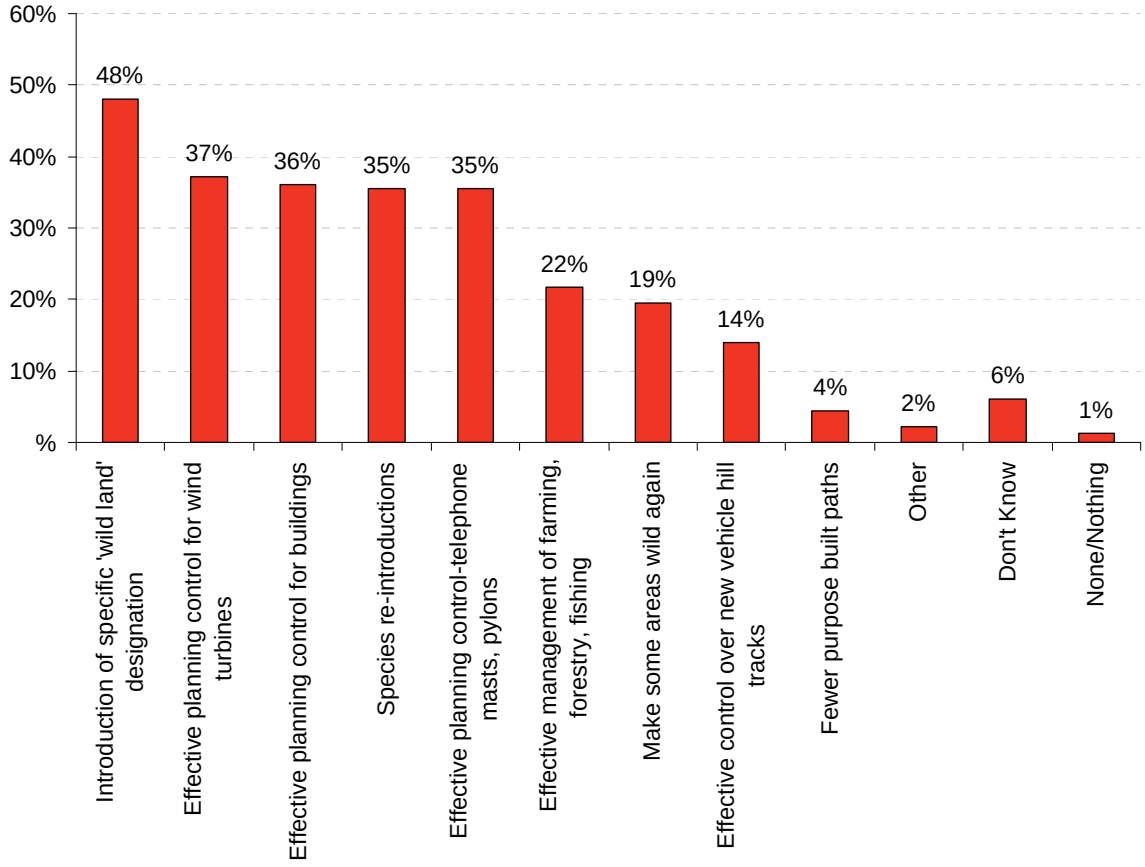


Figure 6.4 Actions to Preserve Wild Areas by Main Sample

6.3.6 The most frequently cited 'other' responses were:

- all of the above actions;
- education and awareness eg in schools;
- effective planning and control in general;
- more national parks;
- less wind farms; and
- wider promotion of the wilderness.

6.4 Importance of Protecting Wild Areas

6.4.1 When asked, to indicate on a five point scale, where 1 is very important and 5 is not at all important, how important respondents think it is to protect wild areas in Scotland, over three quarters of the *main sample* (77%, n=771) considered it was very important.

6.4.2 Of the other two samples, 82% (n=169) of the *residents sample* and 93% (n=611) of *organisation members* also stated that they thought it was very important. This is illustrated in Figure 6.5.

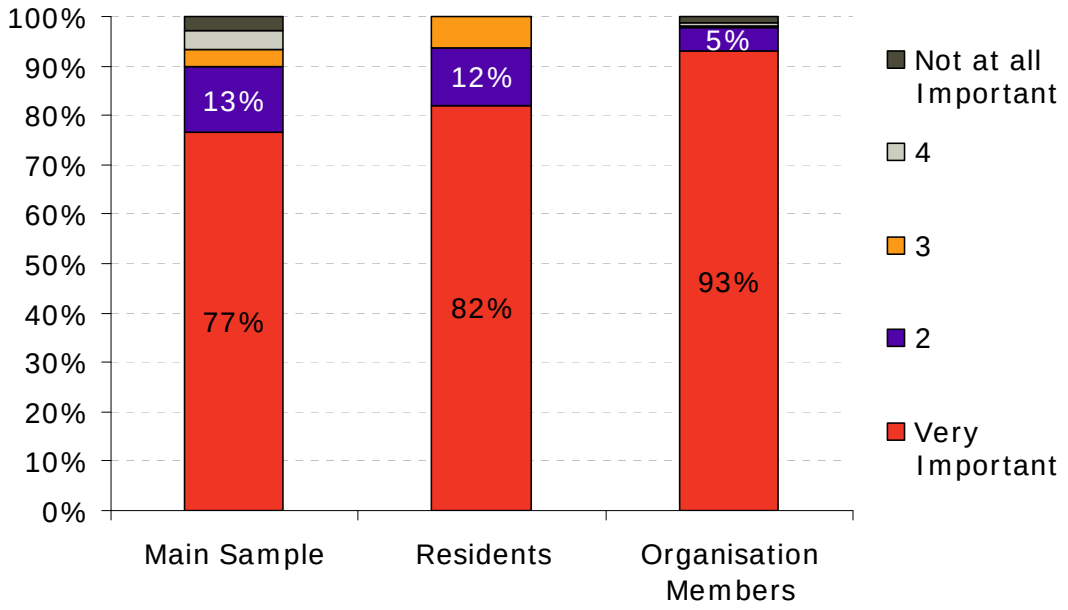


Figure 6.5 Importance of Protecting Wild Areas

6.4.3 The *main sample* was also analysed for statistically significant differences. There were no differences in the sample by urban/rural location.

6.4.4 Age group was found to be statistically significant, with respondents in the older age group more likely than respondents in the younger age groups to think that it was very important to protect wild areas in Scotland.

6.4.5 There was also a statistically significant difference between socio-economic group, with those in group ABC1 more likely to think it was important that wild areas are protected in Scotland than those in groups C2DE.

6.4.6 Gender was also found to be statistically significant, however, the only noticeable differences that can be seen in the results is that males were slightly more likely than females to think that it was not at all important, although numbers for both groups stating this were low.

6.5 Importance of Promoting Economic Development

6.5.1 When asked, to indicate on a five point scale, where 1 is very important and 5 is not at all important, how important respondents think it is to promote economic development in rural areas of Scotland, 31% (n=314) of the main sample felt it was very important to promote economic development in rural areas of Scotland.

6.5.2 Results were similar for the organisation members, with 32% (n=212) stating that they thought it was very important, however, a higher proportion of the residents sample considered this to be very important, with half of all residents indicating this (50%, n=101).

