



# Participation in outdoor recreation by WAG priority groups

Open Space Research Centre

Countryside Council for Wales  
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**Participation in Outdoor Recreation  
by WAG Priority Groups**

**OPENspace Research Centre**

**CCW Policy Research Report No.**

**08/15**

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The CCW Recreation Policy Team managed the project.

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## CRYNODEB GWEITHREDOL

### CYFLWYNIAD

#### Nod ac amcanion

Nod yr astudiaeth hon oedd cwblhau adolygiad systematig disgrifiadol o dystiolaeth o gyfranogiad rhannau o'r boblogaeth a dangynrychiolir ar hyn o bryd mewn hamdden awyr agored. Mae'r astudiaeth yn cyfrannu at y sylfaen dystiolaeth am *bobl ifanc, pobl hŷn, merched, grwpiau lleiafrifoedd ethnig, pobl ag anableddau, pobl o gyd-destunau o amddifadedd lluosog / mewn dosbarth cymdeithasol isel a phobl â chyflawniad addysgol isel* mewn perthynas â hamdden awyr agored anffurfiol.

Nododd y briff ar gyfer yr adolygiad o dystiolaeth yr amcanion allweddol canlynol:

- Adolygu'r rhwystrau i gyfranogiad a brofir gan bob un o'r grwpiau blaenoriaeth hyn mewn perthynas â'r tri phrif fath o gyfyngiadau: personol, rhyngpersonol, a strwythurol.
- Adolygu cymhelliannau, profiadau a dewisiadau o ran gweithgareddau ymhob un o'r grwpiau hyn, gan ystyried y rhai sy'n cyfranogi yn ogystal â'r rhai nad ydynt yn cyfranogi.
- Ystyried unrhyw dystiolaeth yn ymwneud â'r gwahaniaethau rhwng y rhai sy'n cyfranogi a'r rhai nad ydynt yn cyfranogi, a'r strategaethau a ddefnyddiwyd gan y rhai sy'n cyfranogi i oresgyn y rhwystrau a nodir yn yr adolygiad.
- Ystyried beth yw effaith perthyn i fwy nag un grŵp ar gymhelliannau, profiadau a dewisiadau o ran gweithgareddau.

#### Methodoleg

Gwnaethpwyd adolygiad systematig o'r sylfaen dystiolaeth/wybodaeth bresennol sy'n deillio o ymchwil i wahanol rannau o'r boblogaeth a hamdden awyr agored anffurfiol mewn perthynas â chyfranogiad, cymhelliannau, manteision, dewisiadau o ran profiadau a gweithgareddau, cyfyngiadau a strategaethau i oresgyn cyfyngiadau. Rhoddwyd blaenoriaeth i ymchwil a gyhoeddwyd yn y deng mlynedd ddiwethaf (ym 1997 neu ar ôl hynny). Ar ôl proses sgrinio dau gam, nodwyd bod 119 o astudiaethau yn berthnasol ar gyfer adolygiad, ac y byddai 68 yn destun adolygiad llawn a thynnu data.

### CANFYDDIADAU A CHASGLIADAU ALLWEDDOL

#### Cyfyngiadau

Gellir dosbarthu'r 13 cyfyngiad ar gyfranogiad mewn hamdden cefn gwlad anffurfiol, a nodwyd mewn 57 o astudiaethau, yn gyfyngiadau personol, rhyngpersonol, a strwythurol, fel a ganlyn:

*Cyfyngiadau personol* – pryder am ddiogelwch personol; diffyg gwybodaeth; diffyg amser; iechyd neu ffitrwydd gwael; diffyg hyder; teimlo fod y tywydd yn wael; bod ar eu pen eu hunain.

*Cyfyngiadau rhyngpersonol* - teimlo nad oedd croeso iddynt; pryder am ymddygiad gwrthgymdeithasol; profiad drwg blaenorol.

*Cyfngiadau strwythurol* – darpariaeth wael o gyfleusterau a rheolaeth wael; diffyg trafndiaeth; costau rhy uchel.

### **Goresgyn cyfyngiadau**

Nododd 48 astudiaeth strategaethau y gall darparwyr eu defnyddio i oresgyn cyfyngiadau ar gyfranogiad mewn hamdden cefn gwlad anffurfiol, er bod y dystiolaeth am eu heffeithlonrwydd yn llai cadarn na'r dystiolaeth sy'n nodi'r cyfyngiadau hyn. Mae'r 10 prif strategaeth yn mynd i'r afael â'r cyfyngiadau personol, rhyngbersonol neu strwythurol ar gyfranogiad, fel a ganlyn:

*Strategaethau personol* – codi ymwybyddiaeth a hyfforddi staff; datblygu allgymorth a sgiliau; gwrthbwysu costau.

*Strategaethau personol* – grymuso'r grŵp targed; gwybodaeth a digwyddiadau wedi'u ffocysu; rolau model a staff sy'n adlewyrchu'r boblogaeth darged.

*Strategaethau strwythurol* - cydlynid a seilwaith; data sylfaenol; gwella a chynnal safle; sicrhau etifeddiaeth gynaliadwy.

### **Cymhelliannau, diddordebau a dewisiadau o ran gweithgareddau**

*Cymhelliannau* - Ystyriodd 39 astudiaeth y cymhelliannau sydd i gyfranogi mewn hamdden cefn gwlad anffurfiol. Ymhlith y prif gymhelliannau roedd: cael awyr iach ac ymarfer corff; cymdeithasu gyda ffrindiau a theulu; i ddianc ac i gael hwyl; ac i orffwysu, ymlacio ac am brofiadau synhwyrol.

*Dewisiadau o ran gweithgareddau* – fel yn achos rhwystrau a chymhelliannau, mae dewisiadau o ran gweithgareddau yn amrywio yn unol â'r grŵp targed dan sylw. Nododd 46 astudiaeth weithgareddau a ddewisir, o gerdded am hamdden - y dewis mwyaf poblogaidd o bell ffordd - i feicio mynydd. Roedd ymweld â rhywle neu fwynhau'r dirwedd; gwyllo natur; mynd ag anifail anwes am dro; mynd am bicnic; seiclo; marchoga; cadw'n heini a chael awyr iach i gyd yn boblogaidd.

*Diffyg cymhelliant neu ddiddordeb* - O'r 68 astudiaeth a ddefnyddiwyd, mae 57 yn cyfeirio at ddiffyg diddordeb mewn defnyddio mannau gwyrdd agored neu gymhelliant i'w defnyddio. I rai grwpiau a dangynrychiolir, efallai nad oes arfer diwylliannol o ymweld â chefn gwlad; i eraill, fel pobl ifanc, efallai nad yw ymweliadau o'r fath yn ddeniadol o ran cyd-destunau cymdeithasol. Yn aml nid ymchwiliwyd i ddatganiadau o ddiffyg diddordeb ymhellach er mwyn nodi a oedd hyn yn cynnwys cyfyngiadau eraill nas datganwyd.

### **Argymhellion ar gyfer ymchwil yn y dyfodol**

Yn seiliedig ar ddadansoddiad o fylchau yn y dystiolaeth, mae angen am ymchwil er mwyn:

- gwella'r sail wybodaeth sylfaenol a llunio termau, targedau a dangosyddion cyffredin.
- ystyried yr effaith y mae diffyg cyfleoedd yn ei chael ar ymddygiad y rhai nad ydynt yn defnyddio mannau gwyrdd agored.
- sicrhau gwerthusiad effeithiol o brosiectau cyfredol a phrosiectau yn y dyfodol sy'n defnyddio ymyriadau er mwyn goresgyn cyfyngiadau ar hamdden cefn gwlad.

- archwilio beth mae diffyg diddordeb yng nghefn gwlad yn ei olygu yn fanwl, ar gyfer pob grŵp targed, i ddeall yn well faterion o dangynrychiolaeth o'i gymharu ag allgáu.
- asesu'r cysyniadau o ddiogelwch a risg mewn perthynas â dewisiadau o ran ymddygiad i wahanol grwpiau o bobl.
- nodi manteision hamdden awyr agored anffurfiol i wahanol grwpiau o bobl.
- deall beth sy'n gwahaniaethu cyfranogwyr mewn hamdden cefn gwlad o'r rhai nad ydynt yn cyfranogi ym mhob grŵp blaenoriaeth, o ran cyfyngiadau, cymhelliannau, profiadau a dewisiadau.

asesu beth yw effaith perthyn i fwy nag un grŵp blaenoriaeth o ran cyfranogi mewn hamdden cefn gwlad.

## EXECUTIVE SUMMARY

### INTRODUCTION

#### Aim and objectives

The aim of this study was to undertake a descriptive systematic review of evidence on participation in outdoor recreation by segments of the population that are under-represented at present. The study contributes to the evidence base on *young people, older people, women, ethnic minority groups, people with disabilities, people from contexts of multiple deprivation / in low social class and people with low educational achievement* in relation to informal outdoor recreation.

The brief for the review of evidence identified the following key objectives:

- To review the barriers to participation experienced by each of these priority groups in relation to the three main areas of constraint: intrapersonal, interpersonal, and structural.
- To review the motivations, experience and activity preferences of each of these groups, considering both participants and non-participants.
- To consider any evidence relating to the differences between participants and non-participants, and the strategies that have been used by those who do participate to overcome the barriers that have been identified in the review.
- To consider the effect of belonging to multiple groups on motivations, experience and activity preferences.

#### Methodology

A systematic review was undertaken of the existing evidence/knowledge base arising from research on different segments of the population and informal outdoor recreation in relation to participation, motivations, benefits, preferred experiences and activities, constraints and strategies for overcoming constraints. The priority was research published in the last ten years (in or after 1997). After a two-stage screening process, a final 119 were identified as relevant for review, and 68 were subject to full review and data extraction.

### KEY FINDINGS AND CONCLUSIONS

#### Constraints

The 13 constraints to participation in informal countryside recreation, identified in 57 studies, can be classified as intrapersonal, interpersonal or structural, as follows:

*Intrapersonal constraints* – fear for personal safety and security; lack of knowledge; lack of time; poor health or fitness; lack of confidence; finding the weather disagreeable; being a lone person.

*Interpersonal constraints* – feeling unwelcome; concern about anti-social behaviour; being put off by a bad experience.

*Structural constraints* – poor provision of facilities and poor management; lack of transport; costs too high.

#### Overcoming constraints

48 studies identified strategies providers can use to overcome constraints to participation in informal countryside recreation, although evidence for their

effectiveness was less robust than that identifying constraints. The 10 principal strategies can be classified as addressing intrapersonal, interpersonal or structural constraints against participation, as follows:

*Intrapersonal strategies* – awareness raising and staff training; outreach and skill development; offsetting costs.

*Interpersonal strategies* – empowerment of target group; focussed information and events; role models and staffing to reflect the target population.

*Structural strategies* – coordination and infrastructure; base-line data; site enhancement and maintenance; ensuring a sustainable legacy.

### **Motivations, interests and activity preferences**

*Motivations* - 39 studies considered the motivations to participate in informal countryside recreation. The principal motivations include: getting fresh air & exercise; socialising with friends and family; for escape & fun; and for rest, relaxation and sensory experiences.

*Activity preferences* – as with barriers and motivations, activity preferences vary according to the target group being considered. 46 studies identified preferred activities, from walking for leisure - by far the most popular - to mountain biking. Sightseeing or enjoying the landscape; observing nature; walking a pet; picnicking; cycling; horse riding; keeping fit and getting fresh air were all popular.

*Lack of motivation or interest* - Of the 68 included studies, 57 refer to a lack of interest in, or motivation to use, open green spaces. For some under-represented groups, there may be no cultural habit of countryside visiting; for others, such as young people, there may be no social context in which such visits are seen as attractive. A declared lack of interest was rarely investigated further to identify if this indicated other constraints that had not been articulated.

### **Recommendations for future research**

Based on an analysis of gaps in the evidence, there is a need for research to:

- improve the primary information base and establish common terms, targets and indicators.
- consider the effect that lack of opportunity has on the behaviour of non-users.
- ensure the effective evaluation of current and future projects that involve interventions to overcome constraints to countryside recreation.
- explore what a lack of interest in countryside activities means in detail, for each target group, to better understand issues of under-representation vs. exclusion.
- assess the perceptions of safety and risk in relation to actual behaviour choices for different groups of people.
- identify the benefits of informal outdoor recreation for different groups of people.
- understand what distinguishes participants in countryside recreation from non-participants in each priority group, in relation to their constraints, motivations, experience and preferences.
- assess the combined effects of belonging to more than one priority group in terms of accessing countryside recreation.



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## GLOSSARY

**Cross-sectional survey** - a study measuring the distribution of some characteristic(s) in a population at one particular point in time.

**External validity** - the extent to which the results of a study provide a correct basis for generalisations to other circumstances.

**Logistic regression** – a form of regression analysis that models the odds of a particular outcome in an individual (such as health status or frequency of particular behaviours) as a function of certain interventions or personal or environmental variables, sometimes called “explanatory variables”.

**Meta-analysis** - the use of statistical methods to analyse and summarise the results of studies included in a systematic review.

**Multi-level modelling** - a framework for exploring how average relationships vary across hierarchical structures. A common criticism of using statistical models to analyse quantitative data in the social sciences is that these methods place too much attention on the individual, and too little on the social and institutional contexts in which the individuals are located. Multi-level modelling redresses this imbalance by simultaneously modelling processes at all levels of the population hierarchy.

**Nonparametric tests** – statistical analysis that make no assumptions about the form or distribution of the variables being measured, i.e. the distribution may not follow the bell-curve of a normal distribution on which many parametric statistical tests are based.

**Power calculation** – a power calculation in statistics is the probability of rejecting the null hypothesis when a specific alternative hypothesis is true. It is commonly used in clinical trials. For a given size of effect arising from an intervention, studies with more participants have greater power. Studies with a given number of participants have more power to detect large effects than small effects.

**Principal component analysis** - a way of identifying patterns in data, and expressing the data in such a way as to highlight their similarities and differences. It transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called principal components.

**Regression analysis** - a statistical modelling technique used to estimate or predict the influence of one or more independent variables on a dependent variable, e.g. the effect of age, sex, and educational level on the frequency of using a particular facility.

**Systematic review** - a review of a clearly formulated question (or questions) that uses explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. The protocol by which the review is conducted should be determined in advance and eligibility and inclusion criteria should be clearly stated.

**t-test** - a statistical test used to find out if there is a real difference between the means (averages) in two different groups; it computes the probability that two groups are members of the same population

## References

Browne, W.J. and Rasbash, J., 2001. Multilevel Modelling. To appear in Bryman, A. and Hardy, M. (Eds.) *Handbook of Data Analysis*, accessed from <http://www.cmm.bristol.ac.uk/team/mmsage.pdf> [accessed 29/05/2008]

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## 1. Introduction to the review

### Aim

- 1.1. The aim of this study was to undertake a descriptive systematic review of evidence on participation in outdoor recreation by segments of the population that are under-represented at present. The study contributes to the evidence base on *young people, older people, women, ethnic minority groups, and people with disabilities*, in relation to informal outdoor recreation. These are the priority groups identified by the Welsh Assembly Government (WAG) but consideration is also given to social class, occupation and educational background. The review is intended to present robust overall conclusions that are applicable to Wales and the Countryside Council for Wales (CCW).

### Objectives and brief for the review

- 1.2. The study has reviewed the literature on the identified groups and informal outdoor recreation in relation to barriers, motivations, preferred experiences and activities, and strategies for overcoming barriers.
- 1.3. The brief for the review of evidence identified the following key objectives:
  - To review the barriers to participation experienced by each of these priority groups in relation to the three main areas of constraint: intrapersonal, interpersonal, and structural.
  - To review the motivations, experience and activity preferences of each of these groups, considering both participants and non-participants.
  - To consider any evidence relating to the differences between participants and non-participants, and the strategies that have been used by those who do participate to overcome the barriers that have been identified in the review.
  - To consider the effect of belonging to multiple groups on motivations, experience and activity preferences.

### Context

- 1.4. The Countryside Council for Wales is developing the evidence base relating to outdoor activities in order to provide effective advice and guidance on interventions and evaluation. Existing research has indicated that participation in informal outdoor recreation is relatively low among the following groups:
  - *young people;*
  - *older people;*
  - *women;*
  - *people from ethnic minority groups; and*
  - *people with disabilities.*
- 1.5. Research has considered the specific constraints experienced by these socio-demographic groups and, to a more limited extent, reviewed their

motivations and activity preferences. CCW has identified a need for a comprehensive analysis of these studies in order to evaluate their validity and to draw conclusions that can form the foundation for further primary research and inform practical interventions.

## 2. Methodology

### Challenges for the review

- 2.1. It was recognised from the outset that there were some challenges in terms of definitions and the likely coverage and focus of existing research in relation to priority groups of interest.
- 2.2. There was a need to clarify what constitutes 'informal recreation'.
- 2.3. It was necessary to consider the relationship between exclusion, participation, and under-representation. A group that is under-represented may not feel excluded if it has full access but still declines to participate in countryside activities. Past literature reviews show that much of the literature presents little evidence of attempts to distinguish between exclusion and under-representation. It was important to try to distinguish between:
  - a consequence of a choice on the part of an individual not to engage in an activity,
  - a consequence of a constraint that is sufficiently powerful to exclude the participant against their preference to participate, and
  - the result of the actions of others who are in a position to assist or inhibit access to desired spaces or activities.

In practice, it seemed likely that the literature reviewed here would reflect many of the limitations found in earlier reviews, in particular, with regard to the question of whether or not an expressed lack of interest in countryside activities was masking constraints which acted to exclude participation.

- 2.4. The quality and nature of the evidence - the level of detail and quality of evidence can be extremely variable, with some data being more anecdotal than systematic and much being case-study based rather than relying on a representative sample from which generalisations can be drawn.
- 2.5. The research coverage of areas relevant to this review was likely to be uneven and, in some cases, absent entirely, limiting what conclusions could be drawn to address the full range of objectives identified in the brief but highlighting gaps in evidence which indicate where further primary research is needed.

### The nature of the systematic review

- 2.6. A systematic review was undertaken of the existing evidence/knowledge base arising from research on different segments of the population and informal outdoor recreation in relation to participation, motivations, benefits, preferred experiences and activities, constraints and strategies for overcoming constraints.

- 2.7. A systematic review is one that uses explicit (and repeatable) methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. The aim is to identify the best evidence available to address a particular question or set of questions. The protocol by which the review is conducted should be determined in advance and eligibility and inclusion criteria should be explicitly stated.

### Search strategy

- 2.8. Search terms were refined iteratively and in consultation with the client, drawing on a database of research on green and public space prepared by OPENSspace for the Department for Communities and Local Government (DCLG, 2006<sup>1</sup>) and other recent literature reviews. The priority was research published in the last ten years (in or after 1997). A systematic search of a selected sample of key websites and key professional journals, as well as other likely sources of relevant research, was undertaken initially by an information scientist, supported by other reviewers who were subject specialists. The full list of search terms used and sources, including electronic databases and websites, searched is provided in Appendix A.
- 2.9. The following were the principal web-based bibliographic databases and search engines used:
- PubMed (Medline)
  - IBSS
  - Countryside Journal
  - Web of Knowledge
  - Science Direct
  - SportDiscus
  - Treesearch literature references from the US Forestry Dept treesearch database <http://www.treesearch.fs.fed.us>
  - Construction Information Service (CIS) (part of info4education)
- 2.10. Research libraries used included the National Library of Scotland, Edinburgh College of Art, the University of Edinburgh and Heriot-Watt University.

### Selection and inclusion criteria

- 2.11. The review focused on research which satisfied minimum standards of quality and detail. It assessed the 'weight of evidence' provided by the findings. It is not a full Cochrane review (used to assess current best evidence on medicine and health care, see [www.cochrane.org](http://www.cochrane.org)), since this was not appropriate for a study intended as a descriptive systematic review, including both qualitative and quantitative evidence. In addition, the form of quantitative data did not lend itself to any meta-analysis, i.e. to the use of statistical methods to analyse and summarise the results of the included studies.

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<sup>1</sup> Department for Communities and Local Government, DCLG (2006) *Green and Public Space Research: Mapping and Priorities*. London: DCLG

## Primary and secondary screening

- 2.12. 1372 titles identified by the search strategies were assembled into a single Endnote database (although 11 of these were subsequently shown to be duplicates and the number reduced to 1361). Titles/abstracts were initially screened by one reviewer and excluded if they did not fulfil criteria on target populations or informal outdoor recreation. A second reviewer independently checked all of the excluded titles, resulting in a small number of titles being re-included following discussion. The primary screening suggested 884 titles should be excluded and identified 488 for potential inclusion, i.e. titles requiring further consideration, analysis of full text, clarification, or quality assessment. Of these, 49 articles could not be obtained in full but, on reassessing the abstracts, 47 were excluded. Thus, ultimately, only 2 titles identified as potentially for inclusion could not be sourced, leaving 439 full texts to screen. These were further assessed against the following detailed inclusion criteria.

### Target populations:

- 2.13. Young people, older people, women, ethnic minority groups, people with disabilities, people from contexts of multiple deprivation, people in low social class or low educational achievement groups.

### Informal outdoor recreation:

- 2.14. General inclusion criteria: primarily green *and* natural or semi-natural environments, and the kind of activities that can go on in these kind of spaces, and that fall within the definition of recreation activities undertaken through free choice.
- 2.15. **Specific criteria are listed below:**

Included	Excluded
<b>Settings</b>	
Rural and countryside areas Urban green spaces Woodlands and forest Nature reserves Parks Meadows	Sports pitches Playing fields Manicured lawns Formal gardens Hard paved urban areas Botanical Gardens Zoos
<b>Activities</b>	
Walking Cycling, biking Family walks, picnics, etc Jogging Canoeing Climbing Hunting, shooting, coursing Fishing Driving in the countryside Cross country running	Organised school activities and outings Prescribed "Green Gym" activities Conservation activities/volunteering Motocross Quad bikes Visiting gardens Golf Football or other organised team sports



Since the study's inception, sea- and fresh-water based activities were added and off-road driving in motorised vehicles was also briefly explored.

**Initial quality assessment:**

- 2.16. To be included, any title fulfilling the above criteria on target population and informal outdoor recreation had to fall into one of the following three categories:
- i. Any peer-reviewed papers published in reputable international academic journals.
  - ii. Any research report that has undergone a rigorous quality control process by the originating institution, which may or may not include assessment by independent assessors
  - iii. Any other research (including ongoing research) recommended by experts, that satisfies the criteria below.
    - Are the research aims clear?
    - Is there a clear methodology and is it justified?
    - Is the analysis clear?
    - Are the key conclusions well-founded in the results of the analysis?
    - Are the conclusions well related to the relevant literature?
    - If there is a qualitative element to the research: is there an appropriate conceptual/theoretical framework and is the analytical approach appropriate to the type of data?
    - If there is a quantitative element to the research: is the sample size adequate for confident statistical analysis and is the statistical validity adequate?

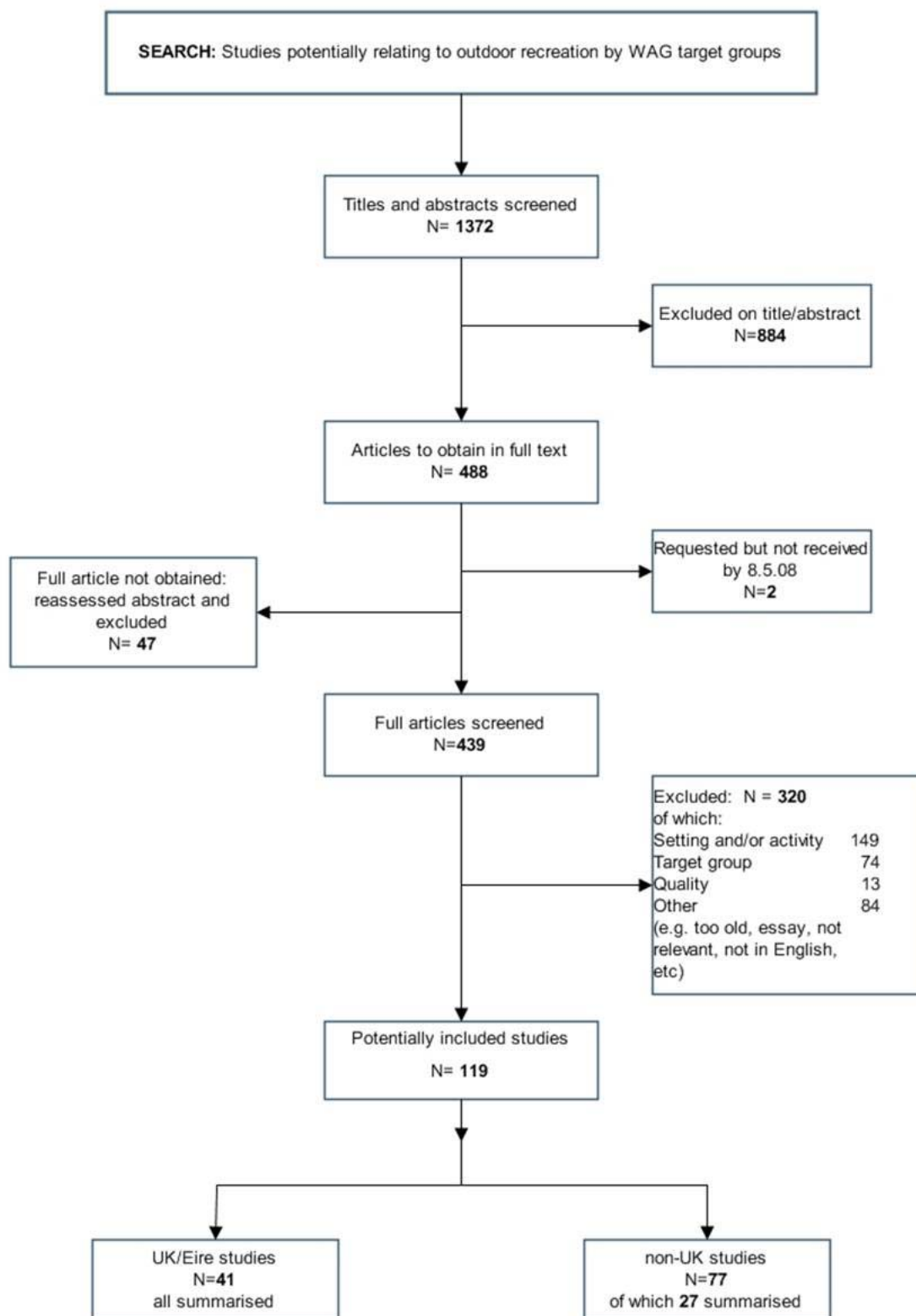
**Secondary screening of full text papers**

- 2.17. Papers included after the primary screening of titles/abstracts were obtained in full text (or accessed online via URL, as appropriate) and assessed against the above criteria. Papers were included in the review if they satisfied the inclusion criteria for target population and informal outdoor recreation AND met the quality requirements listed above. Inclusion/exclusion decisions were recorded in the Endnote database as follows:

- IN Paper included in review
- T Failed to meet inclusion criteria on target population
- S Failed to meet inclusion criteria on setting
- A Failed to meet inclusion criteria on activity
- Q Failed to meet inclusion criteria on quality
- X Excluded for other reasons (e.g. a duplicate not noticed earlier, pre-1997 and not a key paper in the field; essays or commentaries; policy recommendations rather than primary research papers - reasons noted in Endnote)

- 2.18. For each excluded paper, the primary reason(s) for exclusion was recorded. A flowchart illustrating the screening process and selection of studies for inclusion in the review is shown in Figure 1.

