

# Cannock Chase AONB

## Visitor Survey Analysis

Volume 1: Technical Report

October 2012



LEPUS CONSULTING

LANDSCAPE ECOLOGY, PLANNING AND URBAN SUSTAINABILITY

# Cannock Chase Area of Outstanding Natural Beauty Visitor Survey Analysis 2012

## Volume 1: Technical Report

Client:	Cannock Chase Area of Outstanding Natural Beauty Unit
Report Title:	Cannock Chase AONB Visitor Survey Analysis
Status:	Final
Number:	Volume 1 of 2: Technical Report
Filename:	LC-0001_CCAONB_VS_FINAL_VERSION_1_051012ND.docx
Date:	5 <sup>th</sup> October 2012
Author:	SJ and NH
Checked:	NJD and DKF
Approved:	NJD

# Contents

1	Introduction .....	1
2	Survey Results .....	13
3	AONB-wide Survey Analysis .....	29
4	Actual and Projected Visitor Numbers .....	39
5	Site Specific Trends .....	47
6	Comparative Analysis 2000-2011 .....	57
7	Future Visitor Surveys .....	61
8	Management Implications and Recommendations .....	65
9	Summary of Recommendations & Next Steps .....	79

## Technical Appendices (Volume 2)

<b>Appendix A</b>	Additional Visitor Data
<b>Appendix B</b>	Breakdown of Survey Data
<b>Appendix C</b>	Comparison Data
<b>Appendix D</b>	Visitor Survey Data
<b>Appendix E</b>	Survey Methodology
<b>Appendix F</b>	Questionnaire

# List of Figures

Figure 1.1	Location of the Cannock Chase AONB
Figure 1.2	The 30 survey sites
Figure 2.1	Visitors to Cannock Chase AONB by area
Figure 2.2	Frequency of visit
Figure 2.3	Duration of visit
Figure 2.4	Historic perspective
Figure 2.5	Transportation
Figure 2.6	Activities
Figure 2.7	Temporal dimension
Figure 2.8	Group demographics
Figure 2.9	Reasons for visit
Figure 2.10	Preferred locations
Figure 2.11	Alternative locations people tend to visit
Figure 2.12	Gender
Figure 2.13	Age
Figure 3.1	Distance travelled to the AONB
Figure 3.2	Postcode locations of survey respondents
Figure 3.3	Percentage of total visitors to the surveyed sites (2011)
Figure 5.1	How long does a visit last?
Figure 5.2	How long have visitors been coming to particular locations?
Figure 5.3	Transport modes used to visit four sites
Figure 5.4	Car park survey results for different transport types
Figure 5.5	Activity types recorded at different sites
Figure 5.6	Visiting times at selected sites
Figure 5.7	Group demographics for a selection of sites
Figure 5.8	Other locations cited as desirable to visit
Figure 5.9	Gender differences at four sites
Figure 5.10	Age demographics
Figure 6.1	Proportional Walking Comparison 2000 - 2011
Figure 6.2	Proportional Dog Walking Comparison 2000 – 2011
Figure 6.3	Proportional Horse Riding Comparison 2000 – 2011
Figure 6.4	Proportional Cycling Comparison 2000 – 2011
Figure 6.5	Stay-in Car/Car Park Proportional Comparison 2000 – 2011
Figure 6.6	Other Activities Proportional Comparison 2000 – 2011

## List of Tables

Table E1	Survey components used in the analysis of survey findings
Table E2	Survey components and headline figures
Table 1.1	Baseline contextual information
Table 1.2	Survey sites across the AONB
Table 2.1	Survey components
Table 4.1	Validation table
Table 4.2	Survey coverage
Table 4.3	Primary data; recorded net totals during each survey period
Table 4.4	Factorisation figures for non-surveyed time periods
Table 4.5	Gross annual estimated figures using factorisation
Table 6.1	Comparison of surveys

## List of Plates

Plate 1:	The Forestry Commission own and manage significant tracts of the AONB
Plate 2:	Marquis Drive is popular with people arriving by car
Plate 3:	Access to Seven Springs
Plate 4:	Rail Crossing / Moor's Gorse/ A460
Plate 5:	Cannock Chase Visitor Centre
Plate 6:	View from Castle Ring
Plate 7:	Notice of <i>Phytophthora</i>

# Abbreviations

<b>AONB</b>	Area of Outstanding Natural Beauty
<b>CAP</b>	Common Agricultural Policy
<b>CCAONB</b>	Cannock Chase Area of Outstanding Natural Beauty
<b>CC</b>	Cannock Chase
<b>CIL</b>	Community Infrastructure Levy
<b>CROW 2000</b>	Countryside and Rights of Way Act 2000
<b>DEFRA</b>	Department for the Environment, Food and Rural Affairs
<b>ELS</b>	Entry Level Stewardship
<b>FC</b>	Forestry Commission
<b>FE</b>	Footprint Ecology
<b>GIS</b>	Geographic Information Systems
<b>HLO</b>	Higher Level Objectives
<b>HLS</b>	Higher Level Stewardship
<b>IPF</b>	Independent Panel of Forestry
<b>JNCC</b>	Joint Nature Conservancy Committee
<b>NNR</b>	National Nature Reserve
<b>NPPF</b>	National Planning Policy Framework
<b>PPOG</b>	Planning Policy Officers' Group
<b>SAC</b>	Special Area of Conservation
<b>SCC</b>	Staffordshire County Council
<b>SMART</b>	Specific, Measurable, Achievable, Realistic and Timely
<b>SSSI</b>	Site of Special Scientific Interest

# Acknowledgements

In preparing the Visitor Survey Analysis for Cannock Chase Area of Outstanding Natural Beauty we would like to thank the client team at Cannock Chase AONB: Ruth Hytch, Emma Beaman-Green and Anne Walker for all their help throughout the course of this project.

The AONB wish to thank all the volunteers and friends of the AONB who were involved in the visitor survey for all their hard work in collecting the data.

Karen Cartright	Roger Marsh	Natalie Wise-ford	Thomas Nicholls
Roy Ingle	Susan Barbrook	Wendy Davis	Sven Sumner
Glynis Ward MBE	Fred Ward	Howard Price	Sarah Price
Carol Aldridge	Charlotte Ashford	Emma Barker	Sarah Bolas
Anne Golding	Blodwen Williams	Jane Maingay	Russell Maingay
Wendy Skelding	Joan Williams	Veolia Environmental	Roy Edwards
Bryan Sullivan	Helen Lane	Jason McClean	Peter Morris
Marc Heeley	Roland Parkes	Catherine Barratt	Pam Magnuson
Daniel Davies	Stacy Eccleston	Wendy Elsmore	Pam Ewans
Linda Barrett	Bob Barrett	Steve Archer	Naomi Perry
Dawn Clark	Samantha Coles	Amy Crockett	Michael Davies
Ricky Yates	Roger Smith	Pete Shiner	Martin Taylor
Mana Magat	Daisy Marsh	Jannie Mills	Lisa Myatt
Jim Andrews	Olive Harvey	Joan Williams	Karen Ward
Beverley Bolton	Sharon Botfield	Anita Bramwell	Julie Campbell
Alessandro Pignatti	Paul Clenton	Nigel Trow	John Gardiner
Bob Collett	Rosemary Degg	Joyce Bearne	Ian Bearne
Rachel Partridge	Ann-Marie Perkins	Stephanie Priest	Graham Pugh
David Griffiths	Steven Archer	Alastair Bentley	Graham Barratt
Margaret Deakin	Colin Rich	Jo Bevan	Eddie Turvey
Kerry France	Stacey Hamspon	Jennie Hill	Clare Kidd
Jenny Smith	Oliver James Dove	Paul Rochfort	Becky Cartright
Maggie Walker	Judy Ganecki	Diane Nelson	Anne Andrews
Valerie Edwards	Mark Dalgarno	Sue Dalgarno	Angie Hart
Holly Smith	Jill Spare	Maureen Willets	Alan Willets
Lee Slater	Sarah Clifton		







# Executive Summary

## E1 Introduction

- E1.1 To help understand the patterns of recreational use at Cannock Chase Area of Outstanding Natural Beauty, the AONB Management team instructed Lepus Consulting to undertake an analysis of the visitor survey data. Lepus has teamed up with Steve Jenkinson to prepare the report.
- E1.2 Staffordshire University undertook the first visitor survey of Cannock Chase AONB in the year 2000. It investigated who visits the Chase and why. It also explored economic aspects associated with the Chase as a visitor destination.
- E1.3 In 2010-2011 a new visitor survey was undertaken. This provided a comprehensive review of recreational use patterns across Cannock Chase and informed management planning of the AONB.
- E1.4 The visitor survey data for 2010-2011 was collected over a twelve month period (September 2010 to August 2011) by more than one hundred volunteers. The twelve month period was split seasonally with surveys undertaken at periodic intervals across 30 sites. Surveying included tally counts, car park surveys and individual interview style questionnaires to members of the public. The data was compiled and transcribed into electronic datasheets for ease of analysis. The total number of individual people observed during the survey was approximately 28,000. Of these, 4,809 were interviewed face to face by the survey team.
- E1.5 Data analysis was undertaken by Lepus Consulting on thirteen pre-agreed survey components ranging from distance travelled, type of activities and general demographic information (see **Table E1**). The data has been presented in an array of formats including tabulated data and a variety of graphical representations. Where possible a detailed comparison was undertaken between the Staffordshire 2000 and the newly collected datasets in an attempt to establish trends and changes in patterns of use of the intervening ten year period.
- E1.6 Interpretation of the survey findings also prompted a review of existing visitor and recreational management across the AONB. This identified a range of strategic issues that need to be explored and addressed if the survey findings are to be of practical use. These issues include AONB action planning, support and integrated management by partners, the appropriateness of the Country Park designation and potential changes in the public forest estate.
- E1.7 The appraisal of visitor survey data indicated net figures of 1.2M visitors. When scaled up to provide a gross figure for the year the value rose to 2.3M. This is an estimate and should only be used as an order of magnitude, rather than an accurate prediction of visitor numbers such that might be calculated from purely empirical values.

- E1.8 The scale of the survey was much more comprehensive than the 2000 survey and the hard work of the surveyors must be acknowledged as providing a useful basis for understanding patterns of open air recreation at the AONB.

**Table E1:** Survey components used in the analysis of survey findings

Survey Components	AONB Wide	Site Specific
1: Determination of the Spatial Catchment	✓	✓
2: Frequency of Visit	✓	N/A
3: Duration of Visit	✓	✓
4: Historic Perspective	✓	N/A
5: Transportation	✓	✓
6: Activities	✓	✓
7: Temporal Dimension	✓	✓
8: Group Demographics	✓	✓
9: Reasons for Visit	✓	✓
10: Preferred Locations	✓	N/A
11: Alternative Locations	✓	N/A
12: Gender	✓	✓
13: Age	✓	✓

## E2 Findings

- E2.1 Table E2 summarises findings associated with each of the thirteen survey components. Each component and their corresponding findings are presented in salient terms. Full details of the analysis are available in **Chapters 3 to 5**. This includes the full range of graphical and statistical interpretation. A number of the findings include estimates or have been rounded up where appropriate.
- E2.2 The analysis has been able to draw on comprehensive data and information collected over a period of twelve months. The volume and depth of information has provided a strong empirical platform on which to prepare the analysis. During the process of analysis if data was missing or only partially complete the report has cited this fact. All limitations of the analysis process have been highlighted where relevant.

**Table E2:** Survey components and headline figures

Survey Component	Findings
<b>1: Determination of the Spatial Catchment</b>	<ul style="list-style-type: none"> <li>Maps were prepared to illustrate the catchment area of the AONB. Regular visits were identified from all directions around the immediate vicinity of the Chase's boundaries. Beyond this zone, it is thought that the visitor patterns reflect the fact that the north (e.g. Peak District) offers more open air recreation alternatives compared to the south of the Chase.</li> </ul>
<b>2: Frequency of Visit</b>	<ul style="list-style-type: none"> <li>52% of visits are on a weekly basis; and</li> <li>71% as/or more frequently than monthly.</li> </ul>
<b>3: Duration of Visit</b>	<ul style="list-style-type: none"> <li>85% (c.4000 visits) were &lt;3 hours in duration;</li> <li>32% (1534) were 1-2 hours;</li> <li>29% (1397) were up to an hour; and</li> <li>24% (1119) were 2-3 hours.</li> </ul>
<b>4: Historic Perspective</b>	<ul style="list-style-type: none"> <li>Of the ~4800 people surveyed, 76% (3600) had visited the AONB for &gt;5 years.</li> </ul>
<b>5: Transportation</b>	<ul style="list-style-type: none"> <li>Overwhelming car use – 77% of interviewees came by car</li> <li>Public Transport accounts for 1%</li> </ul>
<b>6: Activities</b>	<ul style="list-style-type: none"> <li>Walking – 34% (9,395 of 28,101) of all observed visitors</li> <li>Dog Walking – 26%</li> <li>Cycling – 24%</li> <li>Other – 10%</li> <li>Horse Riding – 2%</li> <li>Stay in Car/Car Park – 4%</li> </ul>
<b>7: Temporal Dimension</b>	<ul style="list-style-type: none"> <li>The majority 58% (2,800 of 4,809) of interviewees do not visit at any regular time.</li> </ul>
<b>8: Group Demographics</b>	<ul style="list-style-type: none"> <li>Interview results showed that the dominant visitor demographic is "with family" 33%, followed by "with my dog" 24%, "with friends" 19%, "alone" 14%, "with family and friends" 8% and "with my horse" and "organised party" with 1%.</li> </ul>
<b>9: Reasons for Visit</b>	<p>People have a range of reasons for visiting including:</p> <ul style="list-style-type: none"> <li>Attractive scenery (14%);</li> </ul>

	<ul style="list-style-type: none"> <li>• Close to Home (12%);</li> <li>• Good for Walking (12%); and</li> <li>• Walking with dogs (9%).</li> </ul>	
<b>10: Preferred Locations</b>	<p>Site popularity by total percentage of visitors was as follows:</p> <ul style="list-style-type: none"> <li>• Birches Valley – 15.3%;</li> <li>• Marquis Drive – 11.1%;</li> <li>• Whitehouse Car Park – 6.6%;</li> <li>• Moor’s Gorse – 6.5%;</li> <li>• Seven Springs – 5.5%;</li> <li>• Brocton Coppice Car Park – 5.1%;</li> <li>• Aspens Car Park – 4.7%;</li> <li>• Springslade Lodge – 4.6%;</li> <li>• Milford Common – 4.6%;</li> <li>• Fair Oak Pools – 4.4%;</li> <li>• Castle Ring – 4.3%;</li> <li>• Punchbowl Car Park – 2.8%;</li> <li>• Kingsley Wood Road – 2.5%;</li> <li>• Toc H Trail Car Park – 2.4%;</li> <li>• Brook Lane Corner – 2.1%;</li> </ul>	<ul style="list-style-type: none"> <li>• Stepping Stones – 1.7%;</li> <li>• Abraham’s Valley – 1.6%;</li> <li>• Oldacre Lane 1.5%;</li> <li>• Gentleshaw Common – 1.4%;</li> <li>• Sherbrook Valley – 1.4%;</li> <li>• West Cannock Farm – 1.3%;</li> <li>• Chase Vista Car Park – 1.1%;</li> <li>• Hazelslade Nature Reserve – 1.1%;</li> <li>• The Cutting - 1.1%;</li> <li>• Shoal Hill Cocksparrow Lane – 1.1%;</li> <li>• Glacial Boulder – 1.0%;</li> <li>• Chase Road Corner 0.9%;</li> <li>• Commonwealth Cemetery – 0.9%;</li> <li>• Duffields – 0.8%; and</li> <li>• Brindley Bottom Car Park – 0.6%.</li> </ul>
<b>11: Alternative Locations</b>	<p>A total of 83 alternative sites were identified by the questionnaire. The most popular include:</p> <ul style="list-style-type: none"> <li>• Castle Ring – 354;</li> <li>• Sherbrook Valley – 322;</li> <li>• Brocton Coppice Area – 316; and</li> <li>• Birches Valley – 289.</li> </ul>	
<b>12: Gender</b>	<ul style="list-style-type: none"> <li>• A total of 2649 men and 1939 women were surveyed.</li> </ul>	
<b>13: Age</b>	<p>The dominant age demographics included:</p> <ul style="list-style-type: none"> <li>• 41-60 – 48% (2262);</li> <li>• 18-40 – 36% (1693); and</li> <li>• Over 65 – 16% (730).</li> </ul>	

## E3 Recommendations

E3.1 The report concludes with twelve recommendations and considerations in relation to the management of open air recreation at the AONB:



1. **Future survey work:** If future visitor surveys are to provide greater insight into visitor behaviour, recreational impacts and future changes in management, additional measures need to be included in survey design. Such measures should be capable of integration with other forms of data collection, such as landscape, habitat and wildlife surveys.
2. **SMART objectives:** The next AONB management plan should identify SMART and prioritised objectives and targets. These must be endorsed and supported by the responsible partners. Progress against these targets should be measured. The management planning design must include the ability to adapt to monitoring triggers (see section 10.3).
3. **Monitoring metrics:** Develop enhancing monitoring metrics to inform (at least) annual measurement of progress towards all targets. Introduce an active and auditable review process to respond to monitoring triggers, and make changes/alterations, in light of any under or over performance.
4. **Management mechanisms:** A review should be undertaken to confirm that the most effective management structures are being used across all areas of activity. The AONB Unit should have input into all management plans and policy documents prepared by partners to facilitate integration and help deliver value for money.
5. **Maximising partnership outcomes:** The AONB management plan should consider prioritising actions where public ownership and effective governance and monitoring can ensure the highest level of cooperation and service delivery towards shared goals, particular where these can deliver some quick wins on important issues in the next 5 years.
6. **Visitor management plan:** Management initiatives seeking to guide and control access throughout the Chase must be introduced gradually over several years. They should be informed by a strategic overview of the access resource and consider the relationship with any strategic nearby access destinations such as Chasewater Innovation Centre and The National Forest.
7. **Country Park Review:** The country park designation should be reviewed in light of the other designations (including the AONB and SAC) and competing priorities to be found at this central site in the heart of the AONB.
8. **Integrated access plan:** An integrated access management plan should be developed to ensure a consistent approach to managing access within the AONB; this should be closely integrated with the car parking and traffic management strategies; ideally they should be produced as one document.
9. **Car Park Strategy:** A car parking strategy must be developed, adopted and applied as the highest priority, within the next two years. Rather than a standalone document, it needs to be very tightly integrated with wider access and visitor management policies, given both its potential contentiousness and ability to significantly influence visitor patterns.
10. **Kingsley Wood Road:** The management of these two routes, and car parks accessed there from, should be defined and agreed as a matter of priority, albeit as a part of the overall access management strategy. Restricted motorised access should be considered.

11. **SAC visitor management:** As part of the strategic access review and preparation of the integrated access management plan, special attention must be paid towards the international nature conservation designation (Cannock Chase SAC). This should consider awareness raising initiatives.

12. The **Public Forest Estate:** Management discussions and decisions need to be flexible enough to accommodate the potential for significant changes in the extent and operation of the public forest estate.

# 1 Introduction

## Chapter Summary

This chapter provides an introduction to the survey and how the analysis has been prepared. It sets the scene in terms of background factors such as green infrastructure, designations at the AONB and other relevant research.

## 1.1 Background

- 1.1.1 Cannock Chase Area of Outstanding Natural Beauty (AONB) is the smallest mainland AONB in the UK and covers 68km<sup>2</sup>. It is a varied landscape of mixed land use including agricultural, recreational and residential, with a strong industrial history. The vision for the 2009-2014 AONB Management Plan states that *"By 2029, Cannock Chase Area of Outstanding Natural Beauty will be an enhanced area of national and international importance in terms of landscape beauty, wildlife and cultural heritage, centred on its heaths and woods. Improved management of both habitat and public access will bring conservation and enhancement of biodiversity and geodiversity and contribute towards a better quality of life both for local communities and visitors"*.



**Plate 1:** The Forestry Commission own and manage significant tracts of the AONB



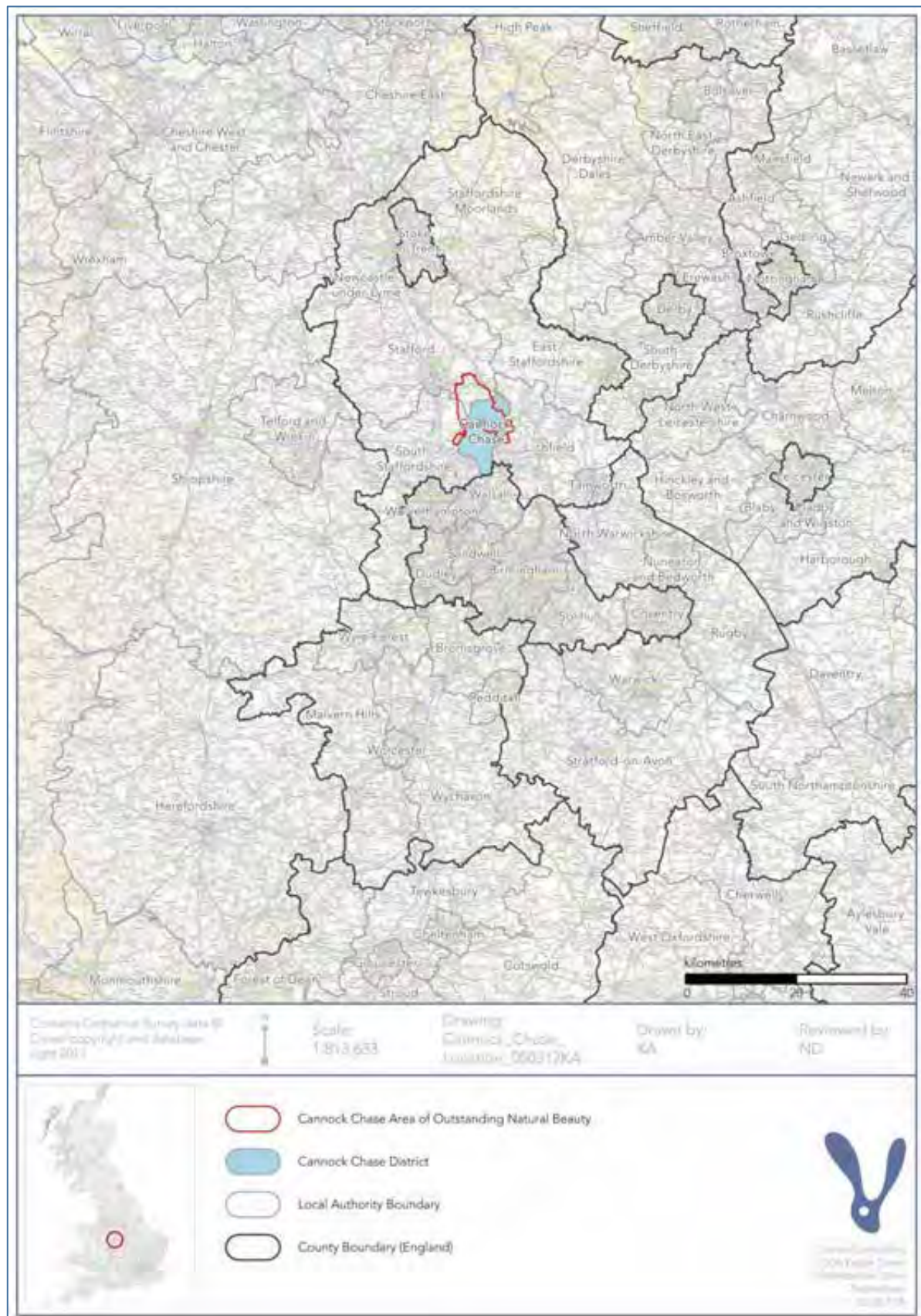


Figure 1.1: Location of Cannock Chase Area of Outstanding Natural Beauty



## 1.2 Legislative Drivers

- 1.2.1 An Area of Outstanding Natural Beauty is a legal designation under the provisions of the 1949 National Parks and Access to the Countryside Act. The Act secures their permanent protection against development that would damage their special qualities, thus conserving a number of the finest landscapes in England for the nation's benefit.
- 1.2.2 The Countryside and Rights of Way Act 2000 (CROW) Part IV describes AONB designation as when "an area which is in England but not in a National Park is **of such outstanding natural beauty** that it... should [be designated] for **the purpose of conserving and enhancing the natural beauty of the area**".
- 1.2.3 AONBs are a landscape designation, established for the purpose of conserving and enhancing their natural beauty (which includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries). The overall purpose of AONBs is complemented by three aims:
- The primary purpose of AONB designation is to conserve natural beauty;
  - Recreation will not be an objective of designation but AONBs should be used to meet the demands for recreation as far as this is consistent with the conservation of natural beauty and the needs of agriculture, forestry and other users;
  - In pursuing the primary objective of designation, account should be taken of the need to safeguard agriculture, forestry, other rural industries as well as the economic and social needs of local communities.

## 1.3 Critical summary of previously published material

- 1.3.1 Various reports have been prepared which are worth noting since they provide contextual information to this project. **Table 1.1** provides a summary of the main relevant publications.