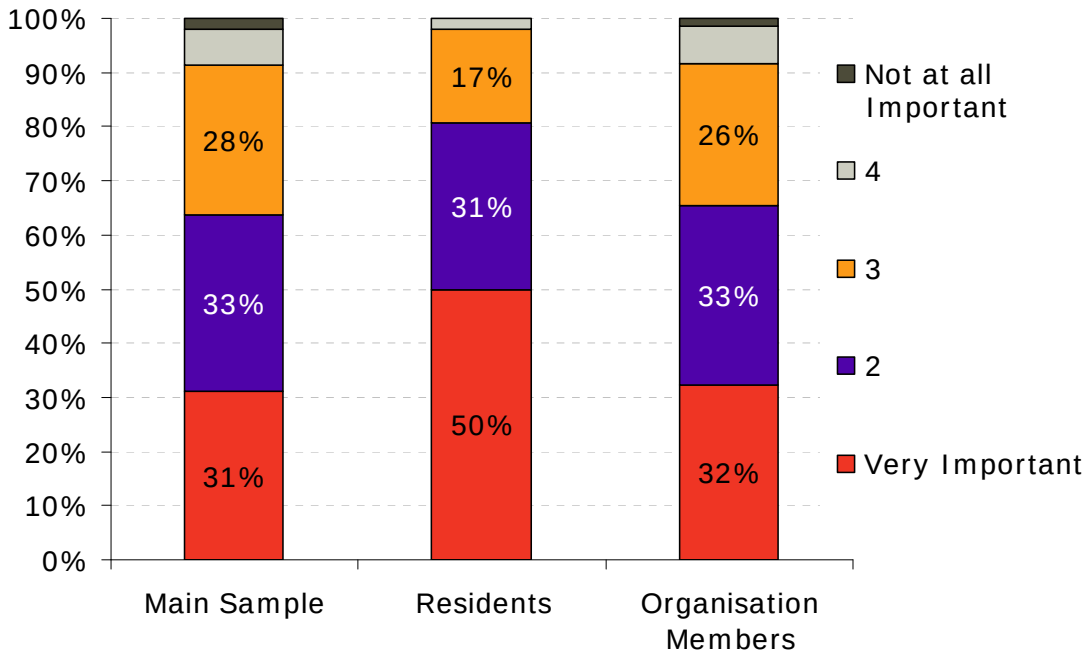


Figure 6.6 Importance of Promoting Economic Development

6.5.3 The *main sample* was also analysed for statistically significant differences. There were no statistically significant differences in the sample by age and urban/rural location.

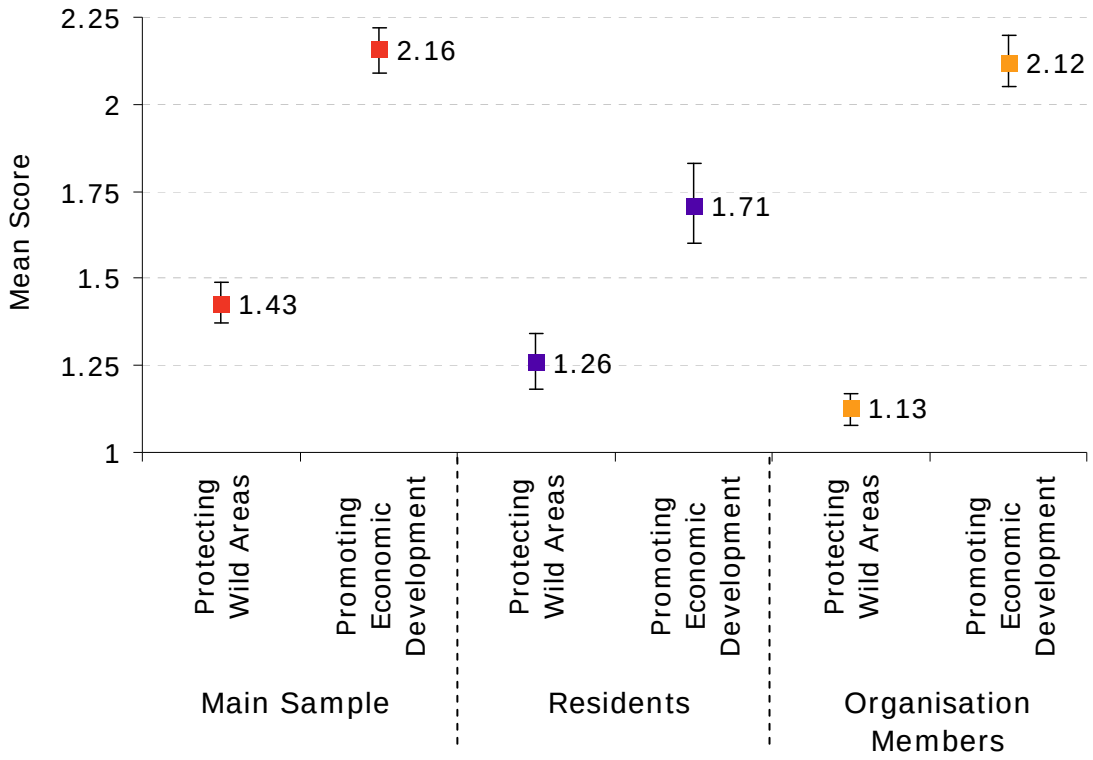
6.5.4 Gender was found to be statistically significant, however, the only noticeable differences that can be seen in the results is that males were slightly more likely than females to think that it was not at all important promote economic development in rural areas of Scotland, although numbers for both groups stating this were very small.

6.5.5 Socio-economic group was also found to be statistically significant, with more respondents in group ABC1 stating '2' ie that it was important to promote economic development in rural areas of Scotland than group C2DE, although overall, around two thirds of respondents in both of these groups considered it important or very important to promote economic development in rural areas of Scotland.

6.6 Importance of Protecting Wild Areas Vs Promoting Economic Development

6.6.1 Comparing the mean scores for the importance of protecting wild areas and the importance of promoting economic development shows that, across all three samples, respondents placed a statistically significant greater level of importance on the protection of wild areas than economic development. (see Figure 6.7)

6.6.2 Note that the scale ran from 1 being very important to 5 being not at all important, therefore, the lower the mean score, the higher the actual level of importance reported.



Scale: 1=Very Important through to 5=Not at all Important

Figure 6.7 Comparing Importance of Protecting Wild Areas and Promoting Economic Development

6.6.3 Figure 6.7 also shows that *organisation members* placed the greatest importance on protecting wild areas, followed by the *residents sample*, then by the *main sample*. These differences in the responses to this question between the three groups are all statistically-significant.

6.6.4 The *residents sample* rated the importance of economic development more highly than either of the other two samples and this difference was statistically-significant. The difference in the responses to this question between the other two sub-groups was not statistically significant.

7 Conclusions/Recommendations

7.1 Conclusions

7.1.1 This approach to measuring public perceptions of wildness has been built on a robust statistical method, using techniques which have been widespread in other fields and sectors for many years. Critical to this is the trade-off of different attributes, which allow weights to be estimated for each attribute which have a robust scale between each. This represents a significant advancement on alternative ranking and rating techniques. The 'goodness-of-fit' statistics which accompany the analysis suggest the high degree of accuracy associated with the estimated weights and values.

7.1.2 The research has also investigated a greater range of attributes than has previously been possible, with attributes presented using both textual and visual descriptions. It has been previously proven that different segments of the population prefer different stimuli; similar research has established the splits as approximately a third preferring text, visual, and text and visual jointly. The visuals deployed were of a high quality, and were perceived by respondents to offer a transparent, accessible, and engaging means of describing different attributes of wildness.

7.1.3 The survey methodology achieved a representative sample of Scottish residents for the *main sample* for analysis. These respondents generally indicated that the wildest places they had visited in Scotland were the highlands and islands regions, various mountain ranges, glens and lochs, and the two National Parks.

7.1.4 Around one third of respondents in the *main sample* visited the outdoors at least once a week, while only 6% indicated that they never make such visits. The main activities undertaken by these respondents included low level walking, sightseeing/visitor attractions and family days out.

7.1.5 However, very few respondents within the *main sample* visit any National Parks with any regularity; only 7% indicated that they visit Loch Lomond at least monthly, 3% visit the Cairngorms on a monthly basis and 4% indicated visit other UK National Parks with the same regularity.

7.1.6 Most respondents, across all three samples, indicated that they considered it important that Scotland has wild areas, although a higher proportion of *organisation members* and the *residents sample* considered this important than within the *main sample*.

7.1.7 Slightly more than half of all respondents in the *main sample* and the *residents sample* considered that Scotland's wild areas were under threat and the majority of *organisation members* felt that this was the case. However, across all samples, the majority of respondents felt that action is necessary to preserve wild land in Scotland.

7.1.8 Actions that were suggested for the protection of wild areas included the introduction of specific 'wild land' designation, with almost half of all *main sample* respondents identifying this as an appropriate action. Effective planning controls for for wind turbines, buildings and telephone masts/pylons were also suggested by just over one third of the respondents in the *main sample*.

7.1.9 Across all samples, although most respondents indicated that protecting wild areas and promoting economic activity were important, respondents appear to place greater importance on the protection of wild areas than they placed on promoting economic development in rural areas.

7.1.10 The majority of respondents, across all sample groups, indicated that the four specified categories of attributes capture what they thought of as wild either 'quite' or 'very' well.