**Figure 1: Process of study selection**



## Included studies

- 2.19. 119 titles met the inclusion criteria, shown in Appendix B. A matrix of the themes and methods covered by these papers was drawn up to map coverage of review themes identified in the brief and to identify gaps and shortfalls in research coverage (see Appendix C). In discussion with CCW, it was agreed that all the UK or Eire papers selected (42 papers covering 41 studies) would be subject to full review and data extraction, while only 27 of the non-UK ones would be reviewed in such detail. These were chosen on the basis that they appeared both applicable to the UK (i.e. not about US-style 'hunting', for example) and relevant to the WAG priority groups least well covered in the UK research; or that they focused on overcoming constraints, an area poorly covered by robust evidence in UK studies.

## Data summaries of included studies

- 2.20. Details of selected studies were extracted into a standard data summary form (Appendix C). Each study was assigned a unique identifier comprising the name of the first author, abbreviated journal name (if appropriate), year and Endnote record number. An overview showing the priority groups, setting, activity and a brief summary for each selected study is set out in Appendix D (UK) and Appendix E (non-UK).

## Reporting

- 2.21. Reporting was structured by using a series of matrices that classify and review relevant projects. The matrices identify the target WAG priority group(s) against the following categories:
- Reported constraints to participation
  - Evidence, (the evidence is limited) of methods and activities that have been successful in overcoming constraints
  - Identified motivations for informal outdoor recreation and preferences for different types of activities
  - Perceptions of safety and risk in relation to actual behaviour choices
  - Identified benefits of informal outdoor recreation for different groups of people,
  - Identified impacts of the effects of people belonging to more than one target group, i.e. multiple effects of priority group membership, where it exists (the evidence is very limited).

## 3. Synthesis of results from the systematic review

### Choice of robust data for deriving conclusions

- 3.1. The detailed reviews and data extraction from the final 41 UK and 27 non-UK studies allowed a more critical assessment of the nature of the data and the confidence that might be placed in generalising from it. This resulted in a final round of inclusion/exclusion where 18 UK and 15 non-UK papers provided robust evidence on which to base recommendations, discussed in more detail below, while the remaining 35 papers provide useful insights that inform the findings and recommendations.

- 3.2. There is little evidence of successful strategies for overcoming constraints presented in the papers. Most of the included studies have a range of recommendations for interventions that could be undertaken but there is rarely any follow up. The best quantitative data comes from studies focussed more on participation for health rather than for experiencing the outdoors, probably because of the research culture relating to standards of evidence considered appropriate for health research.
- 3.3. The heterogeneous nature of the included studies precludes any direct comparison or ranking of studies based on a standard quality scale, and makes it inappropriate to consider any attempt at meta-analysis of data.

### **Selected UK abstracts**

- 3.4. Of the 18 selected UK papers, the majority identify only 'general outdoor activities' or 'walking' as the target activity and location in which it is undertaken. One is urban based. Three involve the study of an organised 'Walking for Health' programme targeted at *older people*, including *ethnic minority groups*, but are less relevant, with a focus on physical activity rather than participation. Two examine social well-being with reference to green open spaces and one sought the opinions of refugee migrants to urban green space. Nine of the papers undertook nationwide population studies, some using hypothetical open spaces, with the remainder as site-specific case studies. There is a mixture of qualitative and quantitative data but with an emphasis towards the former. Nine of the papers establish a sample representative of their target populations. In many cases the sample populations were small with no attempt made to improve the analysis using a power calculation (used in only three studies). Three of the studies were specific to one priority group, *older people*, with some attempt in one of these to include *ethnic minority groups*.
- 3.5. All 18 papers identify the constraints to participation in outdoor recreation and all but two presented strategies for overcoming these, though not always supported by evidence. Some studies assessed motivation and perceived risks and constraints, whilst others included known constraints and related these to people's use of outdoor recreation. Twelve of the papers discussed the question of exclusion versus under-representation, though the evidence was not always clear.
- 3.6. There is no agreed definition of age bands between the studies. In some papers *young people* are those below 30 years of age whilst others refer to teenagers. Similarly *older people* may be those over 50 years of age or older. In this review we have had to accept the classification given in each paper and noted the detail of age groups where significant for the reporting of evidence.
- 3.7. These papers are discussed in two groups as follows:

#### **Nationwide studies**

- i. Alves et al 2008
- ii. Curtis 2003
- iii. Countryside Council for Wales 2005

- iv. Hickey 2003
- v. OPENspace 2003
- vi. NFO System Three 2003
- vii. Sugiyama & Ward Thompson 2008
- viii. Sugiyama et al 2008
- ix. Uzzell et al 2005

#### Case studies – site specific

- i. Askins 2004
- ii. Bell et al 2003
- iii. Bell et al 2004
- iv. Dawson et al 2006
- v. Ethnos 2005
- vi. Madge 1997
- vii. OPENspace 2006
- viii. Resources for Change with the Community Development Foundation 2005
- ix. Ward Thompson et al 2005

### NATIONWIDE STUDIES

- 3.8. With reference to the identified priority groups, only two papers refer to all groupings (Hickey 2003, NFO System Three 2003). These are also the only papers to refer to *people with low educational achievement*. Two papers refer to *people in low social class* (Curtis 2003, Hickey 2003). *Older people* receive the greatest coverage, found in six papers; *ethnic minority groups* and *people from contexts of multiple deprivation* are in five studies; and *young people*, *women* and *people with disabilities* in four studies. Curtis (2003) was an Eire study set in coastal, estuarine, riverside and wetland areas, the only included study to consider the leisure use of water.
- 3.9. Only **Hickey** clearly demonstrated a sample population representative of the target population (general population with an emphasis on *people with disabilities* and *young people*) ensuring a contribution from both users and non-users on England's public rights of way, with results weighted to ensure the correct demographic profiles. The focus on rights of way may have limited the range of preferred activities reported. The study examined, using face to face interviews and focus groups, their motivation for using the countryside (rest, relaxation, adventure), preferred activities identified (walking, cycling and horse riding), and the constraints to using the rights of way for *people with disabilities* (poor surface, lack of facilities), *young people* (lack of public transport) and, for all groups, insufficient information. It concluded that exclusion was occurring and made suggestions for overcoming these constraints. (Hickey 2003)
- 3.10. In **CCW 2005** the sample was large and results weighted to be representative of the target population but no response rate was given. The authors targeted *young people*, *women*, *people with disabilities*, *ethnic minority groups* and those who did not have access to a vehicle, to consider their use or non-use of the Welsh countryside by means of a quantitative cross-sectional telephone survey. The study gave a correlation between the constraints 'lack of time' and 'no interest' particularly for *young people*, *ethnic minority groups* and

Cardiff residents, who are more likely than average to see these as a constraint. The authors suggest that the main constraint to participation for these groups could relate more to 'activity / leisure choice' rather than an absolute lack of time. Both *women* and *people with disabilities* were less likely than average to list these two factors as constraints, with the latter citing poor health as the main reason for non participation. Lack of public transport was the constraint for those without access to a vehicle. The results indicate that *young people*, *ethnic minority groups*, and Cardiff residents were less interested in countryside activities than other groups and infer under-representation rather than exclusion.

3.11. **Uzzell et al 2005** may be representative of the population but confirmation was lacking because the response rate was low (~20%). The authors make a good case for claiming that this was as good as can be expected (and is normal for) this type of survey. The authors targeted *older people*, *people with disabilities*, *minority ethnic groups*, *people from inner cities*, *people with low incomes*, *women* and *young people* set in the English countryside. The study starts with a literature review followed by cross-sectional surveys of local authorities and service providers. The report did not focus on the end-users of facilities. The authors found that the service providers' lack of knowledge about under-represented groups and their poor understanding of the best means of communication to be the principal constraints. Service providers identified three groups to be the most under-represented ('*minority ethnic community*, *those on low incomes*, and *young people*') but few providers have specific projects in place to address their needs. The motivation for change was legislation rather than an understanding of group needs. The paper calls for more group-specific targeting and positive encouragement for under-represented groups, who feel that they do not belong in the English countryside.

3.12. **Alves et al 2008** may be representative of the population but confirmation was lacking because the response rate was low, partly owing to the use of self-reporting. The target population was *older people* (over 65); the study was set in neighbourhood parks and open spaces and involved a self response questionnaire detailing fifteen attributes, eight relating to the journey to the park (environment, travel) and seven within it (facilities, vegetation, maintenance and nuisance). A paired comparison format asked respondents their preferred option between two hypothetical neighbourhood parks. Motivation was pleasant views and seeing wildlife, while the analysis showed the highest ranking negative variable to participation was nuisance caused by unattended youngsters, dog fouling and vandalism, followed by lack of facilities, poor vegetation, high traffic levels, and lack of interesting sights. Exclusion was implied.

3.13. **Curtis 2003** targeted *low versus high income groups* during the summer of 1996 with a telephone survey investigating demand and exclusion in water-based leisure. The response rate was low. Observations not containing all relevant socio-demographic and cost data were excluded, as were high-frequency users. The activities included swimming and other beach trips, sea angling and boating and the modelling allowed calculation of the samples'



total trip demand, as compared with actual trip demand. Motivation for taking part was not addressed and the only constraint identified was for boat trips on grounds of cost (significantly correlated with education and gender).

- 3.14. In **NFO System Three 2003**, the authors presented a cross-sectional survey of all the priority groups but with the results shown as percentages stratified by *age*, *gender* and *social class*. The study, using a computer assisted personal interviewing system, aimed to assess current levels of access to the countryside in Scotland, the activities undertaken and the likely impacts of potential changes in legislation. The sample was weighted to conform to another nationwide survey but representativeness was not demonstrated and no response rate was given. The study found that members of social class A and B and people aged between 35 and 54 were more likely to have taken part in open-air recreation, whereas people who did not have access to a car and members of social class D and E were much less likely to have done so. Those regularly participating in countryside activities did so for exercise, fresh air and scenery, and cited poor health, lack of time, lack of information and inclement weather as constraints to their increased use of outdoor recreation. Infrequent participants would use outdoor recreation more if public transport links were improved or if more paths were provided near towns. Evidence of exclusion is implied.
- 3.15. In **OPENspace 2003**, the authors presented a narrative literature review and a study of outreach projects, targeting *ethnic minority groups*, *older people*, *young people*, *women*, *people with disabilities* and *low income groups* using the European countryside but with a particular emphasis on England. Constraints to participation (cost, lack of information, safety, cultural differences, poor range of activities) and strategies to reduce under-representation (consultation, training, design) were listed, but without a focus on motivation and preferred experiences. The report acknowledged the difficulty in distinguishing between exclusion and under-representation, and a recurring theme was the lack of adequate follow-up and evaluation. There was also a discrepancy between the priority groups generally chosen for research and those chosen for outreach projects. The report noted that participation in outdoor recreation had positive social, economic and health benefits but needs an integrated approach to increase the level of visiting by under-represented or excluded groups.
- 3.16. In **Sugiyama & Ward Thompson 2008**, the authors reported on *older people* (with an '*ethnic minorities sub-group*') walking to and in neighbourhood open spaces using a self-response questionnaire. The focus of the study was physical activity rather than participation. Respondents were asked to recall weekly frequency and duration of walking for transport or recreation, and to assess nuisance, facilities, transport, vegetation and ease of access on a scale ranging from "strongly disagree" to "strongly agree". The authors attempted a random selection of survey recipients but the overall response rate was very low and may not be representative of the target group. Nor was there any comparison made between levels of participation relative to the total population. The analysis used regression models but without ethnicity input since there was no evidence that this variable had any significance in relation to walking.

- 3.17. **Sugiyama et al 2008** reported on *older people* walking (self report) in neighbourhood open spaces and examines the association between neighbourhood open space, health issues and their perception of quality of life. Again there were sampling problems, with a very low response rate and the bias of selection using a self-response questionnaire. A 5-item 'Satisfaction With Life Scale' measured Quality of Life. Measures included the frequency and average duration of walking for recreation and transport for both summer and winter. The study assessed 14 attributes of open space with a scale ranging from "strongly disagree" to "strongly agree." The distance, time and mode of travel to the open space were included as independent variables. A logistic regression analysis examined the effect of distance and open space attributes on health status, with a second examining life satisfaction. The third analysis predicted the odds of being a high-level walker. All the regression models were adjusted for participants' age, functional capability, and level of educational attainment. Gender was not included. The focus of this study was walking and health, not participation in outdoor recreation and no conclusions could be drawn regarding exclusion versus under-representation.

## CASE STUDIES

- 3.18. With reference to the identified priority groups, eight of the papers refer to *young people*; seven to *older people* and *ethnic minority groups*; six each to *women* and *people with disabilities*; four to *people from contexts of multiple deprivation*; three to *people in low social status*; and two to *people with low educational achievement*. Only two papers refer to all groupings (Dawson et al 2006, Ward Thompson et al 2005) but Ward Thompson et al found under-representation for *ethnic minority groups* and *people with disabilities* in the sample population. The case studies cover a range of settings: city parks, urban green spaces, woodlands (including urban fringe), natural countryside environments and two national parks. Four of the studies were considered to have a representative sample (Dawson et al 2006, Resources for Change with the Community Development Foundation 2005, OPENspace 2006, Ward Thompson et al 2005).
- 3.19. **Dawson et al 2006** clearly demonstrated a sample population representative of the target population supported by a robust power calculation. Dawson's target group was the general population (but was able to present some results on *older people*, *women*, *people from contexts of multiple deprivation*, and *people with disabilities*) and the setting was the Walking the Way to Health Initiative and Paths to Health walks in the countryside or urban green areas. The study tested a group over time by collecting baseline data through a cross-sectional survey and follow-up interviews with the same respondents at 3 months and 12 months. The participants were predominantly female, young-old (65-74) and mainly retired. The study used a daily activities questionnaire, with additional information on socio-economic status, health, gender and age. Statistical analysis of continuous data used non-parametric tests only in instances where data was found to be extremely skewed; otherwise, t-tests were employed for making mean comparisons between groups. Logistic regression analysis allowed examination of several possible explanatory



variables simultaneously. Again, the study focused on physical activity, not participation in outdoor recreation, but the motivations (fitness, meeting people) and constraints (safety, health problems, no one to walk with) are relevant.

- 3.20. **Madge 1997** targeted *women, ethnic minority groups* and *older people* using city parks in Leicester. The study, carried out by interviews in nine sample streets across the city, queried use or non use of urban parks but there was no indication of response rate and the results may not be representative of the target population. The author reported that the sample did represent the gender and ethnic characteristics of the total population of Leicester city but showed a slight bias towards the younger age group, students and those not fully employed. The paper did not specify the questions asked or data collection methods used. The main constraint reported by nearly half the respondents was fear of attack, with significant differences by gender and ethnicity, and the report concluded that better security and facilities might overcome this barrier.
- 3.21. The focus of **Resources for Change with the Community Development Foundation 2005** was organised recreational activities in green space and the countryside but is included in this review because it has relevant sections on motivation, constraints to participation and strategies for overcoming exclusion. It targeted the hard to reach and disadvantaged population (*people with disabilities, people from contexts of multiple deprivation, young people, prisoners and older people*) and the case studies appear to be representative of the target population. A literature review covered the UK, with the case studies mainly covering South Wales. There was a narrative description of the key findings, presented in a "per case" or "per article" format. It found that using the outdoors was dependent on knowledge of, and the accessibility, safety and appearance of, the area.
- 3.22. In **Askins 2004**, the author targeted *ethnic minority groups* (also examining gender, age-related and socio-economic differences) and considered the use of national parks (activities not specifically stated) in England using two case study areas: the North York Moors National Park in combination with the city of Middlesbrough, and the Peak District National Park in combination with Sheffield. The study explored the pattern of use by Asian and African-Caribbean groups by using a series of cross-sectional surveys of target population, national park-users, national park staff and other stakeholder groups. As the report gave no indication of response rates, it is not possible to tell if the participants were a representative sample of the target population. The report assessed both quantitative and qualitative data from visitors and the resident population and compiled it into a narrative synthesis of results. As part of the methodology, community groups taking part had the option of an organised day visit to their adjacent national park to enable observation of the ways in which the issues discussed in interview played out in context. The motivations given were exercise, social engagement, and peace and quiet, and a number of constraints were identified (financial, transport, feeling out of place, lack of knowledge and information). Despite this, the conclusion

suggested that ethnic communities were under-represented rather than excluded.

- 3.23. In **Bell et al 2003**, the authors targeted *young people* (but found some information on *older people's* attitudes) on the recreational use of urban fringe woodlands by studying Scottish communities in Alloa, Corstorphine in Edinburgh, Lennoxton, Whitburn, and Wishaw. There was not enough detail of the recruitment process to be able to judge if the participants were a representative sample of the target population. The study used qualitative data from scoping discussions with woodland managers, and focus-group discussions with groups of children and teenagers of different age groups, plus parents and *older people* in the community. The discussions were semi-structured and focused around a standard set of questions prepared beforehand by the researchers, who then visited the identified sites to look for evidence of different types of activity. Key examples of attitudes and perceptions were identified from the discussion transcripts and used for comparison between age groups and locations. Motivations for use and preferred experiences (adventurous play for younger children, freedom from parental supervision) were cited but the report concluded that the 15-17 age group shows little interest in the countryside and is under-represented, not excluded.
- 3.24. In **Bell 2004**, the authors targeted the *general public* but there was a focus on *people with disabilities, ethnic minority groups, women, older people and young people*. The aim was to specify the contribution that green spaces make to people's social well-being by examining the use people make, and the feelings that they have towards, sixteen artificial and natural green space sites throughout the East Midlands. The participants were not a representative sample of the target population because of a bias towards those already using green spaces, and a poor response from individuals and organisations representing people with disabilities. The questionnaire asked participants to rate attributes using a scale from "strongly agree" to "strongly disagree" and collected demographic information on the interviewees. Data underwent a range of analytical techniques, including principal component analysis, and indicated that *women, ethnic minority groups, people with disabilities and young people* were under-represented, the main constraints being fear, lack of information and poor transport.
- 3.25. Ethnos (**Ethnos 2005**) targeted *ethnic minority groups, people with disabilities and young people* from three inner cities (London, Birmingham and Bradford) and four country parks (Aldenham Country Park near London, Sutton Park near Birmingham, Ogden Water Park near Bradford and Anglers & Newmillerdam Country Park near Bradford) to study their general use of countryside and green outdoor spaces. There was not enough detail on the selection, response rates and recruitment of study populations to judge if the participants were a representative sample of the target population. For analytical purposes, all the groups included in the sample of lay people were mutually exclusive (e.g. *ethnic minority group* respondents could not be either *people with disabilities* or *young people*). The survey combined a mixture of interviews carried out by professional researchers with escorted visits to

country parks by 'non-user' families. All interview and focus-group data were transcribed verbatim for analysis to determine how widespread particular issues were in various groups of research participants, concluding that constraints (cost, fear) applied to all priority groups except *young people* who were under-represented by choice.

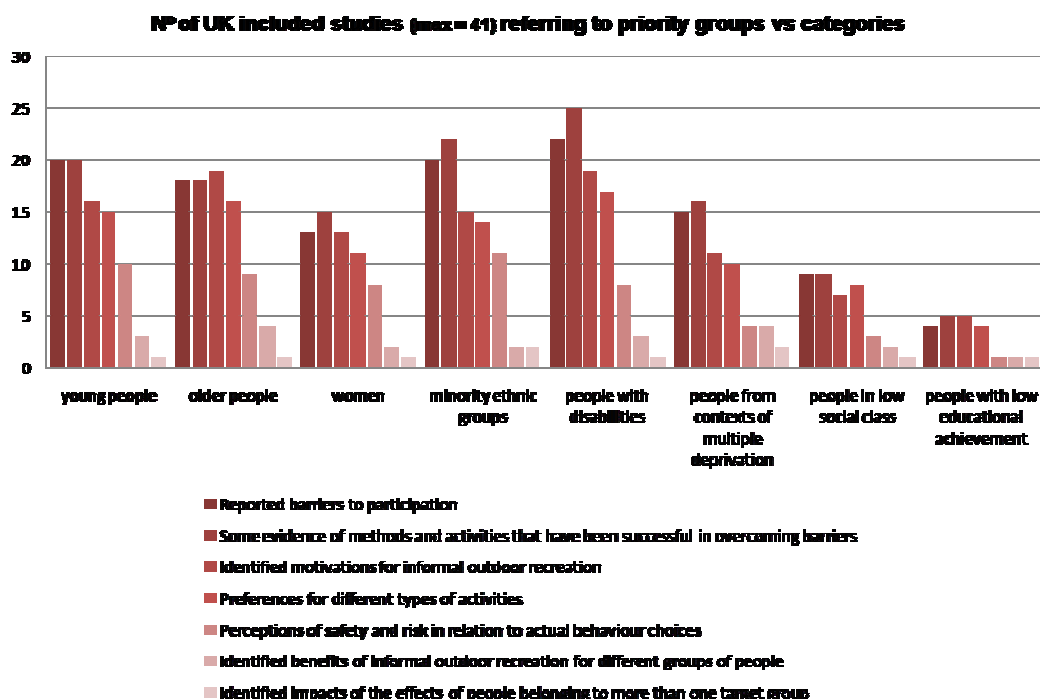
3.26. In **OPENspace 2006**, the authors targeted *young people from contexts of multiple deprivation, women from ethnic minority groups, people with disabilities* and people from rural areas using woodlands around Dumfries and Galloway, Glasgow, Edinburgh and East Lothian. The study used focus-group discussions with the target groups. The sample size was very small with no representation from non-users. Analysis was by narrative summaries abstracted from transcripts of the discussions. Three important constraints to people accessing woodlands emerge, these being a lack of reliable public transport (especially important for blind, visually impaired and other *people with disabilities* and for BME women), poor access within woodlands (and the fear of getting lost) and a fear of other people in woodlands.

3.27. In **Ward Thompson et al 2005**, the authors targeted *all*, but noted that *ethnic minority groups* and *people with disabilities* were under-represented in the sample population in their case studies into visiting woodlands, based in five communities representative of central Scotland (Alloa, Corstorphine in Edinburgh, Lennoxton, Whitburn and Wishaw). Given the geographical coverage and sample size, the findings are likely to be representative but this was not formally demonstrated within the study. Nor was the response rate reported. The study employed a literature review, interviews with managers and focus groups, and a cross-sectional survey in the five case study areas including on-site observations. Analysis was by a narrative summary of the results, including a factor analysis of the attitudinal items in the responses to the questionnaires. Again, fears for safety appeared high on the list of constraints to use, as did nuisance problems and distance from home.

## Gaps in UK-sourced data

3.28. The review of UK-based research discovered little material concerning *people with low educational achievement* and *low social class groups*. (see Figure 2). By searching for these priority groups in the non-UK papers that provided appropriate evidence on which to base recommendations, fifteen papers were selected for detailed review. However, definitions used in these papers do not always translate into the UK context. For example, *people in low social class* is not recognised as a category in the American or Australian studies. They use 'socio-economic status' which may also include *people from contexts of multiple deprivation* and *people with low educational achievement*. In common with the UK-included studies, age bands are not consistent among the papers. The majority of studies draw conclusions concerning exclusion and under-representation but only one presented any evidence of the successful application of strategies to overcome constraints to participation in informal recreation. As with the UK studies, these papers did not investigate specific activities, they described 'general outdoor recreation'.