**Table 1.1:** Baseline contextual information

Cannock Chase AONB Visitor Survey (2000) by Staffordshire University
This report is over ten years old and much of the information and data produced may be obsolete due to changing usage patterns and trends. The report is also heavily focused upon visitor data, patterns of visits, characteristics of visits, economic value etc. There is relatively limited focus upon management issues and problems.
State of the AONB Report (2010) by Red Kite Environment
Provides a picture of the condition of Cannock Chase AONB during 2010, and is itself based upon the preceding State of the AONB report 2004. The report identifies ten special qualities of the AONB and provides a comment on its nature, a measure of condition and a set of indicators and actions required to maintain or improve its condition. An additional four key activities and pressures are identified which impact upon the mentioned special qualities. The report intentionally omitted an examination of the way the AONB operated. For example, in terms of its management, support by partners, funding, activities and administration.

### Evidence Base relating to Cannock Chase SAC and the Appropriate Assessment of Local Authority Core Strategies (2009) Cannock Chase Visitor Impact Mitigation Strategy (2010) by Footprint Ecology

The two reports by Footprint Ecology are not specifically focused on the AONB as a whole; rather their focus is aimed towards the SAC. While much can be inferred from these reports about the wider AONB, it is limited and impacts on this larger scale may differ to those of the SAC.

### Cannock Chase AONB Management Plan 2009-2014 (2009) by Cannock Chase AONB Unit

The management plan provides a wealth of information regarding the Vision for the AONB, its setting in the greater environment and the challenges and issues for managing its diverse landscape areas. The report also describes the future strategies for the AONB and how to deliver these objectives.

1.3.2 The AONB Management Plan includes seven High Level Options (HLO). These include:

- HLO 1: Develop the sense of Cannock Chase AONB as a special place for everyone who lives in, works within or visits the area.
- HLO 2: Conserve and enhance the distinctive and nationally important landscapes of Cannock Chase AONB and the locally, nationally and internationally important biodiversity it supports.
- HLO 3: Develop a place valued and understood by everyone who comes into contact with Cannock Chase AONB, so that they can contribute positively to the shaping of its future.
- HLO 4: Ensure a safe, clean and tranquil environment that can contribute to a high and sustainable quality of life.
- HLO 5: Support a working landscape where prosperity and opportunity increase, natural life flourishes and pressure upon natural resources is diminished.
- HLO 6: Create a place of enjoyment for everyone, providing opportunities for quiet recreation that contributes positively to physical and mental wellbeing.
- HLO 7: Maintain and develop a successful partnership, working together to manage Cannock Chase AONB effectively.

## 1.4 Key issues

1.4.1 The AONB management plan identifies 48 key issues affecting the Chase. A number of these issues have been categorised as “super-issues” which need to be considered in more detail in regards to the Visitor Survey 2010-2011.

## 1.5 Cannock Chase and its role in the wider geographic matrix of greenspace

- 1.5.1 This issue is being investigated by the Planning Policy Officers' Group (PPOG). Staffordshire County Council is preparing new research to identify the use of nearby strategic sites to expand the wider green infrastructure network within the area. Information about surrounding greenspaces, that might provide alternative visitor destinations or recreation opportunities, should be considered as part of any analysis of visitor numbers and subsequent management recommendations for the AONB.

## 1.6 Cannock Chase Special Area of Conservation

- 1.6.1 The Cannock Chase SAC is an important area of lowland and upland heathland. JNCC (2011) record that much of the Cannock Chase SAC falls within a popular and well-used Country Park. Visitor pressures are considered to include dog walking, horse riding, mountain biking and off-track activities such as orienteering. All activities cause disturbance and result in erosion, new track creation and vegetation damage.
- 1.6.2 Bracken invasion is significant, but is being controlled. Birch and pine scrub, much of the latter from surrounding commercial plantations, is continually invading the site and has to be controlled. High visitor usage and the fact that a significant proportion of the site is Common Land, requiring Secretary of State approval before fencing can take place, means that the reintroduction of sustainable management in the form of livestock grazing has many problems.
- 1.6.3 Cannock Chase overlies coal measures which have been deep-mined. Mining fissures continue to appear across the site even though mining has ceased and this is thought to detrimentally affect site hydrology. Furthermore the underlying Sherwood Sandstone is a major aquifer with water abstracted for public and industrial uses. The effects of this on the wetland features of the Chase are not fully understood.
- 1.6.4 The most recent condition assessment (Natural England, 2012) of the Cannock Chase Site of Special Scientific Interest (SSSI), which is largely coincident with the SAC designation, indicated the majority (91%) of SSSI units are in 'unfavourable recovering' condition. One unit (2%) is classified as 'unfavourable, no change'. The remaining 7% are 'favourable'.
- 1.6.5 Forestry Commission (FC) land comprises approximately 2400 hectares within the wider AONB; it has been identified as a key area for accommodating potential future increases in visitor numbers. The Commission and its woodlands could play a role in providing alternative visitor destinations to the SAC, if required. This may be the case if adverse visitor pressure was identified as a negative factor at the SAC. Staffordshire County Council is leading a partnership initiative to look into this issue.
- 1.6.6 The recent change in government has radically altered the political and practical landscape in relation to the public forest estate, in particular the proposed legislative change that would allow the Government to dispose of, in theory, all of the FC's land.

- 1.6.7 Recent information released by DEFRA indicate that “woodlands will not simply be sold off to the highest bidder” and recognises the no single model is appropriate, resulting in a mixed approach to deliver benefit to both users and taxpayers.
- 1.6.8 Future sales of current FC land could address the above issues by ensuring dedicated access rights through agreed binding pledges which requires that the new owner does, or does not, do certain things.
- 1.6.9 If these measures were made to be robust, they may reduce the commercial sale value of the land. The approach might appear less attractive to a government who is seeking the highest capital returns from the sales.
- 1.6.10 In theory any FC land sold at Cannock Chase could be purchased for the explicit purpose of acting as a mitigation provision by developers or partners in the AONB. The Independent Panel on Forestry published their Final Report (July, 2012) on the re-valuation of forests and woods for the benefits they provide. The report states that the public forest estate is a national asset, which should remain in public ownership. The Panel recommends an evolution of the Forestry Commission. The new organisations should have greater financial freedoms and investment to generate even greater benefits for people, nature and the economy.

## 1.7 Comparative impact and management of visitors and recreationalists at the AONB

- 1.7.1 Much is made in specialist reports and other documentation of the need to manage visitors to conserve and enhance the AONB’s special qualities, as well as to meet wider national and European responsibilities in relation to the SAC. While there are noticeable evidential gaps, the principle that visitors may need to be managed to deliver statutory requirements and plans is accepted.
- 1.7.2 In reviewing the available information, irrespective of whatever visitor management approaches are adopted, we suggest the apparent focus on the detailed principles of visitor or habitat management may well be diverting attention away from more fundamental challenges of effectively delivering whatever management approaches are selected. Recent significant changes in wider political, social and economic context could undermine, in at least the short to medium term, key principles on which the SAC mitigation strategy or any other management policies and plans may be built, and the capacity to deliver many substantive aspects of the AONB management plan.
- 1.7.3 While there is a high level of commitment and support for the AONB from individual officers in the AONB team and across partner organisations, this support does not appear to have always been reflected in the delivery of several significant agreed actions in AONB management plans. The current economic and political climate appears likely to exacerbate this as cuts to budgets are felt throughout the public sector.



## 1.8 Local plans and the Community Infrastructure Levy

- 1.8.1 The numbers and levels of planned growth are presently in a state of flux with some authorities changing the planned levels of growth. All Local Plans (LP) will lead to an increased population around Cannock Chase AONB. The need to manage this is imperative, especially the need to understand potential pressures on the SAC, as management measures are likely to ensure favourable conservation status. These are important to retain the ability to provide open-air recreational opportunities for the public.
- 1.8.2 Funding structures that may be associated with new development such as Community Infrastructure Levy (CIL) schedules need to be carefully thought out and prepared so that any contributions to Cannock Chase, or local green space and environmental management in general, are key features.

## 1.9 Structural governance and operating principles

- 1.9.1 While the AONB team has a track record in delivering projects primarily by itself, much of the management plan, and the proposed mitigation strategy (2010), are dependent on partnerships. This establishes and maintains specific projects. The capacity of the ten key partners to deliver current AONB management objectives either alone or together with others is not properly understood.
- 1.9.2 A review of management plan progress was undertaken in 2010 by Red Kite. It revealed that agreed actions from the partner-endorsed AONB management plan are delivered with differing rates of progress. In reality, such issues are pivotal to the successful delivery of the plan. The State of the AONB report (Red Kite, 2010) assessed in detail four of the five themes from the AONB management plan, the fifth “support” theme (HLO7) relating to funding, partnership and governance issues was not explored.
- 1.9.3 It is important to stress that the aim in highlighting these issues is not to apportion blame with hindsight, but to identify the relevant obstacles to future progress and then identify if, and how, changes can be made to improve delivery. Alternatively, to explore a restricted range of achievable actions and targets might be appropriate and yield better results. As with the FC, recent changes in the political and economic context heighten the potential to significantly limit if, and how, the management and mitigation plans can be delivered. In particular due to:
- Fundamental changes in the staffing, funding and extent of influence of Natural England;
  - Budgetary reductions in the capacity of Staffordshire County Council to deliver agreed outcomes, especially as it is both a major landowner and holds responsibilities for public rights of way, transport infrastructure, and biodiversity;
  - The current review of the EU Common Agricultural Policy (CAP) and consequential changes in funding and targeting to agri-environment schemes, especially in regards to the extensive Entry Level Stewardships of which 60% of the England’s agricultural land is within this scheme. SCC signed up to the higher level stewardships (HLS) scheme in 2008 (Natural England, 2008) and

aims to restore the valuable areas of heathland and other important BAP habitats present across the AONB; and

- Proposed changes in the statutory development control system, in particular the potential relaxation of permitted development limits and other development restrictions, could adversely affect the AONB management plan. The recently published National Planning Policy Framework (2012) sets out a presumption in favour of sustainable development. The NPPF replaces a number of planning guidance documents (PPS's and PPG's). The NPPF still requires a balanced approach in-line with the presumption in favour of sustainable development, including protection for AONBs and nature conservation designations including the SAC.



*Plate 2: Marquis Drive is popular with people arriving by car*

## 1.10 Survey methodology

- 1.10.1 Visitor surveying was organised by the CCAONB management team and undertaken by the team and volunteers from the 15<sup>th</sup> October 2010 to the 31<sup>st</sup> August 2011. A total of 4,809 surveys were conducted throughout this period.
- 1.10.2 The AONB Unit produced a guide to instruct volunteers in the survey methodology. The "AONB Visitor Survey Work – Notes for Volunteers Conducting Work" (see **Appendix E**).

## 1.11 Survey sites

1.11.1 A total of 30 sites were surveyed across the AONB and are listed in **Table 1.2**. The sites cover a wide geographic catchment and include areas designated inside the SAC and the main visitor centres within the AONB boundary.

**Table 1.2:** Survey sites across the AONB

Site Number	Site Name	Visitor Survey 2010/11	Visitor Survey 2000
1	Marquis Drive	✓	✓
2	Birches Valley	✓	✓
3	Milford Common	✓	✓
4	Castle Ring	✓	✓
5	Seven Springs	✓	✓
6	Commonwealth Cemeteries	✓	✓
7	Punchbowl Car Park	✓	✓
8	Stepping Stones	✗	✓
9	Sherbrook Valley	✗	✓
10	Fair Oak Pools	✗	✓
11	Whitehouse Car Park	✓	✓
12	Chase Road Corner	✓	✓
13	Hazelslade Nature Reserve	✗	✓
14	Aspens Car Park	✓	✓
15	Brook Lane Corner	✗	✓
16	The Cutting	✗	✓
17	Brocton Coppice Car Park	✗	✓
18	Chase Vista Car Park	✗	✓
19	Glacial Boulder	✓	✓
20	Spring Slade Lodge	✗	✓
21	Oldacre Lane	✗	✓
22	Brindley Bottom Car Park	✗	✓
23	Toc H Trail Car Park	✗	✓
24	West Cannock Farm	✗	✓
25	Duffields	✗	✓
26	Kingsley Wood Road	✗	✓
27	Abraham's Valley	✗	✓
28	Moor's Gorse	✗	✓
29	Gentleshaw Common	✗	✓
30	Shoal Hill Cocksparrow Lane	✗	✓



*Plate 3: Access to Seven Springs*

## 1.12 Survey inconsistency

- 1.12.1 On occasion there would be no data collected, on other occasions data was collected only during the week and not the weekend. Some of this has been identified to be a result of the survey methodology which specifies that at certain survey periods (Christmas and Easter) the volunteer surveyor only has to undertake surveying on a weekday or weekend, not both. For example it is possible that the gaps in the data could be down to the days upon which public holidays land.
- 1.12.2 The visitor survey was reliant upon volunteers for data collection. As volunteers and not paid surveyors, they were taking part in the visitor survey through their own personal interests. Therefore in the case of illness or personal issues preventing the volunteer from surveying, organising cover may not always have been possible.

## 1.13 Approach to the analysis

- 1.13.1 The analysis of data works with two key datasets: (i) questionnaire data, and (ii) tally data. The first of these concerns interviews that were prepared face to face with visitors recorded at Cannock Chase. Throughout this report, information from this dataset is referred to as concerning "respondents". The tally data recorded visitors observed. The total number of people seen during the survey period was 28,336 visitors. This number includes the total number of interviewees (4,809). Details of the questionnaire is presented in **Appendix F**.



- 1.13.2 A third, smaller, dataset consisted of car parking information. For details on this and further information about car parking see **section 5.5**.
- 1.13.3 Before conducting the analysis of these datasets, in November 2011, site visits to all 30 sites were made by the access specialist. The purpose of the visits was to qualitatively assess visitor usage and make observations on management approaches. As part of a previous contract with the AONB in May 2009, the same specialist had visited a much larger proportion of the AONB, including car parks, key access points, visitor facilities and information points.
- 1.13.4 While more extensive fieldwork could better inform certain aspects of the analysis, the broad principles of (i) visitor management, and (ii) the future management needs of the AONB, can be established.
- 1.14 Management documentation and consultation**
- 1.14.1 The research team also obtained and assessed management reports and other documentation held or readily accessible to the AONB team. Additional reports and other documentation that came to light as part of the project were also assessed; see references for full details.
- 1.14.2 This contract did not seek to identify and assess all relevant documentation or widely elicit input from partners due this project being primarily focussed on the survey data, and the considerable number of partners, policies and plans of relevance to the AONB.
- 1.14.3 Nonetheless, the information examined does give sufficient strategic insight to identify future management needs and issues at this strategic level.

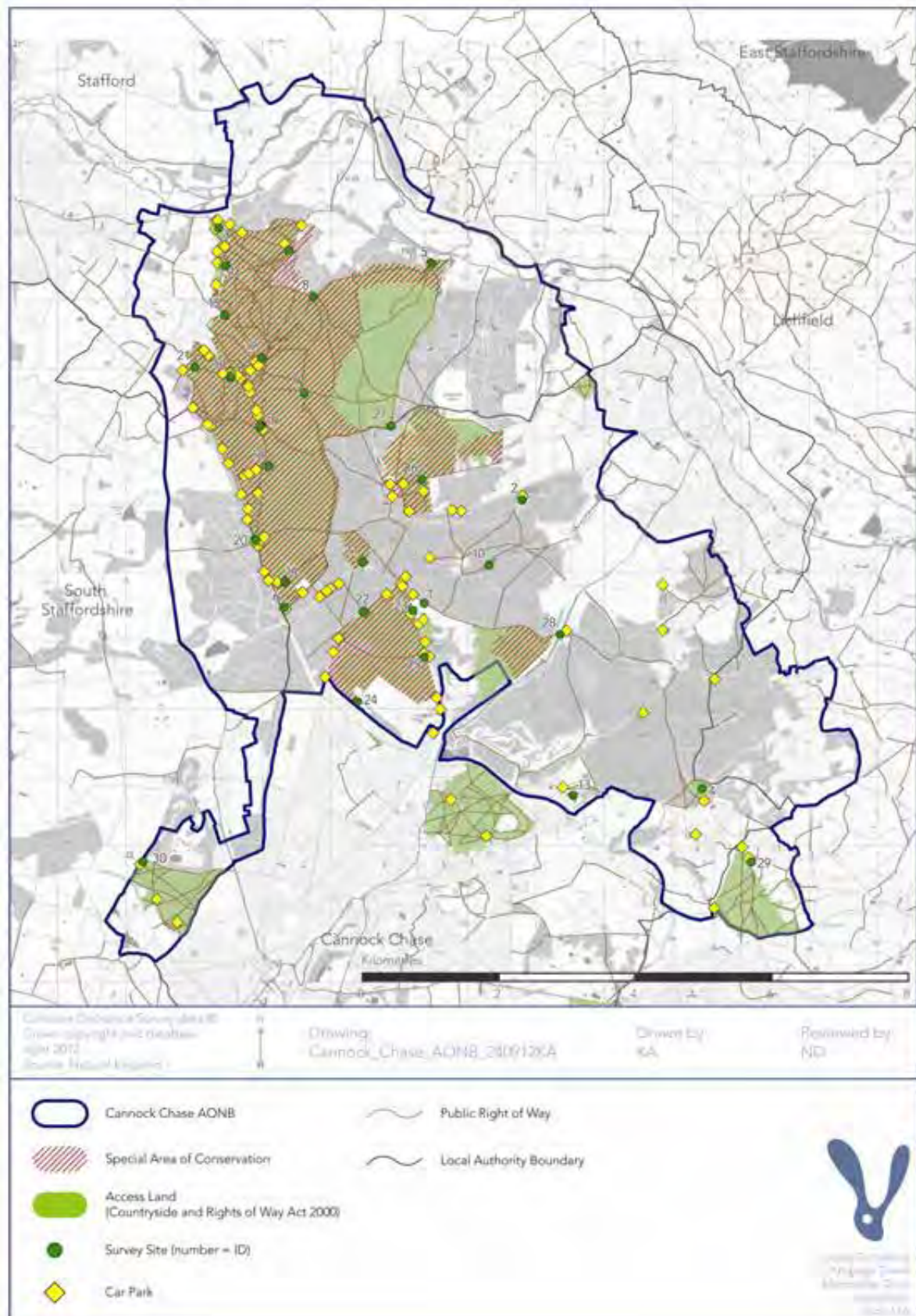


Figure 1.2: The 30 survey site locations

## 2 Survey Results

### Chapter Summary

This chapter presents the results of the survey in a range of maps, graphs and other statistical formats.

### 2.1 Results of the survey

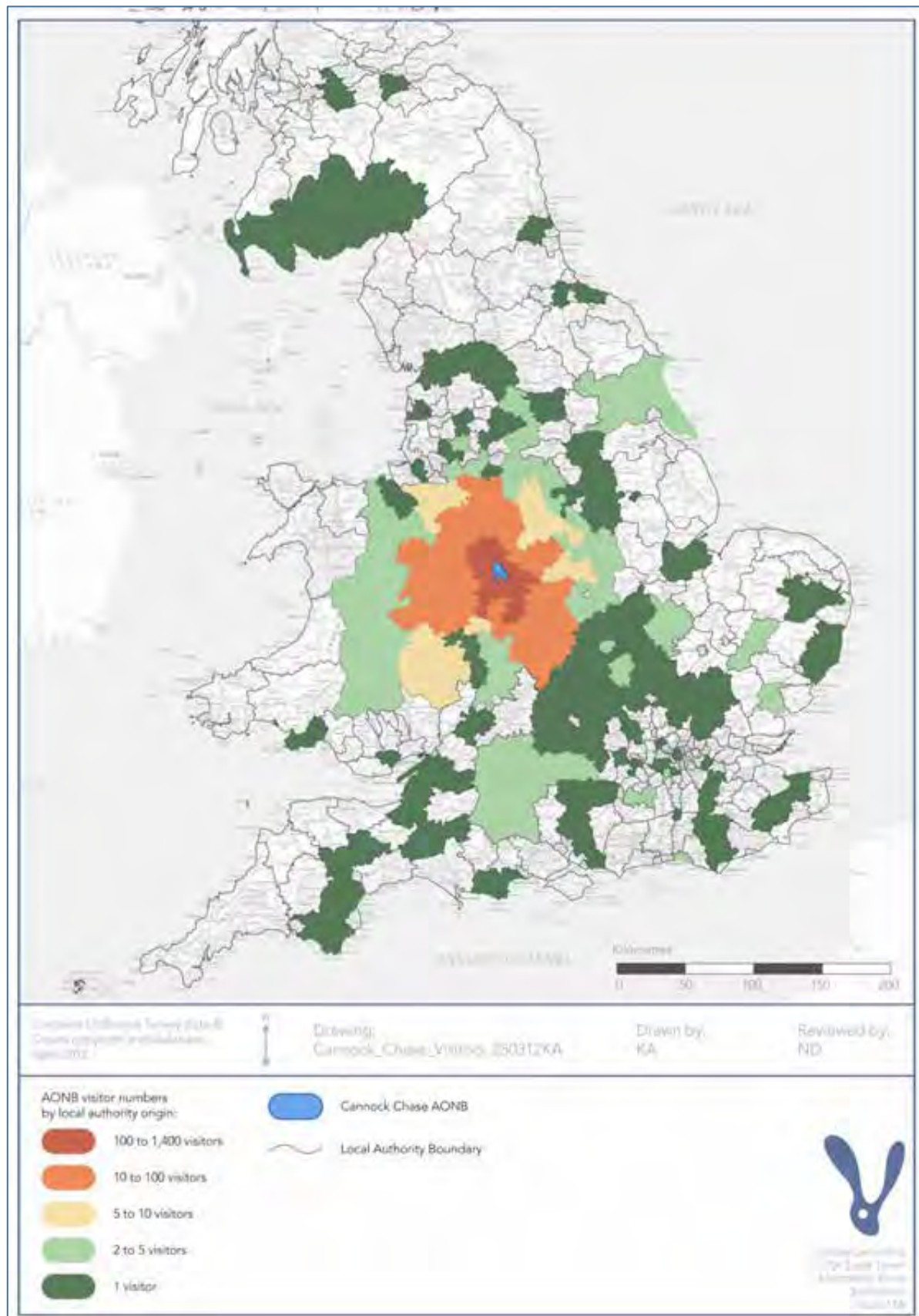
- 2.1.1 A total of 4,809 surveys were conducted by volunteers from the 15<sup>th</sup> October 2010 until the 31<sup>st</sup> August 2011.
- 2.1.2 For ease of interpretation, the survey results are presented according to thirteen survey components. These relate directly to the questions on the questionnaire as used by the AONB volunteers during the visitor survey (see **Appendix F**).
- 2.1.3 The Survey Components are intended to influence the investigation and analysis of the data produced by the visitor survey. All survey components were analysed at an AONB-wide level to provide a strategic view of the effects of recreation across Cannock Chase. Where possible the components were evaluated at a site specific level for detailed analysis of site specific trends and to facilitate site-by-site comparison.