7.1.11 The mathematical analysis of the responses yielded a consistent and statistically-robust set of 'wildness' values for each of the 25 attributes tested here, including a broadly linear relationship between 'remoteness' and wildness and an intuitive ordering of attributes within each of the main attribute categories tested here.

7.1.12 This analysis has suggested that attributes such as the presence of native wildlife, noticeable features in the landscape (such as cliff faces and boulder fields) and perceived naturalness of vegetation all score highly. The absence of any man-made features also achieved a high 'wildness' score. Attributes such as the presence of built-up areas, energy infrastructure (eg wind turbines, pylons, dams etc) and recreational infrastructure (eg 4-wheel drive tracks, hiking paths, ski lifts and field sports) all have a strong negative impact on perceived wildness. It should be noted however, that whilst noticeable features in the landscape were a key element in respondents' perceptions of wildness, this was on the basis of the photos provided and questions/specific attributes being asked about, yet the absence of all features could also lead to perceptions of wildness. However, this attribute was not included or tested within this survey.

7.1.13 The top three attributes which contribute to positive perceptions of wildness for the ***main sample*** are:

- 'native wildlife may be present in the landscape';
- 'landscape has noticeable features'; and
- 'landscape has some area of noticeable features'.

7.1.14 The top three attributes which contribute to positive perceptions of wildness for the ***residents sample*** are:

- 'native wildlife may be present in the landscape';
- 'natural broadleaf or coniferous woodland'; and
- 'mix of terrains with the occasional noticeable feature'.

7.1.15 The top three attributes which contribute to perceptions of wildness for ***organisation members*** are:

- 'no visible man-made features';
- 'landscape has noticeable features'; and
- 'landscape has some areas of noticeable features'.

7.1.16 The *main sample* and the *organisation members* show the same overall pattern, with the 'Man-made Artefacts' attributes and 'Perceived Naturalness' having the highest and 2nd highest range of wildness values respectively and 'Remoteness' having the smallest range of values. The values from the *residents sample* exhibit a slightly different pattern, with 'Man-made Artefacts' again having the largest range but the other categories having broadly similar wildness score ranges.

7.1.17 The resulting weights (summarised in Table 7.1 below) can be used to combine any measures of wildness which have been calculated based on these broad attribute categories. Note that these weights have been calculated independently of each other and therefore can be used to combine **any combination** of these wildness attribute categories. For example, if the level of wildlife

cannot be calculated then we can simply ignore this weight and use the other weights in the table below to combine the categories which are available. These weights should obviously **not** be used to combine measures of wildness based on categories which differ significantly from the range of attributes included in this research.

Table 7.1 Suggested Weights for each Wildness Attribute Category

Attribute Category	Main Sample	Residents Sample	Organisation Members
Terrain	**1.7**	**1.1**	**3.2**
Perceived Naturalness	**2.9**	**2.4**	**5.1**
Man-made Artefacts	**3.8**	**2.8**	**6.6**
Remoteness	**0.8**	**1.4**	**2.5**
Wildlife	**2.0**	**2.5**	**3.0**

7.1.18 It is interesting to note that the *organisations members* who were invited to take part in this research consistently assign a larger range of wildness values than the other two groups, due to a combination of higher positive wildness scores for attributes such as 'No visible man-made features' and more negative scores for attributes which they perceive to reduce wildness.

7.2 Recommendations

7.2.1 The analysis suggests that the four categories of wildness used in previous wildness mapping' merit different weights. Any attempts to combine these previous wildness maps **should use the weights which are listed in Table 7.1 above**. NB Since the level of wildlife was not included in the previous mapping (and is not easy to estimate) the weight for this category can simply be ignored.

7.2.2 In addition, the analysis by market segmentation suggests that there are statistically-significant[5] differences in the wildness scores given to these attributes by the different population groups surveyed here. In particular, the *organisation members* included in this research tended to assign more-extreme wildness scores across all of the categories, while the *residents sample* tend to assign less negative wildness impacts to attributes such as 'modern structures', 'recreation infrastructure' and 'built-up areas' than the other two groups.

7.2.3 **These differences should be borne in mind** when endeavouring to understand the attitudes of different sub-groups. In particular, users of the results quoted here **should consider carefully** which set of attribute values ('*main sample*', '*residents sample*' or '*organisation members*') to use for each application. It is recommended that the **results from the *main sample*** reported here should provide the default values for general future wild-land mapping in Scotland.

[5] at or above the 95% significance level

7.2.4 It should also be noted that 'older built structures' (defined here as '*bothies, abandoned cottages, crofts, castles and stone walls*') actually have a positive wildness score (ie score more-highly than the 'average' wildness attribute) for all three sample groups Care is therefore required when combining built structures within wildness mapping. Additional research would be required to determine the wildness impacts of the various different sub-categories within this 'older built structures' attribute.

7.2.5 In this research we combined various types of 'energy infrastructure' (eg dams, pylons and wind turbines etc) into one attribute. However, 'it would be useful in any future research to separate these across separate attributes and investigate the impact each has individually. For example, it is likely that respondents will have different perceptions of the impact that wind turbines have on wildness compared to, say, hydroelectric dams, but this difference cannot be determined from the results of this Study. Given the importance of this combined 'Energy Infrastructure' attribute (second only to 'Built up Areas, Small Towns and Villages' in reducing perceived wildness), any future research in this area **should consider a further disaggregation of this attribute**.

7.2.6 Finally, the best-worst (most wild/least wild) approach used here **could / should be extended to include additional monetary trade-offs** (eg increases to taxation or visitor charges to protect or enhance particular attributes). Such additional research could facilitate a monetary valuation of the features which add to the general public's perception of Scotland's wildness and would add important additional evidence for the protection (or creation) of these features.

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Appendix A – Survey Questionnaire

Public Perceptions of Wildness in Scotland

Loch Lomond and the Trossachs National Park Authority, the Cairngorms National Park Authority and Scottish Natural Heritage are conducting a survey of the public's perception of 'wildness' and 'naturalness' of land cover in Scotland. MVA Consultancy and Research Now have been commissioned to design and conduct this survey using a representative sample of the Scottish population, and among residents of and visitors to the two National Parks.

We fully adhere to the Market Research Society's Code of Conduct and can assure you that all information that you provide here will be treated in the strictest confidence. All responses will be anonymous and the data will be analysed and reported at such a level that no individual can be identified.

If you have any questions about the research please contact Elaine Wilson Smith at MVA Consultancy either on 0131 240 8907 or by email: ewilsonsmith@mvaconsultancy.com

Q1. Where is the most 'wild' place/area you have ever been in Scotland?

……

……

Q2. Are you a member of any outdoors, wildlife, and/or conservation organisations? (Tick all that apply)

Not a member of any outdoor, wildlife or conservation organisation				☐ 0
John Muir Trust (JMT)	☐ 1		Scottish Mountaineering Club (SMC)	☐ 6
Mountaineering Council of Scotland	☐ 2		Scottish Wild Land Group	☐ 7
National Trust for Scotland (NTS)	☐ 3		Scottish Wildlife Trust (SWT)	☐ 8
Ramblers Association Scotland	☐ 4		Trees for Life	☐ 9
Royal Society for the Protection of Birds (RSPB)	☐ 5		World Wildlife Fund (WWF)	☐ 10
			Other **(tick and write in)**	☐ 11
			_____	

Q3 In the last 12 months, how often, on average, have you made a visit to the outdoors for leisure and recreation? (By outdoors, we mean any large open spaces in cities, towns or the countryside, including parks, woodland, farmland, beaches, etc).

More than once a day	☐ 1		**CONTINUE**
Every day	☐ 2		**CONTINUE**
Several times a week	☐ 3		**CONTINUE**
Once a week	☐ 4		**CONTINUE**
Once or twice a month	☐ 5		**CONTINUE**
Once every 2-3 months	☐ 6		**CONTINUE**
Once or twice	☐ 7		**CONTINUE**
Not made any such visits in the last 12 months	☐ 8		**GO TO Q5**

Q4 Which of the following activities have you participated in during your visits to the outdoors in the last 12 months? (Tick all that apply)

Walking (Low Level)	☐ 1		Birdwatching	☐ 11
Hill walking	☐ 2		Other wildlife/nature watching	☐ 12
Rock Climbing	☐ 3		Running/jogging	☐ 13
Cycling (road-based)	☐ 4		Camping	☐ 14
Mountain biking (off road)	☐ 5		Sightseeing/visitor attractions	☐ 15
Horse riding	☐ 6		Picnicing	☐ 16
Fishing	☐ 7		Family day out	☐ 17
Watersports	☐ 8		Other **(tick and write in)**	☐ 18
Snowsports	☐ 9		_____	
Swimming	☐ 10		None/nothing/can't remember	☐ 19

Q5 Do you regularly visit the 'outdoors' for work purposes?