Figure 2: Chart of priority groups vs categories (UK)

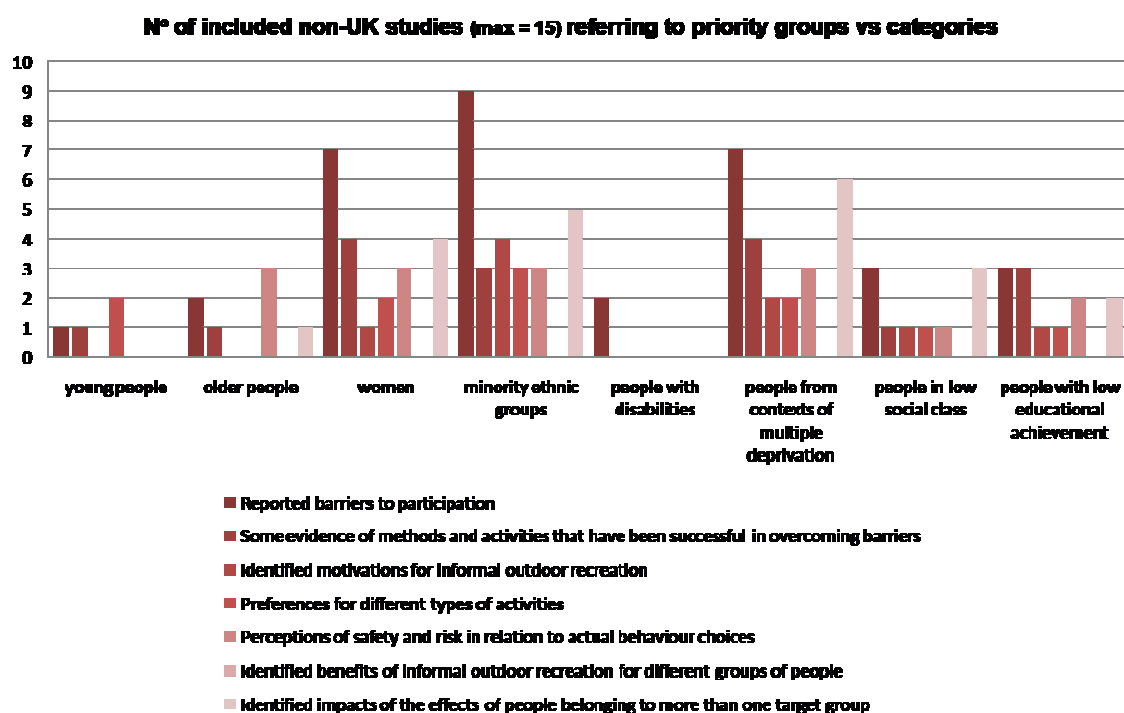


### Selected non-UK abstracts

3.29. Of the 15 selected non-UK papers, six undertook a nationwide population study with the remainder being case studies. In 13 papers, only quantitative data was used but two (Burns and Graefe 2007, Bixler et al 2002) also used qualitative data. Two studies (Culp 1998, Walker et al 2001) used only qualitative data. A sample representative of their target populations, based on a large sample, is established in 11 of these papers, with four improving the analysis by using a power calculation to take account of the sample size. Of the remaining four papers, two have a large sample (but one has a low response rate and the other excludes non-users), one may have a large sample but this was not clear from the review and the remaining study (Culp 1998) acknowledges that it does not have a representative sample.

3.30. The studies are selected because they consider *people in low social class*, *people from contexts of multiple deprivation* or *people with low educational achievement* or consider constraints. Ten also consider *ethnic minority groups* and seven consider *women*. *Younger people*, *older people* and *people with disabilities* are each considered by two of the papers (see Figure 3 for full spread of cover).

Figure 3: Chart of priority groups vs categories (non-UK)



3.31. All but two of the included non-UK papers identify the constraints to participation in outdoor recreation but only five address the question of strategies for overcoming them. Three studies assess motivation with six preferences. Three studies consider perceived risks and six consider (at some level) the combined effects of the priority groups. Exclusion versus under-representation is discussed in 11 of the papers. None of the studies considers the benefits of informal recreation. The papers are presented in two groups as follows:

#### Nationwide studies

- Bowker et al 2006
- Burns & Graefe 2007
- Green et al 2007
- Johnson et al 2001
- Williams et al 2004

#### Case studies – site specific

- Ball et al 2007
- Bixler et al 2002
- Culp 1998
- Jun et al 2007
- Scott et al 2004
- Shores et al 2007
- Stodolska 2002
- Tierney et al 1998
- Tierney et al 2001
- Walker et al 2001

## NATIONWIDE STUDIES

- 3.32. In **Bowker et al 2006**, the authors targeted *women, ethnic minority groups* and *people from contexts of multiple deprivation* in a USA-wide telephone survey to explore the influence of socio-demographic and spatial factors on whether people participate in wilderness recreation (survey started in 2000 and continued to 2004). No response rate was given but the sample was large and subjected to a post-sample weighting procedure to bring some variables in line with census data, so it is probably representative. Data analysis using regression models found that income, gender (male), immigrant status (born in USA) and environmental awareness positively correlate with wilderness visitation, whereas race (black and other), ethnicity (Hispanic), age and urban dwelling have a negative effect. Education levels had no significant impact. Distance to a wilderness area was an important factor determining participation rates and intensities but the study did not consider motivation or preferred experiences.
- 3.33. **Burns & Graefe (2007)** targeted *people with disabilities* to examine the influence of 'disability status' on National Forest visitation, outdoor recreation participation patterns, and perceived constraints by means of two cross-sectional telephone surveys, one carried out in 2001 and the other in 2004. Data was analysed through chi-square tests and logistic regression. The sample was representative of the target population despite a low response rate (below 60%), as the sample was large, covered different geographical areas, and surveyed both users and non-users. The key finding was that the existence of a personal disability was a much greater constraint to outdoor recreation visitation than the presence of a person with a disability in the household, and that disabled people were excluded by poor health and being physically unable to visit.
- 3.34. **Green et al 2007** sought to examine whether the use of wilderness areas in the USA is constrained by factors related to socio-economic standing, facilities, health, and other personal factors. A national telephone survey targeted *women, ethnic minority groups, people from contexts of multiple deprivation* and *older people*, asking 17 questions of those who had visited in the past year or who expressed an interest in doing so, with responses analysed using logistic regression equations. The study did not address motivations and preferences but reported on constraints to use and gave some evidence of exclusion. *Ethnic minority groups, women, people from contexts of multiple deprivation* and *people with low educational achievement* have higher levels of constraint than their counterparts, personal safety being of prime concern.
- 3.35. **Johnson et al (2001)** undertook a nationwide cross-sectional survey to assess whether *ethnic minority groups, women* and 'rural dwellers' perceive more constraints to outdoor recreation participation than other groups. The sample was probably representative of the target populations but neither the response rates nor participant demographics compared to census data were reported. The authors found that *women* were the most likely to feel constrained (by personal safety concerns, inadequate facilities and information, insufficient funds, and outdoor pests). Ethnicity was not a



significant predictor of constraints for participants but non-participating '*African-Americans*' were more likely than '*whites*' to feel personal safety concerns inhibited their outdoor recreation opportunities. Overall, the most prevalent constraints to both participants and non-participants were time, money, outdoor pests and lack of companions.

- 3.36. **Williams et al (2004)** undertook a cross-section survey to gain an understanding of the experience of '*people with mobility disabilities*' in outdoor recreation and to identify participation patterns and the nature and scope of constraints to be negotiated. Only disabilities affecting mobility were included in the analysis, not hearing impairments, learning disabilities and chemical dependence. All the constraints considered were structural in nature. A series of binary logistic regression analyses examined the relationship between physical disability and activity participation while controlling for age. The sample, from a large, random nationwide telephone survey was probably representative of the target population but no response rate is given. The authors found that '*people with mobility disabilities*' participated less frequently in outdoor recreation activities than people without disabilities, citing constraints to participation of poor health, inadequate transport, access, safety, poor facilities, lack of maintenance, pollution and lack of assistance, than people without disabilities, whose main constraint was lack of time.

## CASE STUDIES

- 3.37. In **Ball et al 2007**, the authors targeted *women, people from contexts of multiple deprivation* and *people with low educational achievement* in a self-report study on walking for recreation in 45 neighbourhoods in Melbourne, Australia. A cross-sectional survey used multilevel modelling techniques but, although the sample was large, response rates were low and the emphasis was on physical activity and health strategies. The study found that environmental attributes (proximity of coastal paths and public open space, neighbourhood safety) have a high impact on the level of recreational walking, whilst an apparent correlation between low educational achievement and walking activity is unproven when the analysis takes into account personal, social and environmental variables.
- 3.38. **Bixler et al (2002)** targeted *youth* and undertook two structured questionnaires to examine the relationship between current outdoor recreational preferences and activities and previous childhood play experiences, using hierarchical cluster analysis with a representative sample. Comparisons between '*wild adventurers*' and '*yard adventurers*' clearly show that childhood play and exploration in wildland environments leads to later preferences for wildland-dependent activities (camping, fishing, boating, hunting, hiking). The '*urban adventurer*' cluster results suggest more complex relationships are at work, with a preference for manicured paths. '*Wild adventures*' are least likely to want modern comforts, watch television or visit shopping malls, have little fear of wildlands and are not easily disgusted, whereas '*Yard adventures*' show the opposite trends.

- 3.39. **Culp (1998)** presented fifteen qualitative case studies investigating the constraints perceived by adolescent girls to participation in outdoor recreation (hiking, camping, horseriding, canoeing, rock climbing, hunting). Material was collected by the primary researcher through focus groups and individual interviews, following a prescribed template. The author notes that the sample population is not representative and that results can be generalised only in terms of theoretical constructs. Culp found that gender stereotypes undermine rather than block participation, and that peer and family pressures play a greater role than actual physical differences between boys and girls. The results imply exclusion, and that organised outdoor activities specifically for girls, opportunities to learn and apply new skills, and good female role models are effective in overcoming constraints.
- 3.40. The target of **Jun et al 2007** was *women, ethnic minority groups, people from contexts of multiple deprivation and people with low educational achievement*, using a survey of 16 outdoor recreation areas in Cleveland, USA. Using a self-report questionnaire mailed to a selection of interested residents, the study aimed to distinguish between under-representation (other priorities) and exclusion (highly constrained, least constrained) and to link these to socio-demographic characteristics, motivation, involvement and place attachment. The response rate was quite high but took no account of non-users. Those respondents identified as "highly constrained" tended to be *older, less educated, on lower incomes* and have a lower proportion of *whites*. They scored highly on appreciation of the benefits and attractions of the parks, suggesting that they were likely to be responsive to measures to facilitate their participation.
- 3.41. **Scott et al (2004)** targeted *ethnic minority groups* to determine the extent to which race and ethnicity affected constraints to the use of outdoor recreation facilities away from home. The authors used a cross-sectional telephone survey of Texan residents (data from the same survey used in Lee et al 2001) but it is not possible to tell if the sample was representative as it appears to use an undefined subset of the total collected. The authors found that '*non-whites*' reported more constraints to outdoor recreation away from home than '*Anglos*', with significant differences in information and access constraints, intrapersonal constraints and economic constraints. There was no difference between racial groups in time commitments and lack of interest.
- 3.42. In **Shores et al 2007**, the authors used regression analysis to examine the effects of *socio-economic status, age, ethnicity* and *gender* on participation in outdoor recreation in Texas, USA. A cross-sectional telephone survey asked respondents to rate nine statements as "important" or "not important" to their use of outdoor recreation. The sample seems to be representative within Texas but may not be generally applicable. For six of the nine constraints identified as constraints by the researchers (economic, knowledge, time, lacking a partner, safety, health), the effects were significantly multiplied when status was taken into consideration, whereas the remaining three (distance, not interested and disapprove of activities) showed no increase. However, in the case of time constraints, those with *higher levels of education, higher income* and *youth* had an increased perception of constraint.



- 3.43. **Stodolska (2002)** studied the Polish *ethnic minority group* in Edmonton and Alberta in Canada to investigate the factors inducing immigrants to abandon former leisure pastimes during the period following settlement in a new country using both qualitative surveys and quantitative interviews. The sample was representative of Polish immigrants in Canada; less so if expanded to other contexts. Stodolska found that outdoor recreational activities (hiking, walking, skiing, camping) were the most commonly discontinued type of activity, the constraints being financial difficulties, lack of time and environmental differences (dangerous wildlife, private land ownership).
- 3.44. **Tierney et al 1998** targets *ethnic minority groups* and *socio-economic status groups* in a cross-sectional telephone survey used to study the differences in recreational use of national forests and parks in Los Angeles, USA by ethnically diverse urban residents. Collection of data was from both users and non-users but a low response rate and high refusal rate suggests an unrepresentative sample, although the authors attempted to verify the accuracy of the sample by a comparison with census data. Participants rated 18 questions on constraints to use on a scale from “strongly agree” to “strongly disagree”, with additional questions about discrimination as either “agree” or “disagree”. Regression analysis showed that the decision to visit an undeveloped natural area was not just a transportation and income issue but that *ethnic minority group* preferences, assimilation, education, and discrimination all influence participation in outdoor recreation. Exclusion is implied.
- 3.45. Tierney et al revisit their data in **Tierney et al 2001**. The aim of this study was to: determine the percentage of residents of Los Angeles County who visit and do not visit undeveloped natural areas; quantify the differences in use between different ethnic groups; and identify constraints for visitation. As above, there are some issues with the sampling but the authors were confident that their sample was representative of local residents. Whether the results are applicable more widely, is questionable. The study used the same system of questions and responses and analysis showed that only about two in five residents of Los Angeles County visited an undeveloped natural area despite proximity and low cost. It suggests that *ethnic minority group* preferences, education, crowding, lack of transportation, lack of travel companions, finances and perceived discrimination all influence participation in outdoor recreation within undeveloped natural areas.
- 3.46. **Walker et al (2001)** studied *ethnic minority groups* using a Canadian national park. People identifying themselves as Chinese and visiting the park with friends completed a cross-sectional survey examining their motivations for outdoor recreation. These were compared with responses on the motivations of Euro-North Americans at the same outdoor setting. The sample was representative with a high response rate but the authors themselves note several caveats, including the homogenisation of all Chinese into one ethnic group, the exclusion of lone people, the lack of validated methods, and results only from a single group of users from one park. The study concluded that although ethnicity does affect some outdoor recreation motivations directly (Euro-North Americans cited nature and tranquility, Chinese cited group

activity) this relationship is sometimes mediated by self-construal, an individual's sense of self in relation to others. They recommend that future research should take both ethnicity and self-construal into account.

## 4. Key findings by category

- 4.1. The following analysis takes evidence from the 68 included studies and presents the findings in relation to each of the priority target groups identified by WAG and the focus of this research. In each section we first present the findings from those studies with robust data followed by those from the studies whose data is less representative or reliable (i.e. replicable) in its methods. The latter group provide informative commentaries, offering further insight into possible reasons for participation or non-participation in countryside recreation but the material cannot be tested or replicated. Although there is no individual analysis of each paper from the latter group they are summarised in Appendices D and E.
- 4.2. One paper provides interesting information but as it is not stratified by the priority groups it cannot be treated as useful data in the context of this review (Curry & Ravenscroft 2001). The authors found that about 20% of respondents to a national Day Visit Survey held in 1998 had no interest in visiting the countryside, and the authors conclude that non-visitation does not represent exclusion.

### Young people

- 4.3. This group is generally considered to include children of secondary school age (i.e. 11 or 12 years and above but predominantly teenagers) and young adults, although individual studies vary in their definitions; some studies refer to younger children and the maximum age included in studies is 30. The data with more external validity shows the following:
- 4.4. There is anecdotal evidence that *young people* have little desire to visit the countryside, preferring urban activities such as shopping (Ethnos 2005). Bell et al find that the 15-17 age group is under-represented in their use of urban fringe woodlands but, again, there is evidence that this age group has little interest in woods and the countryside in general and therefore they were not excluded (Bell et al 2003).
- 4.5. Constraints relate to perceptions of safety (particularly by parents and *young black people*) and peer pressure. Access is a difficulty as it may require a dependency on adults. Hickey suggests that *young people* found the lack of transport to be the biggest constraint (Hickey 2003). The lack of appropriate facilities is also cited (Bell et al 2003, Bell et al 2004, Ethnos 2005). Past negative experiences, such as tiring or boring walks with parents, may put *young people* off (OPENspace 2003). In a survey undertaken for the Countryside Council for Wales, for *young people* (16-24), "lack of time" was stated as the main constraint by a greater number of respondents than the average (80% of *young people* compared to the average of 61%). *Young people* were also more likely than average to state that both "lack of public transport" (36% compared to the average of 27%) and "not [being] interested"

(21% compared to 9%) were constraints or motivational issues against more frequent participation (Countryside Council for Wales 2005).

- 4.6. Evidence of successful strategies to overcome the constraints appears in just a few of the papers. Awareness training for countryside staff and consultation with potential users is shown to be effective (OPENspace 2003, Resources for Change with the Community Development Foundation 2005). Uzzell et al called for the appointment by service providers of champions for underrepresented groups supported by the monitoring of participation (Uzzell et al 2005). Woodland managers could accept a controlled level of damage and adopt a more tolerant approach to woodland uses by children (Bell et al 2003).
- 4.7. *Young people* are motivated by a sense of adventure, risk and excitement, free from parental control and peer pressure, and very young children like getting wet and mucky! (Bell et al 2004, Bell et al 2003, Hickey 2003). *Young people* see the countryside as a place to spend quality time with their friends, doing activities as a group: a place to unwind, relax and clear their heads (Ethnos 2005). In woodlands, young children prefer to play and have adventures; as they get older, they like to construct dens and swings away from parents. Teenagers wish to take more risks and this may be construed as vandalism. Older teenagers show little interest and late teenagers seek privacy (Bell et al 2003). CCW state that *young people* (16-24) were significantly less likely to participate in walking (76% in comparison to the average of 84%). However, they have a higher than average level of participation in both camping and mountain biking (Countryside Council for Wales 2005).
- 4.8. Bell et al reported that there was fear for children's safety. Parents of older children expressed a concern about safety and stated that they did not let their children play in woodland unaccompanied. This contrasts with reports from the children who went into the woods anyway without their parents' knowledge (Bell et al 2003). Bell et al believed that it was important for children and teenagers to be able to use and explore woodlands, as it would help their development (Bell et al 2003). The fear of getting lost or having an accident may be a result of some people feeling more vulnerable in the countryside than in towns (OPENspace 2006). Ward Thompson et al suggested that access to woodlands gave potential for physical and psychological health benefits (Ward Thompson et al 2005).

The data from other studies indicate the following:

- 4.9. It is reported that young adults have little interest in outdoor recreation and so may be under-represented rather than excluded (Weldon et al 2007). Culp did find exclusion amongst adolescent girls (Culp 1998). Ward Thompson et al found under-representation of *young people from contexts of multiple deprivation, young people with disabilities, ethnic minority young people and teenage girls* in outdoor experiences, suggesting that this may reflect a form of social exclusion (Ward Thompson et al 2006).

- 4.10. The principal constraints again seem to be fears for personal safety and the lack of accessible transport. *Young people* especially want safe cycle routes (Black Environment Network 2006). Covelli et al add a lack of knowledge of recreation opportunities (Covelli et al 2007).
- 4.11. Strategies for overcoming these constraints include community-driven initiatives to build up local capacity (Slee 2002, Weldon et al 2007) and consultation with non-users (O'Brien 2004). Ward Thompson et al called for better research to improve the primary information base, seek imaginative demonstration projects that engage *young people* and suggest that all *young people* should have a right to experience outdoor adventure (Ward Thompson et al 2006).
- 4.12. Families with young children appreciate woodlands as a low-cost family day out and those visiting the New Forest with children or grandchildren liked having specific areas with entertainment for the children, such as animal centres and activity parks. Young adults want a place to escape authority and parents, and to be with friends. This might involve what others view as anti-social behaviour such as drinking and rowdiness (O'Brien 2004).
- 4.13. Parental fears that affect the degree of restricted or unrestricted play in early childhood were particularly important, as were the combined influences of childhood myth and contemporary media. Participants whose parents had been anxious about them playing in woods as children, and who did not let them go alone, were much less likely to visit woodland and feel comfortable there as young adults (Milligan & Bingley 2007, O'Brien 2004). Ward Thompson et al suggested that free and easy access for adventurous and enjoyable engagement with outdoor environments has the potential to confer a multitude of benefits on *young people's* development and therefore to benefit society as a whole (Ward Thompson et al 2006).

## Older people

- 4.14. Older people can include people over 50, if WHO criteria are used, but in the UK and European/North American context, the term usually refers to people of 65 years or older and most of the studies reported here reflect this. The data with more external validity show the following:
- 4.15. The level of participation in informal countryside recreation by *older people* is not clear from the studies, nor is it clear whether there is exclusion or under-representation (Uzzell et al 2005), though it is implied that more would visit local parks if facilities were better (Alves et al 2008, Green et al 2007, Hickey 2003). Shores et al found the lack of participants indicative of exclusion (Shores et al 2007).
- 4.16. The most common reason people cited for walking less than they might around their neighbourhood was worry about personal safety, whilst having no-one to walk with was the next most frequent reason given. Poor health was the third most cited reason (Dawson et al 2006). Green et al suggested that physical ability and health was a factor, adding to a feeling of vulnerability in 'wilderness' areas (Green et al 2007). Madge reported the fear of mugging amongst the older age groups (Madge 1997), a view supported by

OPENspace (OPENspace 2003). Nuisance, such as dog fouling, youngsters hanging around and signs of vandalism, seems to be the most common constraint to participation (see Alves et al 2008, Shores et al 2007, Sugiyama & Ward Thompson 2008, Sugiyama et al 2008). Sugiyama et al also suggested age and poor health may act as a constraint.

- 4.17. Sugiyama et al presented evidence that the regular maintenance of local parks to keep them free of nuisance was likely to encourage *older people* to use the spaces more often (Sugiyama & Ward Thompson 2008). Other strategies included increasing management inputs and maintaining the infrastructure, perhaps with the addition of seats on routes to open spaces (Alves et al 2008). A hierarchy of walks classified as easy, flat or 'first steps' may encourage participants with health problems to participate (Dawson et al 2006). Other strategies suggested include the introduction of 'parkwatch' schemes and the better design of facilities to reduce the fear of mugging (Madge 1997).
- 4.18. The most common motivation for participation was linked to social aspects, (meeting people, making new friends and having someone to walk with) listed as important (Dawson et al 2006, Bell et al 2004). Preferences were less clearly stated but link to walking the dog or to taking exercise (Bell et al 2004, Dawson et al 2006). It may be enough simply to walk with good views and pleasant surroundings. Trees and plants are important (see Alves et al 2008, Sugiyama & Ward Thompson 2008, Sugiyama et al 2008).
- 4.19. Perceptions of fear are reported, though it is not clear how this relates to actual behaviour. *Older people* have fears about entering woods, particularly if used by teenagers (Bell et al 2003). Madge reported that the degree and severity of fear increases with age, with 73% of respondents indicating that fear would influence where they would go (Madge 1997). Benefits were rarely reported but Dawson et al stated that the 'Walking to Health Initiative' appears to play an important social-psychological support or rehabilitation role for many people who are recovering from an event or crisis. A particular benefit is the reduction in risk of cardiovascular disease (Dawson et al 2006).

The data from other studies indicate the following:

- 4.20. Little is reported in relation to exclusion versus under-representation. Lee et al reported that people under 65 years of age were 2.6 times more likely to participate in outdoor recreation away from home, and 4.3 times more likely to participate in outdoor recreation close to home than those over 65 years (Lee et al 2001).
- 4.21. BEN suggested that fear, especially in areas visited for the first time, was the prime barrier. *Older people* fear going to places unaccompanied. They also called for better facilities, such as toilets and benches (Black Environment Network 2006). According to the Countryside Agency, the most frequently cited constraints to walking included worries about personal safety and not knowing where to walk. In East Hampshire, 44% of people reported personal safety as being the main reason they did not walk alone. Not having anyone to walk with is also frequently cited as a reason for not walking (Countryside



Agency 2005). It may be that poorly designed or maintained facilities create constraints. The lack of benches relates to the difficulty in walking a long distance because of health conditions associated with ageing, such as shortness of breath and lack of stamina (I'DGO). Emphasis must be placed on ensuring that walk leaders are sympathetic to the slower or less able participants and that these individuals are considered in any development of schemes (Countryside Agency 2005).

- 4.22. For neighbourhood open spaces, people want facilities within ten minutes of their homes. Footways to these sites should be well maintained and easy to walk on. Waterscapes are the most preferred environmental feature and the presence of water can contribute to *older people* spending a longer time outdoors (I'DGO). Du Lee et al find that *older people* enjoy general viewing activities as their primary activity (Du Lee et al 2004). Many seek good healthy outdoor exercise in peaceful and safe environments (O'Brien 2004). The Sensory Trust found the most commonly cited activities of potential interest were sitting and relaxing, looking at plants/landscape, meeting friends, going to the cafe, walking, feeding birds, visiting with a club or society, going to an event, going out with children or grandchildren, going to talks, guided demonstrations or guided walks (Sensory Trust 2001).