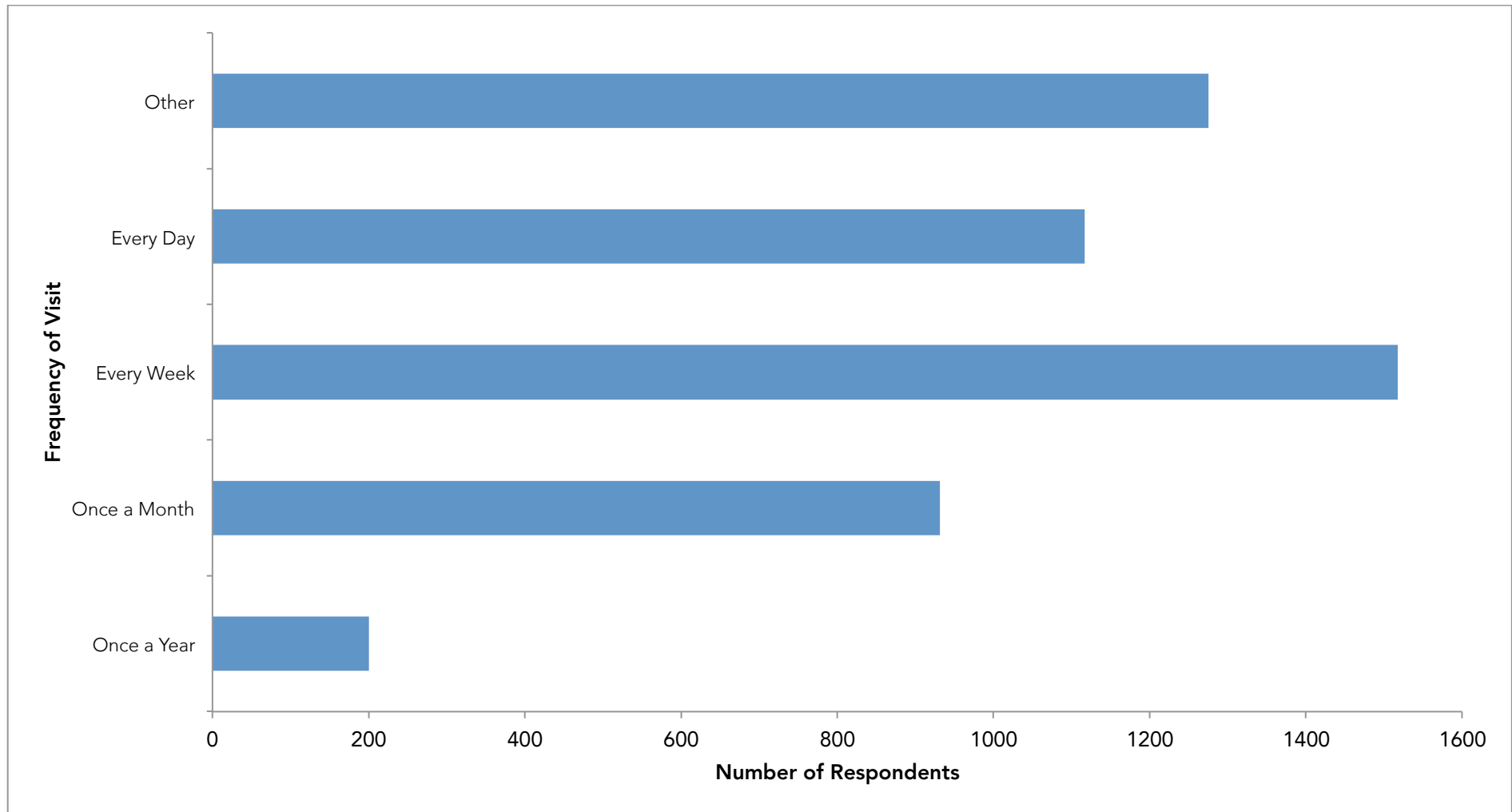
**Table 2.1: Survey components**

Survey components	AONB Wide	Site Specific
<b>1: Determination of the spatial catchment</b> Analysis of this component has used postcode data to determine where visitors travel from.	✓	✓
<b>2: Frequency of Visit</b> Analysis of this component has explored the number of times that visitors choose to come to the AONB. The graph illustrates findings according to the survey form time periods.  <i>(NOTE – Site Specific Analysis maybe misleading since the questions did not specific a locational aspect; the question seemingly applies only at an AONB-wide level).</i>	✓	N/A
<b>3: Duration of Visit</b> Analysis of this component has considered the length of time that visitors spend at a particular location. The graph illustrates findings according to the survey form duration intervals time periods.	✓	✓
<b>4: Historic Perspective</b> Analysis of this component explores the length of time visitors have been coming to the AONB. The graph illustrates findings according to the survey form criteria.	✓	N/A
<b>5: Transportation</b> Analysis of this component looked at the methods of transportation used to visit the AONB. This included motorised and non-motorised means of access and included the data from both the individual questionnaires and	✓	✓

the car park survey data.		
<b>6: Activities</b> Analysis of this component explored the different activities undertaken by visitors to the AONB.	✓	✓
<b>7: Temporal Dimension</b> Temporal dimension refers to time of day during which visits take place. Analysis of this component presents patterns according to what time of day people visit.	✓	✓
<b>8: Group Demographics</b> Analysis of this component explored demographics of the visitor groups.	✓	✓
<b>9: Reasons for Visit</b> There are several different reasons for visiting the AONB. The survey form (questionnaire) categories have been used to help understand the reason why people visit the AONB.	✓	✓
<b>10: Preferred Locations</b> Visitors were asked if they had a preference for particular locations in the AONB. This component looks at where else visitors tend to go to.	✓	N/A
<b>11: Alternative Locations</b> This component reviewed other locations that visitors expressed a secondary interest in.	✓	N/A
<b>12: Gender</b> This component examined the gender profiles of visitors.	✓	✓
<b>13: Age</b> This component explored the age profiles of visitors.	✓	✓