Yes ☐ 1 No ☐ 2

Q6 Do you live in either of Scotland's National Parks, ie Loch Lomond and the Trossachs National Park or Cairngorms National Park?

Live within the boundaries of Loch Lomond and the Trossachs National Park	☐ 1
Live within the boundaries of the Cairngorms National Park	☐ 2
Do not live within either of these two National Parks	☐ 3

Q7 How frequently do you visit:

	Park resident, N/A	Weekly	Monthly	Once or twice a year	Rarely	Never
(a) Loch Lomond and the Trossachs National Park	0	1	2	3	4	5
(b) Cairngorms National Park	0	1	2	3	4	5
(c) Other National Parks in the UK	0	1	2	3	4	5

Q8a Please tick the statement which most-closely describes your current employment status:

Self-employed	☐ 1		GO TO Q8b
Employed (full-time or part-time)	☐ 2		GO TO Q8b
Unwaged (looking after home or family, student, unemployed, retired etc)	☐ 3		GO TO 'Perceptions of Wildness' Section
Other	☐ 4		GO TO 'Perceptions of Wildness' Section

Q8b SELF-EMPLOYED & EMPLOYED ONLY: Please tick the statement which most-closely describes the location of your main job:

My normal place of work lies within one of Scotland's National Park boundaries	☐ 1		GO TO Q8c
My normal place of work is not in either of the National Parks	☐ 2		GO TO 'Perceptions of Wildness' Section

Q8c THOSE WHOSE WORK IN THE NATIONAL PARKS: Which industrial sector best describes your main job?

Agriculture	☐ 1		Construction, Manufacturing & Distribution	☐ 6
Forestry	☐ 2		Transport and Communication	☐ 7
Catering/Leisure/Tourism	☐ 3		Public Sector Services	☐ 8
Energy and Water	☐ 4		Other **(tick and write in)**	☐ 9
Finance and Business	☐ 5		_____	

Perceptions of Wildness

In the following section you will be presented with a series of descriptions of wildness in Scotland.

Wildness will be described by four different aspects:

- *the **naturalness** of the land cover and wildlife*
- *the presence of **man-made structures** and features*
- *its **remoteness** from roads and railway stations*
- *its **terrain** and climate*

In each situation we'll be asking you to select which descriptions you think are 'most wild' and 'least wild'.

We've provided some pictures with each description to help you in making your choices.

Naturalness of the land cover and wildlife tells you about the presence of plants and animals and any evidence of use of the land by people.

- natural/semi-natural woodland
- plants, such as bushes and shrubs
- heaths, moors and other open areas
- water features, including rivers and lochs
- farming & domesticated animals/livestock
- natural wildlife

Man-made structures and features tells you about the age, type, and size of any buildings and other human infrastructure which are present in the landscape.

- modern structures such as homes or industrial premises and activities
- older structures such as farms, lodges and bothies
- plantation forests
- power lines, dams or wind farms
- transport features such as roads and tracks for vehicles
- villages or small towns

Remoteness tells you how far the location is from the nearest paved road.
We've described this using the time it would take for a typical able-bodied adult to walk to this point from the nearest public road. For example:

- one hours walk
- two hours walk
- three hours walk

Terrain and climate tells you about the general appearance of an area, how difficult it is to move around, and how likely you might be to encounter extreme weather conditions.

- the height above sea level
- the presence of natural barriers such as cliff faces and lochs
- the steepness/gradient
- how easy it is to move around the area

Q9 On a scale of one to three, where one is not very well and three is very well, how well do you think these aspects capture what you think of as wildness in Scotland? (Please tick one box only)

Not very well ☐1 Quite well ☐2 Very well ☐3

Q10 Are there any other aspects which you feel contribute toward your perceptions of wildness in Scotland? (please write in)

……

NOTE: RESPONDENTS ONLY SAW ONE SET OF SCENARIO'S BETWEEN A AND E.

SCENARIO A1		Picture Card
A	No visible man-made features	1
B	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10
C	Moorland, actively managed by burning	21
D	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	14
E	Native wildlife may be present in landscape, eg deer, eagle, red squirrel, wild cat, pine marten	16

Scenario A1: Questions		Enter Letter (A-E)
Q11.	*Which of the descriptions above is **most** likely to increase your sense of wildness?*	
Q12.	*And which is **least** likely to increase your sense of wildness?*	
Q13.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q14.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO A2		Picture Card
A	Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	19
B	Moorland, actively managed by burning	21
C	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	11
D	Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	4
E	Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	7

Scenario A2: Questions		Enter Letter (A-E)
Q15.	*Which of the descriptions above is **most** likely to increase your sense of wildness?*	
Q16.	*And which is **least** likely to increase your sense of wildness?*	
Q17.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q18.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO A3		Picture Card
A	4 hours walk from the nearest road or railway station	-
B	No visible man-made features	1
C	Native wildlife may be present in landscape, eg deer, eagles, red squirrel, wild cat, and/or pine marten	16
D	Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	7
E	Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	13

Scenario A3: Questions		Enter Letter (A-E)
Q19.	*Which of the descriptions above is **most** likely to increase your sense of wildness?*	
Q20.	*And which is **least** likely to increase your sense of wildness?*	
Q21.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q22.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO A4		Picture Card
A	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	15
B	Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	18
C	Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	7
D	1 hour walk from the nearest road or railway station	-
E	Plantation forests in landscape (non-native conifers)	3

Scenario A4: Questions		Enter Letter (A-E)
Q23.	*Which of the descriptions above is **most** likely to increase your sense of wildness?*	
Q24.	*And which is **least** likely to increase your sense of wildness?*	
Q25.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q26.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO A5		Picture Card
A	Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	8
B	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	13
C	Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	5
D	Built-up areas, eg small towns and villages	20
E	4 hours walk from the nearest road or railway station	-

Scenario A5: Questions		Enter Letter (A-E)
Q27.	*Which of the descriptions above is **most** likely to increase your sense of wildness?*	
Q28.	*And which is **least** likely to increase your sense of wildness?*	
Q29.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q30.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO B1		Picture Card
A	No visible man-made features	1
B	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	6
C	5 hours walk from the nearest road or railway station	-
D	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	11
E	Native wildlife may be present in landscape, eg deer, eagle, red squirrel, wild cat, pine marten	16

Scenario B1: Questions		Enter Letter (A-E)
Q11.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q12.	*And which is **least** likely to increase your sense of wildness?*	
Q13.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q14.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO B2		Picture Card
A	Domestic livestock may be present in landscape, eg cattle and sheep	17
B	Moorland, actively managed by burning	21
C	Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	13
D	Long line features in landscape, eg roads, railways and/or vehicle tracks	2
E	Area has evidence of farming, including drainage, ploughing and arable crops	9

Scenario B2: Questions		Enter Letter (A-E)
Q15.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q16.	*And which is **least** likely to increase your sense of wildness?*	
Q17.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q18.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO B3		Picture Card
A	Moorland, actively managed by burning	21
B	Plantation forests in landscape (non-native conifers)	3
C	Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	18
D	Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	8
E	Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	12

Scenario B3: Questions		Enter Letter (A-E)
Q19.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q20.	*And which is **least** likely to increase your sense of wildness?*	
Q21.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q22.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO B4		Picture Card
A	Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	12
B	Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	19
C	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10
D	2 hours walk from the nearest road or railway station	-
E	Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	4

Scenario B4: Questions		Enter Letter (A-E)
Q23.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q24.	*And which is **least** likely to increase your sense of wildness?*	
Q25.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q26.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO B5		Picture Card
A	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	6
B	Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	12
C	Long line features in landscape, eg roads, railways and/or vehicle tracks	2
D	Domestic livestock may be present in landscape, eg cattle and sheep	17
E	4 hours walk from the nearest road or railway station	-

Scenario B5: Questions		Enter Letter (A-E)
Q27.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q28.	*And which is **least** likely to increase your sense of wildness?*	
Q29.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q30.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO C1		Picture Card
A	Plantation forests in landscape (non-native conifers)	3
B	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10
C	4 hours walk from the nearest road or railway station	-
D	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	11
E	Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	18