## Women

The data with more external validity show the following:

- 4.23. Ball et al implied that *women* were excluded from participation (especially *women with low educational achievement*) and Madge asserts that more people, including women, would visit a city park in the absence of fear (Ball et al 2007, Madge 1997). Bowker et al reported that males were "12.2%" more likely to have visited a wilderness site in the last twelve months than females (Bowker et al 2006).
- 4.24. *Women* have a lack of confidence to use public transport and fear for their safety (Askins 2004) and are significantly more likely than men (15.5%) to cite "worry about personal safety" as the reason for walking less than they might around their neighbourhood. The most fearful are unmarried *women* (Dawson et al 2006). *Women* feel uncomfortable in wild areas and prefer places with more people (Green et al 2007) as their greatest fears were related to fear of sexual attack by men (Madge 1997) but it may also be that *women* have other priorities and so do not choose to take part (Jun et al 2007).
- 4.25. Little evidence of successful strategies for overcoming these constraints is cited, though the support of family and friends for physical activity is positively associated with walking (Ball et al 2007). Madge suggested the introduction of 'parkwatch' schemes with wardens and the better design of facilities to reduce the fear of attack. Changing the emphasis on physical sports and the domination of physical space by 'male' sports pitches would also, it is suggested, encourage greater use of parks by other groups for their own particular needs. There is also a call for a larger range of high quality toilet and childcare facilities (Madge 1997). NFO System Three found that *women*

in particular would use the countryside more if there were better toilets and public transport (NFO System Three 2003).

- 4.26. The most common motivation for participation was linked to social aspects, such as meeting people, making new friends, and having someone to walk with (Dawson et al 2006, Bell et al 2004). CCW reported that *women* were fairly similar to men in terms of the activities they take part in but were slightly more likely to go walking (86% compared to the average of 84%) and less likely to go fishing (0% compared to 2%) (Countryside Council for Wales 2005). Perceptions of fear are not well reported, though Madge stated that 73% of all respondents indicated that fear would influence where they would go in a park, 80% that these feelings of insecurity would change with the time of day and 80% that perceptions of fear would alter if on their own or in a group (Madge 1997). Shores et al found that female respondents were significantly more likely than men to report that a fear of crime was important to their decision to leave the home for recreation (Shores et al 2007).

The data from other studies indicate the following:

- 4.27. Kuehn undertook a study on fishing in the USA and found that personal circumstances, such as being too busy and having children to look after, can exclude *women*. Lack of support from partners was a factor but *women* may just find fishing boring. This tends to support the suggestion that the lack of women participants reflects under-representation rather than exclusion (Kuen 2004). However, lack of funds excludes some *women* (Johnson et al 2001). Lee et al reported that men were 1.3 times more likely to participate in outdoor recreation away from home, and 1.4 times more likely to participate in outdoor recreation close to home than *women* (Lee et al 2001).
- 4.28. Fears for personal safety are still the greatest constraint (Countryside Agency 2005, Johnson et al 2001), though Krenichyn reported that parks were seen as being safer than the surrounding urban environment. In contrast, Weldon et al suggested that young mothers with children perceive woodland and other green-space areas as the haunts of drug addicts and other groups that they would find dangerous and/or intimidating. This feeling was so strong that mothers would rather walk their children along busy main roads than risk entering green space or woodlands (Weldon et al 2007). But, according to Krenichyn, more concern was expressed about dogs and the conflicts between runners, walkers and cyclists (Krenichyn 2006). Covelli et al revealed that *women* were more likely to be constrained from visiting wild areas by having no-one to go with, possible encounters with wild animals or insects, and by areas being too far away (Covelli et al 2007).
- 4.29. The Black Environment Network reported that *women* in particular want to see project activities involving people from diverse backgrounds with exchange programmes to share experience (Black Environment Network 2006) as presented in a case study in the Peak District National Park (Godley 2007). Attracting participants to indoor activities that can later be transferred outdoors may overcome the difficulties of building up confidence (Mentro Allan National Partnership Evaluation Support Team 2007). An extension of this idea comes from Weldon et al, who suggested that support should be

given to transferable projects, such as 'Safe Routes to School', as this will encourage walking (Weldon et al 2007).

- 4.30. *Women* do refer to health as a reason for exercise, and the therapeutic and spiritual qualities of parks (Krenichyn 2006). O'Brien found that the presence of uniformed wardens makes some *women* feel more secure and therefore more able to use woodlands alone (O'Brien 2004).

### **Ethnic minority groups**

The data with more external validity show the following:

- 4.31. The non-UK studies imply that there is exclusion but it is not clear if these findings would apply in the UK (Bowker et al 2006, Tierney et al 1998, Tierney et al 2001). There is anecdotal UK evidence of exclusion and that more people would participate if constraints were overcome (Ethnos 2005, Madge 1997). Askins hinted that some ethnic communities did not think that visiting a national park was a leisure activity, suggesting that their non-participation is under-representation, not exclusion (Askins 2004). OPENspace support this view; their study found a lack of a cultural habit of visiting woodlands by *ethnic minority groups* and concluded that this was under-representation rather than exclusion (OPENspace 2006). However, the lack of opportunity to develop new habits appropriate to the UK or Welsh context might be construed as a constraint.
- 4.32. Various constraints to participation are reported, ranging from a lack of knowledge about the English countryside, information on how to get access and the costs incurred. Culture issues also create constraints, such as the absence of a cultural habit of visiting the countryside. There are also worries about intimidation and feelings of being threatened. This is exacerbated by a lack of culturally-appropriate provisions (see Askins 2004, Bell et al 2004, Ethnos 2005, Green et al 2007, OPENspace 2003, OPENspace 2006). Madge found fear to be the greatest constraint (cited by 43% of sample) with Asian and African-Caribbean communities fearing racially motivated abuse or attacks and dogs (Madge 1997). In 2005, CCW reported that *ethnic minority groups* were much more likely to identify "not interested" as a constraint to increased frequency (17% compared to the average of 9%), and slightly more likely than average to feel that lack of appropriate information (on both signs and in information centres) and lack of toilet facilities were a constraint (Countryside Council for Wales 2005).
- 4.33. Askins called for a national park awareness campaign supported by outreach facilities. The proposal was for long-term support if repeat visits are to be encouraged. Information is important but there was no conclusion as to the need for translation into a range of languages; it was reported that some find this patronising. Face-to-face contact was thought to be more effective than written materials. There was also a call for staff training (Askins 2004). Ethnos called for the collection of baseline data by service providers, acknowledging that they need guidance on best practice, and a new focus on the design and management of facilities. There is also a call to change rural attitudes with diversity awareness training to promote a welcoming attitude (Ethnos 2005).



Tierney et al found that more people would travel to a natural area if they had transport and more people from their own ethnic group worked in the area (Tierney et al 2001). In urban areas, Madge suggested that a 'parkwatch' scheme with more wardens would be the one action to increase participation, as it tackles the fear factor (Madge 1997). Uzzell et al called for the appointment of a champion for under-represented groups supported by the effective monitoring of use through performance indicators (Uzzell et al 2005). Jun et al suggested implementing "population specific media strategies" directed at *ethnic minority groups* who have lower levels of income and education as these groups were found to be the most responsive to fee waivers or subsidies and transportation assistance (Jun et al 2007).

- 4.34. The motivations for informal recreation are quite general, seeking fresh air, exercise and relaxation. Social and family gatherings seem important to *ethnic minority groups* and spiritual benefits are mentioned. For example, in Hindu culture there is a significant attachment to trees (Bell et al 2004, Ethnos 2005). Tierney et al suggested that finding a safe place to go was a significant motivation (Tierney et al 1998). As to preferences, *young people* from 'visible communities'<sup>2</sup> enjoyed outdoor adventure activities whilst their parents and grandparents took pleasure in walking and landscape views (Askins 2004). Fear of verbal or physical attack is a problem for *ethnic minority groups*, who consider themselves much more vulnerable in the countryside than in towns (OPENspace 2006). CCW found that non-white *ethnic minority groups* were more likely than average to go walking (91%) (Countryside Council for Wales 2005).

The data from other studies indicate the following:

- 4.35. Ravenscroft and Markwell found evidence that *ethnic minority young people* were not under-represented in local parks, in fact the reverse seems to be true. However, they propose that, rather than promoting social inclusivity, the apparent "confining" of ethnic youth to parks with poorer facilities and less user satisfaction exacerbates social divides. This is an interesting perspective not dealt with in other studies included in the review (Ravenscroft & Markwell 2000). Stodolska found that first-generation respondents were now not taking part in activities they used to enjoy in their native country, so exclusion is assumed rather than just under-representation in these activities in Canada (Stodolska 2002). Lee et al reported that white people were 2 times more

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<sup>2</sup> "This research focused on people from Asian and African Caribbean backgrounds, and the term 'visible communities' (employed by Alibhai-Brown, 2001), has been adopted to highlight how people are identified – particularly in rural places such as National Parks – by their skin colour. The term is *not* intended to suggest that all people from non-white backgrounds are the same as each other, but to recognise that such individuals are likely to have experienced particular reactions and exclusions in society based on the colour of their skin. Unfortunately, the term 'white' is used in a generalised way because of the research focus, but it should be noted that there is great diversity within such a category" (from Askins 2004). Alibhai-Brown, Y. (2001) *Mixed Feelings: the Complex Lives of Mixed-Race Britons*, London: The Women's Press.

likely to participate in outdoor recreation away from home, and 1.4 times more likely to participate in outdoor recreation close to home than those from an *ethnic minority group* (Lee et al 2001).

4.36. Natural areas, while offering aesthetic benefits, are seen by various groups as increasing the potential for assault (including racist attacks and attacks by dogs) (Black Environment Network 2006). Personal encounters with racism will deter participation as well as the lack of appropriate activities. Fears of racial attack, of being alone in an unfamiliar environment and worries regarding dangerous flora and fauna, all contribute to a sense of unease in the countryside and other natural open spaces (Morris 2003). The fear of unknown places should not be under-estimated as *ethnic minority groups* may feel unsure about what is appropriate behaviour. Groups become isolated in areas of settlement and are not aware of what is generally available, and some groups report that visiting the countryside for recreation would be unknown in the 'home' country; visits would be primarily social (Rishbeth & Finney 2006).

4.37. Edwards and Weldon told of an initiative to target asylum seekers for voluntary work placements in the countryside and the development of their employment skills. It was hoped that this sort of strategy will eventually lead to better representation of *ethnic minority groups* in employment, which in turn may engage more participation of such groups (Edwards & Weldon 2006). Morris warns against seeing *ethnic minority groups* as one group. Managers should recognise that the term covers a wide range of communities, all with different aspirations and needs. The call is for public-use areas to be managed to foster a sense of belonging through the creation of recreation programmes that are inclusive of ethnic diversity (Morris 2003). Black youths, in particular, seem willing to travel to visit a park with better sporting facilities (Ravenscroft & Markwell 2000). It may be that some *ethnic minority groups* would like to find parallels with the environment of their country of origin, either directly through trees or flowers, or implied by the similarity in some aspect of the landscape or environment. A positive experience can be a useful component of integration into a new society (Rishbeth & Finney 2006). Finally, monetary constraints are a significant contributing factor to the under-participation of *ethnic minority groups* in natural open spaces. However, it is unwise to assume a simplistic correlation between discrimination and poverty (Morris 2003).

## People with disabilities

The data with more external validity show the following:

4.38. Cost and fears of prejudice exclude *people with disabilities* from visiting the countryside (Ethnos 2005). Hickey suggested that more people would use rights of way if access were easier. Poor information and infrastructure tends to exclude *people with disabilities* (Hickey 2003). According to CCW, *people with disabilities* are slightly less likely to undertake the two most popular activities of walking (80%) and cycling (4%), and slightly more likely than average to drive around (4% compared to the average of 2%) (Countryside Council for Wales 2005).

- 4.39. For *people with disabilities*, the main constraints are a lack of information; lack of someone to go with; lack of places with adequate facilities and the lack of accessible public transport, with a particular reference to the limited choice of destinations and inaccessible toilets (Hickey 2003, OPENspace 2003 and OPENspace 2006). Ethnos support this view and adds the sense of vulnerability and isolation owing to the inherent unpredictability of the countryside (Ethnos 2005). CCW found that, for *people with disabilities*, the greatest constraint was “poor health” which was significantly higher than average (66% compared to the average of 30%). This group were also more likely than average to identify all of the other constraints, except for “lack of time” which was lower than average (45% compared to 61%) (Countryside Council for Wales 2005).
- 4.40. Only Dawson et al and Resources for Change reported evidence of successful strategies to overcome the constraints. A hierarchy of walks classified as easy, flat or ‘first steps’ may encourage participants with mobility impairment to participate (Dawson et al 2006). Producing a trail booklet with photographs of the walk was useful for people in wheelchairs and parents with pushchairs in assessing whether the walk was suitable for them (Resources for Change with the Community Development Foundation 2005). Bell et al suggested that better information would help to tell people where they can go and what they can do. Target groups should receive information on sites in a way appropriate for them (Bell et al 2004). Again, Uzzell et al called for a specific person within an organisation to be a champion for under-represented groups supported by the effective monitoring of use through performance indicators (Uzzell et al 2005).
- 4.41. Ethnos (2005) reported that motivations for participation included physical and psychological health, relaxation, being away from city stresses and crowds, the sense of achievement and increased confidence, taking part in activities (with OPENspace identifying stress relief and visiting with children and grandchildren as the main motivation (OPENspace 2006)).

The data from other studies indicate the following:

- 4.42. Exclusion is implied. More people with mobility impairment would use trails if constraints were removed or lessened (Countryside Agency 2000). A National User Survey indicated that very few respondents were uninterested in visiting the countryside and that more would do so if appropriate facilities and information were in place. This indicates exclusion rather than under-representation in this section of the population (Sensory Trust 2001).
- 4.43. *People with disabilities* also face physical constraints, such as steps, steep gradients and inaccessible facilities such as toilets (Avante 2007, Countryside Agency 2000, Sensory Trust 2001). Interestingly, though, in one study, a man blind from birth did not find any significant constraints to his use of the outdoor natural environment (Natural England 2008). Lack of information about opportunities may be a significant constraint (Snowdonia NP 2006).
- 4.44. Awareness training for countryside staff is strongly advocated (Bell et al 2006, Black Environment Network 2006) and more sophisticated information

systems tailored to the needs of under-represented groups, together with sympathetic site management (Countryside Agency 2000). A number of authors (see Natural England 2008, Sensory Trust 2001, Snowdonia NP 2006, Weldon et al 2007) list a range of actions to improve accessibility to this group of users. There is a desire for *people with disabilities* to visit the countryside, usually to improve individual quality of life, promote social contact or promote individual health (Bell et al 2006, Black Environment Network 2006).

### **People from contexts of multiple deprivation / in low social class**

The data with more external validity show the following:

- 4.45. Uzzell et al state that no conclusions can be drawn about exclusion versus under-representation (Uzzell et al 2005) for these groups but Shores et al and Tierney et al believe that exclusion is implied by their data. Tierney et al found that participation would be higher if a person was in better health, did not feel discriminated against and had more money but the question of overall interest in outdoor recreation was not explored in detail (Shores et al 2007, Tierney et al 1998). Curtis reported that there was no exclusion from water-based leisure activities in Ireland. Participation rates were found to reflect demand accurately and so there may simply be under-representation, though the report went on to state that the probability of exclusion is higher if a person is female and highly educated (Curtis 2003).
- 4.46. Curtis found that cost was the main constraint to participation in boating activities but was of less importance for fishing and swimming (Curtis 2003). Bowker et al agreed that cost is a factor but linked this to travel distance (Bowker et al 2006). Green et al suggested that being unable to afford the equipment and travel costs deter participation (Green et al 2007) and OPENspace suggested that low income groups were less likely to be environmentally aware (OPENspace 2003). CCW found that those without a car were more likely to see "lack of public transport" as a constraint (48% compared to 27%), and were also more likely to feel that "poor health" prevented them from participating more often (46% compared to the average of 30%). However, they were less likely than average to state that "lack of time" was a constraint (46% compared to 61%) (Countryside Council for Wales 2005).
- 4.47. Although no evidence was presented, Ball et al suggested that urban design in disadvantaged areas may encourage neighbourhood walking. OPENspace, too, called for design and management guidance for woodland managers (Ball et al 2007, OPENspace 2003). Green et al called for better information and advice to be given to disadvantaged groups about equipment needs and wilderness use (Green et al 2007). Jun et al recommended focusing management efforts on facilitating visits and use by the '*Highly Constrained*' population segment. Respondents identified as "Highly Constrained" tended to be older, less educated, on lower incomes and have a lower proportion of whites. But this group scored highly on the appreciation of the benefits and attractions of parks and were likely to be responsive to measures to facilitate their participation, such as fee waivers or subsidies and transportation

assistance. Managers should also focus on providing experiences that offer opportunities for learning, leisure experience and family interaction (Jun et al 2007). Shores et al did not address the issue of overcoming constraints directly but the authors noted that the compounding of constraints by belonging to several disadvantaged groups simultaneously makes tackling constraints difficult, as removing one may not alleviate other constraints (Shores et al 2007). A promising strategy is providing leadership and resources for organising clubs, special programmes or school outings for urban youths, or developing family programmes that encourage friends and family members to recreate together (Tierney et al 1998).

- 4.48. Tierney et al found that the five most important motives were escape from daily routine, viewing scenery, being with family, seeing something different and going to a safe area (Tierney et al 1998). Walking track length and perceived neighbourhood 'aesthetics' and safety were positively associated with leisure-time walking. People in run-down areas were less likely to consider walking as a recreational activity (Ball et al 2007). Woodlands can make an important contribution to 'quality of life capital'. Assessing the 'social health' of woodlands through woodland and landscape managers recording and evaluating the benefits and services they offer is a way of determining the current and potential contribution of woodlands to quality of life. This could give the greatest benefit to a deprived population group (Ward Thompson et al 2005).

The data from other studies indicate the following:

- 4.49. The general literature revealed little new about this group. Covelli et al found that people in the \$30,000 to \$50,000 income bracket reported being the most constrained by having no-one to go with, and by the fact that "people I want to go with can't afford to go" (Covelli et al 2007). Lee et al reported that people with higher income were 1.5 times more likely to participate in outdoor recreation away from home, and 1.3 times more likely to participate in outdoor recreation close to home than those with a low income (Lee et al 2001).
- 4.50. According to O'Brien, people who lack funds, personal transport and access to spare money (not only those considered to be below the poverty line), such as families with young children, unemployed people and those on low incomes felt that visiting woodlands was important because this was an inexpensive activity. The minimal cost of woodland use is an important factor for the above groups. This finding has implications in terms of social inclusion. The accessibility, location and low cost aspects of woodland use are important in this regard and this research supports initiatives to encourage and place greater emphasis on woodland planting in populated areas (O'Brien 2004).

### **People with low educational achievement**

The data with more external validity show the following:

- 4.51. Bowker et al found that a person's level of education had no significant impact on participation rates (Bowker et al 2006). Green et al found that people with a *low level of educational achievement* did not use wilderness areas because



they preferred places with more people. They were also concerned for their own safety (Green et al 2007). Ball et al suggested that public health strategies aimed at promoting leisure-time walking among lower education groups might focus on enhancing self-worth and enjoyment and engaging social support, as well as on urban planning, if they were to be successful (Ball et al 2007).

The data from other studies indicate the following:

- 4.52. There is very little new information in the general literature but Lee et al reported that people with college degrees were 1.5 times more likely to participate in outdoor recreation away from home, and 1.4 times more likely to participate in outdoor recreation close to home than those without a degree (Lee et al 2001).

### Findings in respect of belonging to multiple groups

- 4.53. Only 11 of the 68 selected papers refer to membership of multiple groups, of which only four consider the combined effects on constraints. These are:

- Jun et al 2007
- Lee et al 2001
- NFO System Three 2003
- Shores et al 2007

- 4.54. Shores et al presented strong evidence that, for six of their nine constraints (economic, knowledge, time, lacking a partner, safety, health), the effects were significantly multiplied when multiple-group membership was taken into consideration, whereas the remaining three (distance, "not interested" and "disapprove of activities" (all considered by Shores et al to act as barriers)) showed no increase. However, in the case of time constraints, those with *higher levels of education, higher income and youth* had an increased perception of constraint. They concluded that there was evidence of exclusion but their sample may only be representative of Texas, USA (Shores et al 2007).

- 4.55. Jun et al showed evidence that survey respondents identified as "highly constrained" tended to be *older, less educated, on lower incomes* and have a lower proportion of whites (Jun et al 2007). NFO System Three presented some evidence to show that respondents in the A and B social classes, car owners, males and those aged between 35 and 54 participated most often in informal recreation, whilst those who did not own a car, those aged 55 or over and those in the D and E social classes were less frequent participants (NFO System Three 2003).

- 4.56. Lee et al reported that though the individual effects of *race, gender, age* and *socio-economic status* on the likelihood of participation in outdoor recreation were not great, the effects multiply considerably when combined. They found that *older ethnic minority women with a low income* have the most difficulty in accessing opportunities for outdoor recreation. For all markers, *age* was the most significant predictor of non-participation, but methodological weaknesses in the study reduce confidence in the findings (Lee et al 2001).

## 5. Exclusion, participation and under-representation

- 5.1. It is known from many examples of research exploring reasons for certain behaviours (or their absence) that it can be extremely difficult to obtain true information about what motivates or fails to motivate people. One typical aspect of this is the tendency of respondents to provide excuses rather than reasons for not doing something (such as visiting the countryside). It is also very hard to tell whether someone who says they are not interested in an activity is making an informed decision (Madge 1997, OPENspace 2003, Slee et al 2002).
- 5.2. "It is necessary to consider and define the relationship between exclusion, participation, and under-representation.
- Participation measures observed behaviour - it is the percentage of all people doing a certain activity who belong to a specific group.
  - Representation is a meta-statistic - it is the ratio of 'the participation of a specific group in a certain activity' to 'the proportion of that group in the background population as a whole'.
  - Exclusion expresses how people feel (their perceptions).
- 5.3. Participation and representation are readily quantified from statistical surveys. However, exclusion cannot automatically be inferred from under-representation; a group that is under-represented may not feel excluded if it has full access but still declines to participate in countryside activities" (OPENspace 2003).
- 5.4. The challenge in interpreting much of the research reviewed for CCW is that it does not necessarily explore what a lack of interest in countryside activities means in detail. Issues of under-representation versus exclusion cannot therefore be fully resolved by this review. This reflects one of the challenges of looking for reliable research findings from which one can generalise to a segment of the population as a whole. Research using surveys with representative samples and subject to quantitative analysis uses data collection methods that do not readily lend themselves to exploring and unpacking complex issues and reasons behind certain responses or observations. Qualitative research is more suited to this but still may suffer from the limitations outlined above. It is unusual to find research that has the breadth and depth of quantitative and qualitative research to address these kinds of concerns.
- 5.5. For this reason, and for the sake of consistency, in our conclusions we have defined 'lack of interest' as a motivational and perception issue rather than a constraint or barrier. However, as indicated in several of the research papers covered in this review, many studies have taken a lack of interest to be a strong indication of exclusion and interpreted it as such in their own conclusions. It must therefore be emphasised that a lack of interest may mask a constraint and may indeed be an expression of exclusion at a number of levels.



## 6. Conclusions

### Thirteen constraints to participation

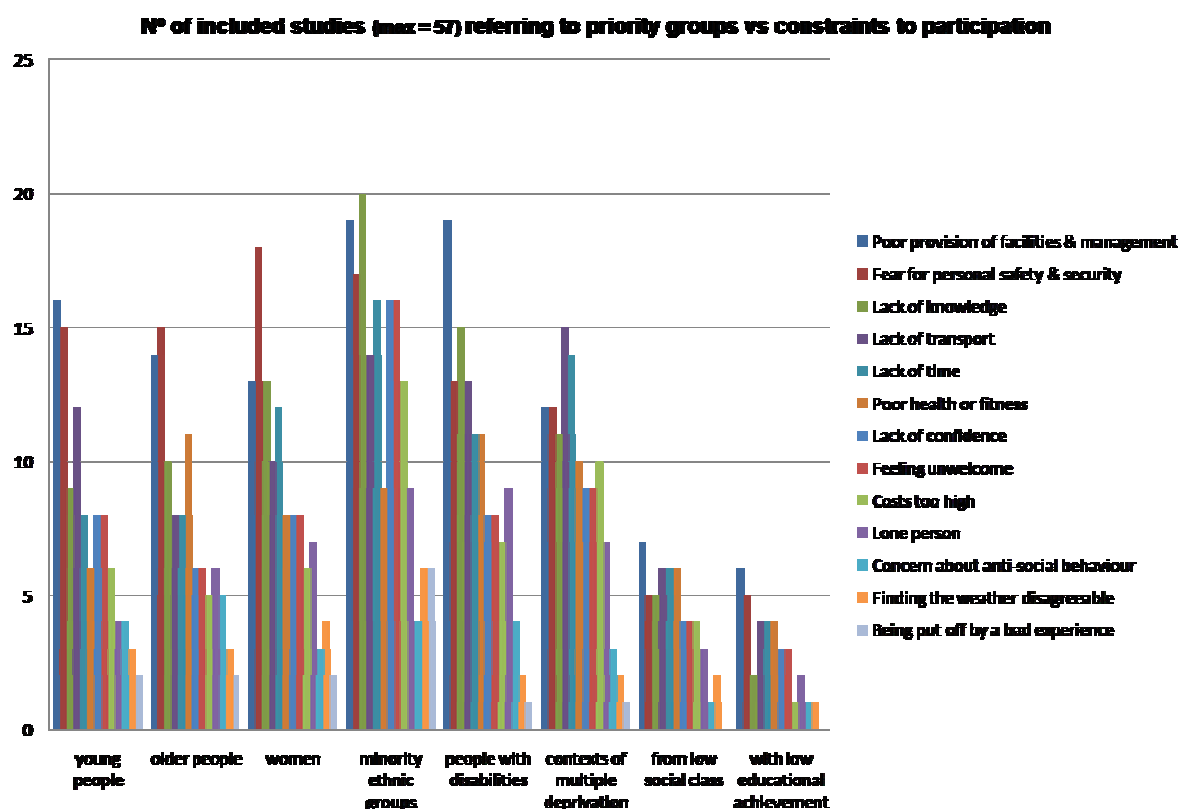
- 6.1. Of the 68 included studies, 57 consider the constraints to participation in informal countryside recreation. The constraints identified in the studies fall under 13 generic headings, as shown below. The list is ranked according to the number of studies that refer to the barrier. *Poor provision of facilities and management* is the most frequently mentioned and *bad experience* the least often mentioned.
- Poor provision of facilities & management
  - Fear for personal safety & security
  - Lack of knowledge
  - Lack of transport
  - Lack of time
  - Poor health or fitness
  - Lack of confidence
  - Feeling unwelcome
  - Costs too high
  - Lone person
  - Concern about anti-social behaviour
  - Finding the weather disagreeable
  - Being put off by a bad experience
- 6.2. Weighting the mentions in terms of their importance is not possible because of the varying nature of the data presented. This could be the subject of future study.
- 6.3. The brief calls for a review of the constraints to participation experienced by each of the priority groups in relation to three main areas of constraint: intrapersonal, interpersonal, and structural. The 13 headings listed above fall under the three main areas of constraint as shown in **Figure 4**.