*Figure 2.2: Frequency of visit*



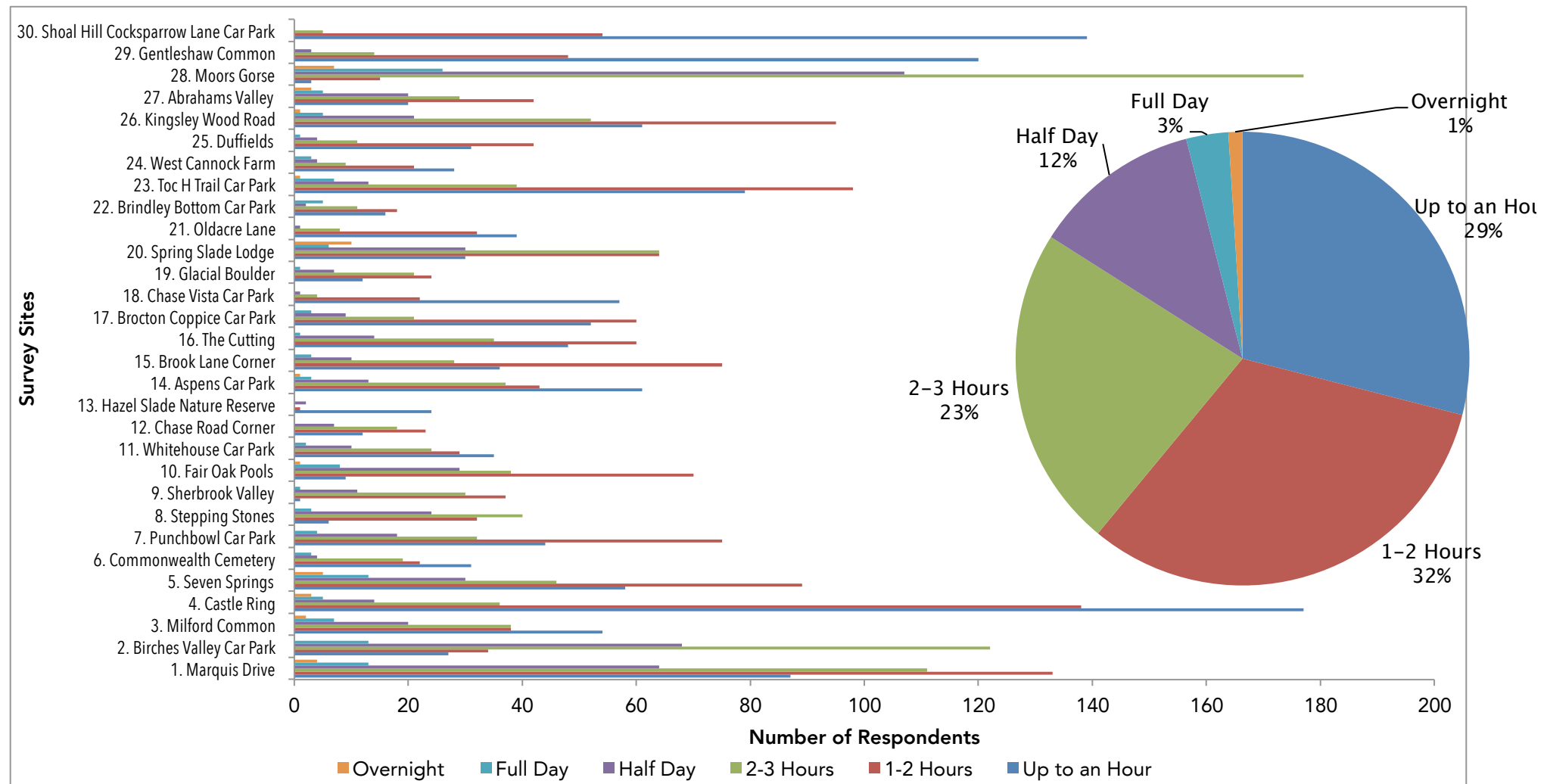


Figure 2.3: Duration of visit

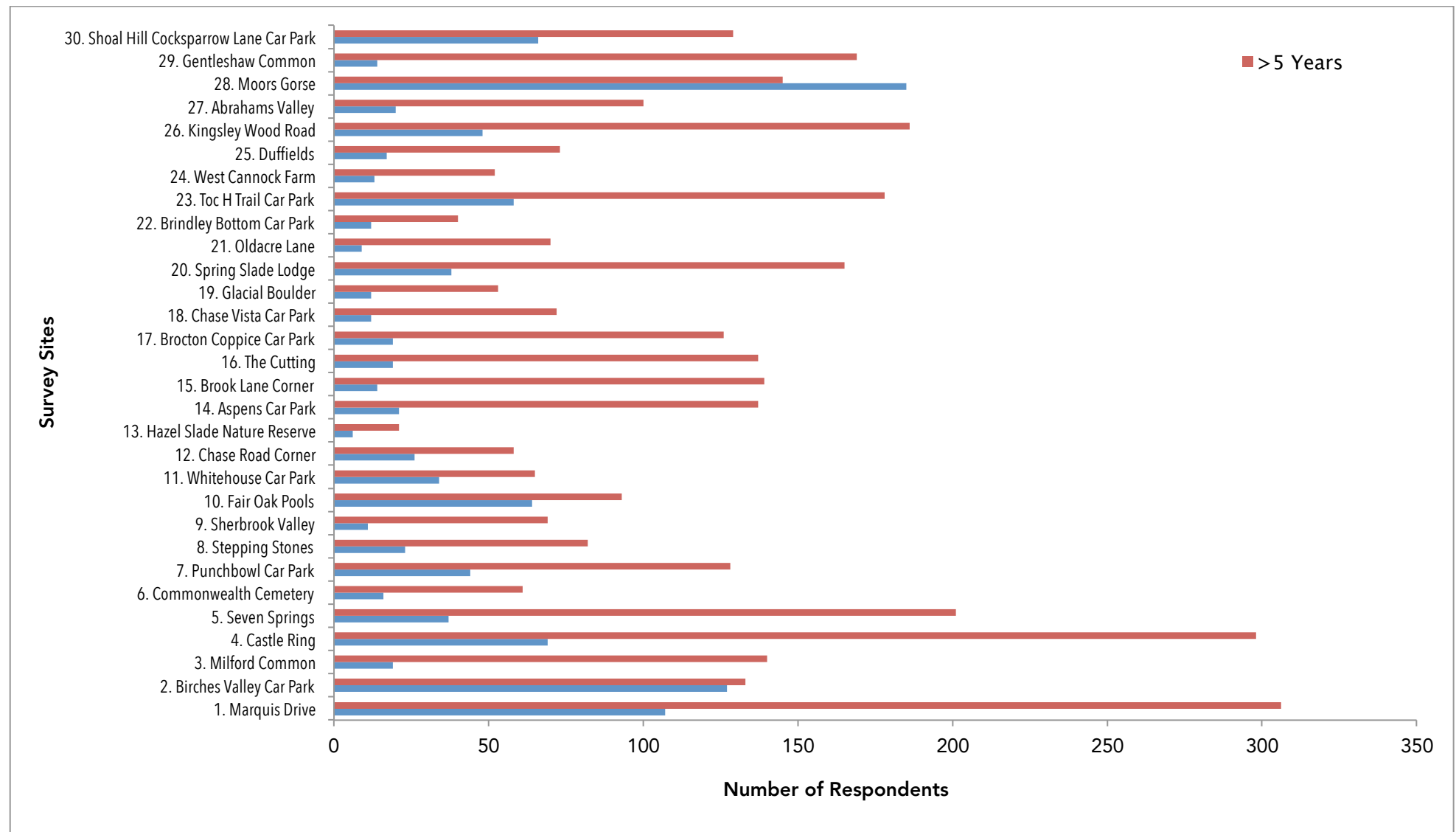


Figure 2.4 Historic perspective

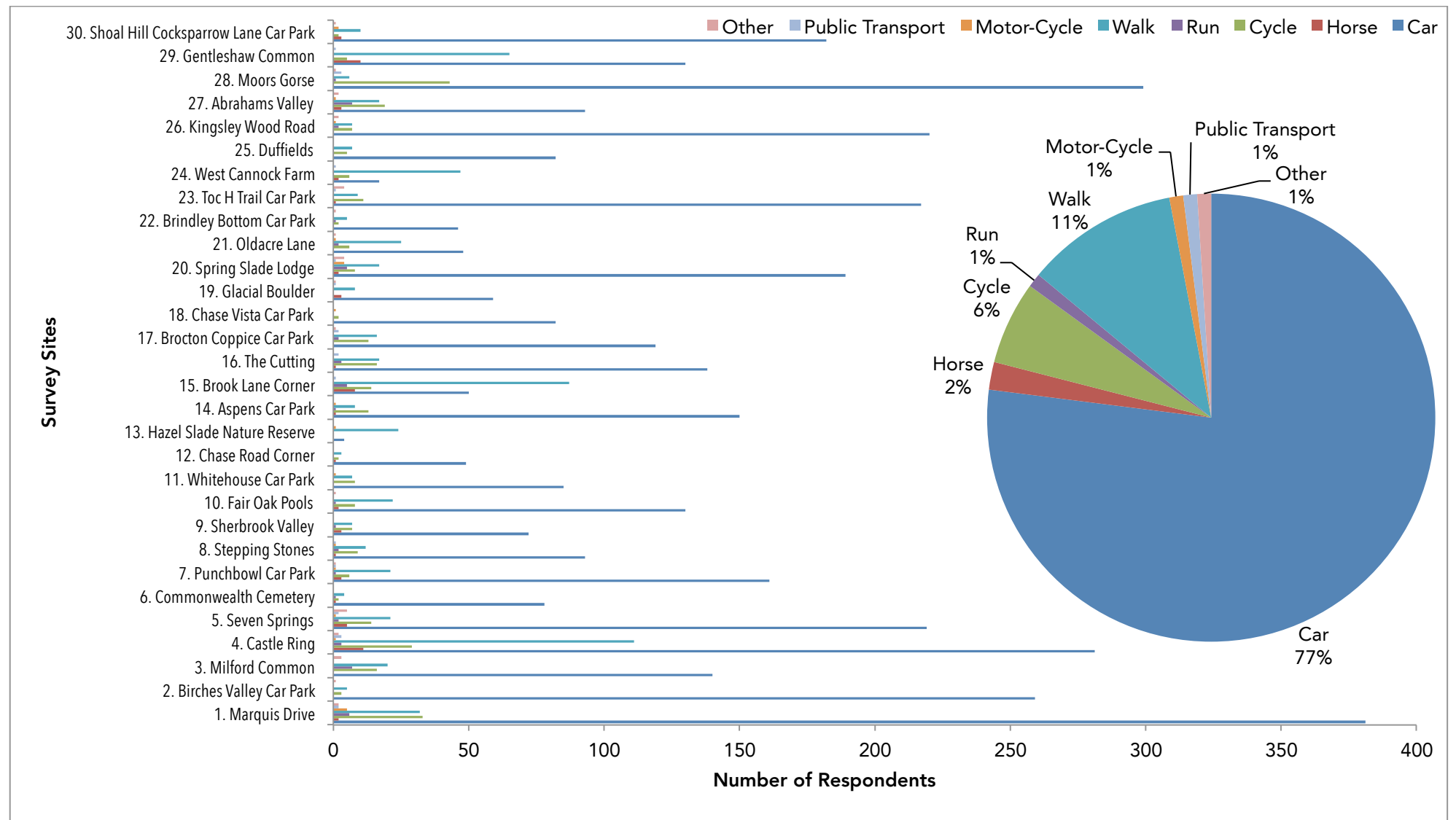


Figure 2.5: Transportation

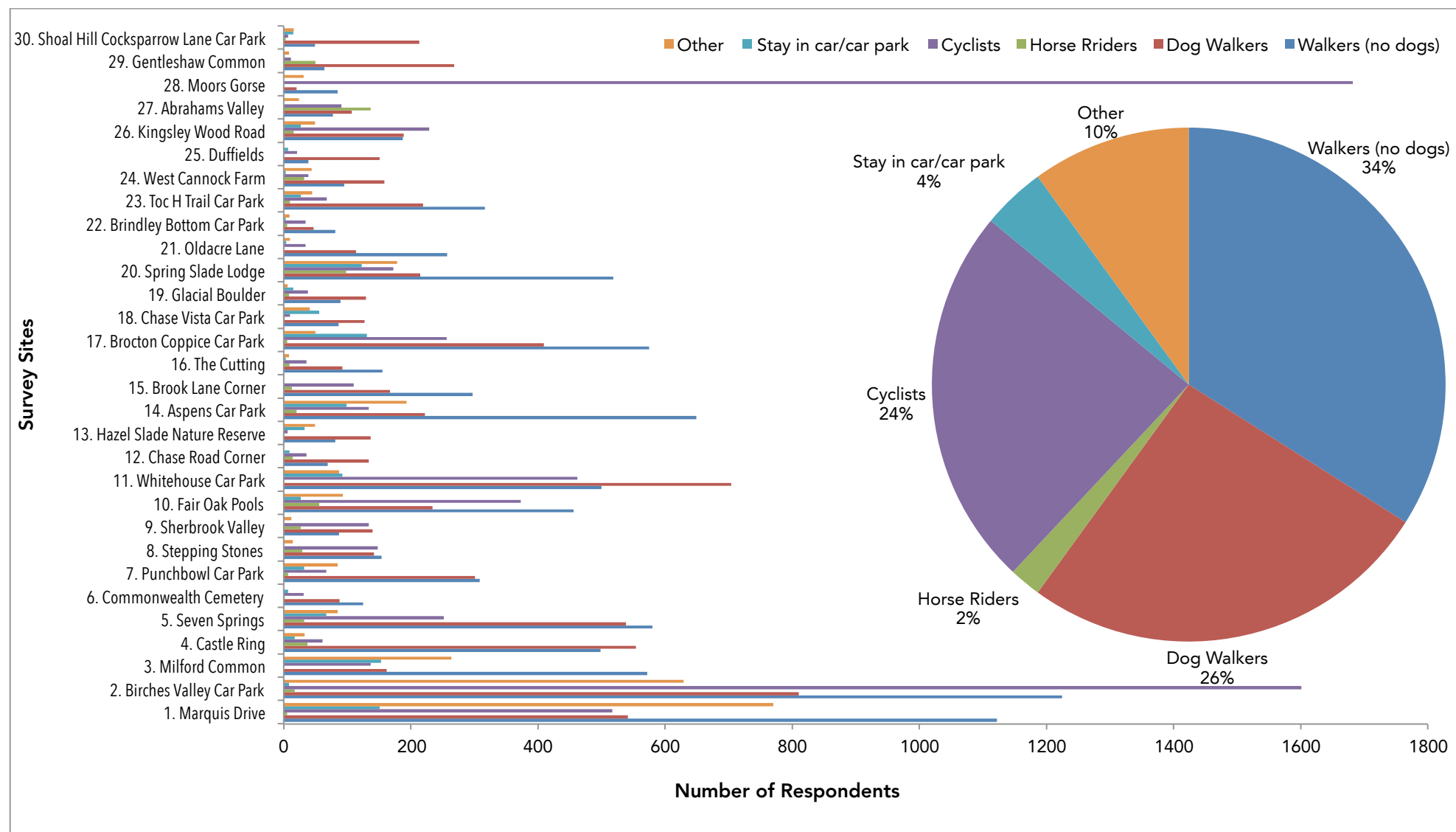


Figure 2.6: Activities

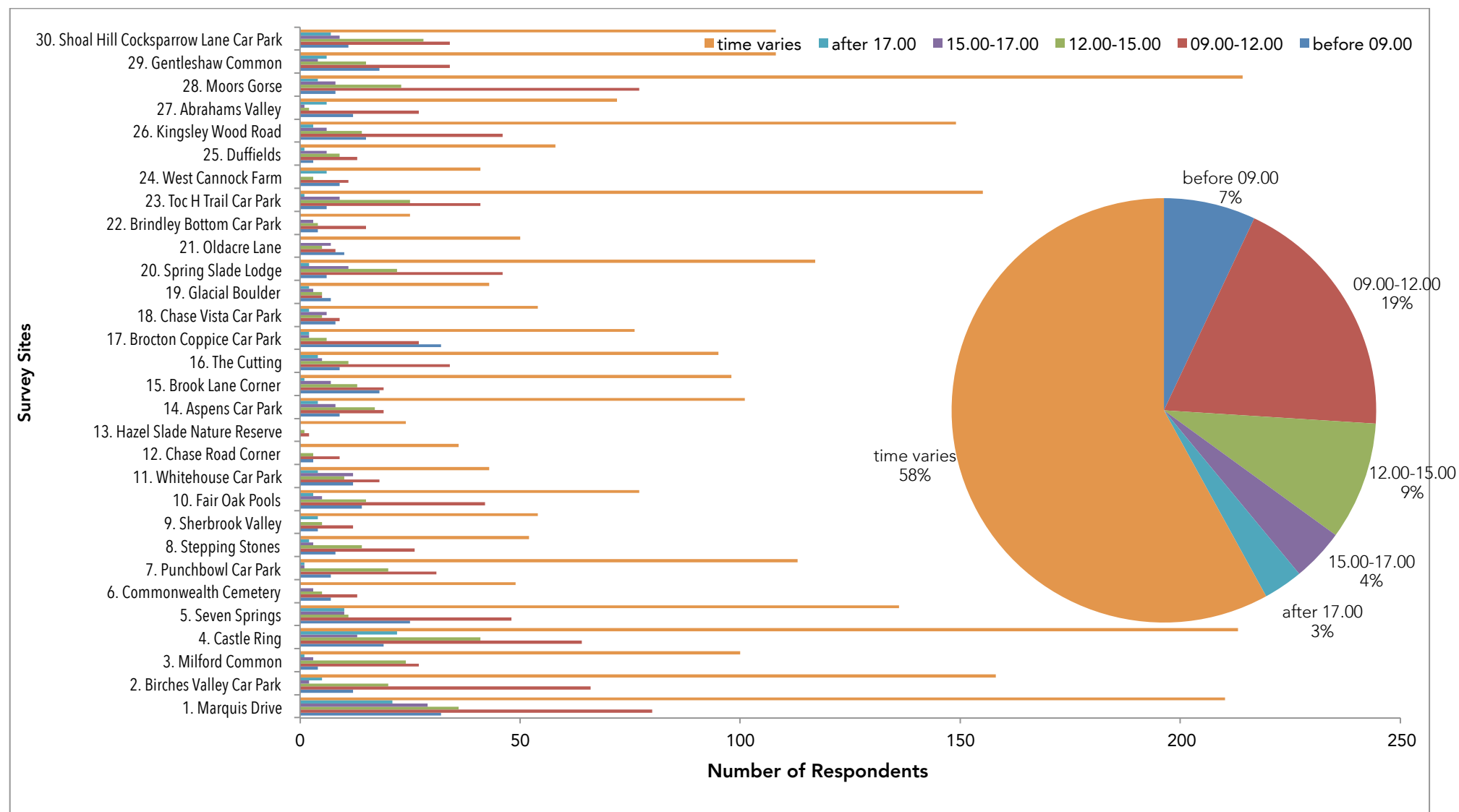


Figure 2.7: Temporal dimension

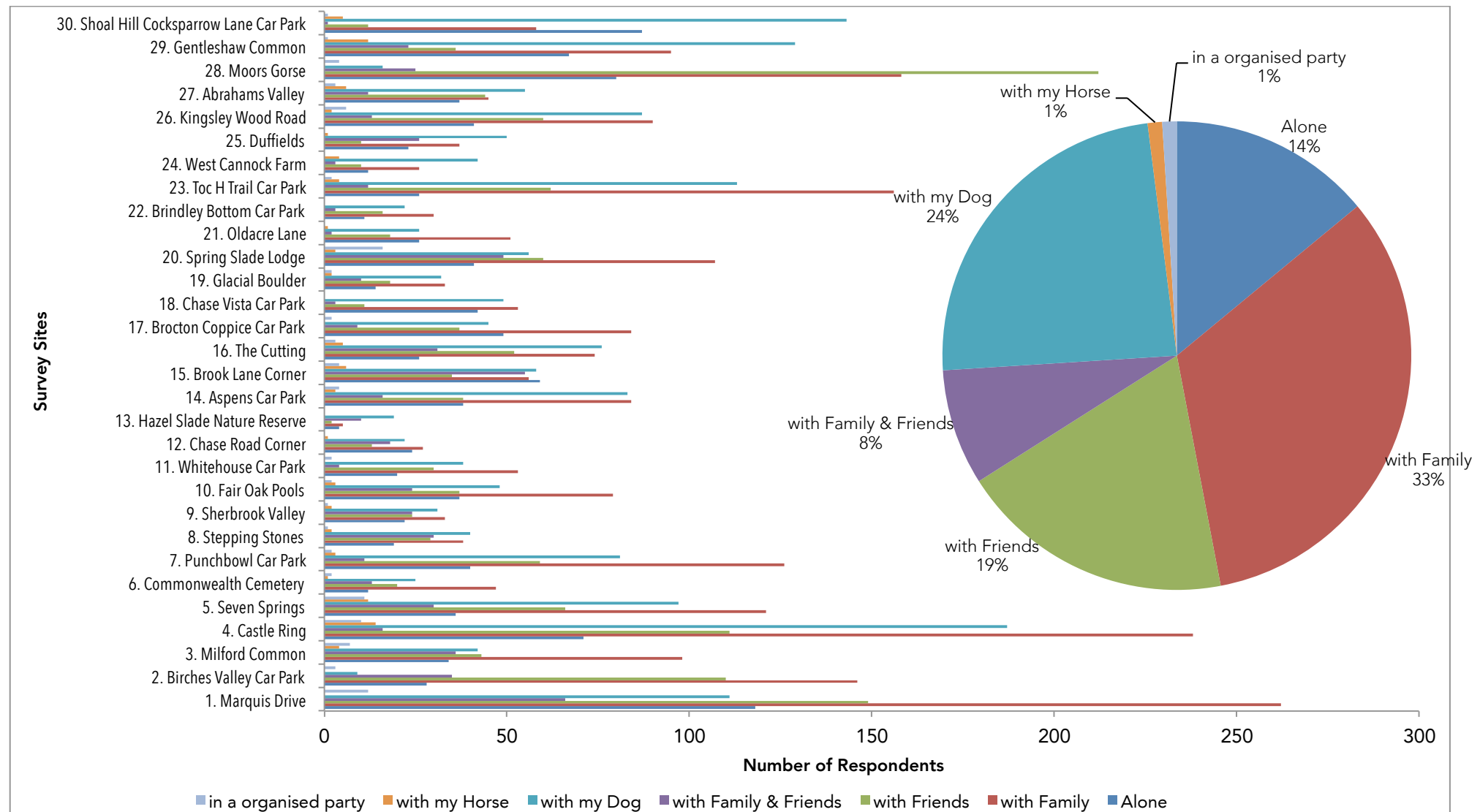
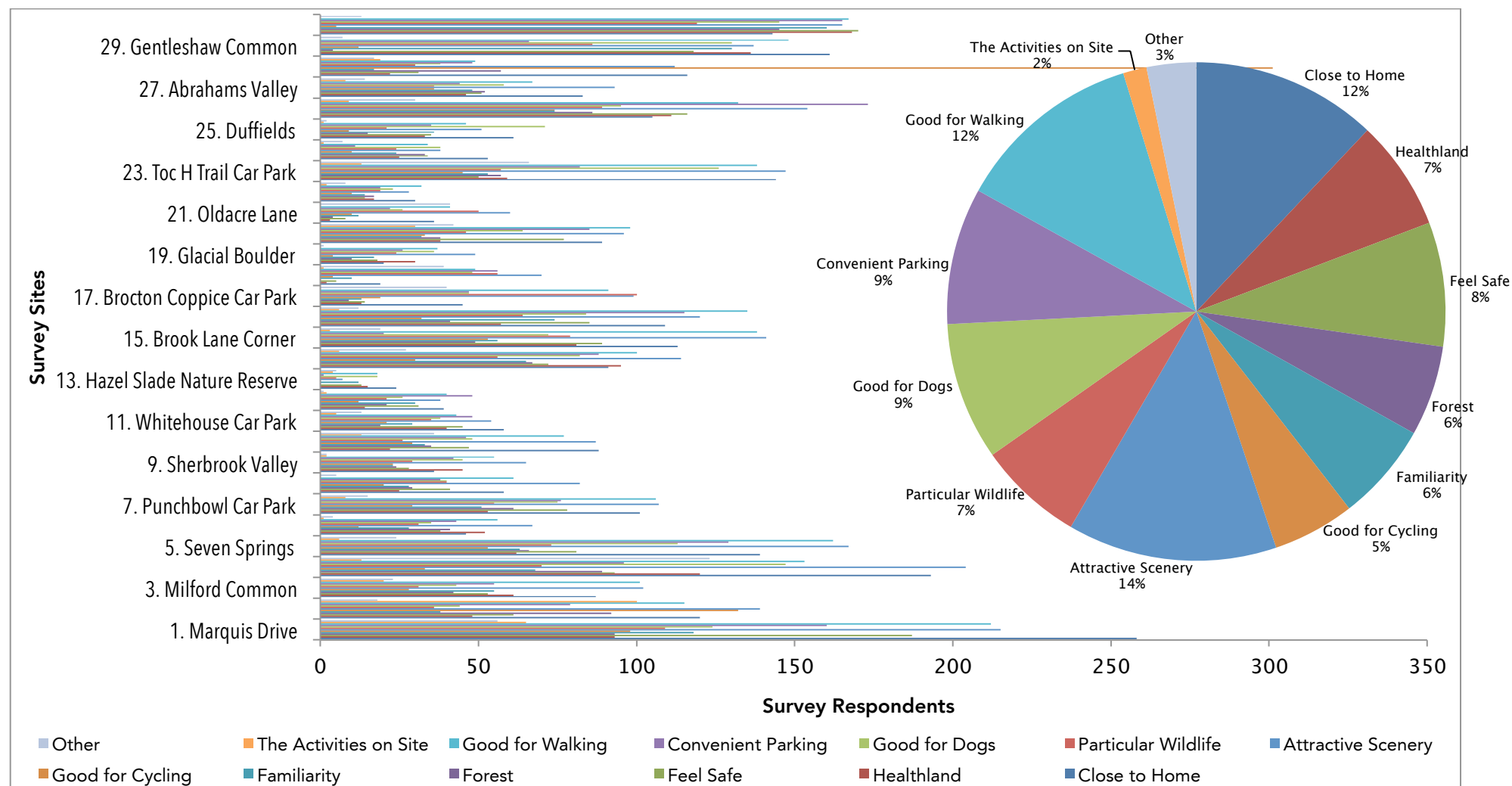


Figure 2.8: Group demographics





**Figure 2.9:** Reasons for visit

**Footnote:** In regards to Figure 2.9 -Survey Component 9, it should be noted that survey respondents could provide multiples responses. This has resulted in a high number of responses and in the case of the pie chart a total figure greater than 100%.

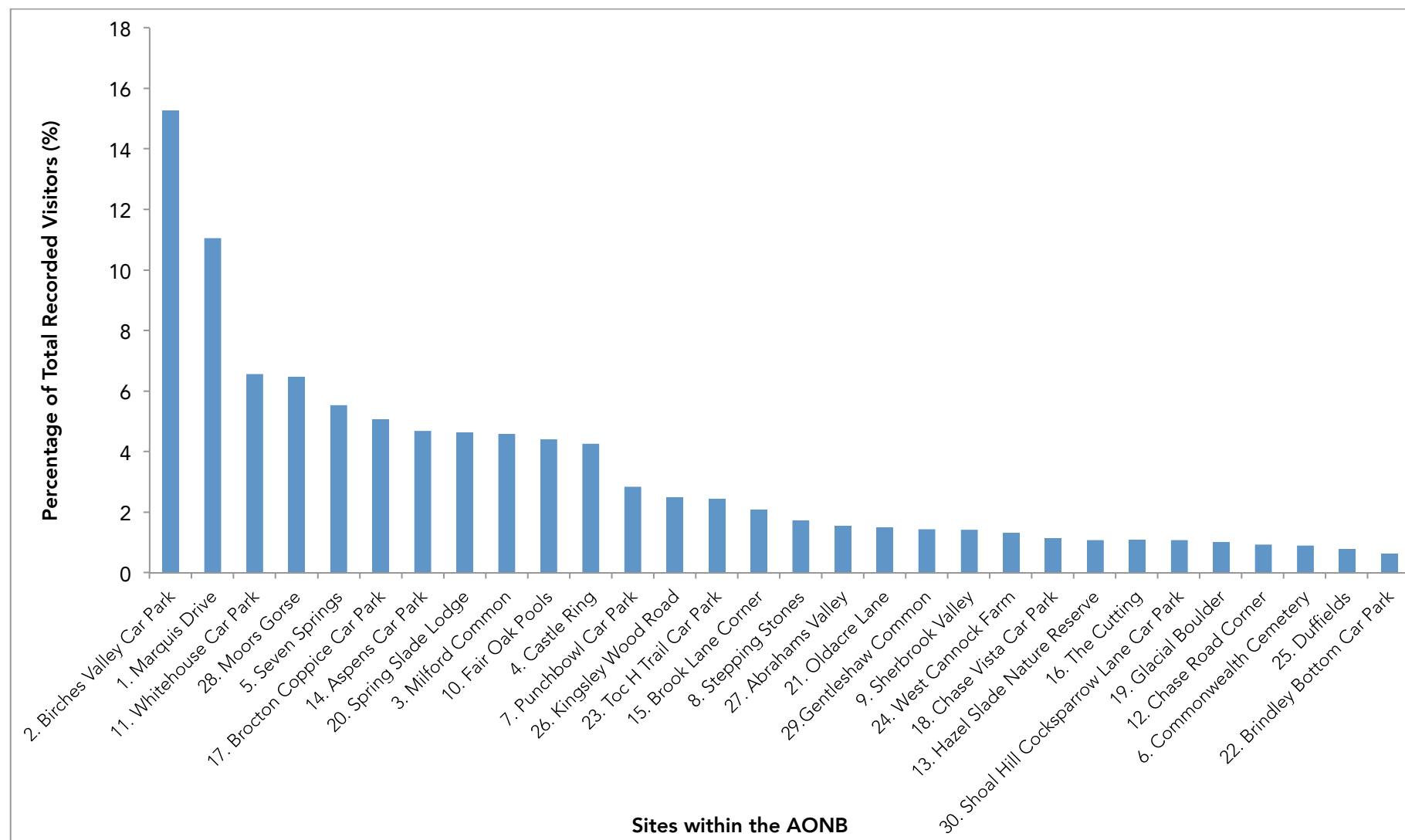


Figure 2.10: Preferred locations

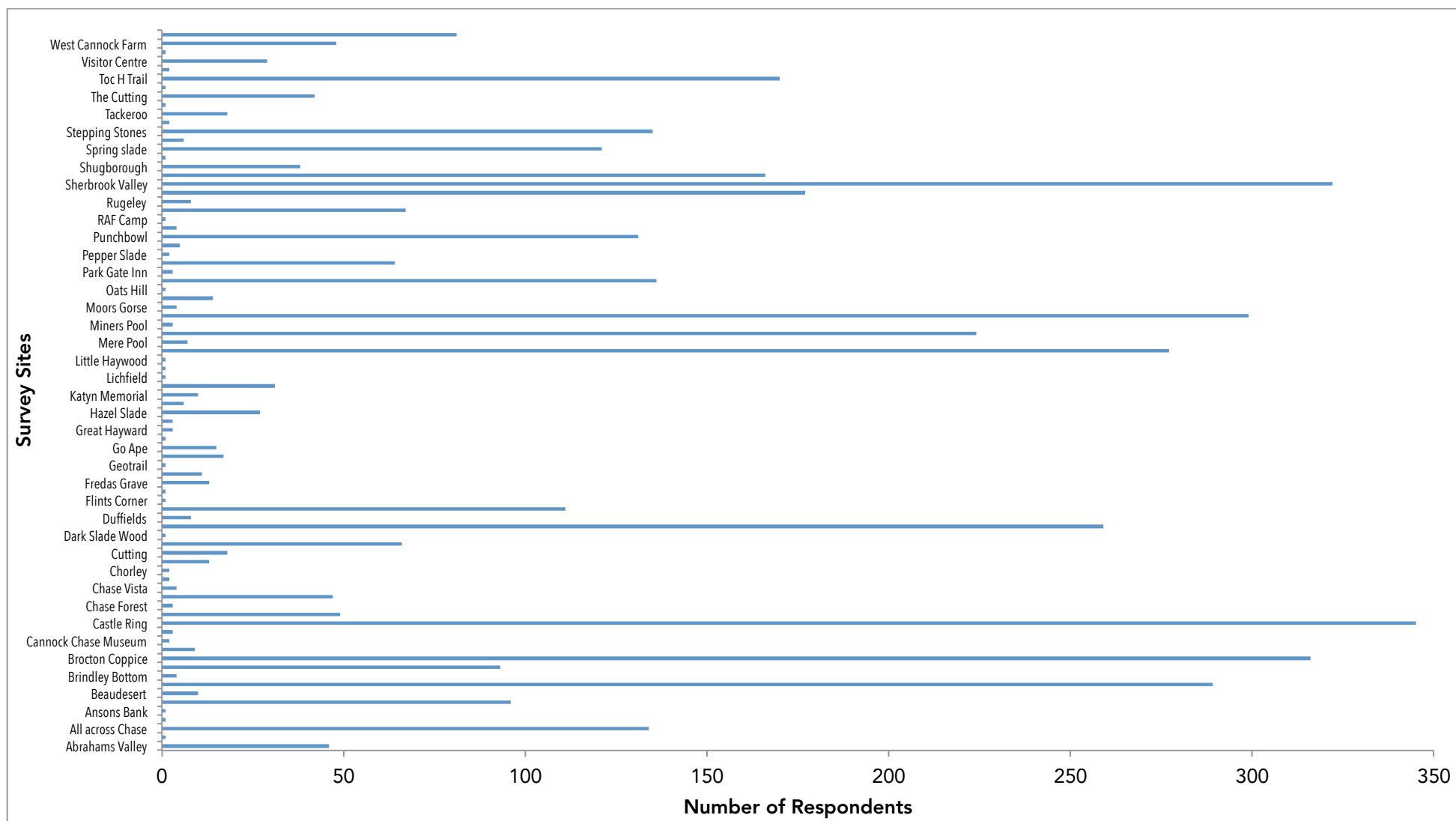


Figure 2.11: Alternative locations people tend to visit

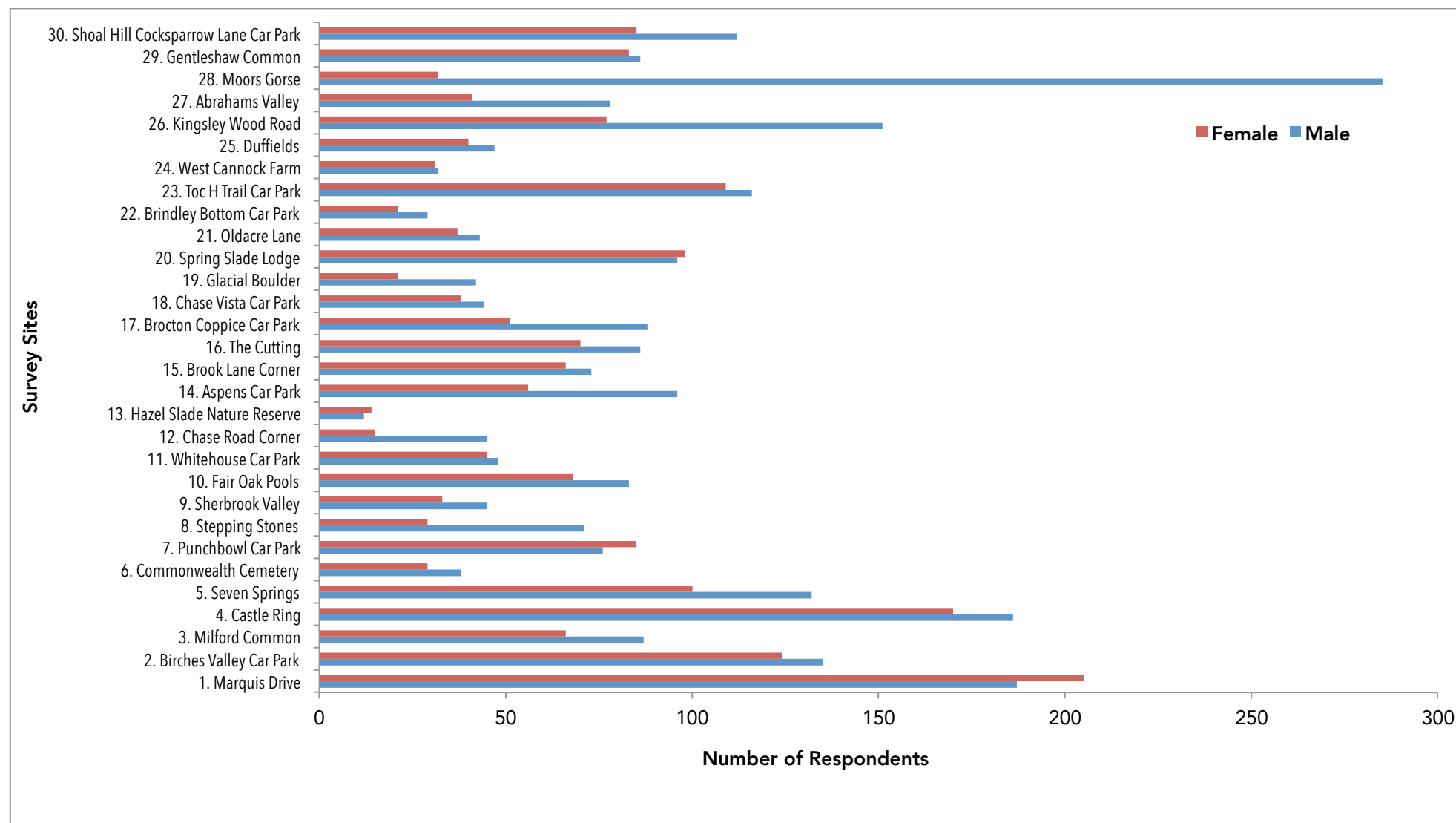


Figure 2.12: Gender

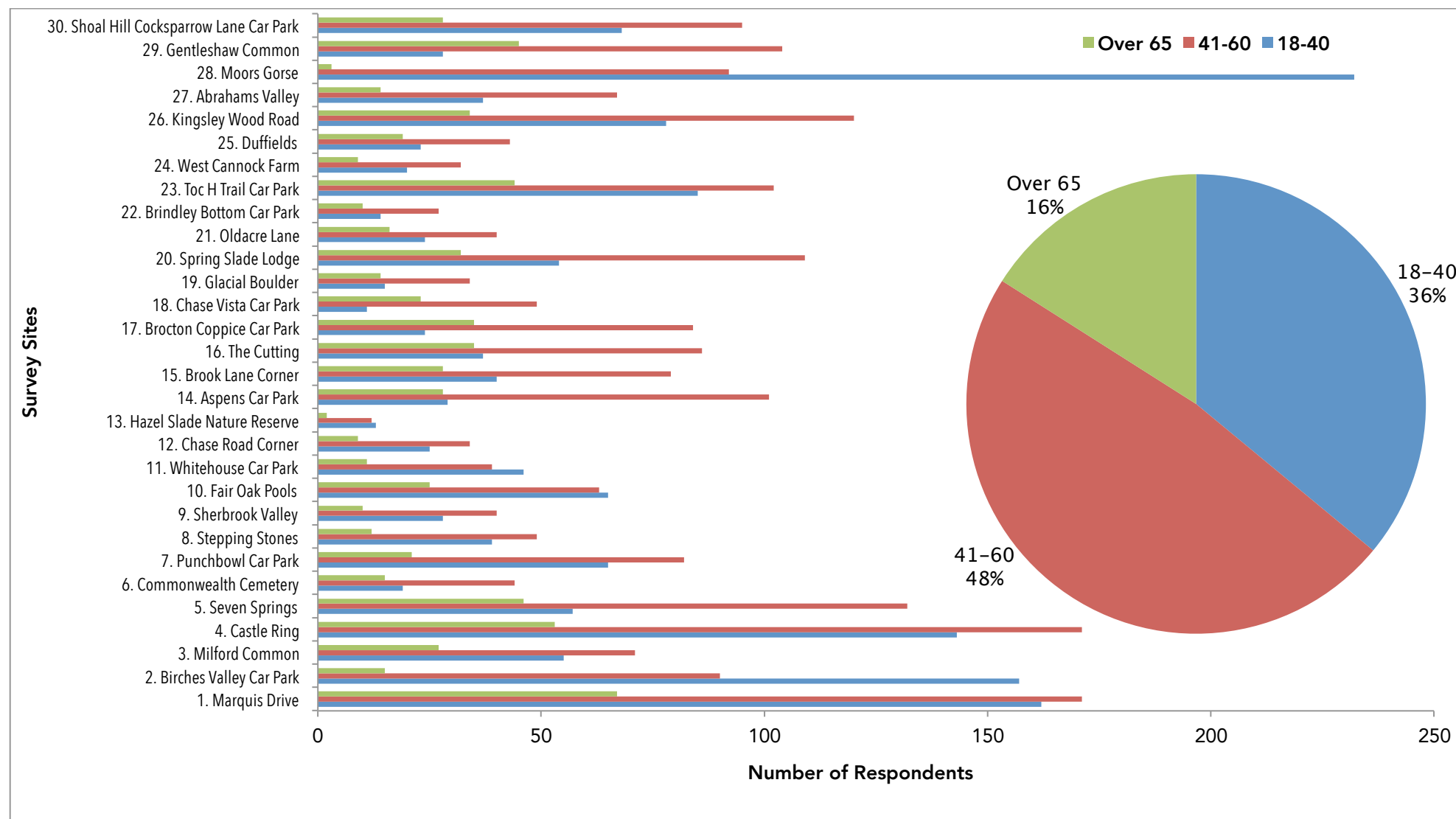
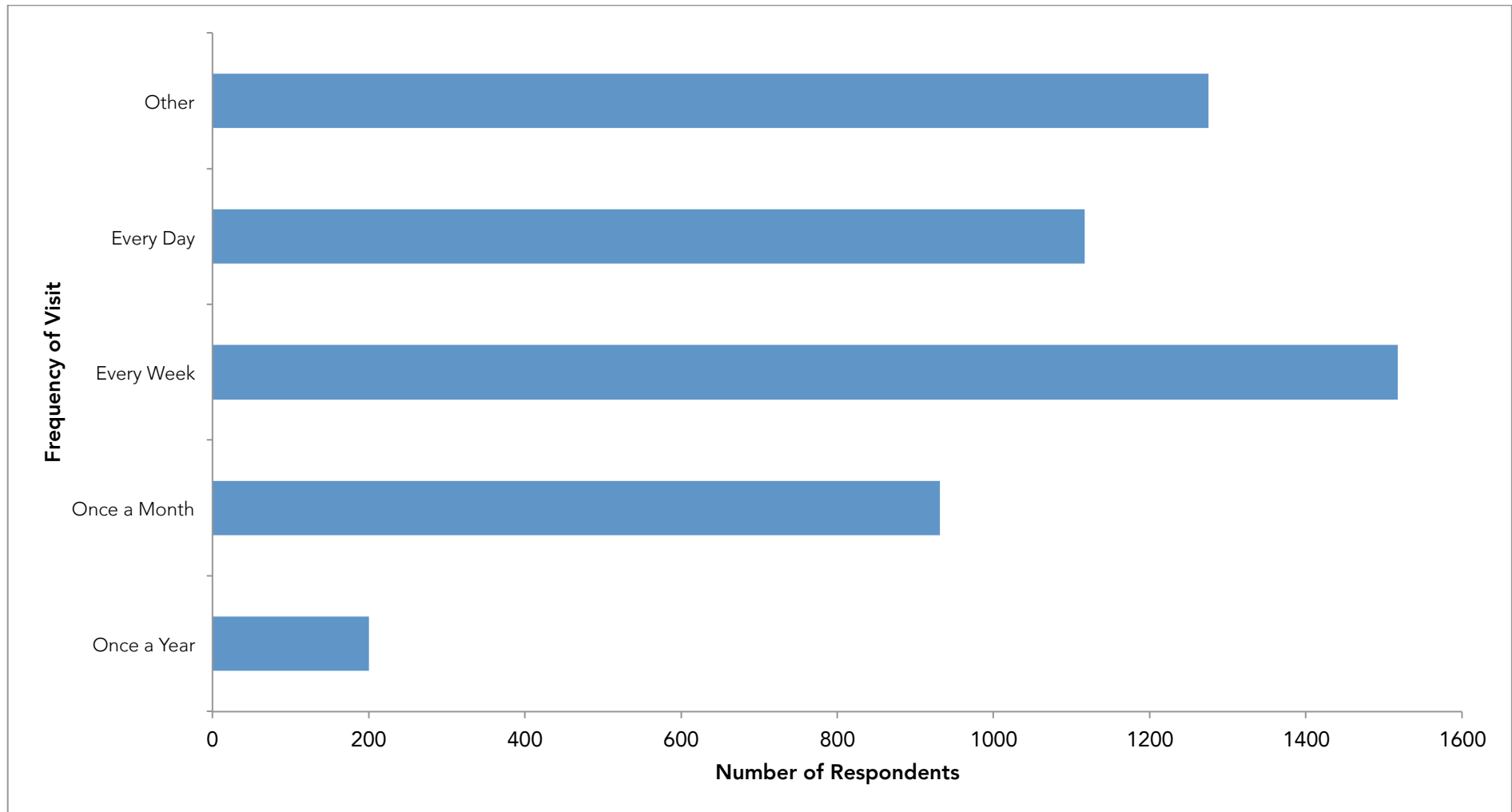