Scenario C1: Questions		Enter Letter (A-E)
Q11.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q12.	*And which is **least** likely to increase your sense of wildness?*	
Q13.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q14.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO C2		Picture Card
A	Native wildlife may be present in landscape, eg deer, eagle, red squirrel, wild cat, pine marten	16
B	1 hour walk from the nearest road or railway station	-
C	Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	12
D	No visible man-made features	1
E	Area has evidence of farming, including drainage, ploughing and arable crops	9

Scenario C2: Questions		Enter Letter (A-E)
Q15.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q16.	*And which is **least** likely to increase your sense of wildness?*	
Q17.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q18.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO C3		Picture Card
A	1 hour walk from the nearest road or railway station	-
B	Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	5
C	Built-up areas, eg small towns and villages	20
D	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10
E	Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	13

Scenario C3: Questions		Enter Letter (A-E)
Q19.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q20.	*And which is **least** likely to increase your sense of wildness?*	
Q21.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q22.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO C4		Picture Card
A	Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	13
B	Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	19
C	Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	8
D	5 hours walk from the nearest road or railway station	-
E	Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	4

Scenario C4: Questions		Enter Letter (A-E)
Q23.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q24.	*And which is **least** likely to increase your sense of wildness?*	
Q25.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q26.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO C5		Picture Card
A	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	6
B	Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places	13
C	Plantation forests in landscape (non-native conifers)	3
D	Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	18
E	2 hours walk from the nearest road or railway station	-

Scenario C5: Questions		Enter Letter (A-E)
Q27.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q28.	*And which is **least** likely to increase your sense of wildness?*	
Q29.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q30.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO D1		Picture Card
A	Long line features in landscape, eg roads, railways and/or vehicle tracks	2
B	Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	7
C	2 hours walk from the nearest road or railway station	-
D	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	14
E	Domestic livestock may be present in landscape, eg cattle and sheep	17

Scenario D1: Questions		Enter Letter (A-E)
Q11.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q12.	*And which is **least** likely to increase your sense of wildness?*	
Q13.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q14.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO D2		Picture Card
A	Built-up areas, eg small towns and villages	20
B	Moorland, actively managed by burning	21
C	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	15
D	Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	5
E	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	6

Scenario D2: Questions		Enter Letter (A-E)
Q15.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q16.	*And which is **least** likely to increase your sense of wildness?*	
Q17.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q18.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO D3		Picture Card
A	5 hours walk from the nearest road or railway station	-
B	Plantation forests in landscape (non-native conifers)	3
C	Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape	18
D	Area has evidence of farming, including drainage, ploughing and arable crops	9
E	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	14

Scenario D3: Questions		Enter Letter (A-E)
Q19.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q20.	*And which is **least** likely to increase your sense of wildness?*	
Q21.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q22.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO D4		Picture Card
A	Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around	14
B	Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	19
C	Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces	6
D	1 hour walk from the nearest road or railway station	-
E	Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	4

Scenario D4: Questions		Enter Letter (A-E)
Q23.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q24.	*And which is **least** likely to increase your sense of wildness?*	
Q25.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q26.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO D5		Picture Card
A	Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	8
B	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	15
C	No visible man-made features	1
D	Native wildlife may be present in landscape, eg deer, eagles, red squirrel, wild cat, and/or pine marten	16
E	2 hours walk from the nearest road or railway station	-

Scenario D5: Questions		Enter Letter (A-E)
Q27.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q28.	*And which is **least** likely to increase your sense of wildness?*	
Q29.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q30.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO E1		Picture Card
A	Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	5
B	Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area	6
C	5 hours walk from the nearest road or railway station	-
D	Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around	12
E	Built-up areas, eg small towns and villages	20

Scenario E1: Questions		Enter Letter (A-E)
Q11.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q12.	*And which is **least** likely to increase your sense of wildness?*	
Q13.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q14.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO E2		Picture Card
A	Domestic livestock may be present in landscape, eg cattle and sheep	17
B	5 hours walk from the nearest road or railway station	-
C	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	15
D	Long line features in landscape, eg roads, railways and/or vehicle tracks	2
E	Area heavily managed, made up of parks and gardens, and/or intensive stock grazing	10

Scenario E2: Questions		Enter Letter (A-E)
Q15.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q16.	*And which is **least** likely to increase your sense of wildness?*	
Q17.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q18.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO E3		Picture Card
A	4 hours walk from the nearest road or railway station	-
B	Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls	4
C	Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure	19
D	Area has evidence of farming, including drainage, ploughing and arable crops	9
E	Landscape is of low altitude with no noticeable natural features, and is very easy to move around	15

Scenario E3: Questions		Enter Letter (A-E)
Q19.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q20.	*And which is **least** likely to increase your sense of wildness?*	
Q21.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q22.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO E4		Picture Card
A	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	11
B	Domestic livestock may be present in landscape, eg cattle and sheep	17
C	Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs	8
D	1 hour walk from the nearest road or railway station	-
E	Long line features in landscape, eg roads, railways and/or vehicle tracks	2

Scenario E4: Questions		Enter Letter (A-E)
Q23.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q24.	*And which is **least** likely to increase your sense of wildness?*	
Q25.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q26.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

SCENARIO E5		Picture Card
A	Area has evidence of farming, including drainage, ploughing and arable crops	9
B	Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around	11
C	Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining	5
D	Built-up areas, eg small towns and villages	20
E	2 hours walk from the nearest road or railway station	-

Scenario E5: Questions		Enter Letter (A-E)
Q27.	*Which of the above descriptions is **most** likely to increase your sense of wildness?*	
Q28.	*And which is **least** likely to increase your sense of wildness?*	
Q29.	*Of the remaining 3 descriptions, which of these is **most** likely to increase your sense of wildness?*	
Q30.	*Of the remaining 2 descriptions, which of these is **least** likely to increase your sense of wildness?*	

Importance of Wild Areas in Scotland

Q31. On a five point scale, where 1 is very important and 5 is not at all important, please indicated how important you think it is that Scotland has wild areas?

1	Very Important	☐ 1		**CONTINUE**
2		☐ 2		**CONTINUE**
3		☐ 3		**GO TO Q33**
4		☐ 4		**GO TO Q33**
5	Not at all important	☐ 5		**GO TO Q33**
0	Don't Know	☐ 0		**GO TO Q33**

Q32. Please explain why you think it is important that Scotland has wild areas.

……

……

Q33. Do you think that wild areas in Scotland are under threat?

Yes ☐ 1 No ☐ 2 Don't know ☐ 3

Q34. Do you believe that action is necessary to preserve wild land in Scotland?

Yes ☐ 1 **CONTINUE** No ☐ 2 **GO TO Q36a**
Don't Know ☐ 3 **GO TO Q36a**

*Q35. Which of these actions do you think should be taken to preserve wild areas in Scotland? (Please tick up to **three** actions only)*

The introduction of specific 'wild land' designation	☐ 1
Effective control over new vehicle hill tracks	☐ 2
Effective planning control for buildings	☐ 3
Effective planning control for wind turbines	☐ 4
Effective planning control for telephone masts and pylons	☐ 5
Make some areas wild again, for example by removing selected human features, reducing grazing and restoring natural vegetation	☐ 6
Species re-introductions, for example beaver, lynx, sea eagle, osprey, boar, etc.	☐ 7
Effective management of farming, forestry and fishing	☐ 8
Fewer purpose built paths, including signage and track removal	☐ 9
Other (write in) _____	☐ 10
None/Nothing	☐ 11
Don't Know	☐ 12

Q36a. On a five point scale, where 1 is very important and 5 is not at all important; please indicate how important you think it is to protect wild areas in Scotland?

Very Important 1 2 3 4 5 *Not at all Important* **OR TICK Don't Know** ☐ 6

Q36b. On a five point scale, where 1 is very important and 5 is not at all important; please indicate how important you think it is to promote economic development in rural areas of Scotland?

Very Important 1 2 3 4 5 *Not at all Important* **OR TICK Don't Know** ☐6

Demographics

This section asks 5 questions which will help us ensure that this survey is representative of the whole population and will allow us to identify how opinions differ between different sub-groups of the population.

Q37. Would you mind answering a question about what sex you are?