Figure 4: The 13 constraints to participation

Intrapersonal constraints	1	Fear for personal safety & security
	2	Lack of knowledge
	3	Lack of time
	4	Poor health or fitness
	5	Lack of confidence
	6	Lone person
	7	Finding the weather disagreeable
Interpersonal constraints	8	Concern about anti-social behaviour
	9	Feeling unwelcome
	10	Being put off by bad experience
Structural constraints	11	Poor provision of facilities & poor maintenance
	12	Lack of transport
	13	Costs too high

6.4. There are variances between the priority groups, as is illustrated in Figure 5.

Figure 5: Chart of priority groups vs constraints to participation



## INTRAPERSONAL CONSTRAINTS

### *Fear for personal safety & security*

- 6.5. The second most often reported constraint is the fear for personal safety and security, with *women* feeling particularly vulnerable (Madge 1997). There are three aspects: fear of attack (physical and emotional); fear of injury; and fear of the unknown (not knowing how to get help). Perceptions of safety and security (or lack of it) augment the element of fear and perceptions are influenced by reporting (by peers and media) and experience. Actions to allow for peoples' safety and security may also become a barrier by raising the perceptions of risk, the fear of litigation may deter service providers (Avante et al 2007, Bell et al 2004, Johnson et al 2001, Ward Thompson et al 2006). Parents may transfer their fears onto their children even when circumstances are different (OPENspace 2006). The expectation of discrimination and abuse does deter participation (Bell et al 2004) and some *women* and *older people*, fear going places unaccompanied (Black Environment Network 2006).

### *Lack of knowledge*

- 6.6. Lack of knowledge is the third most reported constraint by studies across all priority groups. There are two key issues: not knowing of the opportunities that can be generated, including what is acceptable; and not knowing about opportunities on offer, including what facilities and activities are available. These relate both to information available pre-visit and during the visit. With some groups, in particular the *ethnic minority groups*, there is a significant lack of knowledge of the UK countryside, where you are allowed to go and what you are allowed to do (Ethnos 2005). The opportunities for users to influence the provision of services are not widely understood. Some groups do not get asked (Morris 2003). It is becoming more common to use the internet to disseminate information but not everyone has access to, or the ability to manipulate, web-based information (Natural England 2008). Some groups, such as some *people with disabilities*, need to have detailed information about site conditions and facilities before deciding if a journey is feasible. Quite often the style and place of presentation or the complexity of language reduce the effectiveness of the message. However, for *ethnic minority groups*, the lack of translation was only of concern to those *older people* who had not grown up in the country (Askins 2004).

### *Lack of time*

- 6.7. The fifth most reported constraint is lack of time. People are too busy to plan for a visit to the countryside or cannot allocate the time to travel. Time is a cost. This constraint is not the same as a lack of interest, as respondents demonstrate that use is made of facilities close to home, although these facilities may also have more appeal than those in the more distant countryside (Countryside Council for Wales 2005, OPENspace 2006).

### *Poor health or fitness*

- 6.8. Poor health or fitness is the sixth most reported constraint. Men are marginally more likely than *women* to give this as a reason (Dawson et al 2006) but it is more often associated with ageing (Burns & Graefe 2007, I'DGO 2007). Constraints are identified where people are not fit, they lack stamina and become short of breath. Countryside activities are perceived as being too

demanding with walks being too long and gradients too steep. People with disabilities are more likely to be unable to participate due to poor health (Countryside Council for Wales 2005). Some younger people are not used to taking exercise outdoors (Resources for Change 2005).

#### *Lack of confidence*

- 6.9. Lack of confidence is the seventh most reported constraint and links to a lack of knowledge. Some people, especially from city centres, feel out of place in the countryside and have low expectations from a visit (Avante et al 2007, OPENspace 2006). They perceive that they do not have the skills or ability to complete an activity (Ward Thompson et al 2006). Parents no longer pass on knowledge of nature and wildlife to their children in a way they might have done a generation ago (Bell et al 2004). There may be a lack of role models to inspire participation, especially for *young women* (Culp 1998). *Lone person*
- 6.10. Being a lone person is cited in the literature, ranking as the ninth most frequently cited constraint. There are links to *lack of confidence* and *fear for personal safety* but also to the motivation of social contact (Ethnos 2005). Some people prefer to walk with company and/or with someone they know, *older people* and *women* in particular (Dawson et al 2006, Sensory Trust 2001). Some *people with disabilities* need a carer or support to use the countryside (Black Environment Network 2006).

#### *Finding the weather disagreeable*

- 6.11. Finding the weather disagreeable is ranked as the eleventh most frequently cited constraint and seems to be of most concern to *women* and *ethnic minority groups*, particularly for non-users (Covelli et al 2007, Madge 1997, OPENspace 2006, Scott et al 2004). Even those that do visit green spaces are put off by the prospect of bad weather (NFO System Three 2003) though Askins found that the experience of poor weather did not appear to have reduced enjoyment for those that visited (Askins 2004).

### INTERPERSONAL CONSTRAINTS

#### *Feeling unwelcome*

- 6.12. Feeling unwelcome is linked to a lack of confidence, being the seventh most frequently recorded constraint. There are constraining influences between the priority groups and between people from different locations. Discrimination is experienced or expected by *ethnic minority groups*, *people with disabilities*, *people from the contexts of multiple deprivation* and *young people*. People report an undertow of racism (explicit or implicit) and as a consequence do not feel comfortable or at ease in the countryside. Cultural differences, rather than ethnicity, seem to underpin the constraints. Some groups need a place for prayer or specially prepared food (Askins 2004, Edwards & Weldon 2006). The feeling of being unwelcome may develop because of misunderstandings or lack of consideration by others. Cyclists are perceived as inconsiderate of other users and *older children* at play are labelled as vandals. People may be unaware of the needs of a particular group (Ward Thompson et al 2006). Assistance dogs have a task to perform but where other users (and, in particular, their dogs) hinder that role, users who rely on assistance dogs may feel unwelcome (Natural England 2008).

### *Concern about anti-social behaviour*

6.13. Concern about anti-social behaviour is ranked as the tenth most frequently reported constraint. It is not the same as fear of personal attack, as it is concerned with the actions of others devaluing an experience, but there are links to the poor management of sites and facilities. On a well managed site, where the quality of the environment is high, the effects of anti-social behaviour as a constraint are reduced. *Older people* in particular have said that they do not wish to see 'gangs of youths' taking drugs or setting fire to cars (O'Brien 2004). Dog fouling and 'youths' hanging around are seen as nuisances that become constraints. Littering and dumping downgrade the value of a site and so deter visitors (Sugiyama et al 2008, Ward Thompson et al 2005). Some younger people express a concern about dirt and uncleanliness though they do not seem deterred from participating (Milligan & Bingley 2007).

### *Being put off by a bad experience*

6.14. The least reported constraint was being put off by a bad experience. Some *ethnic minority groups* choose not to visit the countryside because of the reception given to them in the past (Askins 2004). Past negative experiences, such as tiring or boring walks with parents, may put *young people* off (OPENspace 2003).

## STRUCTURAL CONSTRAINTS

### *Poor provision of facilities & poor management*

6.15. The poor provision and management of facilities is the most often mentioned constraint in research across all priority groups. People avoid poorly maintained and poorly surfaced areas. Structures, such as stiles and steps, can physically bar access for some *people with disabilities*, people with push chairs, cyclists and *older people*. The lack of benches, resting places or toilets can limit access opportunities, especially for less fit and *older people* (widely reported but see I'DGO 2007 and OPENspace 2003). There may be a need for special provision for some groups; some *people with disabilities* require on-site transport or adaptations to buildings (Black Environment Network 2006). Linked to lack of knowledge is lack of information. The poor placing of sign boards and limited use of tactile, audio or visual media will limit participation. The lack of site management to resolve conflicts between users and the presence of appropriately trained and funded staff is reported (Covelli et al 2007, Uzzell et al 2005, Weldon et al 2007).

### *Lack of transport*

6.16. Lack of transport emerges as the fourth most reported constraint. Not having access to a car is a significant restriction, particularly for urban residents. People cannot get to more remote informal recreational sites (O'Brien 2004, Resources for Change 2005). The lack of (safe and accessible) public transport exacerbates this effect (Askins 2004, Black Environment Network 2006). Some people have particular needs in their use of public transport, which may not be well provided for. Some *people with disabilities* need allowance for their assistance dog or wheelchairs. Some people may wish to transport a cycle (Natural England 2008, Sensory Trust 2001). It is not clear

from the literature whether better availability of more local countryside or green places would counter the lack of transport effectively.

### *Costs too high*

- 6.17. The cost of participation is ranked as the eighth most frequently reported constraint. Transport costs are a part of this effect but so too are entrance charges and other fees (Ethnos 2005, OPENSspace 2003, Sensory Trust 2001). Costs can exclude people from activities that need equipment, such as boating or camping (Curtis 2003, Green et al 2007).

### **Overcoming constraints**

- 6.18. The brief asked us to consider any evidence relating to the differences between participants and non-participants, and the strategies used by those who do participate to overcome the constraints identified in the review. Of the 68 included studies, 48 consider strategies to overcome constraints to participation in informal countryside recreation.
- 6.19. Despite this coverage, there is little solid evidence to demonstrate the effectiveness of different strategies for overcoming constraints present in the papers. The findings are largely anecdotal but the impression from many of the studies is that the recommendations they make based on their findings are highly likely to be effective. Follow-up evaluation was not a focus of many of the studies but a number of them do give a very good analysis of current constraints and the measures to address them. This suggests avenues for future interventions (which should then include mechanisms for effective evaluation).

### **Ten strategies for overcoming constraints**

- 6.20. Though formal analysis is not appropriate, it is possible to draw some generalised conclusions on strategies for service providers that are likely to be effective in overcoming constraints to participation identified from the studies, using ten generic headings. This list is simply a ranking according to the number of studies that refer to a strategy for overcoming constraints. Weighting in terms of their importance is not possible because of the varying nature of the data presented. The provision of *focused information & events* is the most frequently mentioned and ensuring a *sustainable legacy* the least.

- Focused information & events
- Site enhancement & maintenance
- Awareness raising & staff training
- Outreach & skill development
- Empowerment of target group
- Coordination & infrastructure
- Base-line data
- Offset costs
- Role models & staffing to reflect target population
- Sustainable legacy

- 6.21. The 10 headings address the three main areas of constraint as shown in **Figure 6**.

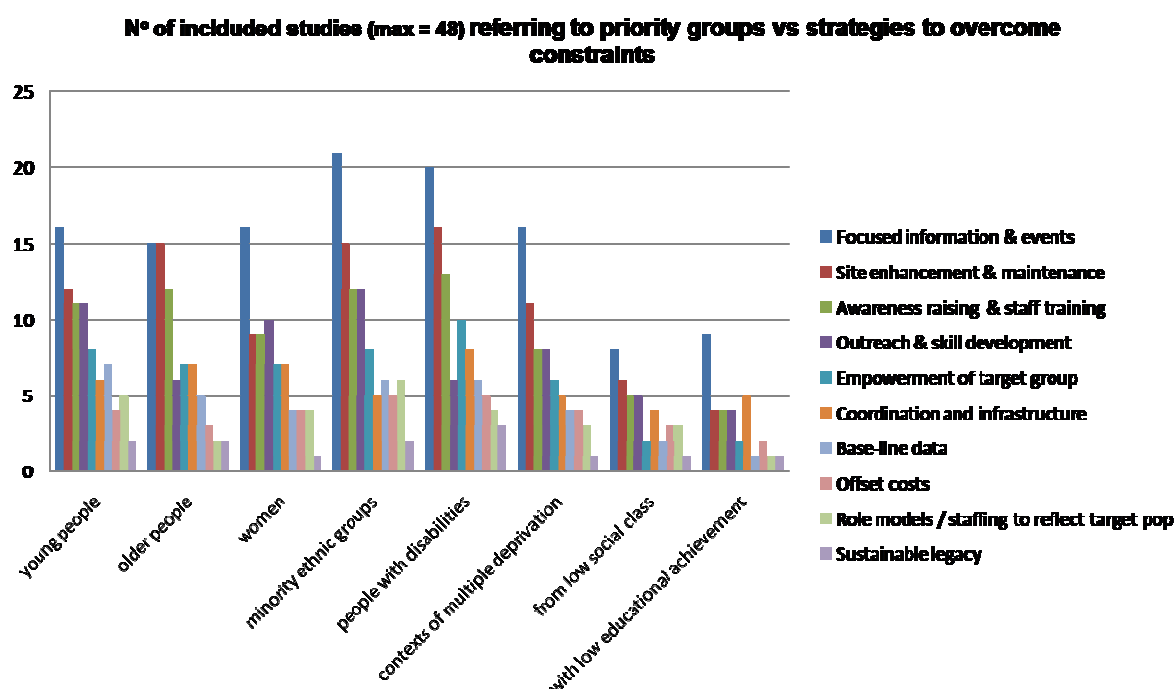
**Figure 6: The 10 strategies to overcome constraints**

Intrapersonal strategies	1	Awareness raising & staff training
	2	Outreach & skill development
	3	Offset costs
Interpersonal strategies	4	Empowerment of target group
	5	Focused information & events
	6	Role models & staffing to reflect target population
Structural strategies	7	Coordination & infrastructure
	8	Base-line data
	9	Site enhancement & maintenance
	10	Sustainable legacy

6.22. There are variances between the priority groups, as is illustrated in Figure 7. Research across all the groups places the provision of focused information and events as the most important, most especially in relation to *ethnic minority groups* and *people with disabilities*. Studies on all but *people in low educational achievement* place site enhancement and maintenance second. Research on *people in low educational achievement* places the coordination of service provision and infrastructure development second, and that is a reasonably high priority in relation to *people in a low social class*. Studies on *young people* and *ethnic minority groups* put a greater worth on outreach programmes and role models than for the other groups. Studies on *older people* show the least interest in outreach and skill development programmes.



Figure 7: Chart of priority groups vs strategies to overcome constraints



## INTRAPERSONAL STRATEGIES

### *Awareness raising and skill training*

6.23. It is reported in the literature that countryside hosts need to be made aware of the expectations of potential users and countryside managers and staff need awareness raising and skill training (Ethnos 2005, OPENspace 2003). Some call for specialist support to be placed in countryside teams, for example, local disability officers (Sensory Trust 2001, Uzzell et al 2005).

### *Outreach and skill development*

6.24. There is a need to proactively seek out potential users by organising activities and events to engage people in green spaces, particularly for *young people* and *ethnic minority groups* (Bell 2004). The use of a 'taster programme of activities' and escorted visits is proposed (BEN 2006, Ethnos 2005). Some groups need training to give them the confidence to use green spaces. Outdoor learning is advocated (see Ethnos 2005, Green et al 2007, Ward Thompson et al 2005).

### *Offset costs*

6.25. The most common call is for subsidised transport (see Curry & Ravenscroft 2001) but capped or waived fees and charges will also encourage use (O'Brien 2004, Jun et al 2007). Kuehn (2006) proposed subsidised equipment or equipment loans to encourage participation. Long-term subsidised facilitation may be needed to help some groups return to the countryside after a 'taster event' (Askins 2004).

## INTERPERSONAL STRATEGIES

### *Empowerment of target group*

- 6.26. Community-driven initiatives are more likely to succeed than those imposed from the outside. Service providers should use the community and other community providers rather than impose solutions. But there is a need to build up the capacity of local groups before they are capable of taking on the new roles, such as volunteer-run community transport schemes (see Sensory Trust 2001, Slee et al 2001, Weldon et al 2007).

### *Focused information & events*

- 6.27. Communication plans should be proactive and balanced. The imaginative use of media techniques placed in accessible locations can increase engagement and help people make informed choices (see Morris 2003, OPENspace 2006). The grading of sites and access in terms of target group needs and limitations could develop this (Dawson et al 2006, OPENspace 2006). Thought must be given to the format (and language) of published material. The use of imagery rather than text will serve the widest audience (Askins 2004, Bell et al 2004). Translation into a range of languages may be appropriate (Edwards & Weldon 2006) but can be seen as patronising by second generation *ethnic minority groups* (Askins 2004).

### *Role model and staffing to reflect target population*

- 6.28. Target group 'champions' in the countryside are needed to trigger engagement (Culp & Ravenscroft 1998). Staffing profiles should reflect the population diversity and the hiring of members of under-represented groups may encourage a greater involvement. Volunteering may be a way of helping local people to appreciate their own green spaces (Askins 2004, Tierney et al 1998, Weldon et al 2007).

## STRUCTURAL STRATEGIES

### *Coordination and infrastructure*

- 6.29. There is a call for more regional and area strategies to join up service provision and ensure management by partnership (Ball et al 2007, Weldon et al 2007). There is a need for more transport links, linking to access points and way-marked. Routes to green spaces need management as much as the sites themselves (Hickey 2003, NFO System Three 2003).

### *Base-line data*

- 6.30. Decisions should be evidence based and there is a need to collect reliable base-line data (see Ethnos 2005, O'Brien 2004, OPENspace 2003, Slee et al 2001, Uzzell et al 2005). Such data can also assist in making the case for interventions.

### *Site enhancement and maintenance*

- 6.31. People will use well maintained sites that are clear of obstructions but they want facilities. Cafes, seating and toilets are called for most often (Alves et al 2008, I'DGO, OPENspace 2003). The presence of 'wardens' and other visible staff reassure some groups, especially *older people* (Madge 1997). Connections to neighbourhood open spaces should be well maintained and easy to use (I'DGO).

### *Sustainable legacy*

- 6.32. There is a need to link projects together and show their value over time. The Sensory Trust (2001) suggests that the Green Flag Award Scheme could be developed to do that. Demonstration projects can be developed with the intention of making them transferable, such as 'Paths for All' and 'Safe Routes to School' as these will help develop the habit of walking for leisure (Weldon et al 2007).

### **Motivations and activity preferences**

- 6.33. The brief calls for a review of the motivations, experience and activity preferences of each priority group, considering both participants and non-participants. The studies reviewed do cover motivations and preferences but there is rarely any clear distinction made between the priority groups or between participants and non-participants. It is therefore difficult to draw any meaningful conclusions. This could be the subject of future study.

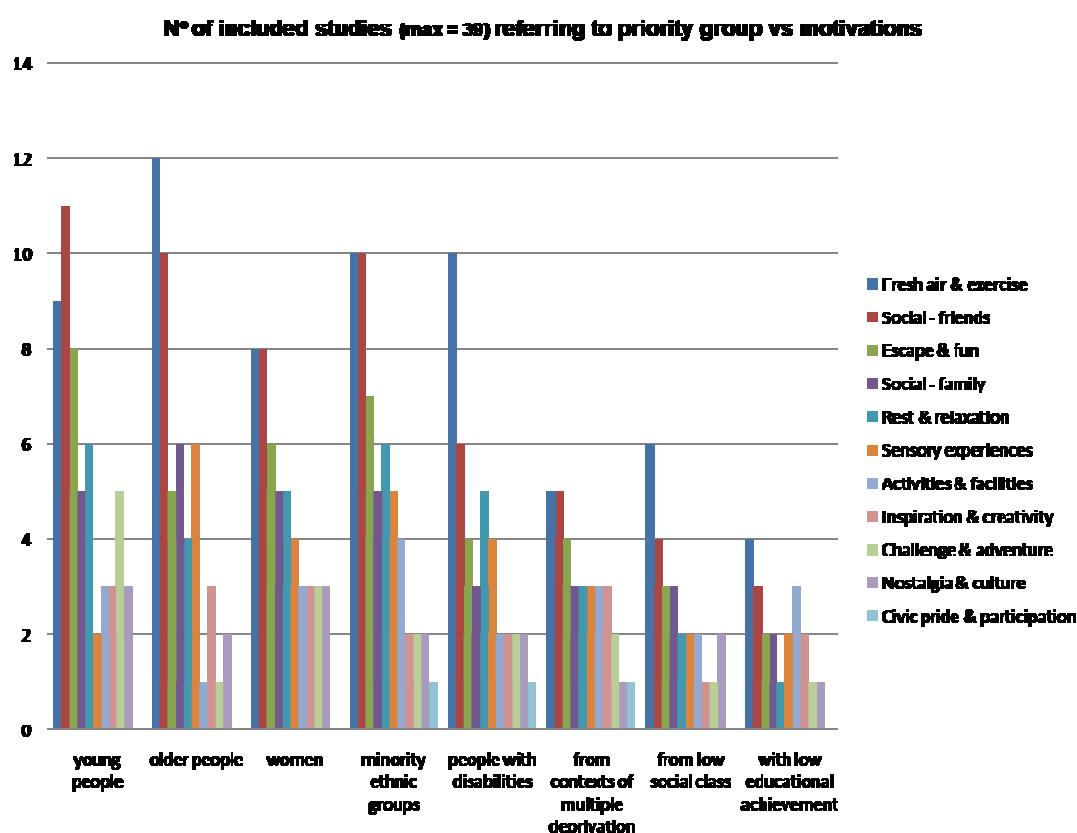
### **Motivation to participate**

- 6.34. Of the 68 included studies, 39 consider the motivations to participate in informal countryside recreation. Though formal analysis is not possible, it is possible to draw some general conclusions from the studies using 11 headings:
- Fresh air & exercise
  - Social – friends
  - Escape & fun
  - Social – family
  - Rest & relaxation
  - Sensory experiences
  - Activities & facilities
  - Inspiration & creativity
  - Challenge & adventure
  - Nostalgia & culture
  - Civic pride & participation
- 6.35. This list is ranked according to the number of studies that refer to the motivation to participate in informal recreation. There seem to be variances between the priority groups, as is illustrated in Figure 8, but this cannot be established without rigorous testing. This review found fresh air and exercise as the most frequently mentioned motive for participation, ranking first for all groups except *young people* and appearing to be very important to *older people* and *people in a low social class*. Civic pride and participation (litter sweeps and community action) is the least mentioned and links only to *minority ethnic groups*, *people with disabilities* and *people from contexts of multiple deprivation* in our review.
- 6.36. Studies on *young people* rank socialising with friends in first place, with fresh air and exercise as second. Studies on *women*, *ethnic minority groups* and *people from contexts of multiple deprivation* rank socialising with friends as equal first. Studies on all other groups, with the exception of *young people*, rank it in second place. Again, this motive seems important to *older people*

and people in a low social class. Older people, women and ethnic minority groups put a high value on socialising with the family and older people value sensory experiences (looking at good views or hearing and smelling nature). Young people and ethnic minority groups seek escape from routine and fun whilst organised activities and formal facilities attract people with low educational achievement.

- 6.37. Dog ownership and accessibility to green open spaces is associated with all groups but reported as a motive in only one study (Ward Thompson et al 2005). Similarly, the cost associated with participation links to all groups but only one study reports it as a motivation (O'Brien 2004).