Figure 2.13: Age





**Figure 2.2:** Frequency of visit

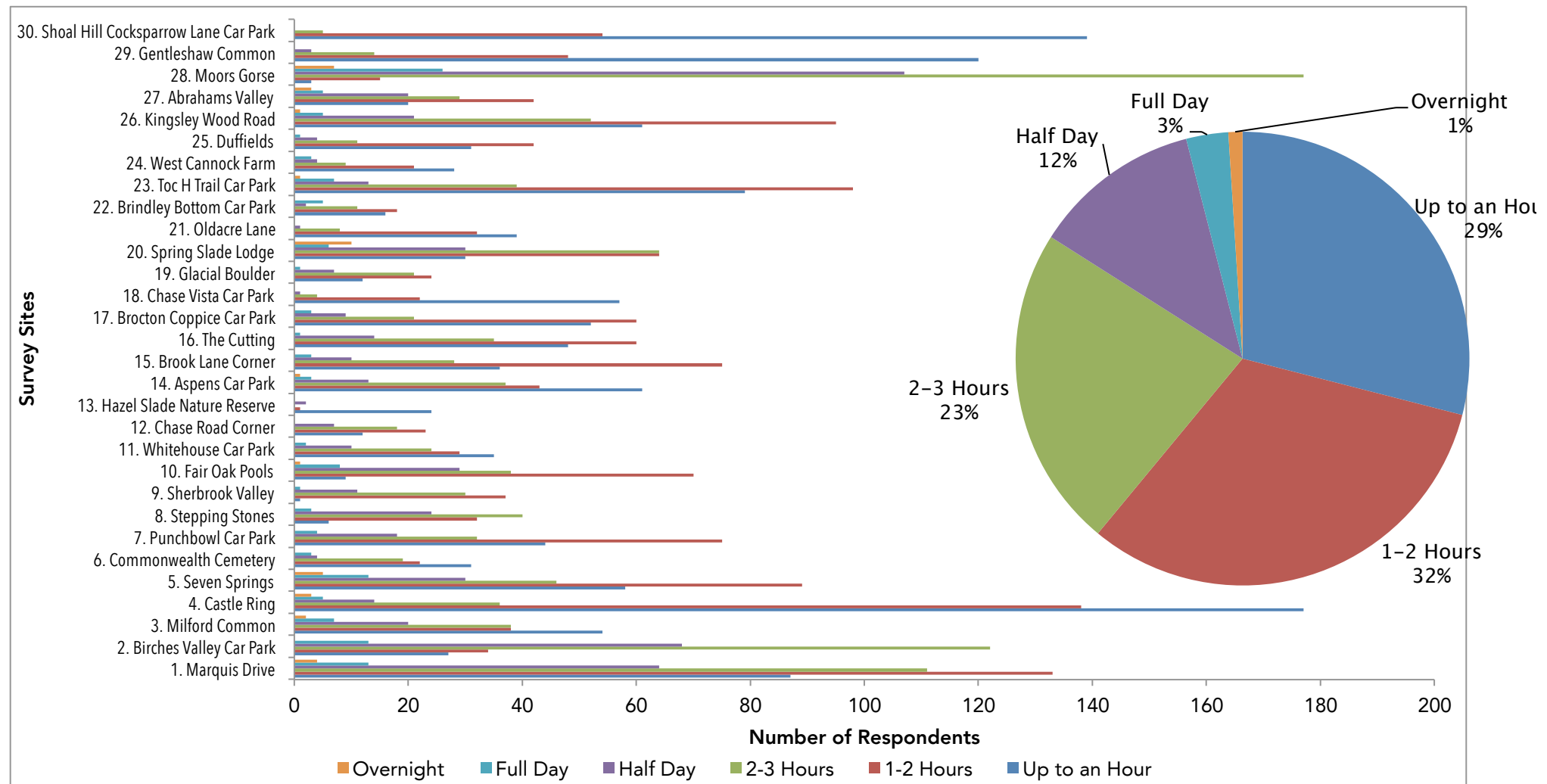


Figure 2.3: Duration of visit

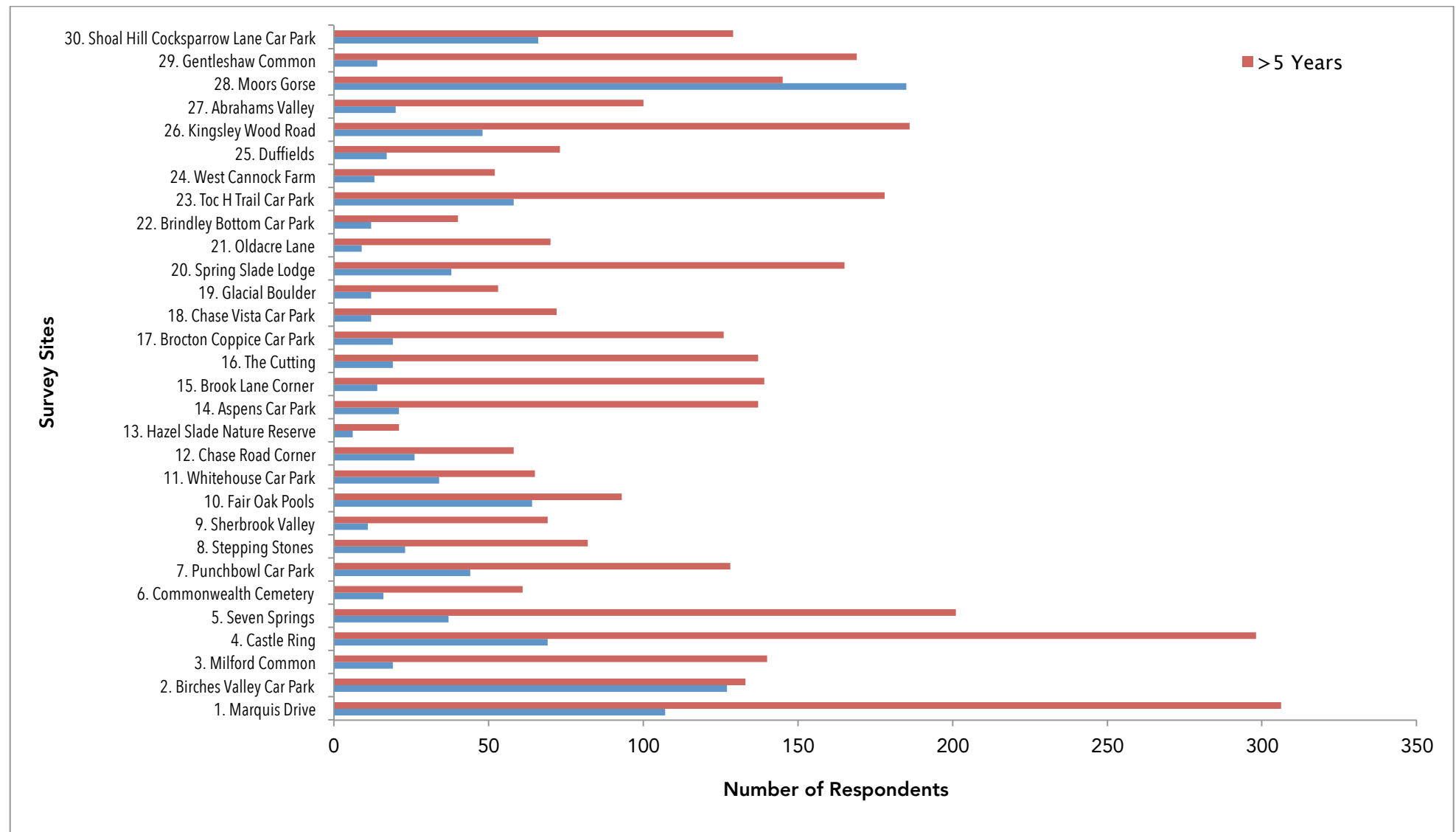


Figure 2.4 Historic perspective

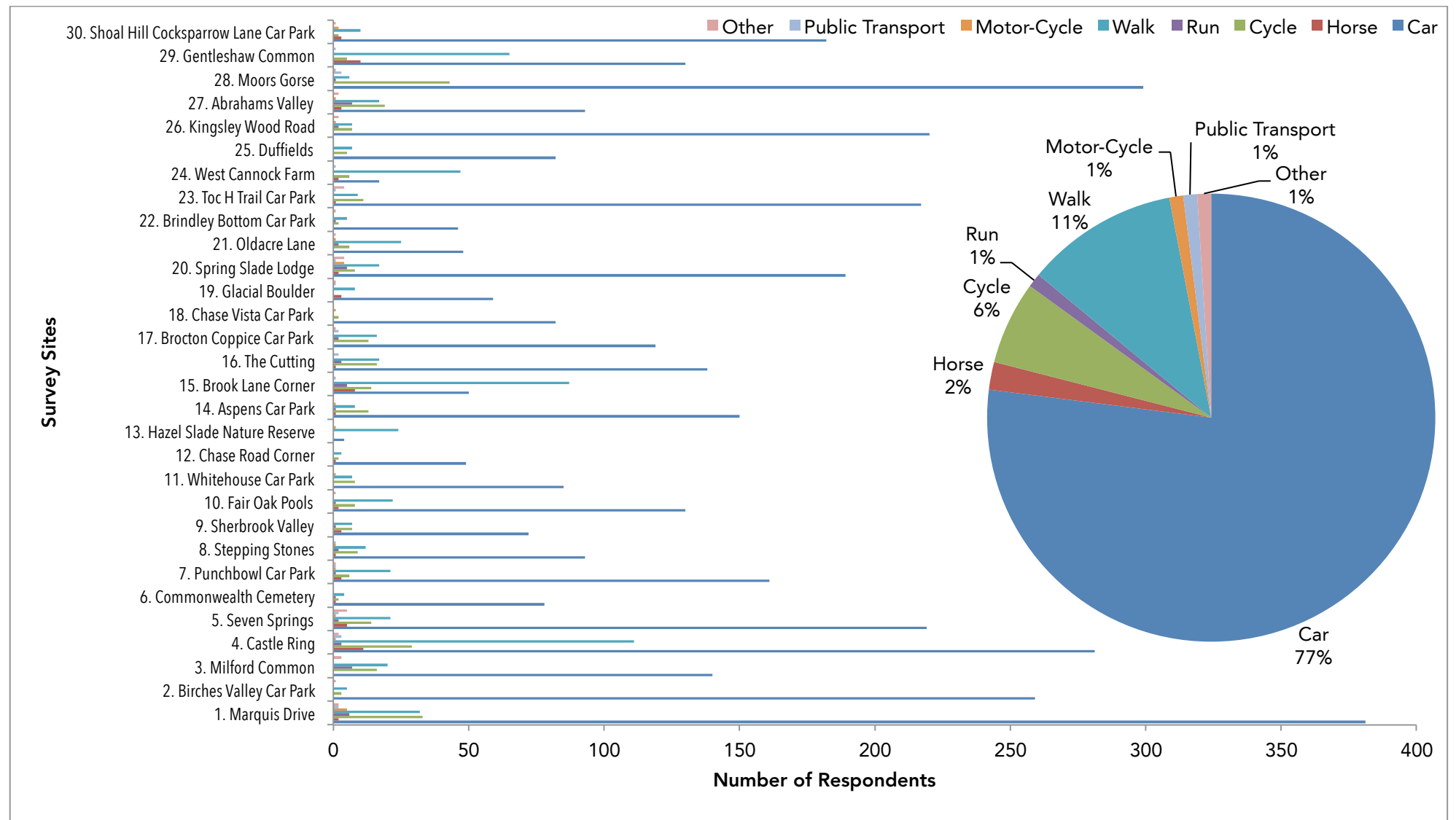


Figure 2.5: Transportation

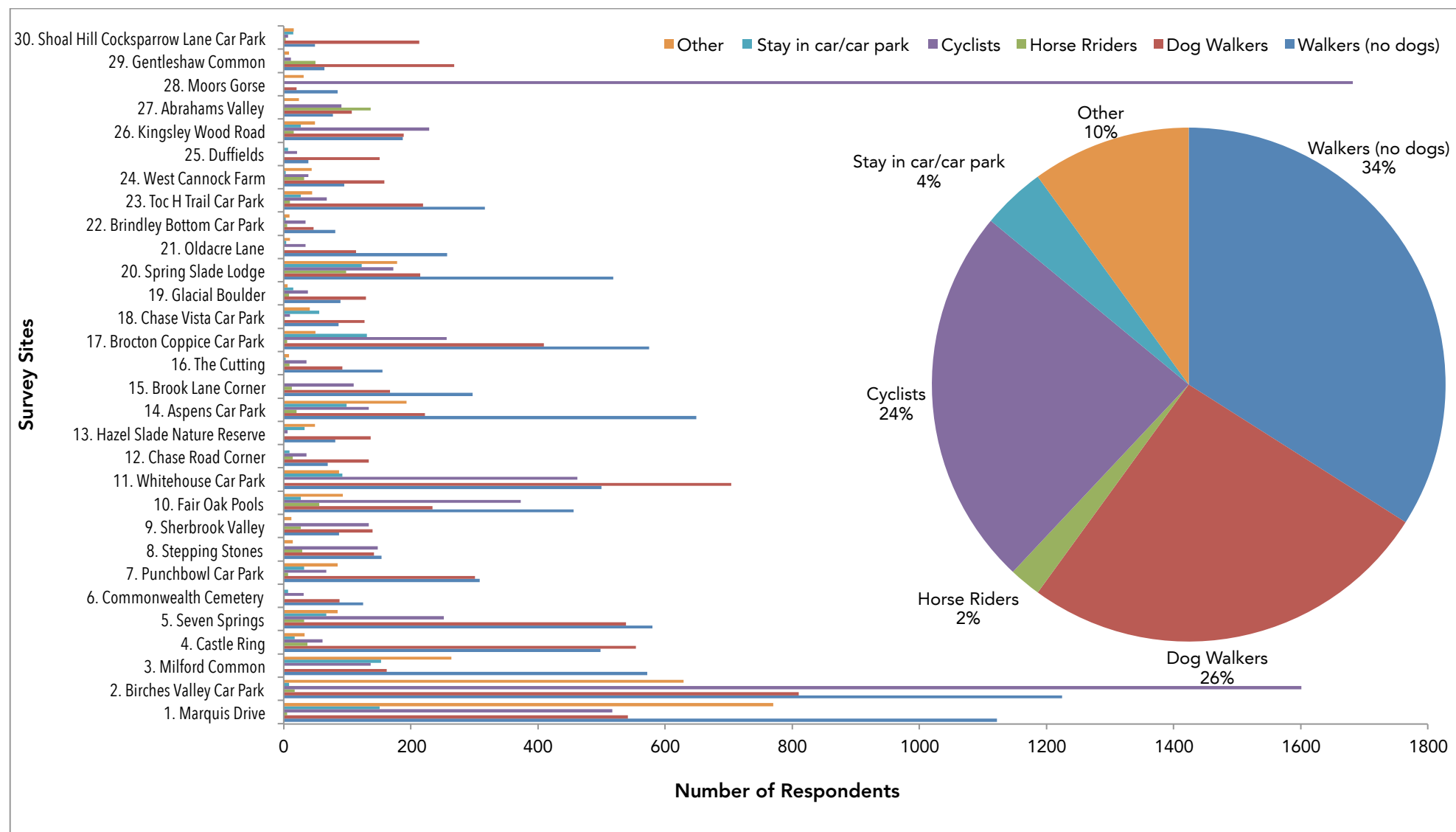


Figure 2.6: Activities



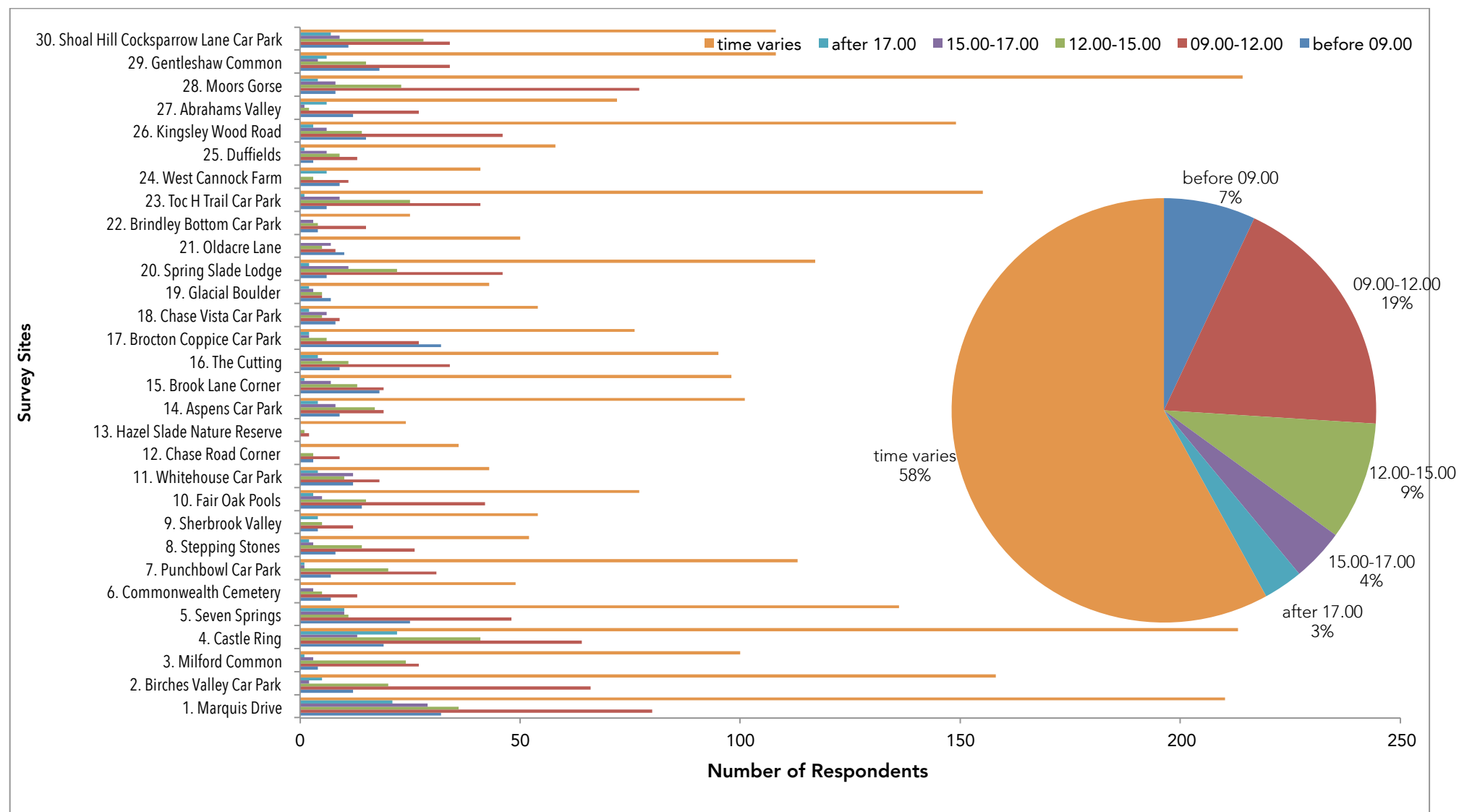


Figure 2.7: Temporal dimension

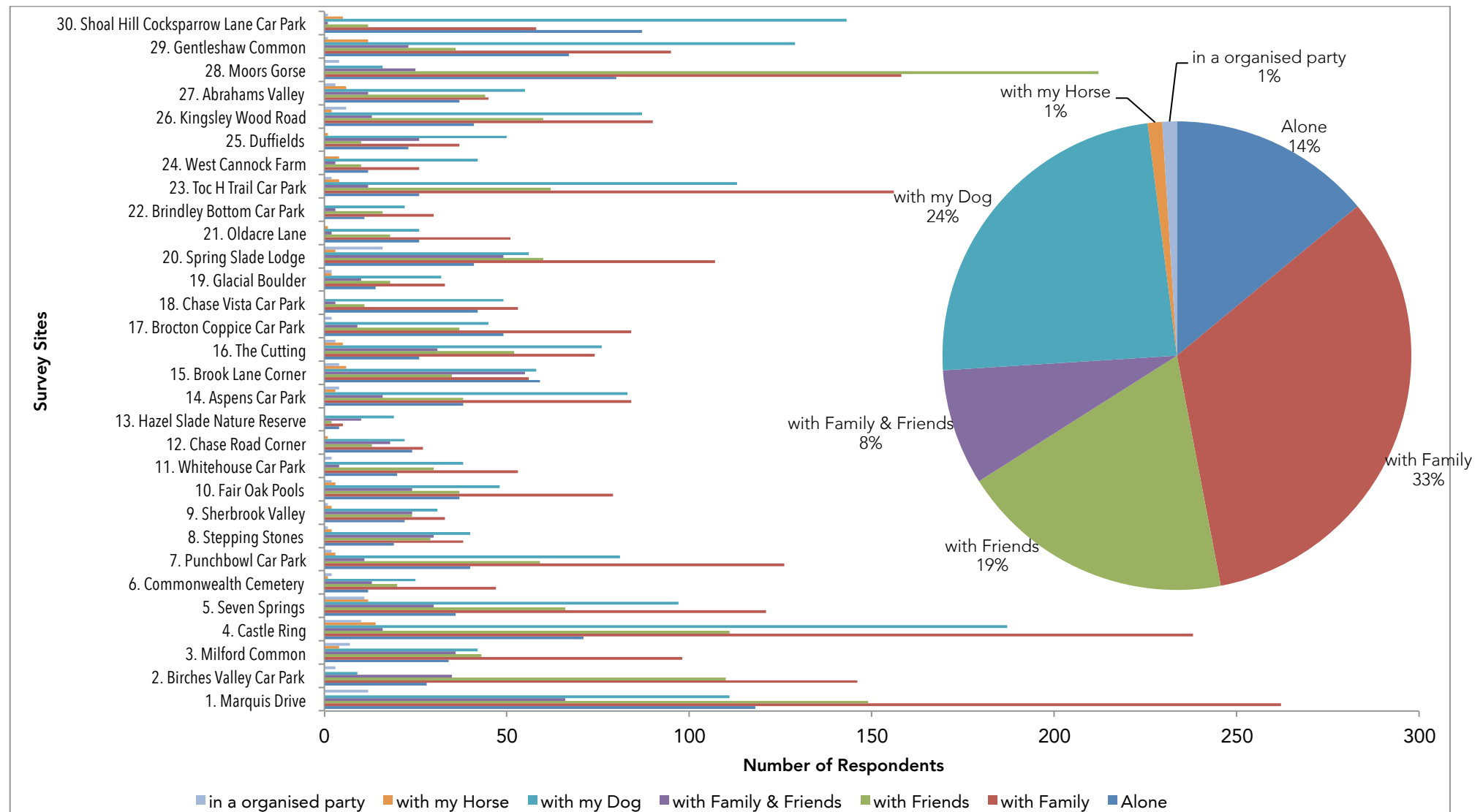
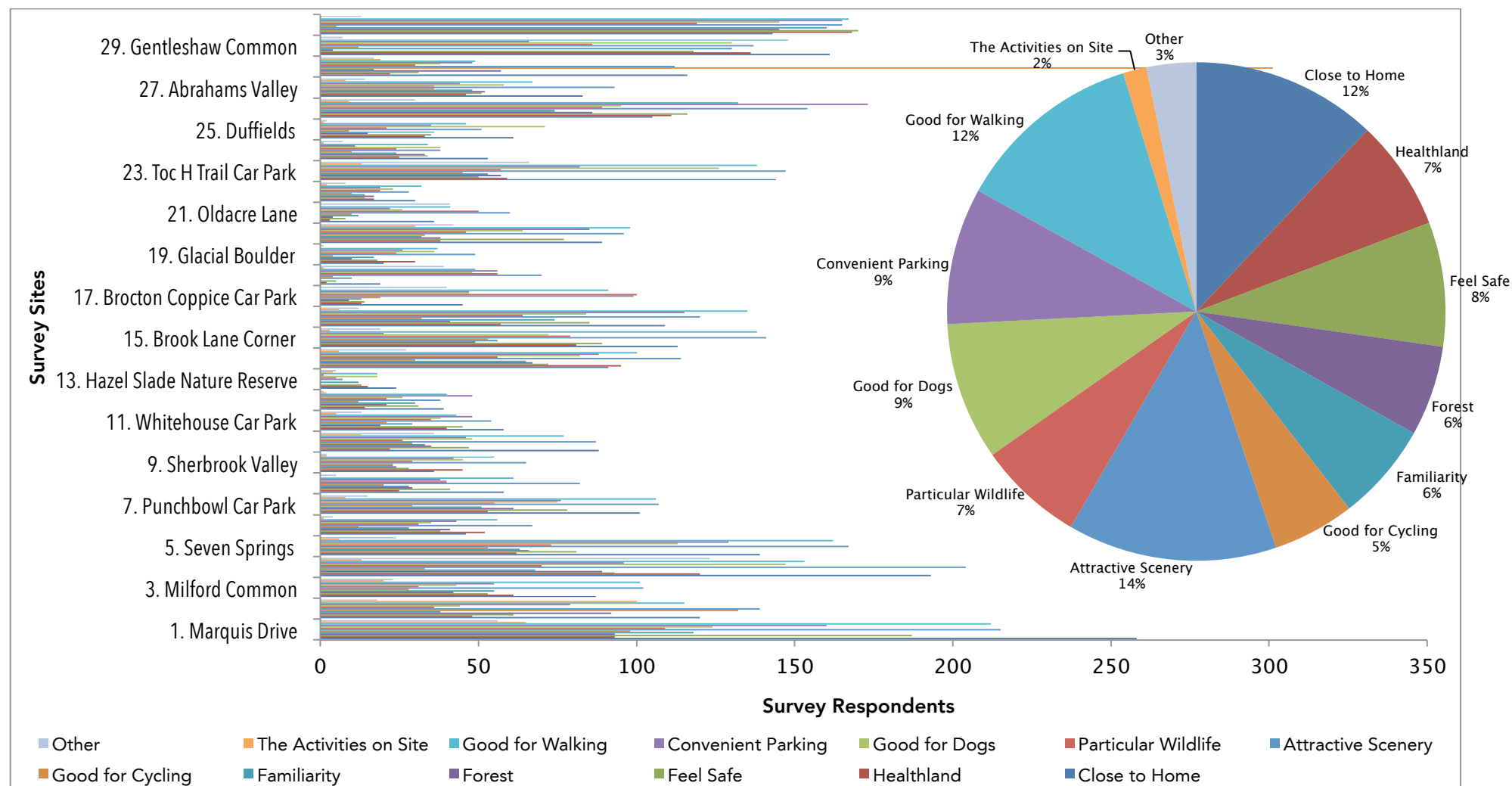


Figure 2.8: Group demographics



**Figure 2.9:** Reasons for visit

**Footnote:** In regards to Figure 2.9 -Survey Component 9, it should be noted that survey respondents could provide multiples responses. This has resulted in a high number of responses and in the case of the pie chart a total figure greater than 100%.