Rather not say ☐0 Male ☐1 Female ☐2

Q38. Please indicate the age group you fall within:

Rather not say ☐0

16-29 ☐1 45-59 ☐3 75+ ☐5

30-44 ☐2 60-74 ☐4

Q39. Which Local Authority area do you live in?

Aberdeen City	☐1		Highland	☐17
Aberdeenshire	☐2		Inverclyde	☐18
Angus	☐3		Midlothian	☐19
Argyll & Bute	☐4		Moray	☐20
Clackmannanshire	☐5		North Ayrshire	☐21
Dumfries & Galloway	☐6		North Lanarkshire	☐22
Dundee City	☐7		Orkney Islands	☐23
East Ayrshire	☐8		Perth & Kinross	☐24
East Dunbartonshire	☐9		Renfrewshire	☐25
East Lothian	☐10		Scottish Borders	☐26
East Renfrewshire	☐11		Shetland Islands	☐27
Edinburgh, City of	☐12		South Ayrshire	☐28
Eilean Siar	☐13		South Lanarkshire	☐29
Falkirk	☐14		Stirling	☐30
Fife	☐15		West Dunbartonshire	☐31
Glasgow City	☐16		West Lothian	☐32
Other, please specify	☐33		_____	

Q40. Which of the following, best describe the area you live in?

Large Urban Area	☐1		Small Town	☐3
Other Urban Area	☐2		Rural Area	☐4

Q41. Finally, please indicate to which occupational group the Chief Income Earner in your household belongs, or which group fits best.

- *This could be you: the Chief Income Earner is the person in your household with the largest income.*
- *If the Chief Income Earner is retired and has an occupational pension please answer for their most recent occupation.*
- *If the Chief Income Earner is not in paid employment but has been out of work for less than 6 months, please answer for their most recent occupation.*

1. Semi or unskilled manual work (e.g. Manual workers, All apprentices to be skilled trades, Caretaker, Park keeper, Non-HGV driver, Shop assistant)	☐ 1
2. Skilled manual worker (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/Ambulance Driver, HGV driver, AA patrolman, Pub/Bar Worker, etc)	☐ 2
3. Supervisory or clerical / junior managerial / professional / administrative (e.g. Office worker, Student Doctor, Foreman with 25+ employees, Salesperson, etc)	☐ 3
4. Intermediate managerial / professional / administrative (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, Middle manager in large organisation, Principal officer in civil service/local government)	☐ 4
5. Higher managerial / professional / administrative (e.g. Established doctor, Solicitor, Board Director in a large organisation [200+ employees, top level civil servant/public service employee])	☐ 5
6. Student	☐ 6
7. Casual worker – not in permanent employment	☐ 7
8. Housewife / Homemaker	☐ 8
9. Retired and living on state pension	☐ 9
10. Unemployed or not working due to long-term sickness	☐ 10
11. Full-time carer of other household member	☐ 11
12. Other (Please Specify) _____	☐ 12

Thank you for your time in completing this survey, your views are very helpful.

Appendix B Supporting Picture Cards

Richard Webb

No visible manmade features

Picture 1

Long line features in landscape, eg roads, railways, and vehicle tracks

Picture 2

Plantation forests in landscape (non-native conifer)