6.38. Figure 8: Chart of priority groups vs motivations

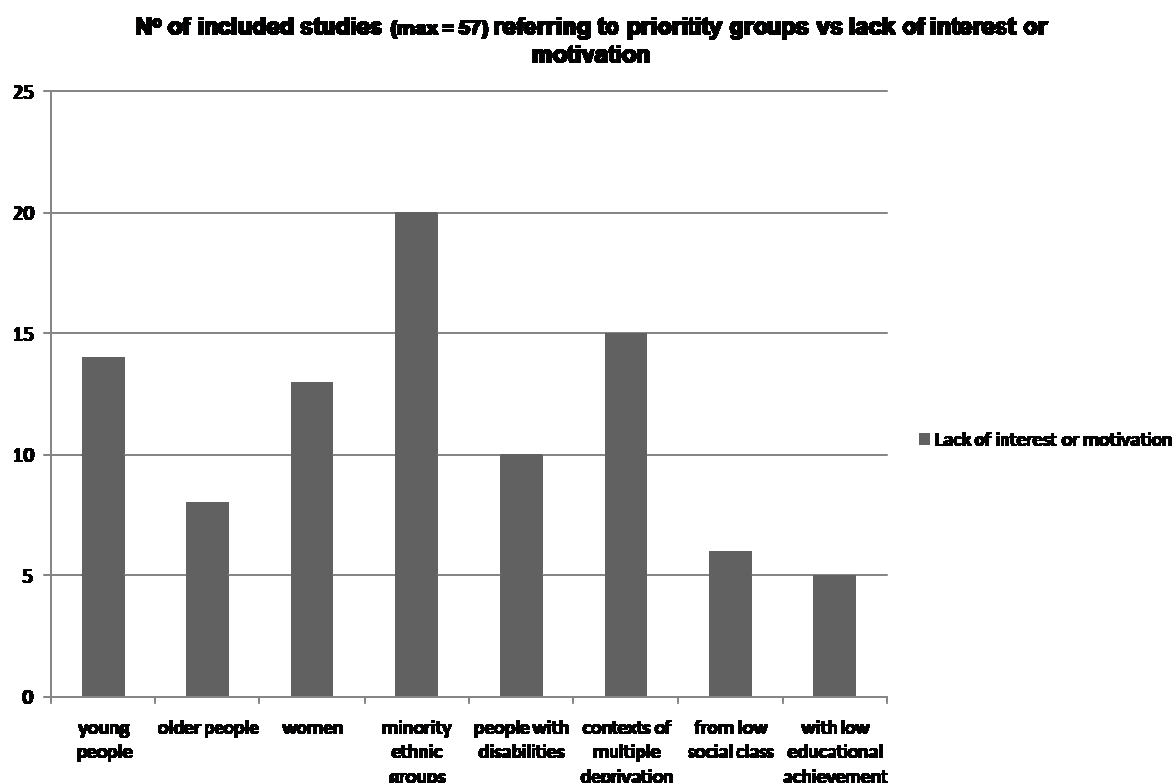


## Motivation and perception

- 6.39. Lack of interest or motivation (Figure 9) is assessed here as a perception ("the countryside is not for me!"). In certain circumstances, however, they may be interpreted as constraints to participation or indicators of other constraints that have not been articulated. Of the 68 included studies, 57 refer to a lack of interest in, or motivation to use, open green spaces. From those 57 studies, it appears that people from *ethnic minority groups* express the greatest lack of interest, with a reference in 35% of the included studies. *People from contexts of multiple deprivation* are the second largest group recorded (26.3% of the studies), with *young people* the third (at 24.6% of the studies). The low level of reports for *people with low educational achievement* (8.8%) and *people in a*

*low social class* (10.5%) are likely to be a reflection of the lower number of studies about these groups.

**Figure 9: Chart of priority groups vs lack of interest**



6.40. There are two aspects to lack of interest or motivation: those associated with cultural setting and those with social context. There may be no cultural habit of using the countryside by a group of people. For *some ethnic minority groups*, visiting the countryside for recreation is an alien concept. Visits are seen as social and linked to the family (Ethnos 2005, Rishbeth & Finney 2006). There may be no social context for a visit to the countryside; *younger people* may perceive the countryside as boring or not for them. Groups such as *young people* may have other priorities, linked to social activities in urban areas or indoors. Peer pressure suggests that it is 'uncool' to visit the countryside (Bell et al 2003, Ethnos 2005, OPENspace 2003). The lack of modern comforts in the countryside may also be a constraint (Bixler & Floyd 1997).

6.41. Effective information dissemination and interpretation techniques, on- and off-site, may be necessary to allow visitors and potential visitors to make informed choices regarding accessibility and use (OPENspace 2003).

### Activity preferences (Figures 10 and 11)

6.42. Of the 68 included studies, 46 consider informal recreational activity preferences. Though formal analysis is not possible, it is possible to draw some generalised conclusions from the studies. The following 27 activities are in the included studies:

- Walking for leisure

- Sightseeing / landscape
- Observing nature
- Walking a pet
- Picnicking
- Cycling
- Horse riding
- Keeping fit
- Fresh air
- Visiting a site
- Children's games
- Events & activities
- Camping
- Hiking (all day +)
- Photography
- Canoe / boating
- Fishing
- Sitting and reading
- Being with friends
- Group sport
- Rock climbing
- Hunting / shooting
- Quad biking
- Children's imagination
- Acquiring new skills
- Swimming
- Mountain biking

6.43. This list is ranked according to the number of studies that refer to the preferred activity. Walking for leisure is by far the most frequently mentioned and mountain biking the least (note that the term cycling may include mountain biking). Swimming receives only two mentions but few of the included studies considered water-based recreation. All groups place walking for leisure first with this activity being particularly important to *older people* and *ethnic minority groups*. Sightseeing and appreciating landscape or good views comes second over all with *people with disabilities* and *people from contexts of multiple deprivation* showing a particular preference. *People in a low social class* show the least interest in this activity. The third most preferred activity over all is observing nature and particularly by *ethnic minority groups*. *People with disabilities* place walking a pet higher than other groups but this may be associated with assistance dogs; that is not clear from the literature. The more energetic activities are preferred by *young people*, as is picnicking.

Figure 10: Chart of priority groups vs activity preferences

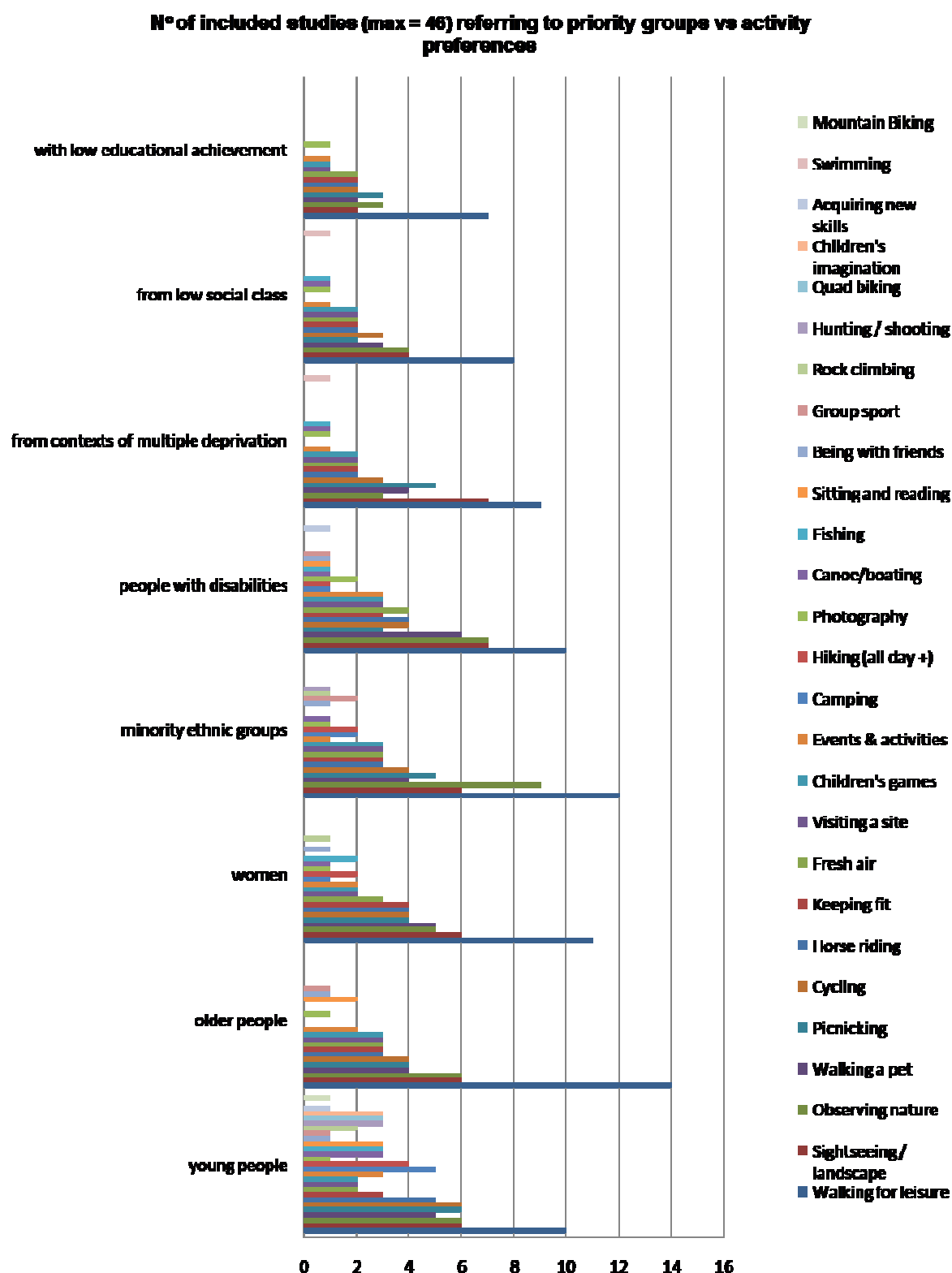
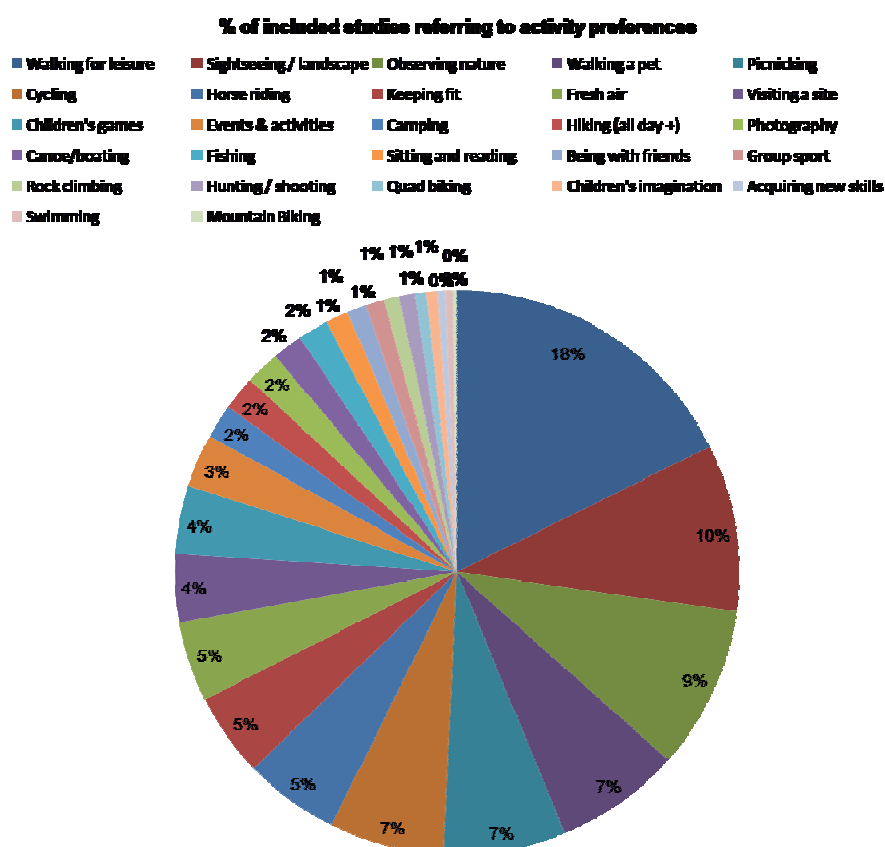




Figure 11: Pie-Chart of activity preferences by percentage



## The effect of belonging to multiple groups

- 6.44. The brief asks for an assessment of the effect of belonging to multiple groups on motivations, experience and activity preferences. As only four of the selected papers consider the combined effects on constraints and each have sampling weaknesses, there is not enough data upon which to draw any firm conclusions.

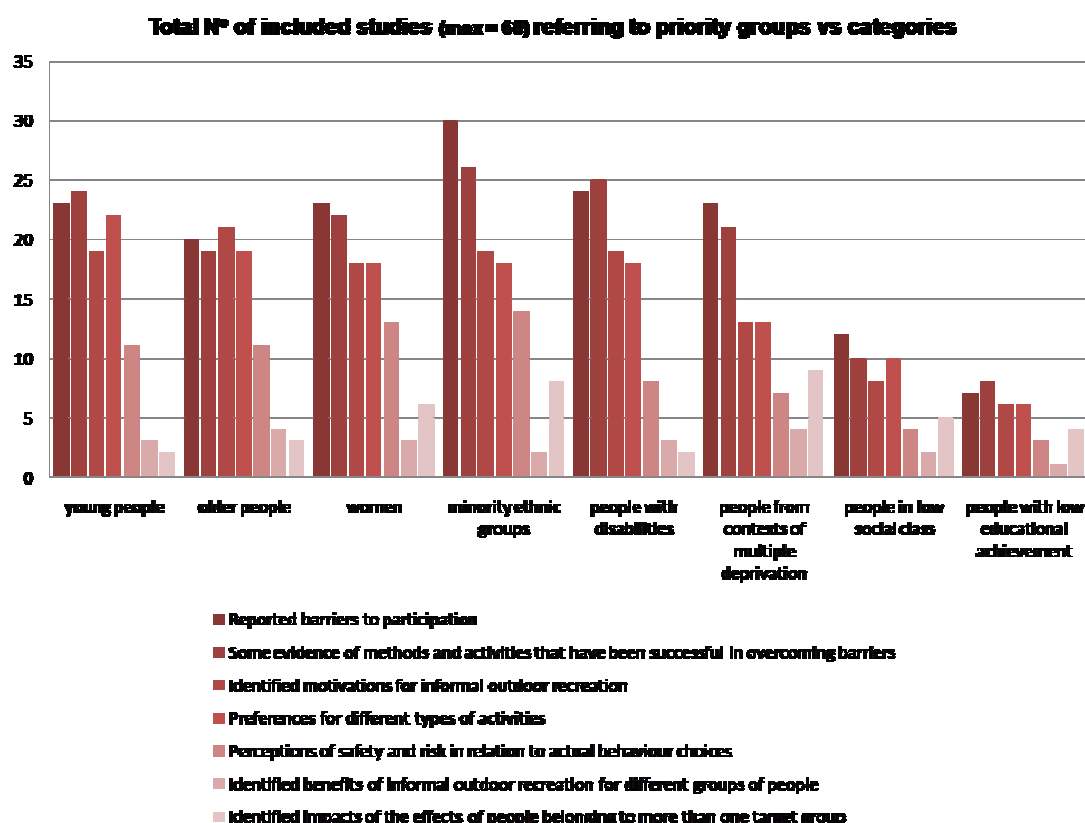
## Gap analysis

- 6.45. The challenges identified at the start of this review suggested that there would be some difficulty in addressing all the questions and issues identified in the brief, due to lack of adequate coverage in existing research literature. This has been confirmed by undertaking the systematic review. While there is good coverage of some aspects relating to participation, exclusion and under-representation in the context of informal countryside recreation, there remain gaps in the evidence on a number of key issues.
- 6.46. Issues of under-representation versus exclusion are not resolved by this review. This is an important area in relation to WAG priority groups.
- 6.47. Differentiation between priority groups is not clear within or consistent between the included studies. Findings are not always stratified by the priority groups and there are no common definitions of terms. This makes it more

difficult to assess the weight of evidence that is presented in relation to any priority group covered by the review.

- 6.48. There is a lack of data associated with *people with a low educational achievement* and *people from a low social class* (see Figure 12). This leads to an unbalanced review as the other groups appear to dominate.
- 6.49. The included studies present little evidence to show that the strategies proposed for overcoming constraints to participation are successful. The findings on this are largely anecdotal. Most of the included studies have a range of recommendations for interventions that could be undertaken but there is rarely any follow up. The best quantitative data comes from studies focused more on participation for health rather than for experiencing the outdoors. This is probably because of the demanding standards of evidence expected in health research.
- 6.50. The brief calls for a review of the motivations, experience and activity preferences of each priority group, considering both participants and non-participants. The studies do cover motivations and preferences but as there is rarely any clear distinction made between the priority groups or between participants and non-participants, it is difficult to draw any meaningful conclusions.
- 6.51. Perceptions of safety and risk are found in the included studies but they are rarely discussed in relation to actual behaviour choices.
- 6.52. Assessing the weight of importance of different constraints to participation for different priority groups could assist in identifying the most important to be overcome
- 6.53. Few of the included studies identified the benefits of informal outdoor recreation for different groups of people. It is therefore difficult to assess the value of decisions made to participate in such recreation. Since perceived benefits are likely to play an important role in motivating people to visit the countryside, this is a significant gap.
- 6.54. Very little evidence of the identified impacts of the effects of people belonging to more than one target group (effects of multiple priority group membership) was found in the included studies.

Figure 12: Chart of priority groups vs categories (Total)



## 7. Recommendations for future research

7.1. Not surprisingly, some of the principal gaps in evidence which require further study are those which are particularly difficult to research, such as where under-representation reflects or masks exclusion that has not been adequately articulated or understood. There are also areas recommended for future research where the gaps are comparatively straightforward to fill but where, to date, there has been inadequate external validity in data collection and analysis. Other opportunities have also been identified by the studies in this review. The following recommendations relate to the most promising areas for future research in terms of addressing WAG aims for CCW, recognising that they will vary in their demands for expertise, time and resources.

### Primary information base

7.2. There is a need for research to improve the primary information base that establishes common terms, targets and indicators. Reliable and comparable data is required for each target group. The adoption of methodologies that give a sufficient breadth and depth of quantitative and qualitative research to address the complex issues and reasons that lie behind people's recreational choices is a priority.

- 7.3. In terms of priority groups, it is suggested by Ravenscroft & Markwell (2000) that *ethnic minority youth* appear to be "confined" to parks with poorer facilities and less user satisfaction than other groups of their age, exacerbating social divides. Although this may refer principally to urban settings, it would be valuable to test this hypothesis with further research and seek evidence for any attempts to overcome this.
- 7.4. In relation to other target groups, there is little research to date on *people with low educational achievement* and those from low socio-economic class in relation to countryside use, so this presents an opportunity for further study. Level of educational achievement is often used in social science research as an indicator of socio-economic status. However, it may be that *people with low educational achievement* have particular preferences and/or face particular constraints in accessing and enjoying countryside recreation, regardless of socio-economic status, and vice versa. This could be explored further by research targeting these groups, using appropriate methods to explore preferences, perceptions, experience of the countryside and constraints to access and use.

## Constraints

- 7.5. Consider the effect that lack of opportunity has on the ability of non-users of countryside to develop the habit of use.
- 7.6. Use appropriate methods to assess the weight of importance of different constraints to participation for different priority groups. These should also be considered in relation to motivations, perceptions and preferences (see below).
- 7.7. It is not clear whether the constraint on countryside recreation for many priority groups due to lack of affordable, convenient and appropriate transport could be overcome by providing more countryside-like green space closer to urban areas. In other words, is there a desire to access places away from urban areas, regardless of what is available locally, that is constrained by lack of transport, or would more local (and possibly more urban in context) availability satisfy the demand for countryside recreation? This is an important but challenging research question that needs to be addressed.
- 7.8. It would be valuable to explore the reasons behind a lack of a cultural habit of visiting woodlands by *ethnic minority groups* and study opportunities to develop new habits, drawing perhaps on the work of BEN and similar groups to provide evidence with external validity on whether such interventions are successful and worthwhile for the target populations

## Strategies for overcoming constraints

- 7.9. Mechanisms need to be put in place to ensure the effective evaluation of current and future projects that involve interventions to overcome constraints to countryside recreation. These must include collection of adequate baseline data before the intervention to enable any meaningful evaluation to be undertaken.

- 7.10. In order to secure evidence of successful strategies for overcoming constraints, appropriate methods with some external validity should be used. The research culture relating to use of green space and countryside activities has to date been less demanding than that of health research. This is partly in recognition of the different (and less controllable) environment in which such research must be undertaken. Nonetheless, there are useful lessons that can be learnt from health-related research approaches, particularly in relation to assessing the effectiveness of an intervention in facilitating behaviour change, e.g. through the use of control groups. Ethical issues may arise but the health research community has considerable experience in obtaining reliable results without disadvantaging participants, e.g. through using staggered timing for interventions with different groups of participants.

### **Motivations and activity preferences**

- 7.11. Research is needed to explore what a lack of interest in countryside activities means in detail, for each target group, so that issues of under-representation vs. exclusion may be better understood. Research using surveys with representative samples and quantitative analysis doesn't readily lend itself to exploring and unpacking complex reasons behind certain responses to questionnaires. Qualitative research is better at this but has its own limitations in terms of generalisability. It is unusual to find research has the breadth and depth of quantitative and qualitative research to address these issues adequately, but that is what is needed.

### **Perceptions and behaviour – what makes a difference in practice?**

- 7.12. Research has pointed to the fact that people may find aspects of countryside recreation and access to it attractive but also face constraints and inhibitions that may deter or prevent them from visiting the countryside. What is less clear, for different groups that are currently under-represented and/or who suffer exclusion, is what would in practice make the difference. It may well require a combination of removing constraints and creating attractions to motivate visits, rather than simply addressing the major barrier or constraint. For example, removing the constraint of lack of transport by providing affordable and convenient public transport services may be a necessary condition for someone to visit the countryside but not sufficient to make them actually do so unless they are also attracted by activities on offer which they know they'll enjoy. Equally, an identified concern about cost may be a constraint but not sufficient to deter a person from visiting the countryside if the motivation, e.g. to get fresh air and access to nature, or to accompany a friend or family member in an activity, is sufficiently strong. There are research methods that focus on choice which can assist in teasing out some of these issues and would be worthwhile to pursue.
- 7.13. There is a particular need to research more carefully the perceptions of safety and risk in relation to actual behaviour choices for different groups of people, since this is so often mentioned as a constraint by under-represented groups. There is often an assumption that negative perceptions prevent people from engaging in countryside recreation but this needs to be tested more rigorously, since this may not always be the case in practice.

## **Benefits for different groups**

- 7.14. Identify the benefits of informal outdoor recreation for different groups of people. Much research has focused on activities and frequency of visits for different groups, but the perceived benefits from visits may not be identifiable from their activities or the primary motivation. Understanding benefits can be important in helping target interventions for different groups and in supporting sustained countryside use over time.

## **Countryside users versus non-users**

- 7.15. Research to understand what distinguishes participants in countryside recreation from non-participants in each priority group, in relation to their motivations, experience and preferences would be very valuable. Such information can make an important contribution to understanding what makes the difference in people choosing to participate and in helping develop effective support to increase participation, where this is deemed appropriate.

## **The effect of belonging to multiple groups**

- 7.16. There is very little research on the combined effects of belonging to more than one priority group in terms of accessing countryside recreation. This is an area that would benefit from more targeted study across the different group categories.

## APPENDICES

### Appendix A: Full list of search terms and sources used in the review

The search has been performed in a variety of sources and databases, as listed, using the search terms discussed. As expected, a large number of references were found, which were subsequently screened for relevance.

#### Search terms used (all truncated/expanded as appropriate)

##### **Setting: [natural green environment, not structured grounds]**

outdoor, countryside, woodland, forest, natural environment, nature, hills, mountains, moorland, wild space, wilderness, open space, greenspace, green space, parks, parkland, gardens (open to the public), nature reserves, coast, seaside, beach, Allotments

##### **Activity [informal, implying freedom of choice]**

recreation, physical exercise, physical activity, leisure activity, walking, climbing, cycling, biking, horse riding, pony trekking, wayfinding, canoeing, water sports, fishing, camping, picnics, Fruit-picking, vehicles, motorised sports, all-terrain vehicles, Motorised recreation, e.g. driving in the countryside, 4x4 use, Trail bikes/scramble bikes, Motocross - exclude if organised, competitive event, Quad bikes – exclude if among farm kids on their own land

##### **Participation/Constraints**

Participation, involvement, inclusion/include, “taking part”, experience, Barriers, obstacles, constraints, exclusion/exclude, preferences, choices, facilitators

##### **Groups [ie WAG priority groups]**

Young, youth, teen, Female, women, girl, gender, Old, elderly, pension, over-50s etc, retired, Ethnic, black, minority, racial, non-white, Asian, immigrant, Disabled, less able, handicap, mobility problems, learning difficult, blind, visually impaired, partially sighted, deaf, hearing difficulties, Carer, Deprived, social class, “non-car owners”, unemployed,

##### **Exclusions**

Visiting gardens (e.g. FC or NT owned estates)



Botanic gardens  
School-organised activities  
Conservation activities/volunteering  
Green Gym activities, if prescribed rather than chosen independently  
Orienteering

### **Sources searched**

#### **Libraries:**

National Library of Scotland,  
Edinburgh College of Art  
University of Edinburgh  
Heriot-Watt University.