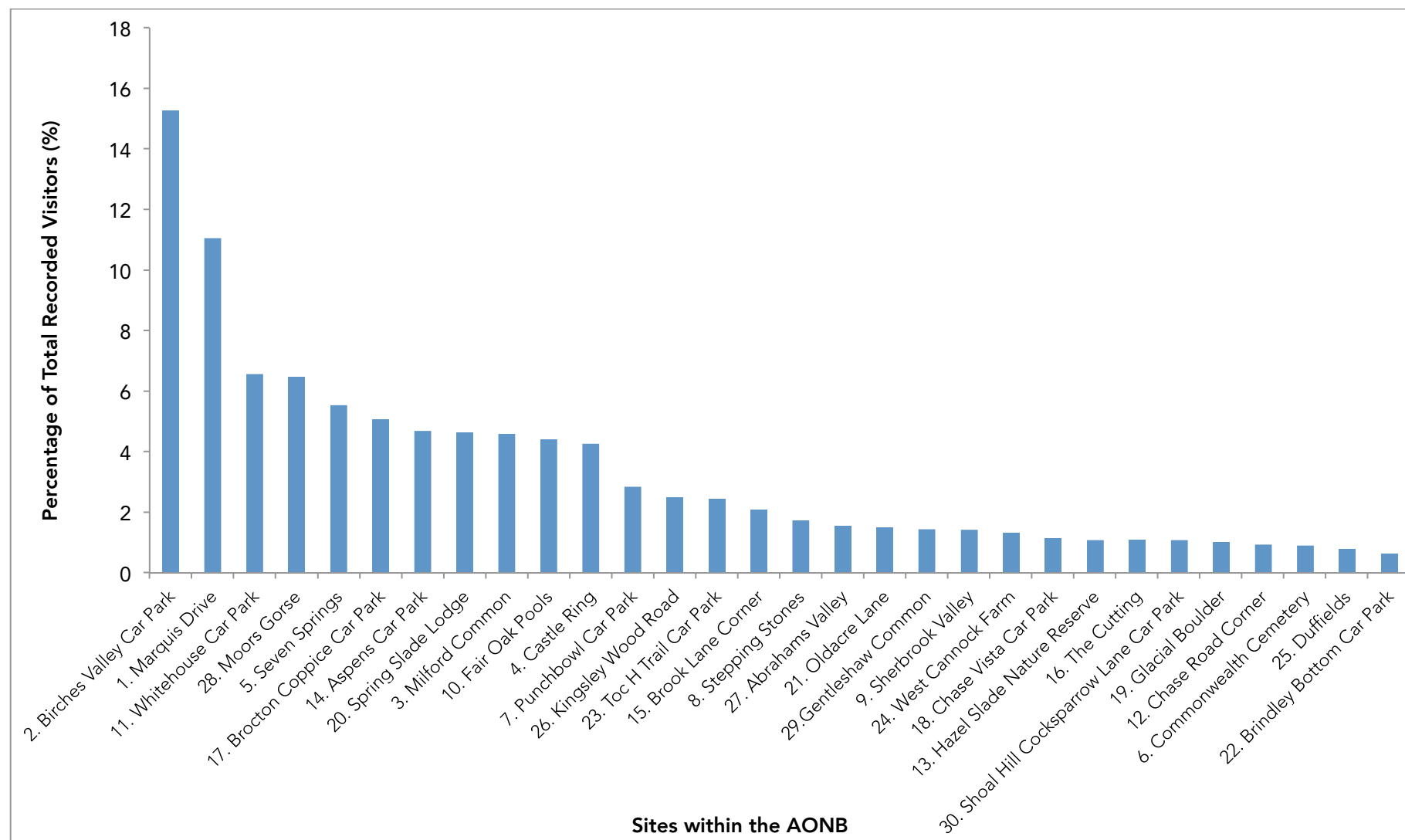


Figure 2.10: Preferred locations

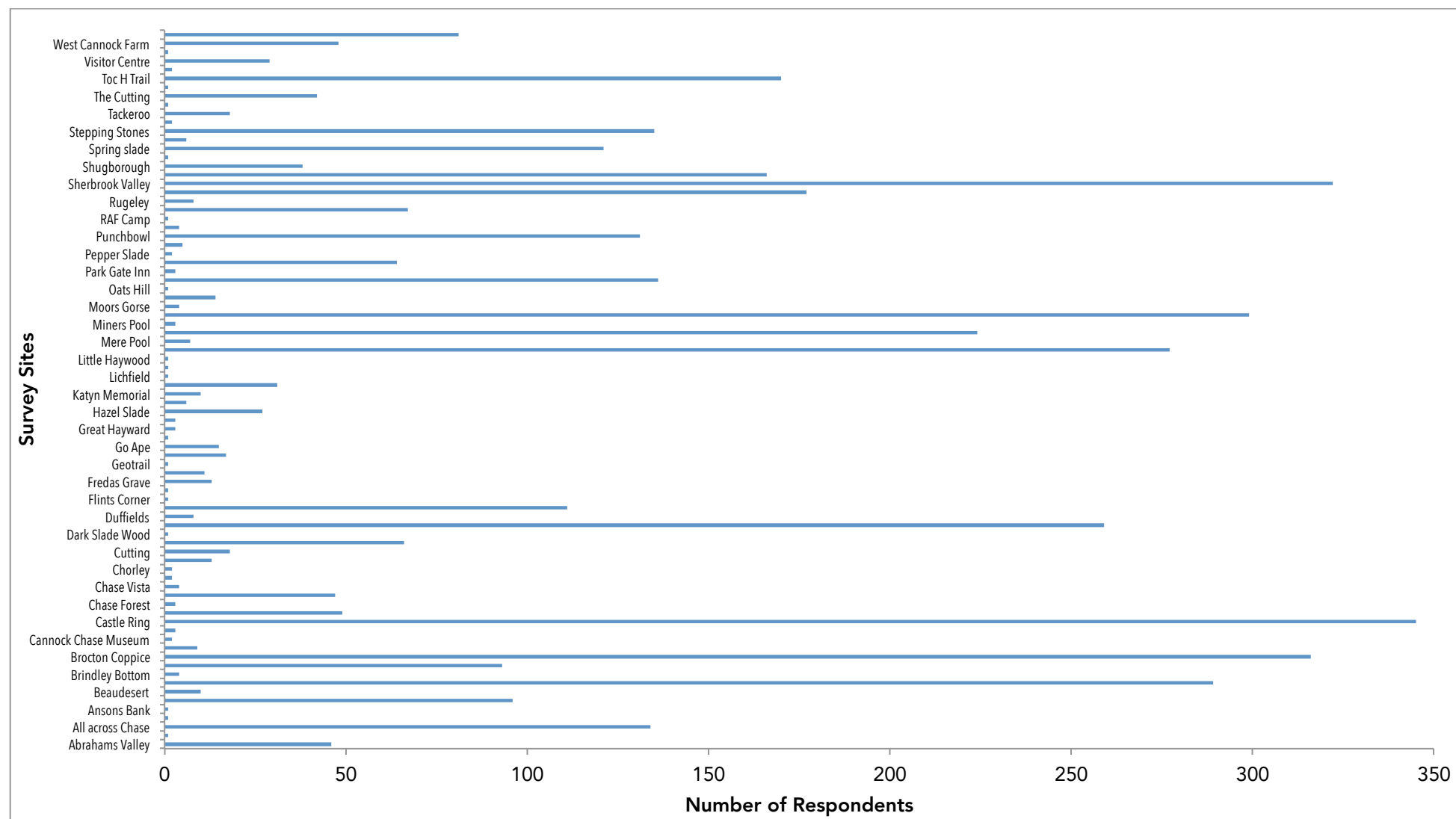


Figure 2.11: Alternative locations people tend to visit



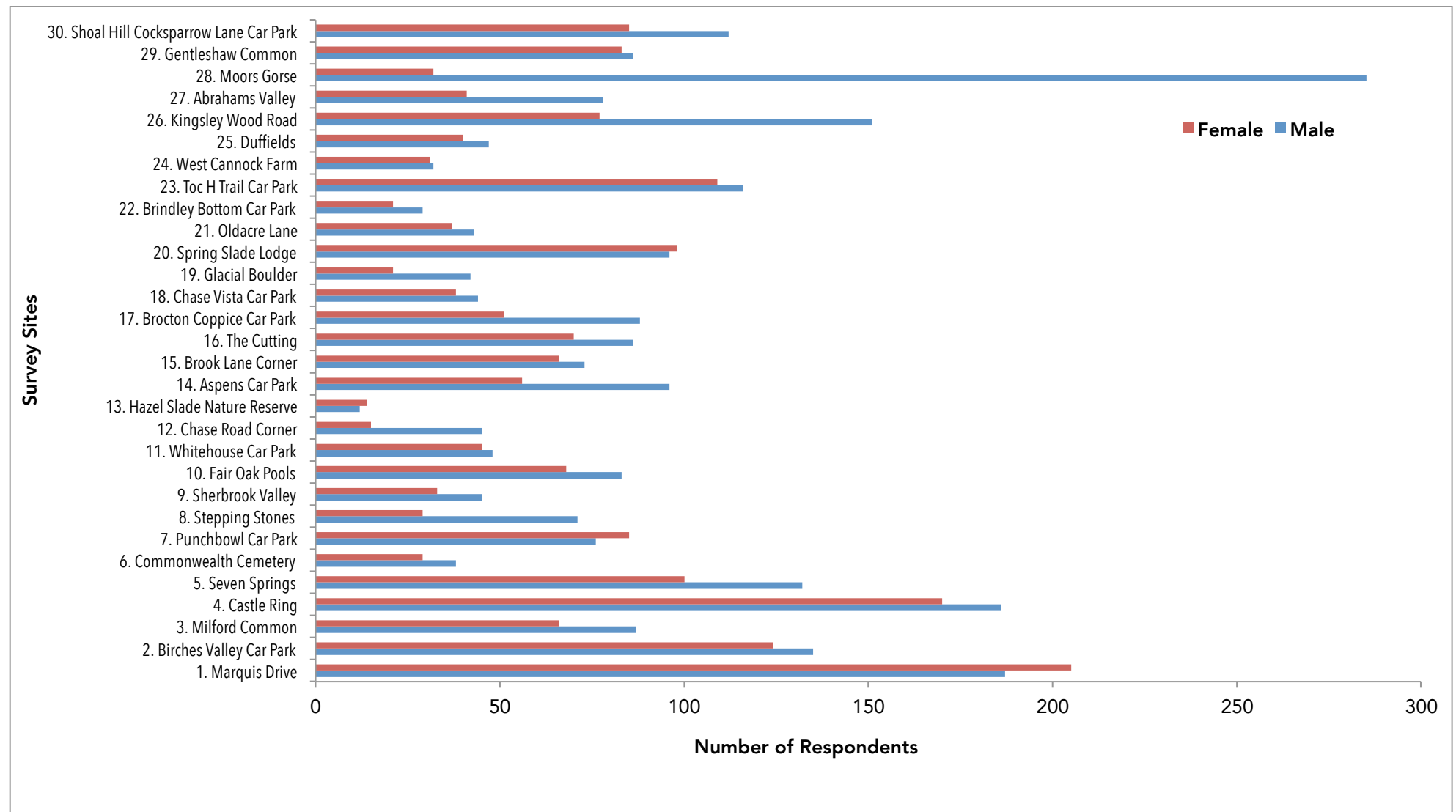


Figure 2.12: Gender

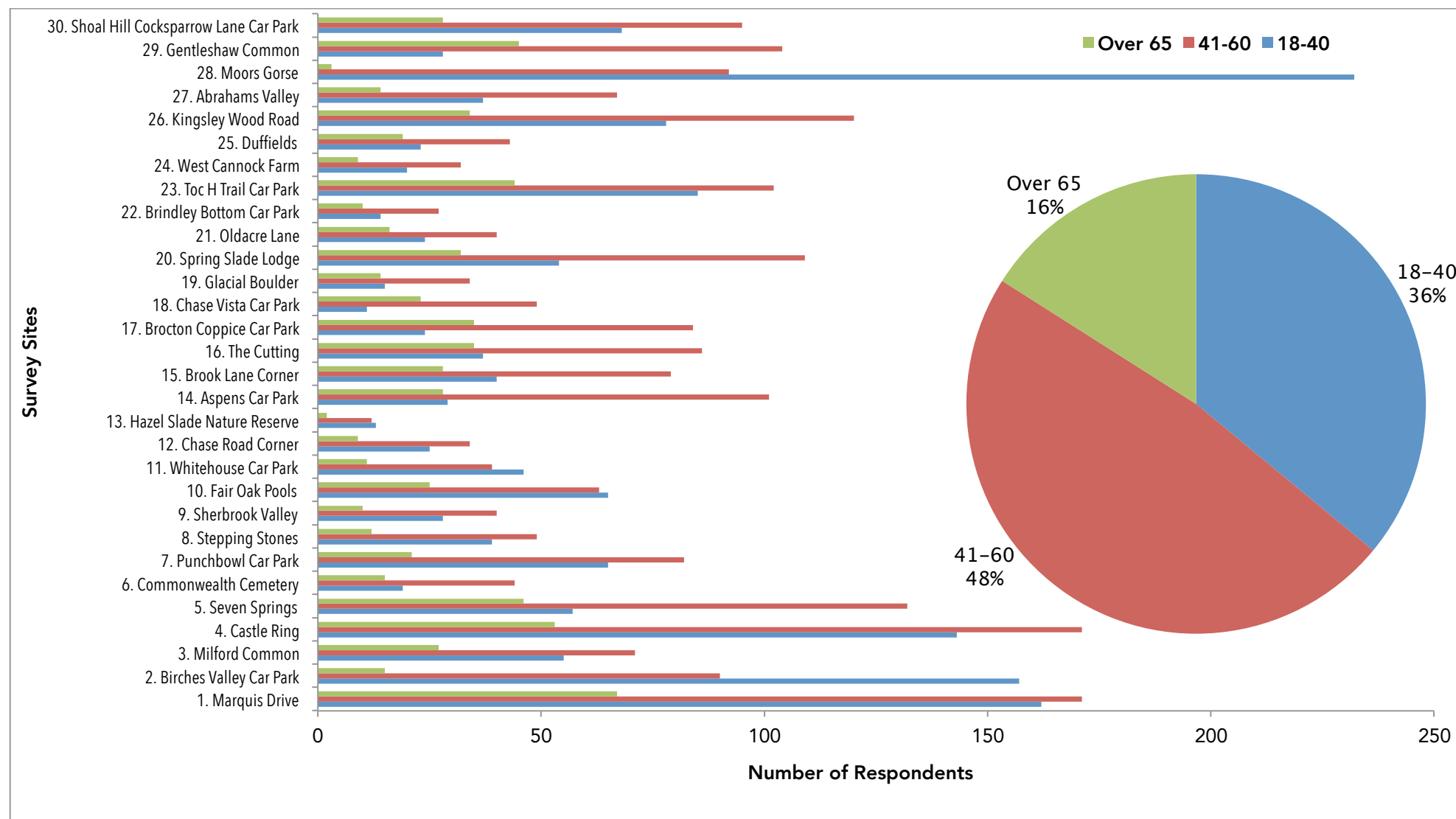


Figure 2.13: Age





## 3 AONB-wide Survey Analysis

### Chapter Summary

This chapter analyses and interprets the results of the interviews and observations recorded during the survey at an AONB-wide scale.

### 3.1 Survey component 1: Determination of the spatial catchment

- 3.1.1 **Figure 3.1** illustrates the distance that surveyed visitors travelled to visit the AONB. The map illustrates that whilst many visits are made by local people, some come from much further afield. **Figure 2.1** shows the national distribution of surveyed visitors to the AONB by local authority area. A high proportion of visitors come from within the immediate area around the AONB with attendance diminishing as distance increases. Surveyed visitors have been recorded from across the UK, ranging from Edinburgh to south Devon. The majority of visitors from further afield account for a small proportion of total visitors.
- 3.1.2 **Figure 3.2** shows the postcode data for the survey respondents of the 2010-11 visitor survey. The data shows the exact or general home location indicated by the respondents' postcodes. The survey methodology requests that a complete postcode is recorded; this was not completed in all cases with many only providing the first part of the postcode e.g. B75.
- 3.1.3 The first one or two digits allow the identification of the postcode area, for example ST refers to the Stoke-on-Trent area that covers approximately 20,000 postcodes. The second part of the postcode narrows down the geographic location to district level, for example ST17 is one of the six in the vicinity of Stafford. The remaining digits of a postcode allow further accuracy of location, generally down to an approximate 20 house area.
- 3.1.4 Restricted postcode accuracy limits any meaningful or precise geographic analysis. For this reason no detailed attempt to quantify or correlate volume of visitors with distance travelled, by for example stating number of visitors per specific zoned distance, have been made. Instead, general interpretation have been made where possible. Analysis of distance travelled was prepared for all survey responses that included a full postcode. Some 2,437 responses included a full postcode data. Of these, 2,197 (88%) of responses revealed that they had travelled from a distance equal to or less than 15km.
- 3.1.5 The main visitor areas are from the immediate periphery of the AONB including Stafford, Cannock and Lichfield. Other apparent source locations include Birmingham, Wolverhampton, Telford, Stoke-on-Trent and Tamworth. The AONB is located close to the M6 and M54 motorways.

### 3.2 Survey component 2: Frequency of visit

- 3.2.1 **Figure 2.2** shows a relatively even spread in visitor frequency across the categories. The most popular category indicates that 1,517 interviewees visit the AONB on a weekly basis; 52% visit on a daily or weekly basis; and 71% of visits are monthly. Only a small proportion of visitors visit less frequently than every month with 200 respondents representing 4%.
- 3.2.2 The “Other” category also showed high popularity with 1,275 respondents. Further information regarding frequency of visits is within the original data sheets.

### 3.3 Survey component 3: Duration of visit

- 3.3.1 **Figure 2.3** demonstrates a high level of variation in duration of visits to the AONB sites. The majority of respondents (c.4000; 85%) stated that visit length was under three hours, with the remaining c.800 (15%) comprising half day or overnight visits.
- 3.3.2 The shorter visits are comprised of:
- 1-2 Hours: 1534 (32%);
  - Up to an Hour: 1397 (29%); and
  - 2-3 Hours: 1119 (24%).

### 3.4 Survey component 4: Historic perspective

- 3.4.1 This component shows that the majority of respondents have been visiting the AONB for 5 years or more. There are more prominent trends for this at the more popular sites including Marquis Drive and Castle Ring. Of the 4800 surveyed respondents approximately 3600 had been visiting the Chase for greater than 5 years; this is approximately 76% of visitors.
- 3.4.2 There is a secondary trend present which indicates that some sites have undergone a recent surge in popularity; these include Moor’s Gorse and Birches Valley sites. The sites have experienced 50-60% increases in proportional visitor numbers within the past 5 years.

### 3.5 Survey component 5: Transportation

- 3.5.1 Component 5 indicates that the overwhelming majority of transportation to the AONB is via car with approximately 4000 visitors using this form of transport. Marquis Drive, Moor’s Gorse, Castle Ring and Birches Valley are shown to be the most popular sites for car-borne visitors.
- 3.5.2 Castle Ring and Gentleshaw Common have the highest incidences of walking and horse riding as the primary transportation to site.
- 3.5.3 There appears to be low usage of public transport amongst the sample group with only 22 (1%) recorded visitors. Motor-cycles, running and other forms of transportation are also all small scale usage.