Picture 3

Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles and stone walls

Picture 4

Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining

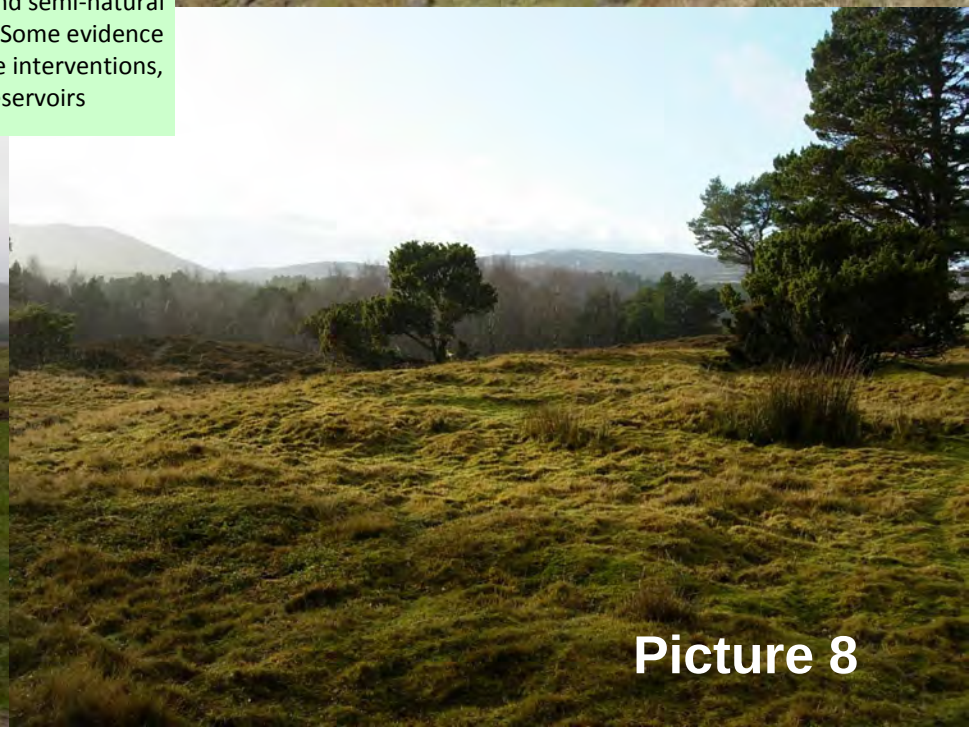
Picture 5

Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces

Picture 6

Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area

Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs



Picture 8

Area has evidence of farming, including drainage, ploughing, and arable crops

Keith Evans

Picture 9

Area heavily managed, made up of parks and gardens and intensive stock grazing

Brian Robert Marshall

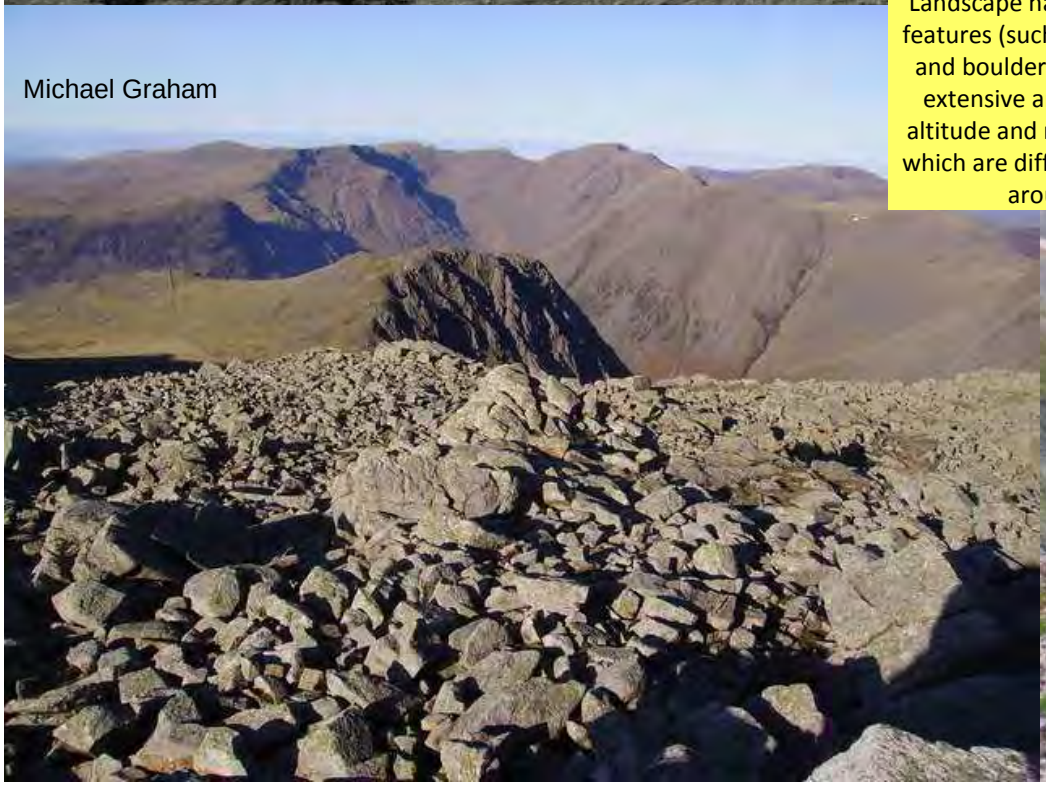
Ken Bagnall

Picture 10

Helmutt Zozimann

Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around

Michael Graham



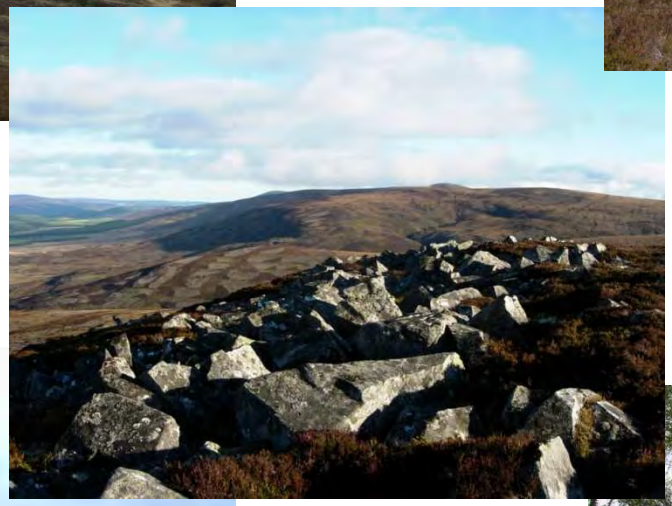
Picture 11

Adam Ward

Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around

Picture 12

Alice H Myers



Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places

Picture 13

Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around

Chris Downer

Picture 14

Landscape is of low altitude with no noticeable natural features, and is very easy to move around

Picture 15

Native wildlife may be present in landscape, eg deer, eagles, red squirrel, wild cat, and pine marten

Picture 16


Walter Baxter


Stephen Craven

Domestic livestock may be present in landscape, eg cattle and sheep

Picture 17

Evelyn Simak

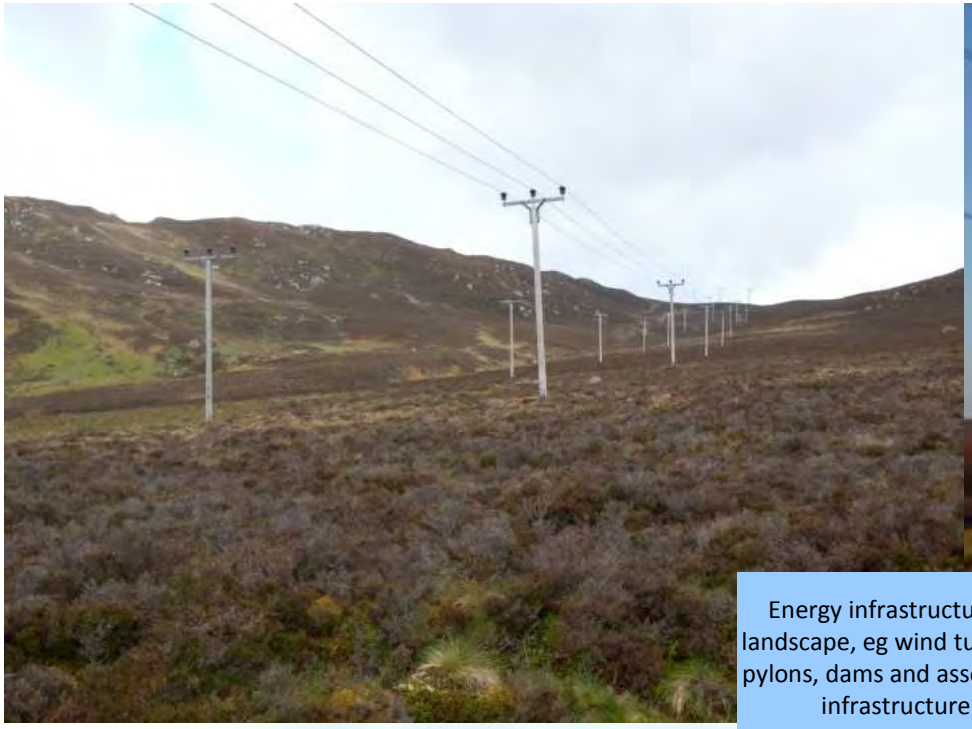
Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape

Mick Garratt

Dave Croker

Phillip Williams

Picture 18



Energy infrastructure in landscape, eg wind turbines, pylons, dams and associated infrastructure

Picture 19

Colin Smith

Mike Pennington

Built-up areas, eg small towns and villages

Walter Baxter

Anne Burgess

Picture 20

Moorland actively managed by burning

Picture 21

Appendix C – Key Attributes

1 Introduction

1.1 In this Appendix we provide the detailed descriptions of each of the 'wildness' attributes, as they appeared in the material presented to the respondents taking part in the three surveys.

2 Naturalness of the land cover and wildlife

- Area made up of natural broadleaf or coniferous woodland, heath or moor vegetation, rivers, lochs, and streams, and bare rock surfaces
- Area made up of semi-natural woodland, bracken or shrubs (gorse, heather and bilberry), and marsh area
- Area made up of planted woodland and semi-natural grasslands. Some evidence of manmade interventions, eg reservoirs
- Area has evidence of farming, including drainage, ploughing and arable crops
- Area heavily managed, made up of parks and gardens, and/or intensive stock grazing
- Native wildlife may be present in landscape, eg red deer, eagles, red squirrel, wild cat, and/or pine marten
- Domestic livestock may be present in landscape, eg cattle and sheep

3 Presence of man-made structures and features

- No visible man-made features
- Long line features in landscape, eg roads, railways and/or vehicle tracks
- Plantation forests in landscape (non-native conifers)
- Older built structures in landscape, eg bothies, abandoned cottages, crofts, castles, and stone walls
- Modern built structures in landscape, eg working farms, isolated homes, deer fencing, and small scale industrial land uses such as quarrying or mining
- Moorland, actively managed by burning
- Physical evidence of recreation (eg 4 wheel drive tracks, hiking paths, ski lifts) and field sports (eg hunting, shooting, fishing) in landscape

- Energy infrastructure in landscape, eg wind turbines, pylons, dams, and associate infrastructure
- Built-up areas, eg small towns and villages

4 Remoteness from roads and railway stations

- Five hours walk from the nearest road or railway station
- Four hours walk from the nearest road or railway station
- Two hours walk from the nearest road or railway station
- One hours walk from the nearest road or railway station

5 Terrain

- Landscape has noticeable features (such as cliff faces and boulder fields), with extensive areas of high altitude and rough terrain which are difficult to move around
- Landscape has some areas of noticeable features (such as cliff faces and lochs), and high altitude, which are difficult to move around
- Landscape is a mix of terrains with the occasional noticeable feature (such as lochs), and can be difficult to move around in places
- Landscape has one or two noticeable features (such as lochs), but is generally of low altitude and is easy to move around
- Landscape is of low altitude with no noticeable natural features, and is very easy to move around

Appendix D – Detailed Analysis Methods

1 Introduction

1.1 In this appendix we provide details of the sampling and analysis used in the three surveys.

2 Data Weighting

Firstly, the main sample and the residents sample profiles were compared against the relevant populations in order to determine if weighting was required to ensure representativeness within the results. However, it was found that the achieved samples were similar enough in nature to the populations that data weighting was not required.

3 Data Segmentation

Across all sections of the questionnaire the results were analysed by the three separate sample groups:

- *main sample* (ie the online panel representative of the Scottish population);
- *residents sample* (ie the face-to-face booster survey with residents in each of Scotlands two National Parks, representative of the populations within these Parks); and
- *organisation members* (ie those invited to complete the online questionnaire via one of the relevant organisations).

In addition, market segmentation was undertaken within the main sample. This utilised responses provided to the demographic section, and included:

- gender;
- age (although for analysis purposes age groups 60-74 and 75+ were combined due to the low numbers within the 75+ group);
- urban/rural (which was created by combining 'large urban areas' and 'other urban areas' to create the variable for 'Urban'; and 'small town' and 'rural area' to create the variable for 'Rural'); and
- socio-economic group, grouped into ABC1 and C2DE for analysis purposes. This variable was created based on responses regarding the chief income earners occupational group, with responses recoded as outlined in Table D.1 to provide the socio-economic group for analysis.