#### **Web-based bibliographic databases and search engines**

- PubMed (Medline)
  - IBSS
  - Countryside Journal
  - Web of Knowledge
  - Science Direct
  - SportDiscus
  - Treeseach literature references from the US Forestry Dept treeseach database <http://www.treeseach.fs.fed.us>
- Construction Information Service (CIS) (part of info4education)  
General Websites:

#### **Black Environment Network**

<http://www.ben-network.org.uk/resources/intro.html>

#### **British Heart Foundation National Centre, Physical Activity & Health**

<http://www.bhfactive.org.uk/index.html>

#### **Centers for Disease Control & Prevention (US)**

<http://www.cdc.gov/nccdphp/dnpa/physical/index.htm>

Physical activity site

#### **Countryside Council Wales**

<http://www.ccw.gov.uk/>

#### **Countryside Recreation Network**

<http://www.countrysiderecreation.org.uk/research/>

#### **Fieldfare Trust**

<http://www.fieldfare.org.uk/>

#### **Forestry Commission/Forest Research**

<http://www.forestresearch.gov.uk/fr/HCOU-5QJMBB>

#### **Get Hooked on Fishing**

<http://www.ghof.org.uk/index.htm>

**Girls on the move**

<http://www.girlsonthemove.org.uk/>

**Groundwork**

<http://www.groundwork.org.uk/index.asp?page=76>

**Health Challenge Pembrokeshire**

<http://www.healthchallengepembrokeshire.co.uk/>

**I'DGO: Inclusive Design for Getting Outdoors**

<http://www.idgo.ac.uk/index.htm>

**International Longevity Centre**

<http://www.ilcuk.org.uk/view.jsp?view=browse&type=publication&order=date&by=desc&skip=0&pageID=55>

**Let's Walk Cymru (Sports Council for Wales)**

<http://www.sports-council-wales.org.uk/getactiveinthecommunity/active-adults/lets-walk-cymru%20->

**Mosaic partnership**

<http://www.mosaicpartnership.org/news.html>

**National Centre for Physical Activity and the Disabled [US]**

<http://www.ncpad.org/>

**National Institute for Clinical Excellence**

<http://www.nice.org.uk/>

**Natural England - Diversity Review**

<http://www.countryside.gov.uk/LAR/Recreation/DR/index.asp>

**Naturally active**

<http://www.naturallyactive.org/ruralhome.aspx?SectionID=69>

<http://www.naturallyactive.org/woodlandhome.aspx?SectionID=61>

**New dynamics of aging**

<http://www.newdynamics.group.shef.ac.uk/>

**OPAN - Older People & Aging Research Activity Network (Wales)**

<http://www.opanwales.org.uk/Home/tabid/617/Default.aspx>

**OPENspace**

<http://www.openspace.eca.ac.uk/>

**Paths to Health (Scotland)**

<http://www.pathsforall.org.uk/pathstohealth/index.asp>

**Physical activity and health alliance (Scotland)**

<http://www.paha.org.uk/paha/120.5.48.html>

**Scottish Government**

<http://www.scotland.gov.uk/Publications/Recent>

**Scottish Natural Heritage**

<http://www.snh.org.uk/pubs/cr.asp>

**Sensory Trust**

<http://www.sensorytrust.org.uk/>

**Sport Development.org.uk**

<http://www.sportdevelopment.org.uk/html/21background.html>

**Sport England**

[http://www.sportengland.org/index/get\\_resources/research.htm](http://www.sportengland.org/index/get_resources/research.htm)

[http://www.sportengland.org/index/get\\_resources/research/segmentation\\_main\\_page/segments\\_and\\_priority\\_groups.htm](http://www.sportengland.org/index/get_resources/research/segmentation_main_page/segments_and_priority_groups.htm)

**Sports Council Wales**

<http://www.sports-council-wales.org.uk/>

**Steps2Health [Pembrokeshire]**

[http://www.healthchallengepembrokeshire.co.uk/content.asp?nav=833,743&parent\\_directory\\_id=673&id=1065&d1p1=1](http://www.healthchallengepembrokeshire.co.uk/content.asp?nav=833,743&parent_directory_id=673&id=1065&d1p1=1)

**Value of sport monitor (Sports Council England)**

<http://www.sportengland.org/vosm/vosm.htm>

**Wales Centre for Health**

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=568&pid=12632>

**Walking the way to health [England]**

<http://www.whi.org.uk/>

**Welsh Assembly Government**

<http://new.wales.gov.uk/?lang=en>

**Women's Sport & Fitness Foundation**

<http://www.wsff.org.uk/informed/research.php>

**Woodland Trust**

<http://www.woodland-trust.org.uk/publications/index.htm>

**OTHER SOURCES CHECKED**

All UK National Park websites

Various **disabled ramblers'** sites - no surveys found.

**Journal:** Countryside Recreation 2000-2007 [available online]

Black Environment Network Environmental needs of disadvantaged groups - bibliography

Resources for Change: The outdoors as a resource for all: preliminary research, final report for CCW - 20 item bibliography

**CCW CD**

Taking Forward Recreation and Access Work: A Briefing and Discussion Paper

CCW Access Awareness Survey Sept 2005: Key Findings On Participation And Barriers. This report interprets findings from an unpublished survey of 1000 respondents carried out by Beaufort Research: TIMMINS, C. (2006) Public Awareness of the Countryside Code Report. Beaufort Research, Cardiff, Wales

Williams Active Lives - Bevan report

Providing Accessible Natural Greenspace in Towns and Cities [CCW Greenspace toolkit]. Contains guidance on what is defined as "natural greenspace" - parks can vary.

Countryside Council for Wales: An Outdoor Recreation Evidence Framework [gives context of the current research - aiming to answer who the users and non-users and why.]

Environmental Conditions of Communities First Areas - report to CCW  
GIS study - interesting background -

## Appendix B: Titles meeting inclusion criteria

ABERCROMBIE, L. C., SALLIS, J. F., CONWAY, T. L., FRANK, L. D., SAELENS, B. E. & CHAPMAN, J. E. (2008) Income and Racial Disparities in Access to Public Parks and Private Recreation Facilities. *American Journal of Preventive Medicine*, 34, 9-15.

ADAMS, C. E. & STEEN, S. J. (1997) Texas females who hunt. *Wildlife Society Bulletin*, 25, 796-802.

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ANDERSON, L. E. & LOOMIS, D. K. (2007) Recreation specialization and gender: a comparison of Massachusetts freshwater anglers. IN BURNS, R. & ROBINSON, K. (Eds.) *Proceedings of the 2006 Northeastern Recreation Research Symposium*; 2006 April 9-11; Bolton Landing, NY. Newton Square, PA, Department of Agriculture, Forest Service, Northern Research Station.

ASKINS, K. (2004) Visible communities' use and perceptions of the Peak District and North York Moors National Parks: a preliminary analysis of interview data.

AVANTE CONSULTING & UNIVERSITY OF EDINBURGH, Moray House School of Education (2007) *A Review of the Literature: Social Inclusion and Access to National Parks*, Edinburgh, Avante Consulting.

BALL, K., BAUMAN, A., LESLIE, E. & OWEN, N. (2001) Perceived Environmental Aesthetics and Convenience and Company Are Associated with Walking for Exercise among Australian Adults. *Preventive Medicine*, 33, 434-440.

BALL, K., TIMPERIO, A., SALMON, J., GILES-CORTI, B., ROBERTS, R. & CRAWFORDS, D. (2007) Personal, social and environmental determinants of educational inequalities in walking: a multilevel study. *Journal of Epidemiology and Community Health*, 61, 108-114.

BEEHLER, G. P., MCGUINNESS, B. M. & VENA, J. E. (2001) Polluted fish, sources of knowledge, and the perception of risk: Contextualizing African American anglers' sport fishing practices. *Human Organization*, 60, 288-297.

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BELL, S., FINDLAY, C., MONTARZINO, A. & OPENSPLACE (2006) *Access to the countryside by deaf visitors*, Clydebank, Scottish Natural Heritage.

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- BELL, S., THOMPSON, C. W. & TRAVLOU, P. (2003) Contested views of freedom and control: Children, teenagers and urban fringe woodlands in Central Scotland. *Urban Forestry & Urban Greening*, 2, 87-100.
- BIXLER, R. D. & FLOYD, M. F. (1997) Nature is scary, disgusting, and uncomfortable. *Environment and Behavior*, 29, 443-467.
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- BLACK ENVIRONMENT NETWORK (2006) Environmental needs of disadvantaged groups.
- BOWKER, J. M. & LEEWORTHY, V. R. (1998) Accounting for ethnicity in recreation demand: A flexible count data approach. *Journal of Leisure Research*, 30, 64-78.
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COUNTRYSIDE AGENCY. (2000) Sense and accessibility: how to improve access on countryside paths, routes and trails for people with mobility impairments, Wetherby, Countryside Agency.

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## Appendix C: Example of abstract summary form

1. General study description			
Study ID	Full citation		Source
Abstract			
Priority group(s)			
Setting			
Activity			
Geographical location and coverage			
2. Study summary			
Design			
Study aims			
Study population			
Sample size			
Methodology			
Analysis			
Results:	General		
	Barriers		
	Motivation		
	Preferred experiences or activities		
	Strategies for overcoming barriers		
Key findings			
Notes			
3. Relevance to review			
How do the results of this study relate to the review question?			
Is there evidence of methods or activities that have been successful in overcoming barriers?			
Are the findings likely to be generally applicable to the target population?			
Can any conclusions be drawn regarding exclusion versus under-representation?			
4. Quality assessment		Y/N/NA/CT	Notes
Research aims	The study addresses an appropriate and clearly focused question		
Participants (selection)	Are individuals selected to participate in the study likely to be representative of the target population? (Were study samples randomly recruited from study population with response rate of at least 60%, or were they otherwise shown to be representative of study population?)		
Data collection	Were data collection methods adequately described?		
	Were data collection methods/tools shown or known to be valid?		
	Were data collection methods/tools piloted?		
Analysis	Is the method of analysis clear and appropriate to the study question?		
	Is there a power calculation or other indication that sample size was taken into account?		
	Are measures of statistical significance reported?		
Qualitative research	Is there an appropriate conceptual/theoretical framework and is the analytical approach appropriate to the type of data?		
Conclusions	Are the key conclusions well-founded in the results of the analysis?		
	Are the conclusions well related to the relevant literature?		

## Appendix D: UK study summary table

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
<b>UK studies</b>													
Alves et al 2008	Preferences of Older People for Environmental Attributes of Local Open Space		✓								Neighbourhood parks and open spaces	Opinions to use of neighbourhood parks and open spaces	Older people are more likely to visit a local open space if it is free from nuisance and has facilities, such as a café and toilets, natural elements, such as trees and plants, and entertaining views or things to watch.
Askins 2004	Visible communities' use and perceptions of the Peak District and North York Moors National Parks: A policy guidance document for National Park Authorities			✓	✓			✓			English National Parks	General visitation and use of national parks	The greatest practical barrier emerging from the research is lack of knowledge; "visible communities <i>do not go</i> because they <i>do not know</i> ."
Avante Consulting & University of Edinburgh 2007	A Review of the Literature: Social Inclusion and Access to National Parks	✓				✓	✓				National parks	Visiting and using National Parks	Literature review: In general, this review is not too useful, as any studies that do provide information relevant to this review should be included as primary studies, and this review does not really add much to the analysis. Some of the literature included is quite old (1970s) and several studies involve schools or other organised programs.
Bell et al 2004	Nature for People: The Importance of Green Spaces to East Midlands Communities	✓	✓	✓	✓	✓				✓	Natural and greenspace environments	Recreational use of greenspace	Target groups under represented in survey sample; focus groups provide some possible underlying reasons for this, e.g. lack of freedom of children to roam the countryside as they used to, lack of suitable directed information to ethnic minority groups, women's concerns about safety and feeling of vulnerability.
Bell et al 2006	Access to the countryside by deaf visitors					✓					Scotland's outdoors, including parks and open spaces	Various countryside recreational activities	Deaf people already visit the countryside, but greater deaf awareness, accessible signage and information, and wider advertising of events for deaf people would be welcome; a range of attitudinal and physical barriers to using the

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
													countryside were reported, e.g. lack of deaf awareness, lack of signed interpretation, lack of accessible information, personal safety and summoning help, and hazards in the environment.
Bell et al 2003	Bell S, Ward Thompson C, Travlou P (2003) Contested views of freedom and control: Children, teenagers and urban fringe woodlands in Central Scotland.	✓	✓								Urban fringe woodlands	Recreational use by children and teenagers	Gives a detailed account of the activities, motivations and concerns of children and young people of different age groups in relation to their use of fringe woodlands, as well as perceptions of that use by woodland managers and other segments of the population (e.g. older adult users of the same woodlands).
BEN 2006	Environmental needs of disadvantaged groups	✓	✓	✓	✓	✓	✓	✓			Green spaces	Trips to the countryside	Specific issues for different groups. For ethnic minority groups, feeling welcome and a better understanding of cultural issues are particularly important. For disabled and older people, better signage, different language forms and physical access issues are crucial. Organisations representing disabled people make the point that wheelchair access improves access for everyone and thus should not be an afterthought.
CCW 2005	CCW Access Awareness Survey Sept 2005: Key Findings on Participation and Barriers	✓		✓	✓	✓	✓				"Countryside"	Visits to the countryside and activities in the countryside	Correlation between the barriers 'lack of time' and 'no interest'. Three groups – young people, ethnic minorities and Cardiff residents - are both more likely than average to see these as a barrier; for other groups, for example women and disabled people more specific barriers exist but interest in participation is relatively high.
Countryside Agency 2000	Sense and Accessibility: how to improve access on countryside paths, routes and trails for people with mobility impairments					✓					National Trails	Outings to National Trails	Overcoming the information barrier will provide more access for more people than tackling any other barrier.

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
Countryside Agency 2005	Walking the way to health 2000 - 2005: summary of local health walk evaluations		✓	✓	✓	✓					Mostly in countryside or urban green areas	Recreational walking	WHI schemes seem to have been successful in encouraging regular walking (by implication regular access to greenspace settings) of relatively large numbers of people, mostly the over 50s and mostly women.
CRN 2007	Life's one big adventure. In: Burgon J (ed) Countryside Recreation (2007) vol 16 "Youth and the countryside", pp 25-29	✓		✓	✓	✓	✓	✓			National Park	"Adventurous" outdoor activities	Young people enjoyed their outdoor experiences. Female only groups were successful, as was the incorporation of role-models
Curry & Ravenscroft 2001	Countryside recreation provision in England: exploring a demand-led approach							✓			Countryside	Countryside recreation	Of reasons for not visiting the countryside, material constraints (money and car ownership) together constitute only 16% of reasons for not visiting. Preferences for not going include simply having not gone or being not really interested in the countryside. Together these latter reasons account for 36% of reasons for not visiting. Thus, preferences are more than twice as likely to lead to non-participation as material constraints. Health reasons or disability (18%) and a lack of time because people are too busy at work to go (17%) are both more important than material constraints.
Curtis 2003	Demand for water-based leisure activity							✓			Coastal areas, rivers, wetlands, estuaries	Swimming and other beach/sea day-trips, boating and sea angling	Boating activity, including sailing and cruising, appears to be the only activity where social exclusion appears to prevail, i.e. no evidence of social exclusion for swimming and other beach visits
Dawson et al 2006	Evaluation of changes to physical activity amongst people who attend the Walking the way to Health Initiative (WHI): prospective survey		✓	✓		✓		✓		✓	Mostly in countryside or urban green areas	Walking for health and recreation	People attending a led walk for the first time were less likely to be white, were less well educated and less likely to own their own homes. First-timers were also more likely than other walkers to be registered disabled and tended to occupy a worse position on the deprivation index. These results indicate that target groups are

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
													being reached by the WHI/PTH advertising.
Edwards & Weldon 2006	Race equality and the Forestry Commission				✓						Woodlands	Woodland recreation	The report stresses that a passive "countryside for all" approach is no longer sufficient to address under representation of BME and other minority groups. Active engagement is required, most importantly through outreach activities in BME and other minority communities.
Ethnos 2005	What about us? Diversity review part 1: Challenging perceptions: under-represented visitor needs	✓			✓	✓					Countryside and green outdoor spaces	General use of the countryside	For people from ethnic minority backgrounds, the main factors restricting use of the countryside included cost, transport, a lack of knowledge of the English countryside and 'cultural habit', as well as fear of discrimination, different patterns of use and a lack of culturally-appropriate provision. For disabled people, the principal barriers are transport and cost, a lack of knowledge of suitable facilities, as well as a basic lack of provisions for disabled people. For young people, negative perceptions of the countryside, other priorities, peer pressure and a dependency on adults were mentioned as barriers, as well as a lack of appropriate facilities for this age group, transport and cost.
Hickey 2003	Use and Demand of Rights of Way	✓				✓				✓	Public rights of way in the countryside	Using public rights of way	Use of the countryside remains a popular activity, with over half the households surveyed include at least one person who had walked, and a quarter at least one person who had cycled in the countryside in the last year. Users of rights of way would like to see more info on networks, more joined up networks, better public transport, and facilities for specific groups, e.g. disabled, that would also benefit all users.
I'DGO	inclusive design for getting outdoors		✓								Outdoors (including	Being outdoors (including visiting	The most important aspects of local open space to participants were safety, having

# OPENspace: Participation in Outdoor Recreation by WAG priority groups, June 2008

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
											neighbourhood greenspace)	neighbourhood greenspace)	appropriate facilities, trees and plants and activities to watch, good maintenance, and no heavy traffic en route.
Madge 1997	Public parks and the geography of fear		✓	✓	✓						City public parks	Visiting and using public parks	43% of respondents stated that fear was a 'very important' factor restraining their use of urban parks.
Mentro Allan 2007	Mentro Allan evaluation report	✓	✓	✓	✓	✓	✓	✓		✓	Natural outdoor environments	Wide range of outdoor activities offered	Of the 1640 participants, 737 are female, 210 have a disability, 253 belong to an ethnic minority, 269 are under 16, 74 are aged 16-18, 94 are aged 19-25 and 247 are aged 55+; Participant barriers not really a focus of this report. Barriers mentioned include logistical problems with programme delivery, lack of transport provision for participants, etc.
Milligan & Bingley 2007	Therapeutic places or scary spaces? The impact of woodland on the mental well-being of young adults	✓									Woodlands	Play (remembered), visits to woodlands, walking	This study explores some of the motivations and preferences of young adults in their use of woodlands for recreation and restorative activities, and suggests that an individual's perceptions and attitudes towards woodland spaces are highly dependent on their childhood experiences there.
Morris 2003	Black and minority ethnic groups and public open space, literature review				✓						Countryside and greenspace	Use of countryside and greenspace	Reviews the literature 1987-2003 on exclusion of BME communities from participation in use of public open space. 7 key barriers identified: (1) lack of ability to shape strategy, (2) lack of appropriate information, (3) lack of appropriate activities, (4) lack of awareness of local initiatives, (5) lack of confidence and negative perceptions of environment, (6) negative previous experience, (7) cost and lack of time.
Natural England 2008	A sense of freedom: the experiences of disabled people in the natural environment					✓					Outdoor natural environments	Recreational use of outdoor natural environment	All contributors enthusiastic about outdoor pursuits, and all find ways to manage to participate. Several make the point that disabled people often have the impression that the countryside is not for them, or that access issues will make



OPENspace: Participation in Outdoor Recreation by WAG priority groups, June 2008

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
													things difficult, but the contributors here thought people should make the effort themselves to find out what is available to them
NFO System Three 2003	Public attitudes to access to the countryside	✓	✓	✓				✓		✓	Outdoors	Outdoor recreation	Survey undertaken to assess current levels of access to the countryside in Scotland, activities undertaken and the likely impacts of potential changes in legislation.
O'Brien 2004	A sort of magical place: people's experiences of woodlands in northwest and southeast England	✓	✓	✓			✓			✓	Woodlands	Experiences of woodlands	This report is not specifically focused on access for WAG target groups. Much of the research focused on what woodlands mean to people in a more abstract way. e.g. as places to relax, be inspired by, enjoy, rather than on specific activities and access.
OpenSpace 2003	Diversity review: options for implementation	✓	✓	✓	✓	✓	✓				Countryside	Visiting the countryside for recreation	Literature review. One of the few included documents to review and assess ongoing outreach projects (although this is now 5-years out-of-date). A recurring theme is the lack of adequate follow-up and evaluation.
OpenSpace 2006	Review of the Scottish Forestry Strategy Consultation Process: Focus Groups, final report	✓		✓	✓		✓				Woodlands	Recreational use of woodlands	The response people have to woodlands is mostly very positive - trees, parks, meadows, green spaces, waterfalls and canals, wildlife, tranquility, beauty, pleasure and relaxation – but for some there are concerns about inaccessibility and fear for safety. Three main barriers identified: lack of reliable public transport, poor access within woodlands, and fear of other people in woodlands.
Ravenscroft & Markwell 2000	Ethnicity and the integration and exclusion of young people through urban park and recreation provision	✓			✓						Urban parks and playgrounds	Park usage	The observational statistics and survey interviews demonstrate that ethnic youth is not under-represented in local parks; authors suggest that rather than promoting social inclusivity, the apparent "confining" of ethnic youth to parks with poorer facilities and less user satisfaction in fact exacerbates social divides.

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
Resources for Change 2005	The outdoors as a resource for all: preliminary research. Final report for CCW	✓	✓			✓	✓				Local greenspace and countryside	Use of accessible land close to home for recreation	Accessing the outdoors is dependent on knowing what there is, how to find it and, particularly if you are less able, whether it is suitable for your abilities; an area will not be used if it is subject to fly-tipping or is very neglected, or if people are afraid to go there.
Rishbeth & Finney 2006	Novelty and nostalgia in urban greenspace: Refugee perspectives.				✓						Local greenspace	"Engagement" with local greenspace (visiting and use for recreation)	The paper concludes that a positive impression of the local environment and meaningful participation in it can be a useful component of integration into a new society. This study focuses on a very specific sub-group within the category ethnic minority (i.e. refugees and asylum seekers) and as such the results cannot be generalised to the larger target group. However, the kinds of suggestions that would make urban greenspace more accessible to this subgroup would probably also make it more accessible to other target groups. The clear benefits felt by the participants in this study indicate the potential importance of engaging with open greenspace for refugees and asylum seekers, and the results of this study should help inform strategy in areas where such populations live.
Sensory Trust 2001	Making Connections: A Guide to Accessible Greenspace.		✓			✓					Public greenspace	Using public greenspace for recreation	National User Survey indicated that very few respondents were uninterested in visiting the countryside, and that more would do so if appropriate facilities and information were in place; people with disabilities and special needs prefer to be in the ordinary mainstream of everyday life rather than being the recipients of "special facilities", which should be remembered when planning site access and improvements, etc.
Slee 2002	Social Exclusion in the Countryside	✓			✓	✓	✓				Countryside	Countryside recreation	The aim of this study was to characterise features of successful projects aimed at

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
													social inclusion in countryside recreation.
Slee et al 2001	Social exclusion in countryside leisure in the UK: the role of the countryside in addressing social exclusion	✓			✓	✓	✓				Countryside	Countryside recreation	(Full report) Twelve case studies of projects aimed at social inclusion in countryside recreation.
Snowdonia NP 2006 / Snowdonia NP 2007	Draft disability equality scheme 2006-9 / Draft Annual Monitoring Report, March 2007					✓					National park	Park use	From consultation with disabled groups, the issues that were agreed should form the main priorities for the Disability Equality Scheme were: (1) Accessible Information, (2) Disability Equality training – training based on the Social Model – with the trainers being disabled people.
Sugiyama & Ward Thompson 2008	Associations between neighborhood open space attributes and quality of life for older people in Britain		✓								Neighbourhood open spaces	Outdoor activity (walking)	The relevant finding of this paper is that people who have good paths to an open space have twice the odds of being a high-level walker, i.e. to walk for 2.5 hours/week or more. That this translates to actual "use" of NOS is implied rather than demonstrated.
Sugiyama et al 2008	Associations between characteristics of neighbourhood open space and older people's walking		✓								Neighbourhood open spaces	Walking for recreation and transport	Results of the analyses indicate that the quality of, and access to, open, green spaces in a neighbourhood were associated with longer walking time for the study participants. These findings suggest the possibility that improvements in the quality of and access to neighbourhood natural spaces could contribute to increase the amount of outdoor activity for the older population.
Uzzell et al 2005	What about us? Diversity review part 2: Challenging perceptions: Provider awareness of under-represented groups.	✓	✓	✓	✓	✓	✓	✓		✓	Countryside	Countryside visits	Very thorough and highly relevant report, exploring issues of access for under-represented groups from the point of view of the service provider; No data showing increased participation levels, but the report highlights the need for meaningful evaluation of such interventions, and stresses the need for these to be adequately funded.

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
Ward 2003	Walking the way to health: Final Evaluation Report. Merthyr Tydfil NPHS					✓	✓			✓	Walks and trails	Walking	This scheme focuses on the health benefits of walking, rather than on promoting outdoor recreation as such, but the increase in the number of walkers can be taken as a proxy for increased participation in outdoor recreation; Many people took part in the walks, with self-reported benefits to physical and mental health. Walks were made accessible to wheelchairs and buggies; a sensory walk for all but particularly aimed at the visually impaired was implemented.
Ward Thompson et al 2005	Open Space and Social Inclusion: Local Woodland Use in Central Scotland.									✓	Woodlands	Visiting woodlands	While the target population here is general, the report stresses the importance of positive woodland experiences for children as this was the main predictor of visiting woodland as an adult.
Ward Thompson et al 2006	Free-range teenagers: the role of wild adventure space in young people's lives.	✓									"Outdoor space"	Unconstrained and unsupervised use of wild adventure space	As part of the wider remit of looking at the benefits to young people and the wider community of young peoples' access to wild adventure spaces, the report also collates literature and anecdotal evidence of under-representation and access issues. Young people need access to local places for outdoor adventure that are attractive and within easy walking distance of their homes. They also need access to structured adventure activity and more distant wild and countryside places. The role of youth workers and outdoor adventure leaders is of key importance here and is highly valued by young people themselves.
Weldon et al 2007	New pathways for health and well-being in Scotland: research to understand and overcome barriers to accessing woodlands	✓	✓	✓						✓	Woodlands and other greenspaces	Recreational use of woodlands and greenspace	The most-often reason cited by young mothers with children for not using woodland spaces and other greenspace areas was concern about personal safety, and the impression that such places are the haunts of drug addicts and other

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Brief summary
													groups that they would find dangerous and/or intimidating. Although evidence suggests that geographical distance or proximity is important, it is not just the availability of local woodlands that determines who accesses them.