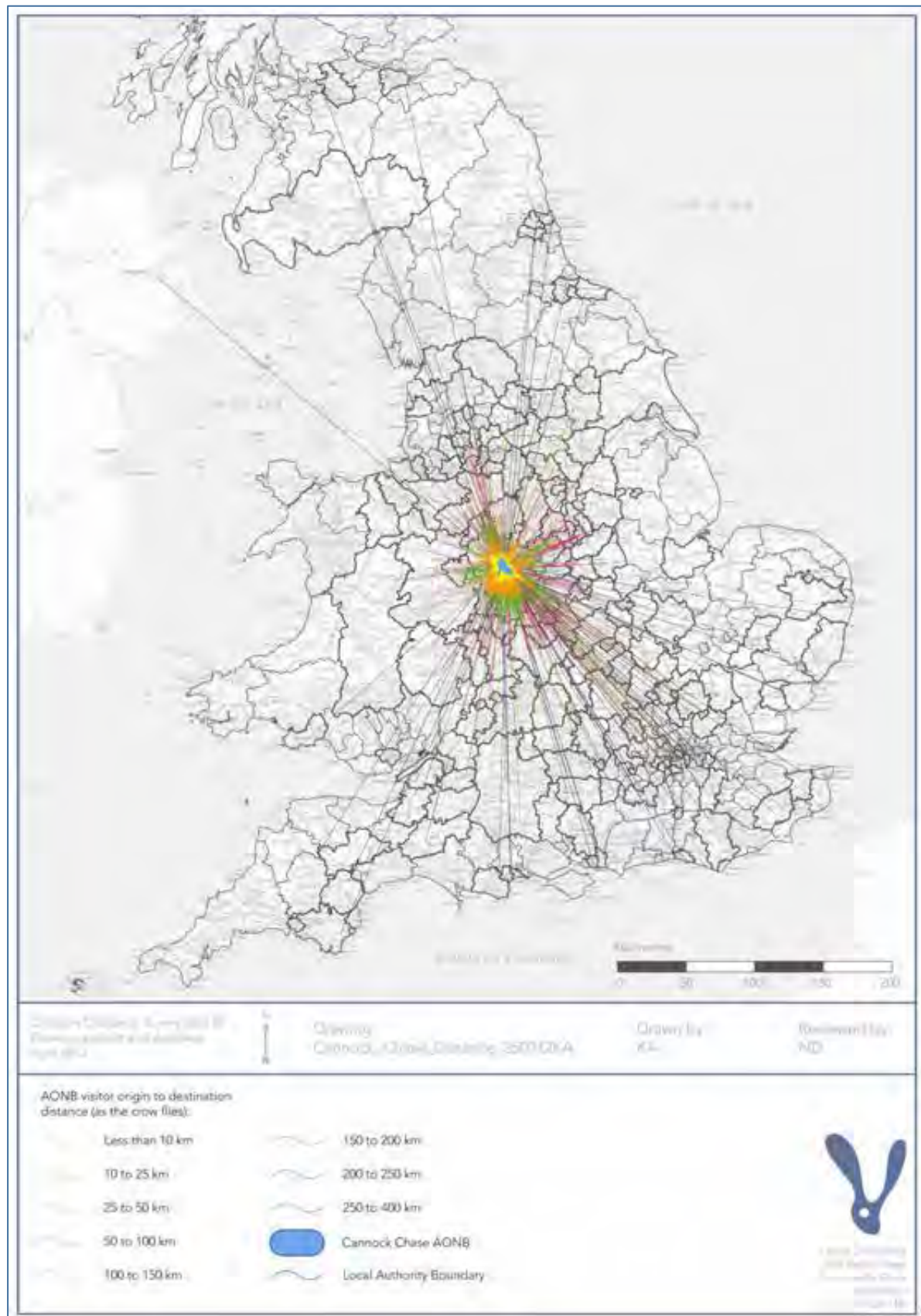


Figure 3.1: Distance travelled to the AONB

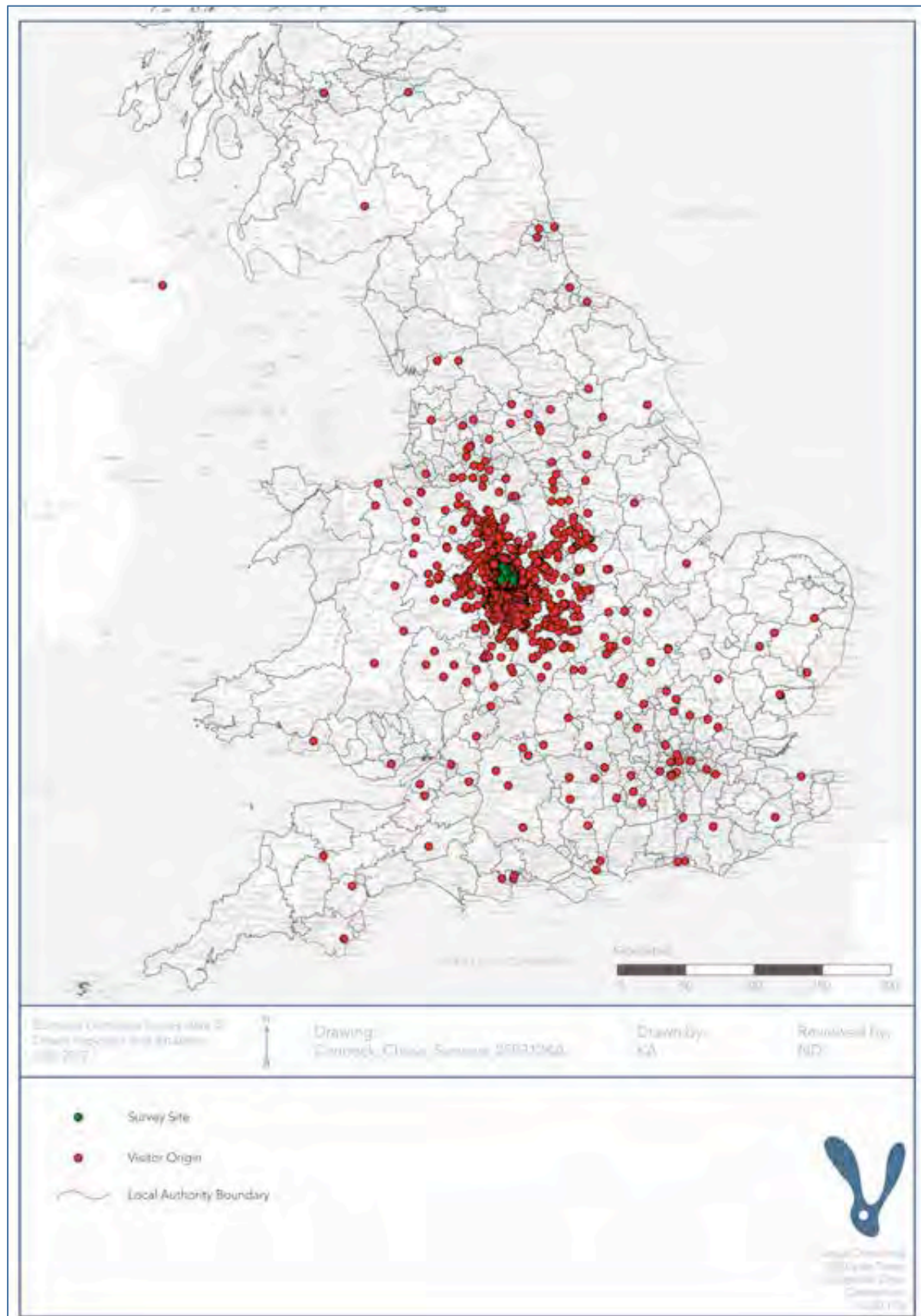


Figure 3.2: Postcode locations of survey respondents



### 3.6 Survey component 6: Activities

- 3.6.1 Component 6 shows that the surveyed sites throughout the AONB accommodate a variety of activities. **Figure 2.6** shows the number of visitors undertaking the activities at a site-by-site level; the additional pie chart displays the proportional breakdown of the activities AONB-wide as a percentage. A total of 28,336 visitors were observed during the surveys.
- 3.6.2 Preferred sites for walking included Birches Valley, Marquis Drive, Aspens, Seven Springs, and Brocton Coppice. The survey data shows:
- Walking is the most popular activity for visitors to the AONB with a total share of 9395 (34% of total observed visitors) recorded visitors. Of the activity categories walking is spread the most uniformly throughout the surveyed sites.
  - Birches Valley and Marquis Drive are the most popular sites for general walking with a larger proportion of total walkers 2346. Visitor numbers drop significantly at the next most popular site Aspens with 649.
- 3.6.3 Preferred sites for dog walking included Birches Valley, Whitehouse, Castle Ring, Marquis Drive, and Seven Springs. The survey data shows:
- Dog walking is the second most popular of the surveyed activities with 7332 (26%) of total visitors observed. In parallel with walking this activity has a wide geographical distribution across the AONB with all sites showing some incidence of dog walkers.
  - The five sites of preference incorporated 3147 dog walkers. The trends are comparable with walking as three of the five foremost sites are shared with the previous activity.
- 3.6.4 Preferred sites for horse riding included Abraham's Valley, Springslade, Fair Oak Pools, Gentleshaw Common, and Castle Ring. The survey data shows:
- Horse riding is prevalent throughout the AONB with the majority of survey sites. Horse riding only accounts for 635 recorded visitors, approximately 2% of total observed activity.
  - Two sites, Abraham's Valley and Springslade Lodge, have proven to be the most popular for this activity with 235 (37%) of all horse riders seen here.
  - The mobility of horses could result in single visits covering much larger areas of the AONB than other activities, with the exception of cycling. This could result in over-estimation of absolute numbers of individual horse riders due to double counting.
- 3.6.5 Preferred sites for cycling included Moor's Gorse, Birches Valley, Marquis Drive, Whitehouse, and Fair Oak Pools. The survey data shows:
- Cycling is the third most popular activity at the AONB with 6795 (24%) of total observed visitors participating.
  - 3281 (50%) of all cycling based activities took place at the Moor's Gorse and Birches Valley sites. These sites are within 2km of each other and are both within proximity to other sites and other parts of the AONB.

- Geographically, cycling is primarily confined to the central forested areas of Cannock Chase with much lower recorded presence on the un-wooded heathland.
- In the same way as horse-riding, the mobility of cyclists could result in single visits covering much larger areas of the AONB than other activities. This could result in over-estimation of absolute numbers of cyclists due to double counting.

3.6.6 The locations where people preferred to stay in their car or within vicinity of the car park were: Milford Common, Marquis Drive, Brocton Coppice, Springslade, and Aspens. The survey data shows:

- This activity category identifies those who visit the site and stay within the vicinity of their cars or the car park. This is a minority activity and accounts for 1111 (4%) of total observed visitors.
- The trends for this activity indicate that visitors within this categories cluster around the main visitor centres, scenic spots and gateway sites such as Marquis Drive, Milford Common, Aspens and Brocton Coppice.

3.6.7 A range of other activities occurred at Marquis Drive, Birches Valley, Milford Common, Aspens, and Springslade. The survey data shows:

- The “other” category comprises a wide range of alternatives which do not fit into the other main surveyed categories. These activities include picnicking, using play facilities, running etc.
- This activity contains 2833 (10%) of the total observed visitors within the survey period. Marquis Drive and Birches Valley are among the most popular locations for this range of unclassified activities.

3.6.8 It should be noted that some interviewees used the “other” category if visitors indicated they were likely to participate in different activities at different times. For example, some people indicated they were walking their dog at the time of interview but stated that they sometimes picnicked at the same location.

3.6.9 Another qualification to consider when analysing this component is the fact that surveyors would tick the box marked “other” when recording visitor presence without interviewing the observed visitors. This was necessary if the reasons behind a particular visit were unclear, or if they were likely to be participating in more than one activity.

## 3.7 Survey component 7: Temporal dimension

3.7.1 **Figure 2.7** illustrates that the majority of respondents visit the AONB at no regular time, approximately 2800 (58%) of the respondents fall into this category. This could indicate geographical proximity to the site and regular visiting patterns at various times of day.



**Plate 4:** Rail Crossing / Moor's Gorse/ A460

- 3.7.2 Some 1947 (42%) of respondents visit primarily between the hours of 09.00 – 12.00 (903/19%) with smaller proportions visiting before 09.00 (332/7%). The smallest proportion is after 17.00 with 124 (3%) respondents visiting the AONB at these times.
- 3.7.3 Unfortunately the largest proportion of the data offers limited specifics on temporal activity. This makes it difficult to identify relevant conclusions on patterns of visit.
- 3.7.4 The popularity of certain sites is shown with Moor's Gorse, Castle Ring and Marquis Drive amongst the most frequently visited. Marquis Drive, Birches Valley, Castle Ring, Kingsley Wood Road and Moor's Gorse all have higher proportions of visitors at earlier times, primarily 09.00-12.00.

### 3.8 Survey component 8: Group demographics

- 3.8.1 This component investigates group dynamics of visitors. It shows that visiting with family 2510 (33%), their dog 1832 (24%) or with friends 1424 (19%) are the most common group format.
- 3.8.2 Locational patterns reveal Castle Ring is popular for dog walking. Moor's Gorse is the most popular location to visit with friends. This could reflect the site's popularity for cycling.

- 3.8.3 For visitors with a horse, only 96 visitors (1%) used the AONB in this way. This is in-line with Survey Components 5 and 6, which indicate only small volumes of use for horse riding. Organised party was also a fringe category with approximately 1% of the total. This could demonstrate that the AONB is underutilised for organised visits or due to survey methodology (no under 18's surveyed) that organised groups were not accurately represented in the data.

### 3.9 Survey component 9: Reasons for visit

- 3.9.1 **Figure 2.9** shows that people visit the AONB for a variety of reasons. No single activity stands out. Activities include visiting to admire the attractive scenery; because the Chase is close to home; and it is a good place to go walking.
- 3.9.2 The graph reveals certain distinctive patterns. Most noticeable is the very high number of cyclists at Moor's Gorse. Another example is Brocton Coppice; where visitors go to enjoy the wildlife.
- 3.9.3 This part of the questionnaire included an option for people to specify that one of the reasons for visiting was that they felt safe. 8% of respondents registered this statement.

### 3.10 Survey component 10: preferred locations

- 3.10.1 **Figure 2.10** presents information about the number of visitors recorded at each of the 30 survey locations. Some 28,000 observations were made.
- 3.10.2 **Figure 2.10** shows that Birches Valley and Marquis Drive are the most popular sites accounting for 15% and 11% of total recorded visitors respectively. Both sites have significant visitor infrastructure including visitor centres and car parking. Specific reasons behind visits are raised (see **Figure 2.9**).
- 3.10.3 The other 28 sites are fairly evenly visited with no one site having more than 7% of the total visitor share. Brindley Bottom Car Park had the least number of visitors.

### 3.11 Survey component 11: Alternative locations

- 3.11.1 The questionnaire investigated the interviewee's alternative site preferences; this is displayed in **Figure 2.11**. A total of 83 alternative sites were referred to by the respondents.
- 3.11.2 The most popular alternative sites included Castle Ring (354), Sherbrook Valley (322), Brocton Coppice Area (316) and Birches Valley (289).
- 3.11.3 The respondents were allowed to select multiple alternatives. Some selected one alternative site, while others selected as many as five.

### 3.12 Survey component 12: Gender

- 3.12.1 A total of 2,649 men and 1,939 women were surveyed. No gender was recorded on 223 occasions; these have been excluded from the analysis.
- 3.12.2 The graph shows a fairly even spread of gender across the sites with marginally higher male (58%) to female (42%) ratio. There are, however some sites which have recorded noticeably higher levels of either gender.



3.12.3 The primary example of this is Moor's Gorse. Of the 317 interviewees 285 were male and 32 were female. Another example is Kingsley Wood Road where 151 of the 228 interviewees were male. There are few examples of numbers of women exceeding their male counterparts on site; the most notable is Marquis Drive with 205 women recorded out of 395 visitors in total.

### 3.13 Survey component 13: Age

3.13.1 The questionnaire sheet recorded age according to three ranges: (i) 18-40, (ii) 41-65 and (iii) over 65. The largest proportion is the 41-65 age group with 2262 (48%) respondents, followed by 1693 (36%) records for the 18-40s and 730 (16%) in the over 65 category.

3.13.2 Additionally a further 31 people were surveyed who were under the age of 18. These individuals have been excluded from analysis as the CCAONB methodology states not to interview those under the age of 18. There were no obvious trends for site popularity amongst over 65's with a proportional spread across the sites.

3.13.3 Some trends within the data are readily apparent; again Moor's Gorse is the primary example. Moor's Gorse has the highest number of recorded visitors between the ages of 18-40. Site popularity is focused on certain locations including Marquis Drive, Birches Valley and Castle Ring.



**Plate 5:** Cannock Chase Visitor Centre



## 4 Actual and Projected Visitor Numbers

### Chapter Summary

This chapter uses a process of scaling up actual visitor numbers to predict an overall total annual number of visits to the AONB. This number is estimated to be 2.3 million visits per annum. It should be noted that estimates of this kind include significant subjectivity. Appropriate caveats can be found in the text.

### 4.1 Introduction

4.1.1 This chapter presents the results of the survey effort that was undertaken in accordance with the survey methodology presented in **Chapter 2**. The visitor counts were undertaken on a sampling basis that enabled snapshots of particular time periods to be collected during the daytime. Two sets of figures are presented in the following sections. A net figure which refers to total sampled data collected, and a gross figure which is a predicted figure derived through scaling up the net figures.

### 4.2 Assembling the data

4.2.1 **Chapter 2** explains how the visitor survey data was collected by a team of dedicated volunteers. The survey methodology was clearly explained and followed to help ensure that information was collected consistently. A total of 4,809 face to face surveys were conducted during the survey campaign. The total time period covered 39 weeks of the year beginning in September and finishing in August.

4.2.2 All primary data, that is to say, information collected first-hand by the surveyors was transferred to Excel worksheets by the AONB Team. This data was then passed to Footprint Ecology so that the data could be presented as part of a single Excel worksheet. The presentation of the data in this format enables comprehensive analysis using the Microsoft Excel software. The data transfer procedure was quality assured.

### 4.3 Quality assurance

4.3.1 Lepus Consulting has been instructed by the Cannock Chase AONB Partnership to analyse the newly collected 2010-2011 Visitor survey data. This includes examining visitor numbers, patterns of use, assist in identifying future visitor impact and facilitate the future management practises upon the AONB.

4.3.2 Thirty sites were sampled over a twelve month period collecting a total of 623 datasheets. The counts recorded approximately 28101 (adjusted) visitors. In addition, approximately 4810 detailed individual survey questionnaires were conducted. This equates to a 60% increase on the estimated collection number of 3000.



- 4.3.3 Lepus Consulting was requested to independently validate the Footprint Ecology manipulated data for accuracy of transcription with the original CCAONB datasheets. An initial validation of 10% was suggested, with an additional 10% if no errors were identified within the initial stage.
- 4.3.4 The AONB Unit provided both the original datasheets and the transcribed data for analysis by Footprint Ecology. The FE data covers all 30 survey sites and includes a summary of both the overall tally data and the individual questionnaires given by the CCAONB volunteer team. A comprehensive validation has been completed for all sites.
- 4.3.5 The analysis undertaken by Lepus Consulting places no emphasis upon designation, aiming to provide an assessment of the AONB as whole. The differences in percentage validated are a result of the number of sites within the sample. The initial validation of 10% identified no errors within the sample therefore a further 10% was analysed resulting in a total validation sample of 120 datasheets. The validated sample comprises approximately 19% of the total survey sample of 632.
- 4.3.6 To ensure accuracy of transcription, data from each site was checked on at least four occurrences, at different points throughout the year and at varying times of day. Each of the four checks at each site attempted to cover as great a diversity of temporal variability as possible. The aim of this was to ensure that as much of the sample was covered as possible.
- 4.3.7 Of the 120 datasheets validated none were established to have been transcribed incorrectly to the FE datasheets. While there may still be errors within the dataset, the sample of 120 points provides a confidence level of 99% in an error level of 10.6% (Custom Insight, 2012).
- 4.3.8 Further cross-comparison could be undertaken to provide further assurance that the data has been transcribed accurately, this would be a labour intensive process; example figures for accuracy are as follows:
- 5% Accuracy at 99% Confidence – 324
  - 2% Accuracy at 99% Confidence – 548
  - 1% Accuracy and 99% Confidence – 609

#### 4.4 Survey coverage

- 4.4.1 The data collection period followed the methodology established by the AONB Unit (see **Appendix E**). Survey effort did not always yield coverage of each site in the same way. This is understood to reflect (i) adverse weather conditions e.g. parts of the Chase are inaccessible by car during heavy snow, (ii) occasional surveyor absence due to illness and (iii) availability in general of volunteers.

**Table 4.1: Validation Table**

	Site	Date	Time	Date	Time	Date	Time	Date	Time
1	Marquis Drive	28/07/2011	0800-1000	20/04/2011	1030-1300	03/01/2011	0800-1000	16/02/2011	1330-1530
2	Birches Valley	25/08/2011	1600-1800	21/04/2011	1630-1900	21/04/2011	1030-1300	25/05/2011	1030-1300
3	Milford Common	23/08/2011	1630-1900	05/03/2011	1330-1600	19/02/2011	0730-1000	30/04/2011	1630-1900
4	Castle Ring	07/08/2011	1330-1600	14/02/2011	0810-1010	23/12/2011	1030-1330	21/04/2011	0800-1000
5	Seven Springs	16/08/2011	1630-1900	19/04/2011	1030-1300	03/02/2011	0730-1000	05/02/2011	1330-1600
6	Cemeteries	15/04/2011	0730-1000	18/04/2011	1330-1600	05/03/2011	1330-1530	03/01/2011	1030-1300
7	Punchbowl	18/08/2011	1030-1300	13/03/2011	1330-1530	27/11/2010	1030-1230	20/04/2011	1030-1300
8	Stepping Stones	25/08/2011	1330-1600	10/11/2010	1230-1430	26/04/2011	0730-1000	22/12/2010	1330-1600
9	Sherbrook Valley	25/08/2011	1630-1900	21/04/2011	1030-1300	21/02/2010	0730-1000	20/04/2011	1630-1900
10	Fair Oak Pools	05/08/2011	1330-1600	05/03/2011	0800-1000	25/07/2011	1400-1600	23/11/2010	1030-1230
11	White House	28/08/2011	1030-1300	02/01/2011	1330-1600	05/07/2011	1630-1830	07/11/2010	1600-1800
12	Chase Road Corner	16/08/2011	0730-1000	22/12/2010	0730-1000	25/01/2011	1030-1300	26/04/2011	1330-1600
13	Hazelslade Reserve	04/08/2011	1630-1900	03/01/2011	1100-1300	22/10/2011	1400-1600	18/10/2010	0730-0930
14	Aspen	02/08/2011	1022-1222	22/04/2011	1030-1300	14/05/2011	1030-1300	08/02/2011	0800-1000
15	Brook Lane Corner	05/08/2011	1030-1300	06/03/2011	1330-1600	21/04/2011	1330-1600	09/05/2011	1030-1300
16	The Cutting	05/08/2011	1630-1830	25/10/2010	1100-1300	03/01/2011	1030-1230	23/05/2011	1030-1230
17	Coppice Hill	08/08/2011	1330-1600	21/11/2010	0730-0930	17/04/2011	1030-1300	20/05/2011	1330-1600
18	Chase Vista	30/07/2011	1630-1900	08/02/2011	1600-1800	21/12/2010	1030-1300	20/04/2011	1330-1600
19	Glacial Boulder	25/08/2011	0730-1000	13/03/2011	1030-1300	27/04/2011	0730-100	22/12/2010	1030-1300
20	Spring-slade Lodge	28/07/2011	1030-1230	16/11/2010	1030-1230	11/04/2011	0800-1000	07/07/2011	1330-1600
21	Oldacre Lane	19/08/2011	1330-1600	18/02/2011	1200-1400	25/04/2011	1630-1900	27/06/2011	1030-1300
22	Brindley Bottom	31/08/2011	1025-1225	15/03/2011	0735-0935	03/01/2011	1330-1530	05/03/2011	1030-1230
23	Toc H Trail	24/02/2011	1030-1300	22/12/2010	1030-1300	11/04/2011	1030-1300	26/06/2011	0630-1900
24	West Cannock Farm	22/08/2011	1030-1230	07/02/2011	1315-1315	17/12/2010	0740-0940	15/04/2011	0800-1000
25	Duffields	13/08/2011	0730-1000	04/11/2010	1230-1430	22/12/2010	0730-1000	27/04/2011	1330-1600
26	Kingsley Wood	06/05/2011	0745-0945	14/04/2011	1030-1230	28/12/2010	0800-1000	14/02/2011	1030-1300
27	Abraham's Valley	20/12/2010	0730-1000	06/07/2011	1630-1830	18/08/2011	1030-1230	27/01/2011	1020-1200
28	Moor's Gorse	16/06/2011	1030-1230	14/04/2011	1630-1900	30/12/2010	1345-1545	19/08/2011	1400-1600
29	Gentle shaw Common	24/05/2011	1030-1300	19/04/2011	1630-1900	25/10/2010	0730-0930	30/12/2010	0730-1000
30	Shoal Hill Common	19/03/2011	0800-1000	21/06/2011	0900-1100	07/01/2011	1030-1300	12/11/2010	0730-0930

4.4.2 **Table 4.2** illustrates survey coverage according to the number of sites surveyed during a survey season and has presented data according to weekend and weekday information.

4.4.3 In terms of weekend data, the survey methodology for bank holiday periods required that interviews be undertaken at either weekend or weekday. The Christmas bank holiday periods fell across weekends hence the weekend survey coverage is lower compared with other survey windows. Nevertheless useful information was collected by dedicated volunteers who were prepared to work on the Boxing Day and New Year's Day bank holiday. Easter had similarly low coverage of weekend periods for the same reasons.

- 4.4.4 The summer holiday survey period also has a low weekend count when compared with autumn and spring/summer. This is attributed to the fact that volunteer availability is affected by other commitments during this period meaning that some sites were surveyed (11) whilst others were not (19).
- 4.4.5 The effects of the weather were not recorded on the questionnaire sheet. Consequently, they have not been discussed or analysed in any detail.

**Table 4.2:** Survey coverage

	Weekday		Weekend	
	No. of sites where surveys took place	Total as percentage of 30 sites	No. of sites where surveys took place	Total as percentage of 30 sites
<b>Autumn</b> (19 weeks) 3 x 2-hr periods	30	100%	29	97%
<b>Christmas</b> (2 weeks) 3 x 2-hr periods	22	73%	8	27%
<b>Easter</b> (3 weeks) 4 x 2-hr periods	27	90%	5	17%
<b>Spring/Summer</b> (9 weeks) 4 x 2-hr periods	22	73%	22	73%
<b>Summer Holiday</b> (6 weeks) 4 x 2-hr periods	26	87%	11	37%

## 4.5 Net data figures

- 4.5.1 Primary data is represented in this section and called net data. **Table 4.3** illustrates the results according to the survey window during which they were collected. Column 1 of **Table 4.2** indicates the survey frequency that was expected at each site. In cases where data was not collected according to the required number of two hour slots the information presented in the Net Data Tables in **Appendix D** has been prepared according to the average number of visitors available for the total number of two hour slot data available for that particular site. A total of 47 (11%) survey events (2 hour slots) were determined in this way for the purposes of preparing the Net Data Figures.
- 4.5.2 The figures and information in **Table 4.3** reflects the data that was collected first hand. The only changes at this stage in the calculations relate to circumstances where at least one set of two hour data was collected for a site. In these cases the respective missing two hour slots have been estimated according to averages for the same site.
- 4.5.3 **Table 4.3** represents primary data, adjusted for any missing time. It does not include any scaled data. It reflects data derived and presented as a sample i.e. a proportion of total visitor numbers.

- 4.5.4 The total number of visits recorded i.e. the sum of the primary net data (that which reflects one day a week and one day at the weekends) only where data was collected on this basis, over a non-sequential 39 weeks within a 52 week period, is 1.28M (million).

**Table 4.3:** Primary data; recorded net totals during each survey period

	Weekday	Weekend
	Recorded net number of weekday visitors	Recorded net number of weekend visitors
<b>Autumn</b> (19 weeks) 3 x 2-hr periods	358,571	157,695
<b>Christmas</b> (2 weeks) 3 x 2-hr periods	16,945	8,800
<b>Easter</b> (3 weeks) 4 x 2-hr periods	77,905	5,774
<b>Spring/Summer</b> (9 weeks) 4 x 2-hr periods	112,417	102,483
<b>Summer Holiday</b> (6 weeks) 4 x 2-hr periods	130,978	19,435

## 4.6 Scaling the sampled data

- 4.6.1 As **Table 4.2** shows, the survey coverage was less than 100% during all survey periods except for autumn weekdays. During this time at least three 2-hour slots were recorded during each week day (Monday-Friday).
- 4.6.2 In the case of all other survey periods (a total of 9 out of 10, see **Table 4.2**) some data needs to be scaled up in order to present comparable figures. That is, so that all sites have survey figures to meet the full planned quota of data at each of the 30 sites.
- 4.6.3 To facilitate this, the missing data cells have used averaged values for all of the other sites for which data was available in the same survey period e.g. weekdays for Easter. A total of 98 out of 300 site survey periods were adjusted in this way.
- 4.6.4 The total number of visitors when scaled up to reflect survey results for five days a week and two days at the weekends was 1.4M (million).

## 4.7 Scaling to produce gross estimated annual figures

- 4.7.1 In preparing an estimate of the total number of visitors to Cannock Chase throughout the year, the scaled sampled data has been used. It should be noted that any estimate of this nature is precisely that: an estimate. There are different ways of preparing a gross estimate. The simplest is to identify the period of time for which visitor survey data is available and multiply this figure by the period of time for which data has not been recorded. By way of an example see Box 1.

**Box 1: Example used to illustrate scaled calculations**

The total available visitor survey hours during a weekday in the autumn and winter period is, on average, approximately 11.5 hours. In the case of weekday data for Marquis Drive, this yielded a value of 85 visitors during 6 hours of the available 11.5 survey hours on a weekday. In a week, this adds up to 425 visitors during 30 hours of the available 57.5 survey hours.

In order to scale up the recorded figures so that they might reflect the total available time for accessing the chase during this period for open air recreation, a factorisation value of 0.92 (rounded) can be derived from these figures.

- 4.7.2 Factoring in this way has provided the means to scale up the figures so that 39 weeks of the year can now be calculated. In order to account for the 13 weeks that experienced no survey effort, weekly figures for the relevant “missing” part of the year were applied. It was determined that seven of the missing weeks fall into the autumn survey season and six weeks fell into the spring and summer period.

**Table 4.4:** Factorisation figures for non-surveyed time periods

Seasonal Survey Period	Survey time	Earliest time of day on average	Latest time of day on average	Survey coverage (hours)	Total available survey window (hrs)	Amount of time not surveyed (hours)	Factor to be applied to Gross figure (rounded)
Autumn	3 x 2-hr slots	0730	1800	6	11.5	5.5	<b>0.92</b>
Christmas	3 x 2-hr slots	0730	1600	6	9.5	3.5	<b>0.58</b>
Easter	4 x 2-hr slots	0730	1900	8	12.5	4.5	<b>0.56</b>
Spring Summer	4 x 2-hr slots	0730	1900	8	12.5	4.5	<b>0.56</b>
Summer Holidays	4 x 2-hr slots	0730	1900	8	12.5	4.5	<b>0.56</b>

- 4.7.3 The total annual figure for visitor numbers at Cannock Chase AONB is estimated to be 2.35M. **Table 4.5** indicates the scaled up values that have been determined for the year. They cover all available daylight hours that might be used for open air recreation.
- 4.7.4 It should be stressed that this figure represents only one outcome of factorisation. It should only be used to provide an order of magnitude from which management recommendations be made. It is perhaps more useful to apply the net survey figures rather than any scaled version such as this. There are other ways in which scaling may be achieved and a range of complex statistical measures that may be applied to provide an indication of annual visitor numbers. This report has not explored these as the scope of work is to provide indicative figures rather than an exhaustive suite of options relating to magnitude.