Table D.1 Socio-Economic Group

Chief Income Earners Occupational Group	Socio-Economic Group
Semi or unskilled manual work	C2DE
Skilled manual worker	C2DE
Supervisory or clerical/junior managerial/ professional/administrative	ABC1
Intermediate managerial/professional/ administrative	ABC1
Higher managerial/professional/administrative	ABC1
Student	ABC1
Casual worker – not in permanent employment	C2DE
Housewife/Homemaker	C2DE
Retired and living on state pension	C2DE
Unemployed or not working due to long-term sickness	C2DE
Full-time carer of other household member	C2DE

4 Analysis Methods

The questionnaire was essentially split into two sections for analysis purposes, with the initial questions on respondents use of the outdoors, ie Q1 to Q10, and the final questions on the importance of wildness, ie Q31 to Q36b being subject to more descriptive types of data analysis, and the scenarios presented within the perceptions of wildness section being subject to best-worst choice modelling data analysis.

Descriptive Analysis

Essentially, crosstabulations were run for each question. These involved, firstly, crosstabulations by sample type; and then, for the main sample only, crosstabs by each of the four market segments outlined above.

Chi-square tests were also performed on each crosstabulation in order to identify any significant differences between the respondent categories. Only those results that showed a significant difference were then described in the reporting.

The only variation to this was in conducting a comparison between the two questions, 'importance of protecting wild areas in Scotland' and the 'importance of promoting economic development' (ie Q36a and Q36b). The aim of this comparison was to determine which of these two options was seen as more important to respondents.

Both questions were asked in the same way, with respondents indicating levels of importance across a five point scale. The mean score was calculated for each of the questions for each of the three sample types, along with the upper and lower confidence intervals associated with each mean. These were then compared to identify if/where there were statistically significant differences between the mean values, and to determine if and/or what element was considered to be more important.

Best-Worst Analysis

Design

The design of the 'Wildness' Best-Worst Scaling experiment followed a series of sequential steps:

- selection of a range of attributes which defined 'wildness', eg terrain or the presence of wild animals;
- each attribute then had a number of 'levels' attached to it using text and/or images which can be easily understood by respondents. For example, a level for the attribute 'Perceived naturalness' might be 'Some small plantations at the edge of the area' or for the attribute 'Extent of area' it could be a numerical value in hectares (if understood) or a proportion of an area;
- based on the number of attributes and their levels, an orthogonal statistical design giving the number of 'scenarios' to be presented to each respondent was selected. The maximum number of scenarios to be presented to a respondent in the survey was capped at five using a technique known as 'blocking' to minimise cognitive burden; and
- scenarios were then worked up for presentation to respondents 'in the field'.

For illustration only, Figure D.1 presents an illustrative mock-up of how a choice scenario for the wildness research looked. In this example we have provided descriptive text only for ease of presentation, but the final survey also included photographic material to help respondents visualise the attribute level presented, as detailed in Appendix B. Online and face-to-face interviews allowed for the collection of the full best-worst scale for each scenario, and also for the inclusion of supplementary information such as graphics, extended descriptions, or maps either as show cards or via buttons where 'More Information' can be requested.

Most likely to increase sense of wildness		Scenario 1	Least likely to increase sense of wildness	
A	☐	Some older features (eg fences, bridges, stalking tracks or small buildings) present in landscape	A	☐
B	☐	Vegetation primarily consists of species native to Scotland, with some small plantations at the edge of the area	B	☐
C	☐	Extensive striking features (mountains, lochs) and rough terrain which is difficult to traverse	C	☐
D	☐	No access by motor vehicle or boat, predominantly more than 10 miles from nearest settlement	D	☐
E	☐	Some evidence of over-grazing and footpath deterioration	E	☐

Figure D.1 Example of Best-Worst Scaling Scenario

Respondents were firstly asked to pick their 'best' or 'most wild' alternative, then their 'worst' or 'least wild' alternative. This was extended to their second best/worst alternative until all alternatives had been ranked. The first choice gave us four data points (eg A is wilder than B to E), the second choice gave us three data points (eg B is wilder than C to E), and so on. Thus, for each scenario the respondent, with five attributes on offer, provided us with their perception of wildness **ten** times. Repeating the experiment with five different sets of scenarios to rank therefore gives a total of 50 (= 5 x 10) wildness-ranking observations per respondent.

The ordering of the attributes in the final experiment was randomised across scenarios to further reduce the potential for bias.

Analysis

Best-worst scaling experiments can be analysed using either regression or choice modelling techniques. For the purposes of this research, we used an 'exploded logit' whereby each preference on the best-worst scale for a given scenario is converted into an equivalent choice[1]. Statistical analysis of this nature is based on the concept of utility theory (the degree of satisfaction provided by the alternatives on offer). Individuals are assumed to choose the alternative which is 'best' [or 'wildest'] and therefore maximises satisfaction or 'utility', where utility is taken to be a construct of the choice alternative (the attributes of wildness). By comparing the relative influence of one attribute against another, through the parameters which result from the statistical models, it is possible to infer its relative

[1] As respondents progress through a best-worst scaling task in a given scenario, alternatives selected at previous stages are removed from the 'choice' set available at subsequent stages in the statistical analysis.

value (or contribution to wildness). Such techniques allow for a full degree of market segmentation, should sample sizes permit, through the estimation of separate parameters for each segment of interest.

Estimated models were subject to a full set of diagnostic tests to ensure they were statistically robust. This included an examination of their overall level-of-fit, precision in parameter estimation, and accommodation of correlation between attributes and alternatives.

Appendix E –Demographic Profiles of Respondents

1 Key Demographics / Market Segments

		Main Sample	Total Residents Sample	Organisation Members
Gender	Male	46%	53%	65%
	Female	54%	47%	35%
Age	16-19	23%	10%	6%
	30-44	27%	25%	21%
	45-59	27%	26%	36%
	60-74	20%	30%	34%
	75+	3%	9%	3%
Urban/Rural Location	Urban	56%	0%	37%
	Rural	44%	100%	63%
Socio-Economic Group	ABC1	51%	32%	83%
	C2DE	49%	68%	17%
Total (N)		1006	210	656

2 Area Lived In

	Main Sample	Organisation Members
Large Urban Area	40%	27%
Other Urban Area	16%	10%
Small Town	23%	21%
Rural Area	21%	42%
Total (N)	1006	656

3 Local Authority

	Main Sample	Organisation Members
Aberdeen City	5%	5%
Aberdeenshire	4%	9%
Angus	2%	2%
Argyll & Bute	2%	3%
Clackmannanshire	1%	<1%
Dumfries & Galloway	3%	2%
Dundee City	3%	2%
East Ayrshire	2%	1%
East Dunbartonshire	2%	2%
East Lothian	2%	2%
East Renfrewshire	2%	1%
Edinburgh, City of	11%	16%
Eilean Siar	<1%	1%
Falkirk	3%	1%
Fife	6%	7%
Glasgow City	13%	5%
Highland	6%	15%
Inverclyde	1%	<1%
Midlothian	2%	2%
Moray	1%	2%
North Ayrshire	2%	<1%
North Lanarkshire	5%	<1%
Orkney Islands	<1%	0%
Perth & Kinross	3%	10%
Renfrewshire	3%	1%
Scottish Borders	3%	3%
Shetland Islands	<1%	<1%
South Ayrshire	2%	1%
South Lanarkshire	4%	2%
Stirling	2%	3%
West Dunbartonshire	1%	1%
West Lothian	3%	2%
Total (N)	1006	656

4 Occupational Group

	Main Sample	Organisation Members
Semi or unskilled manual work	12%	2%
Skilled manual worker	22%	6%
Supervisory or clerical/junior managerial/professional/administrative	25%	19%
Intermediate managerial/professional/ administrative	20%	38%
Higher managerial/professional/ administrative	4%	24%
Student	3%	2%
Casual worker – not in permanent employment	1%	1%
Housewife/Homemaker	2%	<1%
Retired and living on state pension	6%	7%
Unemployed or not working due to long-term sickness	6%	1%
Full-time carer of other household member	1%	0%
Total (N)	1006	656

5 Residents Sample: Key Demographics by National Park

		Loch Lomond and the Trossachs	Cairngorms
Gender	Male	56%	50%
	Female	44%	50%
Age	16-19	7%	14%
	30-44	28%	21%
	45-59	25%	26%
	60-74	32%	28%
	75+	8%	11%
Total (N)		106	104