**Appendix E: Non-UK study summary table** (those studies included in the detailed review are marked in bold by author)

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
<b>Australia</b>													
Ball et al 2001	Perceived Environmental Aesthetics and Convenience and Company Are Associated with Walking for Exercise among Australian Adults									✓	Neighbourhood	Walking for exercise or recreation	Perceived environmental aesthetics is an important correlate of walking for exercise among urban Australians.
Ball et al 2007	<b>Personal, social and environmental determinants of educational inequalities in walking: a multilevel study</b>			✓							Neighbourhood	<b>Walking for exercise or recreation</b>	<b>A combination of personal, social and environmental factors contribute to explaining lower levels of leisure-time walking among women with low education.</b>
Timperio et al 2007	Is availability of public open space equitable across areas?						✓				Neighbourhood	Recreation	The results did not support the hypothesis that low socio-economic status (SES) neighbourhoods have less public open space than high SES neighbourhoods.
Tandy 1999	Children's diminishing play space: a study of inter-generational change in children's use of their neighbourhoods	✓									Neighbourhood	Outdoor play	Analysis of children's drawings and stories suggest that, given the choice, most children would choose to play in the bush, in parks or on the beach; their actual choice of play space seems to be constrained by knowledge of parental constraints.
<b>Canada</b>													
Stodolska 2002	<b>Ceasing participation in leisure activities after immigration: Eastern Europeans and their leisure behavior.</b>				✓						Outdoors	<b>Outdoor recreational activities</b>	<b>outdoor recreational activities were the most commonly discontinued type of activity after immigration, mainly due to lack of time, financial difficulties and environmental differences.</b>
Tucker et al 2007	Splashpads swings, and shade - Parents' preferences for neighbourhood parks	✓									Neighbourhood parks	Outdoor play	Explores parents' preferences for park amenities and finds that people will travel further with their children to visit a park with desired amenities.
Walker et al 2001	<b>Ethnicity, acculturation, self-construal, and motivations for outdoor recreation</b>				✓						<b>A Canadian National Park</b>	<b>Outdoor recreation</b>	<b>Although ethnicity does affect some outdoor recreation motivations directly, this relationship is often, albeit not always, mediated by self-construal.</b>

Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
<b>Japan</b>													
Takano et al 2002	Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces		✓								"Greenery filled public areas"	Walking	Living in an area with walkable green spaces positively influenced on the longevity of senior citizens (assumption that this is due to more walking by these residents).
<b>Norway</b>													
Roskraft et al 2004	Patterns of outdoor recreation activities among Norwegians: an evolutionary approach		✓	✓							Natural outdoor settings	Outdoor recreation activities	The authors predictions that, as for our ancestors, outdoor recreation activities are age- and gender-specific are supported by results; younger men engage in high-risk activities like mountain climbing and hang gliding, while men of all ages hunt and fish, while women dominate in gathering activities.
<b>USA</b>													
Abercrombie et al 2008	Income and Racial Disparities in Access to Public Parks and Private Recreation Facilities				✓		✓	✓			Public parks, open space	Recreation	The expected deprivation of recreation facilities in low-income and high-minority neighborhoods was not found.
Adams & Steen 1997	Understanding wildlife constituents: birders and waterfowl hunters			✓	✓			✓	✓	✓	Various	Birdwatching and waterfowl hunting	Nearly all (99%) of the birders and waterfowl hunters were white; waterfowl hunters had higher incomes than birders; there were more women among birders (44%) than among hunters (<1%)
Adams et al 1997	Texas females who hunt			✓							Various	Hunting (deer & wildfowl)	Texas females who hunt were initiated into hunting by husbands; motivated to hunt because of achievement, affiliative, and appreciative reasons; and confronted few barriers to participation.
Anderson & Loomis 2007	Recreation specialization and gender: a comparison of Massachusetts freshwater anglers			✓							Not stated	Recreational fishing	Only 10 percent of surveys returned by licensed freshwater Massachusetts anglers were completed by women.
Beehler et al 2001	Polluted fish, sources of knowledge, and the perception of risk: Contextualizing African				✓						Great Lakes region of USA	Recreational fishing	African American anglers viewed fishing as a beneficial low risk activity, used to relax and socialise; possible dangers from consumption of contaminated fish more often ignored than by



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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
	American anglers' sport fishing practices												while anglers.
Beets et al 2007	Parent's social support for children's outdoor physical activity: Do weekdays and weekends matter?	✓									Various, including local parks/playgrounds	Outdoor play activities	For boys' weekend activity, fathers' doing activity with the children was positively associated with increased activity levels; for girls', mothers' using outdoor play as recreation during the weekday was the only significant contributor to activity.
Bixler & Floyd 1997	Nature is scary, disgusting, and uncomfortable	✓			✓						"Wildland environments"	Hypothetical activities in wildland environments assessed by questionnaire	Eighth grade students with high fear expectancy, disgust sensitivity and desire for modern comforts were more likely to prefer manicured park settings and urban environments and to dislike wildland environments.
Bixler et al 2002	<b>Environmental socialization - Quantitative tests of the childhood play hypothesis</b>	✓									Wild environments	Childhood play experiences	<b>Respondents (adolescents) reporting having played in wild environments had more positive perceptions of natural environments, outdoor recreation activities, and future indoor/outdoor occupational environments.</b>
Bowker & Leeworthy 1998	Accounting for ethnicity in recreation demand: A flexible count data approach				✓			✓			Florida Keys	Recreational trips	Recreationists of Hispanic background make more trips to the keys than non-Hispanics, but Hispanics are more sensitive to price changes, thus increased travel and access costs could have a dramatic effect on the ethnic distribution of visitors to the keys.
Bowker et al 2006	<b>Wilderness and primitive area recreation participation and consumption: an examination of demographic and spatial factors</b>			✓	✓		✓	✓			Wilderness areas	Recreational trips	<b>Distance to a wilderness area was found to be an important factor in determining the probability of participation and amount of participation.</b>
Burger et al 1998	Gender differences in recreational use, environmental attitudes, and perceptions of future land use at the Savannah River Site			✓							Former department of energy site, now looking at future land use for recreation	Preferred activities: birdwatching, photography, fishing, camping, hiking	There were significant gender differences in attitudes towards future land use for this site, with men scoring higher on hiking, camping, fishing, hunting, building factories and houses, nuclear production and storing of nuclear waste; both genders scored highest priority for maintaining the site as a National Environmental

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
													Research Park.
Burger 2002	Consumption Patterns and Why People Fish				✓						New York - New Jersey harbor estuary	Recreational fishing	Of 267 people interviewed, 13% were Asian, 21% were Hispanic, 23% were Black, and the rest white; there were no ethnic differences in reasons for angling, although there were ethnic differences in consumption patterns.
Burns & Graefe 2007	<b>Constraints to outdoor recreation: Exploring the effects of disabilities on perceptions and participation</b>					✓					National Forests	Visits to National Forests	<b>Among people with disabilities, poor health was reported as the strongest factor affecting their ability to recreate in National Forests.</b>
Cohen et al 2006	Public parks and physical activity among adolescent girls	✓		✓							Parks and playgrounds	Physical activity	Adolescent girls who live near more parks, particularly near those with amenities that are conducive to walking and with active features, engage in more nonschool metabolic equivalent-weighted moderate/ vigorous physical activity than those with fewer parks.
Cohen et al 2007	Contribution of public parks to physical activity				✓			✓			Public parks	Use of public parks	Both park use and exercise levels of individuals were predicted by proximity of their residence to the park.
Cordell et al 2005	United States of America: outdoor recreation (book chapter)									✓	General outdoors (from neighbourhood to wilderness parks)	Wide range of outdoor recreational activities	Participation rates have risen faster for females than for males in many activities; generally, larger percentages of Caucasians and Hispanics participate in outdoor activities than do African Americans; participation rate declines with increasing age.
Cordell & Herbert 2002	The Popularity of Birding is Still Growing									✓	General (places where you can watch birds)	Birdwatching	In comparison with non-birders, more birders are female, are between the ages of 40 and 59, have a college degree, are white, and earn over \$50,000 per year; on the other hand, fewer birders are between 16 and 24 years old, have less than a high-school education, or are from Black or Spanish-speaking backgrounds.
Cordell et al 1999	The Growing Popularity of Birding in the United States									✓	General (places where you can watch birds)	Birdwatching	Higher percentages of birders than non-birders are female, between the ages of 40 and 59, are college educated, white, from 2-person households, retired and homemakers; on the other hand, smaller percentages of birders than non-birders are between 16 and 24 years old,

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
													have less than a high school education, and are unemployed
Covelli et al 2007	Perceived constraints by non-traditional users on the Mt. Baker-Snoqualmie National Forest				✓						National Forests	Visits to National Forests	Six significant relationships were noted in the structural constraints domain: lack of information, lack of awareness of opportunity, having no way to get there, recreation opportunities I like are not available, weather, and crowding.
Culp 1998	<b>Adolescent girls and outdoor recreation: A case study examining constraints and effective programming</b>	✓		✓							Not specified other than outdoors	Outdoor recreation	<b>Most significant constraints identified were perceived gender roles, lack of opportunities, differential opportunities for males and females, peer influence, self concept, physical and safety concerns and individual affinity for outdoor environment.</b>
Du Lee et al 2007	An exploratory study of the outdoor recreation participation of families who have a child under sixteen	✓								✓	Columbia River Gorge National Scenic Area	Outdoor recreation such as hiking, backpacking, camping	People traveling with children manifested preferences in their outdoor leisure activities distinct from those traveling without children.
Du Lee et al 2004	Older Adults: A Unique Market for the Columbia River Gorge National Scenic Area?		✓								Columbia River Gorge National Scenic Area	Visiting Columbia River Gorge National Scenic Area: mainly general viewing activities	Senior visitors differ significantly from younger visitors in motivations for their visits and activity participation: senior visitors placed less attention on physical and skill-oriented activities and motivations, compared with the younger-aged groups; most senior visitors reported viewing or sightseeing as their primary activity while visiting; senior visitors prefer to use developed outdoor recreational sites over undeveloped sites.
Dwyer 2000	Similarities and Differences in the Outdoor Recreation Participation of Racial/Ethnic Groups: An Example from Illinois				✓						General outdoors	Outdoor recreation (walking, picnicking and many other activities)	There are significant differences in participation rates for a racial/ethnic group compared to whites, although individuals in each of the racial /ethnic groups engage in a significant amount of outdoor recreational activity.
Dwyer & Barro 2001b	Outdoor recreation behaviors and preferences of urban racial/ethnic groups: an example from the				✓						General outdoors	Outdoor recreation	Important similarities across the three racial/ethnic groups include the attachment of a high level of importance to outdoor recreation (especially high for the Hispanic and African American groups), and the high level of

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
	Chicago area												importance of safety, cleanliness, and drinking water at the areas where they recreate; important differences between racial/ethnic groups include the specific activities engaged in, places used, preferences for site development and programming, who accompanied individuals in their recreation activities, and number of outdoor recreation trips taken out of state.
Dwyer & Barro 2001a	Linkages in the use of recreation environments across the urban to ex-urban spectrum by urban residents				✓					✓	Outdoor recreation sites in and around Chicago	Outdoor recreation	A large proportion of Cook County residents did not travel outside of Illinois to public recreation areas, and those who did took few trips; non-Hispanic whites took most trips while Hispanic Americans took fewest.
Dwyer & Klenosky 2004	The Implications of Demographic Change in Metropolitan Areas for the Use of Recreation Sites	✓	✓	✓	✓			✓	✓	✓	Outdoor recreation sites in and around Chicago	Outdoor recreation	Distance to site inversely associated with participation; results offered little support for reported under-representation by blacks and Hispanics - at some sites these groups were over-represented.
Gobster 2002	Managing urban parks for a racially and ethnically diverse clientele				✓						Lincoln Park, Chicago	Using the park	Minority park users came from farther away to use the park, more often came by car, used the park less frequently, and were more likely to visit in large, family-oriented groups than White park users.
Green et al 2007	An examination of constraints to wilderness visitation			✓	✓		✓	✓			Wilderness	Wilderness visitation	<b>Minorities, women, lower levels of income and education, and elderly populations were more likely to perceive they were significantly constrained from visiting wilderness; however, immigrants perceived fewer constraints to wilderness visitation than was expected.</b>
Grilliot & Armstrong 2005	A comparison of deer hunters with disabilities and nondisabled hunters in Alabama: motivations and satisfactions in deer hunting					✓					Deer hunting areas in Alabama	Deer hunting	Hunter groups displayed some statistical differences but practical differences were not found; authors conclude that state-provided facilities for disabled deerhunters are adequate.
Ho et al 2005	Gender and ethnic variations in urban park preferences, visitation, and perceived benefits			✓	✓						Urban parks	Visiting urban parks	There were no significant gender differences in the types of visits or the perceived benefits of parks; however, there was significant ethnic variation in preferred park attributes, frequency

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
													and type of visits, and perceptions of the positive and negative effects of parks (effects of ethnicity did not differ between men and women).
Johnson et al 2001	Outdoor Recreation Constraints: An Examination of Race, Gender, and Rural Dwelling			✓	✓						General outdoors	Outdoor recreation	<b>Women are most likely to feel constrained by personal safety concerns, inadequate facilities and information, insufficient funds, and outdoor pests; race is not a significant predictor of constraints for participants, but nonparticipating African-Americans are more likely than whites to feel personal safety concerns inhibit their outdoor recreation opportunities; rural residence does not appear to be an important factor among either participants or nonparticipants in explaining the probability that an individual feels constrained in outdoor recreation participation.</b>
Johnson et al 2004	Ethnic variation in environmental belief and behavior: An examination of the new ecological paradigm in a social psychological context				✓						General outdoors	Nature-based outdoor recreation.	Blacks, U.S.-born Latinos, and Asians are significantly less likely than Whites to engage in nature-based outdoor recreation activities.
Johnson et al 2005	Acculturation via nature-based outdoor recreation: a comparison of Mexican and Chinese ethnic groups in the United States				✓						General outdoors	Nature-based outdoor recreation.	Results showed little evidence that respondents of Chinese descent (either US-born or immigrant) were more acculturated than Mexican-origin respondents to US society (with acculturation measured by participation in nature-based outdoor recreation).
Johnson et al 1997	Theoretical Perspectives of Ethnicity and Outdoor Recreation: A Review and Synthesis of African-American and European-American Participation (review)				✓						General outdoors	Outdoor recreation	No one factor—ethnicity, marginality, attributed meaning, or place of residence—offers a definitive explanation of racial differences in recreation behavior.
Johnson et al 1998	Wildland recreation in the rural south: An examination of				✓						Wildland areas, national forests	Outdoor recreation	Results do not provide strong support for either ethnicity of marginality as the sole explanation for racial differences in wildland recreation; the

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
	marginality and ethnicity theory												two probably work together; less affluent blacks actually participate more in wildland visitation than those with higher incomes.
Johnson et al 2007	"Provide it... but will they come?" a look at African American and Hispanic visits to Federal recreation areas				✓						Federal recreation areas	Visits to Federal recreation areas	Factors such as private landownership, and social definitions of place may be useful in considering African American use of wildland public recreation areas in the South.
Jun et al 2007	<b>Market segmentation using perceived constraints</b>			✓	✓		✓	✓	✓	✓	<b>Cleveland's Metroparks</b>	<b>Outdoor recreation</b>	<b>This study aimed to profile identified market segments based on their socio-demographic characteristics, motivation, involvement and place attachment.</b>
Kim et al 2005	Race, Ethnicity, and Information Use Related to Natural Resource Recreation				✓						Texas Park and Wildlife Department (TPWD) media presentations	Natural resource recreation	Anglos reported greater use of the TPWD sponsored media as information sources. However, members of minority groups, particularly African Americans, were more likely to watch the television program; Current TPWD media vehicles are not being significantly used by Hispanics and African Americans when compared to White, non-Hispanics.
Krenichyn 2004	Women and physical activity in an urban park: Enrichment and support through an ethic of care			✓							Prospect Park, Brooklyn, NY	Park use	Women found enrichment and support for both relationships and activities among family, friends, acquaintances, and strangers in the park, which provided feelings of safety and enjoyment; the presence of others and chance meetings in the park also provided emotional social support and more long-term affiliations to support athletic interests such as team sports.
Krenichyn 2006	'The only place to go and be in the city': women talk about exercise, being outdoors, and the meanings of a large urban park			✓							Prospect Park, Brooklyn, NY	Park use	Women's perceptions of Prospect Park as a place for everyday physical activities revealed a number of ways that urban parks might provide opportunities for physical challenge, mental escape/restoration, and even social connection.
Kuehn 2004	Gender-Based constraints to sportfishing participation in the eastern Lake Ontario area			✓							Lake Ontario area of New York State	Sport fishing	Constraints varied by life stage, with fishing opportunity constraints limiting participation during childhood, social constraints affecting adolescence, and time constraints limiting participation during adulthood; female interviewees tended to have more constraints on

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Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
													their fishing involvement throughout the course of their lives than did male interviewees.
Kuehn 2006	A discriminant analysis of social and psychological factors influencing fishing participation			✓							Lake Ontario area of New York State	Sport fishing	Elements identified as strongly influencing fishing participation for both males and females were opportunity, perceived ability, and fishing-related customs during childhood; affiliation, opportunity, and commitment during adolescence; and affiliation and commitment during adulthood.
Lee et al 2001	Structural inequalities in outdoor recreation participation: A multiple hierarchy stratification perspective									✓	General outdoors	Outdoor recreation	Elderly minority females without a college degree who earn <\$20,000/year occupy the lowest rank of outdoor recreation participation probability, while young white males with a college degree earning > \$20,000 are highest; other groups fall in between these two extremes
Li et al 2005	Multilevel modelling of built environment characteristics related to neighbourhood walking activity in older adults		✓								Neighbourhood	Walking	A positive relation was found between built environment factors (density of places of employment, household density, green and open spaces for recreation, number of street intersections) and walking activity at the neighbourhood level. At the resident level, perceptions of safety for walking and number of nearby recreational facilities were positively related to high levels of walking activity. A significant interaction was observed between number of street intersections and perceptions of safety from traffic.
Librett et al 2006	Characteristics of physical activity levels among trail users in a US national sample									✓	Community trails	Use of community trails	Community trails facilitate physical activity, and almost half of frequent trail users report that access to trails and other green space is important in choosing a place to live.
Marsinko & Dwyer 2005	Trends in Participation Rates for Wildlife-Associated Recreation by Race/Ethnicity and Gender: 1980-2001			✓	✓						General outdoors	Hunting, fishing, observing wildlife	Hunting was the activity with the greatest disparity in participation by gender and race/ethnicity. However, more women are participating in this activity and there appeared to be an early trend toward more similar participation rates by gender within racial/ethnic groups.
Marsinko & Dwyer 2003	African American and Hispanic American				✓						Forest lands	Hunting, fishing	African American hunters in the North Central region tend to be older, more likely to be retired,



Study ID	Title	Young	Older	Women	Minority	Disabled	Deprivation	Social	Education	All	Setting	Activity	Single sentence summary
	sportsmen in the north central region												earn less, and more likely to reside in rural areas than African American non-hunters in the region.
Martin 2004	Apartheid in the great outdoors: American advertising and the reproduction of a racialized outdoor leisure identity				✓						Wildland recreation sites	Depiction of people participating in wildland recreation	Advertising featuring models participating in outdoor recreation activities rarely include black models; white models regularly make use of the outdoors, while black models are confined to urban themes.
Payne et al 2002	An examination of park preferences and behaviors among urban residents: The role of residential location, race, and age		✓		✓					✓	Local public parks	Use of local public parks	Examination of park preferences revealed that older adults and Blacks were more likely to prefer recreation to conservation than younger adults and Whites. Race, however, was the strongest of these characteristics in terms of predictive power. Race had the strongest influence on the preference for type of recreation activity. When examining park visitation, older adults and Blacks were more likely to be nonvisitors.
Pohl et al 2000	Women, wilderness, and everyday life: A documentation of the connection between wilderness recreation and women's everyday lives			✓							Wilderness	Wilderness recreation	Wilderness recreation can influence women's everyday lives in the forms of self-sufficiency, a shift in perspective, connection to others, and mental clarity.
Robinson et al 2007	An aging population: relationships between socio-demographics, motivations and participation		✓								General outdoors	Outdoor recreation	Examined respondents' current motivations for engaging in outdoor recreation and their expected motivations in 10 years. The findings provides insight as to how respondents' motivations may be affected by their retirement.
Roemmich et al 2006	Association of access to parks and recreational facilities with the physical activity of young children	✓									Neighbourhood parks	Physical activity	Neighborhoods with increased proximity between homes and a greater proportion of park area are associated with greater physical activity in young children.
Rupert & Dann 1998	Fishing in the Parks: A research-based outreach program	✓									Local parks in Michigan	Fishing	Fisheries outreach program aimed at attracting families with children with some evidence of success.
Sali & Kuehn 2007	Gender-based motivations of non-residential birdwatchers			✓							General outdoors	Birdwatching	Analysis of the qualitative data also revealed similarities and differences in motivations between male and female birdwatchers, e.g.

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	in New York state: a qualitative study												more males than females mentioned conservation of birds, whereas more females than males indicated enjoying the sights and sounds of birds as their motivation.
Sasidharan 2005	Ethnicity and Urban Park Use: A Cross-Cultural Examination of Recreation Characteristics Among Six Population Subgroups				✓						Urban parks and forests	Visits to urban parks and forests	Most ethnic minority groups visit parks in forests in larger groups (family/friends) than do whites; outdoor land and water-based activities are popular with Hispanic Latino communities.
Scott et al 2004	<b>Constraints to Outdoor Recreation among Ethnic and Racial Groups</b>				✓						General outdoors	Outdoor recreation	<b>Non-whites reported more constraints to outdoor recreation away from home than did whites; ethnic minorities more likely to report constraints due to lack of information, access, intrapersonal constraints and economic constraints.</b>
Shaull & Gramann 1998	The effect of cultural assimilation on the importance of family-related and nature-related recreation among Hispanic Americans				✓						General outdoors	Nature-related recreation	More culturally assimilated Hispanics were more similar to whites in their perception of the benefits of nature-related recreation.
Shores et al 2007	<b>Constraints to outdoor recreation: A multiple hierarchy stratification perspective</b>		✓	✓	✓		✓	✓	✓	✓	General outdoors	Outdoor recreation	<b>The estimated effects of SES, age, gender, and race/ethnicity on the probability of experiencing any constraint to outdoor recreation were tabulated. With the exception of time constraints, all other outdoor recreation constraints were most important to elderly, female or minority respondents with lower SES. The probability of experiencing constraints to outdoor recreation is multiplied when respondents had more than one of these statuses.</b>
Taylor et al 1998	Growing up in the inner city - Green spaces as places to grow	✓									Neighbourhood	Outdoor play	The incidence of creative play was significantly lower in barren spaces than in relatively green spaces.
Thapa et al 2002	Information needs and search behaviors: a comparative study of				✓						National Forests	Outdoor recreation	Whites generally reported using all available information sources to a greater extent than Hispanics or Other Minority Groups.

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	ethnic groups in the Angeles and San Bernardino National Forests, California												
Tierney et al 1998	Cultural diversity of Los Angeles County residents using undeveloped natural areas				✓			✓			National Forest or Park, or other undeveloped natural areas	Outdoor recreation	Respondents significantly less likely to visit an undeveloped natural area were those with low levels of socio-economic status, low levels of assimilation, who had moderate to high perceived discrimination, and who were of African-American ethnicity. There were no significant differences between Asian, Latino, and white respondents in their probability of visiting a natural area, if intervening variables were held constant.
Tierney et al 2001	Cultural diversity in use of undeveloped natural areas by Los Angeles county residents				✓			✓			National Forest or Park, or other undeveloped natural areas	Outdoor recreation	Ethnic group preferences, education, crowding, lack of transportation, ethnic workers, lack of companions who travel to natural areas, finances and perceived discrimination all influenced recreation within undeveloped natural areas.
Tinsley et al 2002	Park usage, social milieu, and psychosocial benefits of park use reported by older urban park users from four ethnic groups		✓		✓						Urban park	Park use	Significant differences were found among the ethnic groups in their use of park facilities, the social milieu within which they visit the park, and their ratings of the psychosocial benefits of park use.
Toth & Brown 1997	Racial and gender meanings of why people participate in recreational fishing			✓	✓						Mississippi delta	Fishing	Explores motivation for fishing activity in relation to ethnicity and gender.
Wesely & Gaarder 2004	The gendered "nature" of the urban outdoors - Women negotiating fear of violence			✓							Urban outdoor park	Outdoor recreation	The women derived positive benefits from exercising outdoors, but they also felt vulnerable and exposed to violence.
Williams et al 2004	Outdoor recreation participation of people with mobility disabilities: selected results of the national survey of recreation					✓					General outdoors	Outdoor recreation	Although no significant differences were found between participants with mobility disabilities and participants without disabilities for nearly half of the constraints included in the survey, the results indicated that inadequate facilities continue to prevent

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	and the environment												the inclusion of almost a third of people with mobility disabilities.
Wolch & Zhang 2004	Beach recreation, cultural diversity and attitudes toward nature				✓			✓			Beaches	Spending leisure time at the beach	Whites were more frequent beach goers, and economic class exerted an independent influence on how often people go to the beach for outdoor leisure, recreation, and interaction with nature; since Latinos and African Americans typically have more modest incomes, this explains the significant difference in beach visits.
Zhang & Gobster 1998	Leisure preferences and open space needs in an urban Chinese American community				✓						Parks	Relaxing and other activities in parks	Outdoor recreation activity was found to have strong cultural meaning and significance for many Chinese Americans living in Chicago's Chinatown.