**Table 4.5:** Gross annual estimated figures using factorisation

	Weekday	Weekend
	Recorded net number of weekday visitors	Recorded net number of weekend visitors
<b>Autumn</b> (19 weeks) 3 x 2-hr periods	687,262	312,671
<b>Christmas</b> (2 weeks) 3 x 2-hr periods	36,586	52,250
<b>Easter</b> (3 weeks) 4 x 2-hr periods	135,251	54,132
<b>Spring/Summer</b> (9 weeks) 4 x 2-hr periods	239,525	218,359
<b>Summer Holiday</b> (6 weeks) 4 x 2-hr periods	225,356	82,822
<b>Autumn – not surveyed</b> (6 weeks)	154,934	117,655
<b>Spring – not surveyed</b> (7 weeks)	192,500	181,852





## 5 Site Specific Trends

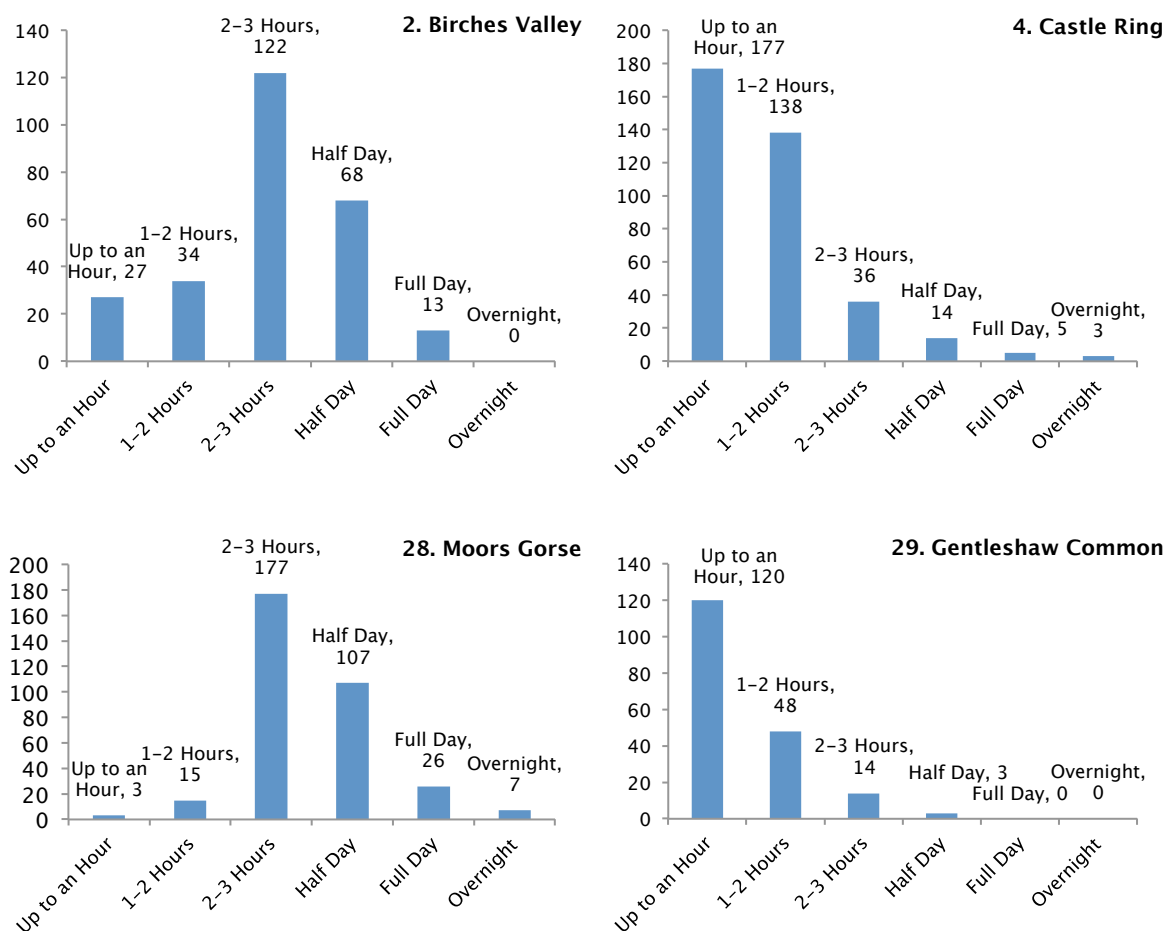
### Chapter Summary

This chapter explores differences between the 30 survey sites. It considers a number of different questions and uses interview response data to answer them. The question about distance travelled to visit the AONB is discussed in Chapter 3.

### 5.1 How often do visits take place?

5.1.1 The frequency of visits is not directly comparable across the survey sites.

### 5.2 How long does a visit last?

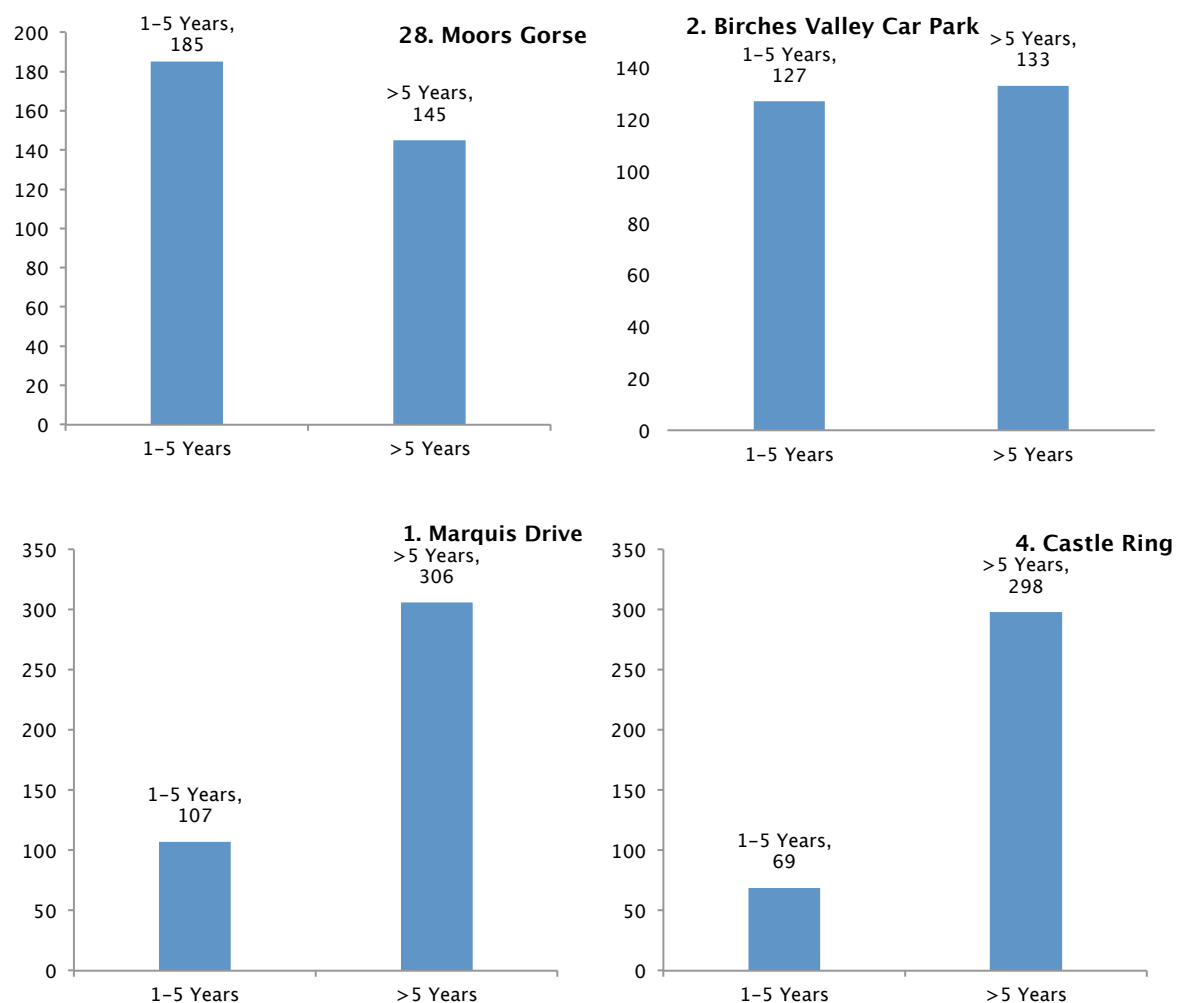


**Figure 5.1:** How long does a visit last?

5.2.1 **Figure 5.1** shows the wide variation of visit duration at different locations across the AONB. Four have been chosen to illustrate this point: Birches Valley, Castle Ring, Moor's Gorse and Gentleshaw Common.

- 5.2.2 Birches Valley and Moor's Gorse have a limited number of short visits with the majority exceeding two hours in length. Both these sites have been identified as the principle locations for cycling activities within the AONB.
- 5.2.3 Data for Castle Ring and Gentleshaw Common indicates that these two sites have shorter duration visits of up to two hours. They are also amongst the most popular sites for horse riding and dog walking.
- 5.2.4 Small numbers of people visit for more than half a day.

### 5.3 How long have people been visiting sites?



**Figure 5.2:** How long have visitors been coming to particular locations?

- 5.3.1 Drawing on four examples, the graphs in **Figure 5.2** illustrate that the majority of visitors to the AONB have been visiting for five years or more.
- 5.3.2 Moor's Gorse and Birches Valley do not comply with this general trend and have shown notable increases of visitors within the 1-5 year category.
- 5.3.3 Marquis Drive and Castle Ring demonstrate high levels of repeat visits for more than five years.

## 5.4 Survey Component 5: Transportation

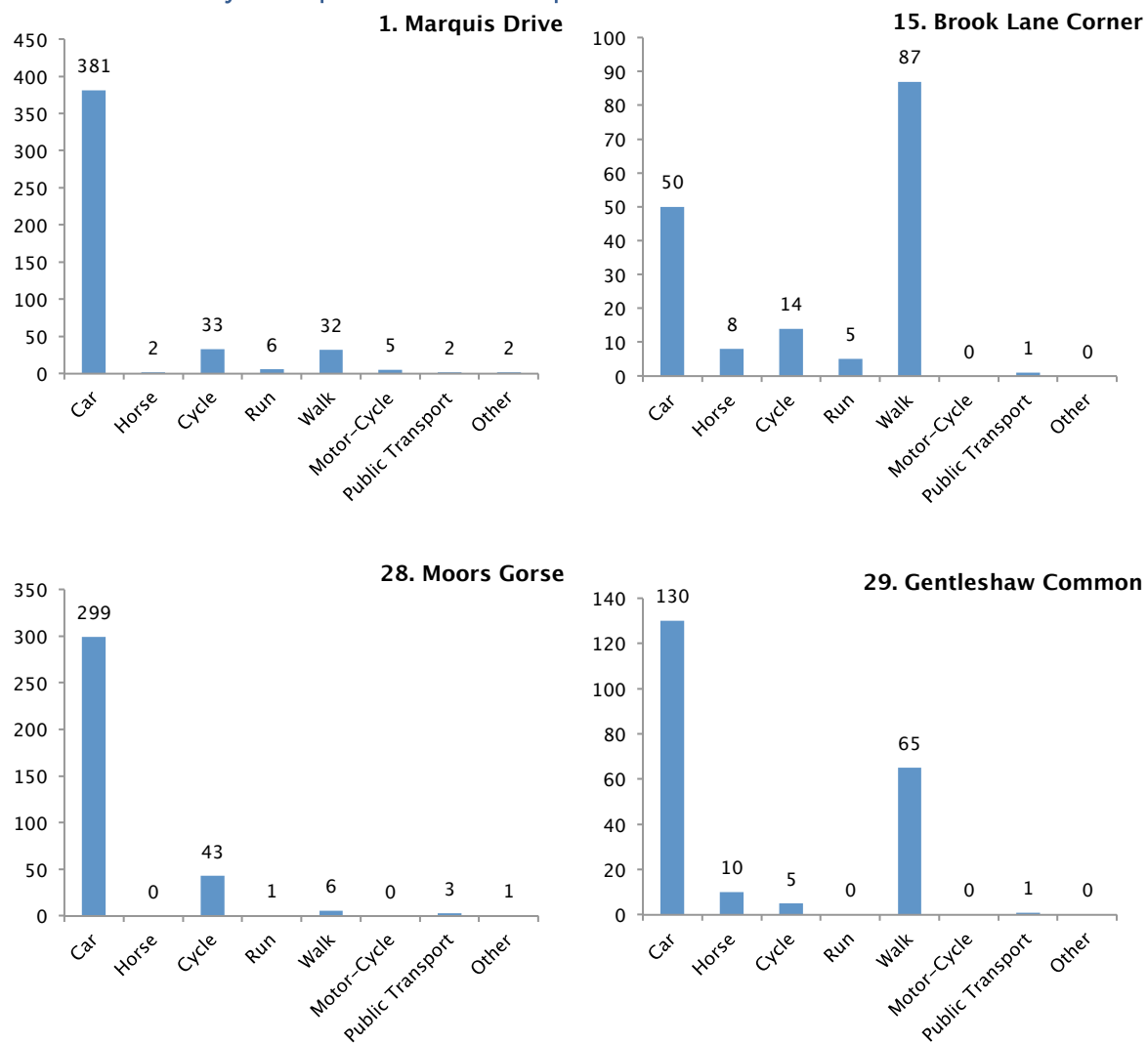


Figure 5.3: Transport modes used to visit four sites

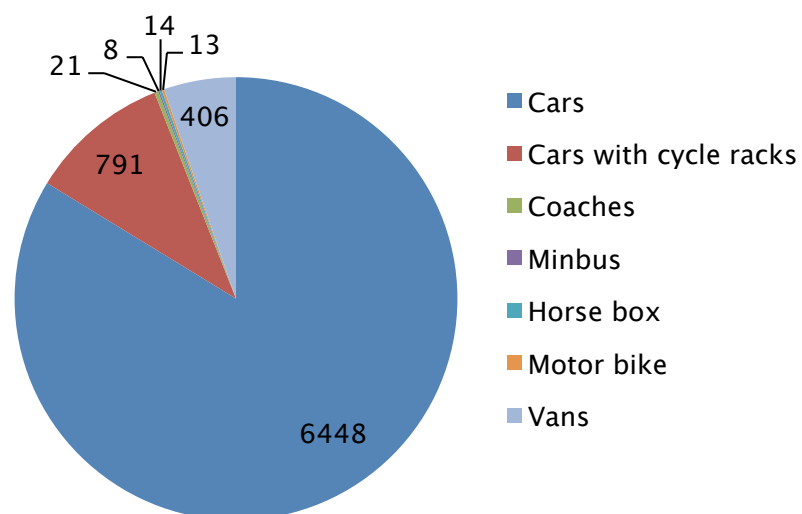


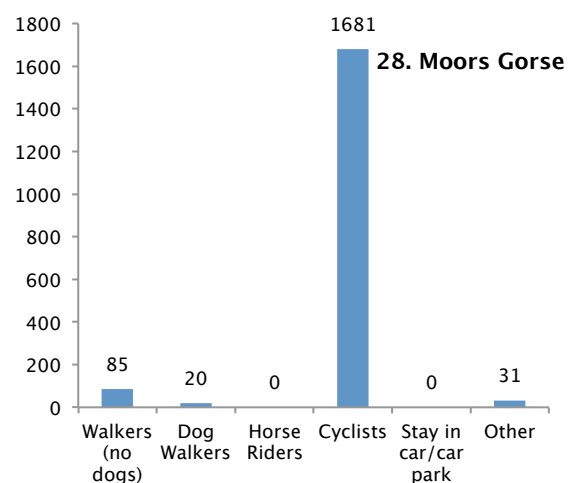
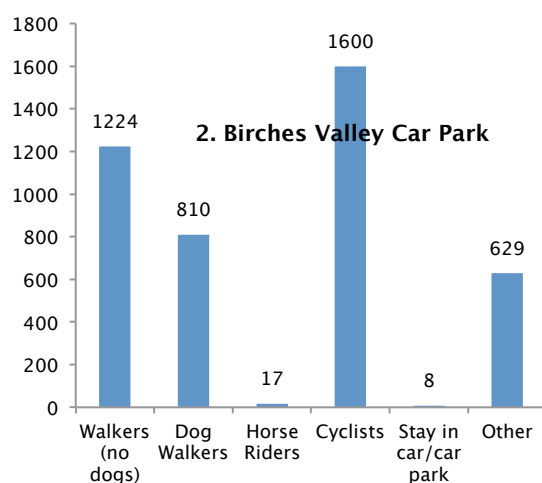
Figure 5.4: Car park survey results for different transport types

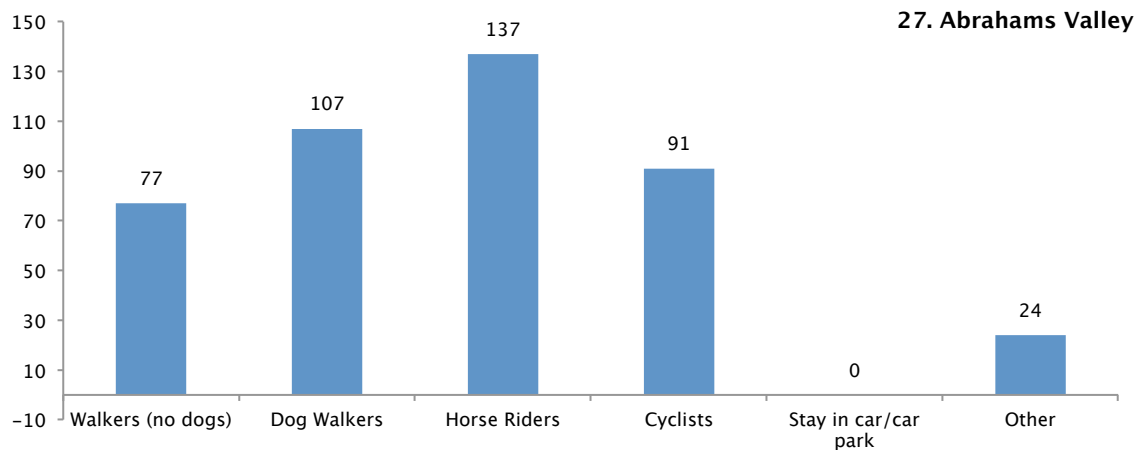
- 5.4.1 Figure 5.3 shows the different modes of transport cited by interviewees at a selection of four sites.
- 5.4.2 Access by car features strongly at all sites. Only at Brook Lane Corner was walking higher than car use. This is an important consideration when looking at these parts of the Chase that are in close proximity to houses. At such locations, walking is popular and sustainable. Walkers are likely to be accompanied by dogs and access into the Chase is important for people living close to the edge.
- 5.4.3 Moor's Gorse has an increased proportion of visitors cycling to, or through, the sampling point in comparison to AONB-wide trends as displayed in **Figure 2.5**. Moor's Gorse is on the Forestry Commission's promoted mountain bike route "The Monkey Trail" and also very close to the "Follow the Dog" bike trail. These are likely to be significantly influencing decisions to visit this location.

## 5.5 Car park survey

- 5.5.1 Data was also collected through surveys of the primary car parks and secondary parking sites throughout the AONB. The data was collected on eighteen occasions throughout the survey period at varying time slots.
- 5.5.2 The surveyors followed a fixed route starting at Shoal Hill Common and finished at Seven Springs. The forms of transportation recorded included: cars, cars with cycle racks, vans, motorbike, horseboxes, minibuses and coaches. Over the survey period a total of 7701 records were made.
- 5.5.3 The graphs indicate that the data collected from the car park survey supports the information collected from the questionnaires. The majority of visitors appear to use the car as their primary means of transportation. Unfortunately the two datasets do not have 100% equivalent categories making comparison difficult except for broad trends. The car park survey did not record numbers of people walking to the site.

## 5.6 What do visitors do at different sites?





**Figure 5.5:** Activity types recorded at different sites

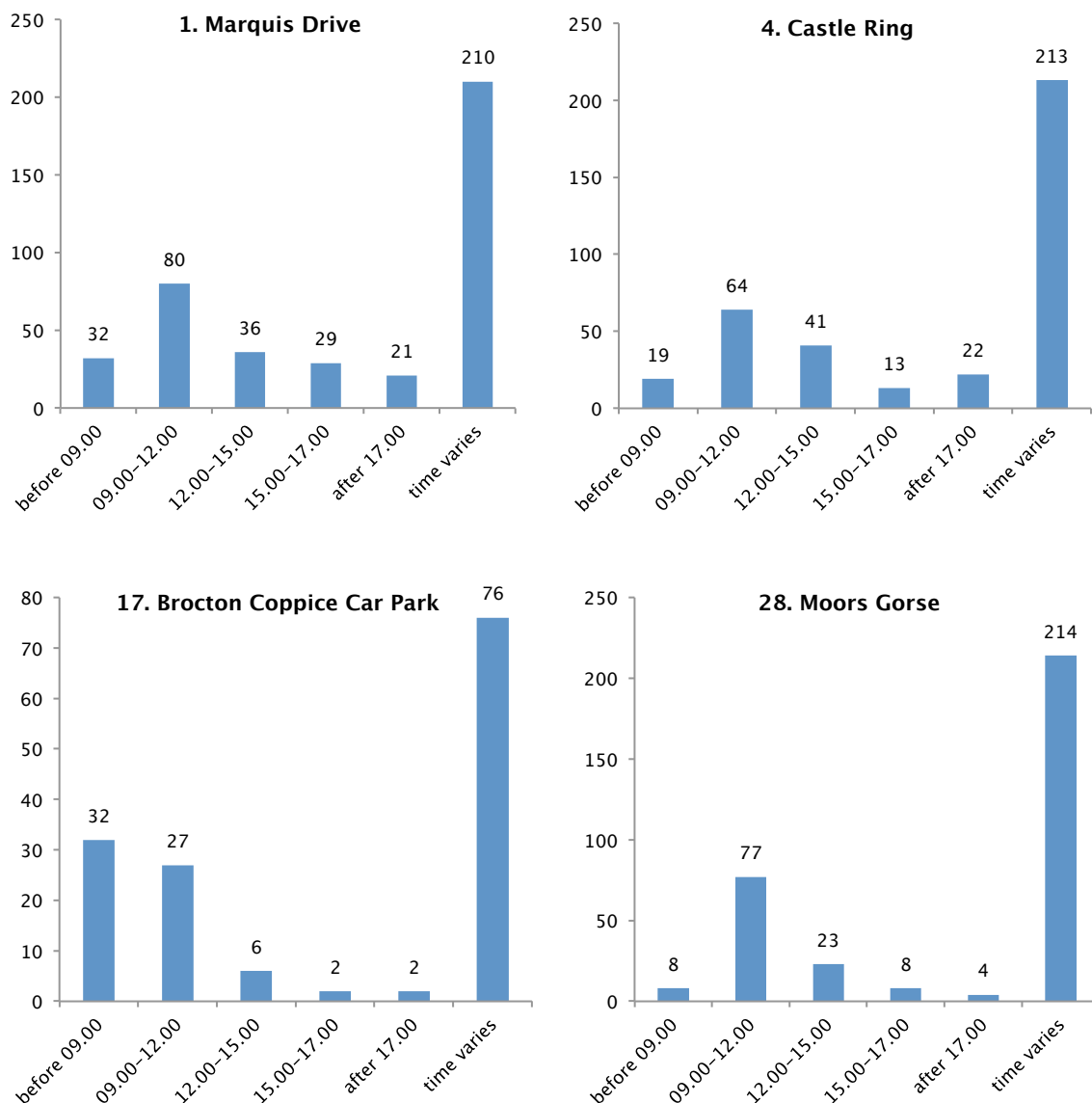
5.6.1 Open air recreation is an important feature of Cannock Chase. People visit with their friends, family and pets to enjoy the place. They undertake a range of activities. Predominantly, these include walking, cycling and horse riding. The popularity of cycling has grown in recent years. Birches Valley and Moor's Gorse are special locations for this activity. There are economic links to cycling including a new bike shop at Milford Common. Economic aspects associated with visitor levels have not been included as part of this study.

5.6.2 Of the surveyed sites, Abraham's Valley has relatively even numbers of different activities.

## 5.7 When do visitors come to the AONB?

5.7.1 The majority of interviewees (58%) visit the AONB at no regular time. Of the four example sites selected in **Figure 5.6**, all have low incidence of activity in the afternoon/evening, the trends present correspond with the AONB-wide patterns as displayed in Survey Component 7.

5.7.2 Brocton Coppice has a high proportion of visitors before 09.00, this could be a result of the sites proximity to the village of Brocton. Moor's Gorse has limited visitation outside of the 09.00 – 15.00 range, this could be linked with the sites importance for cycling, as before and after these times light may be inadequate resulting in decreased safety conditions.

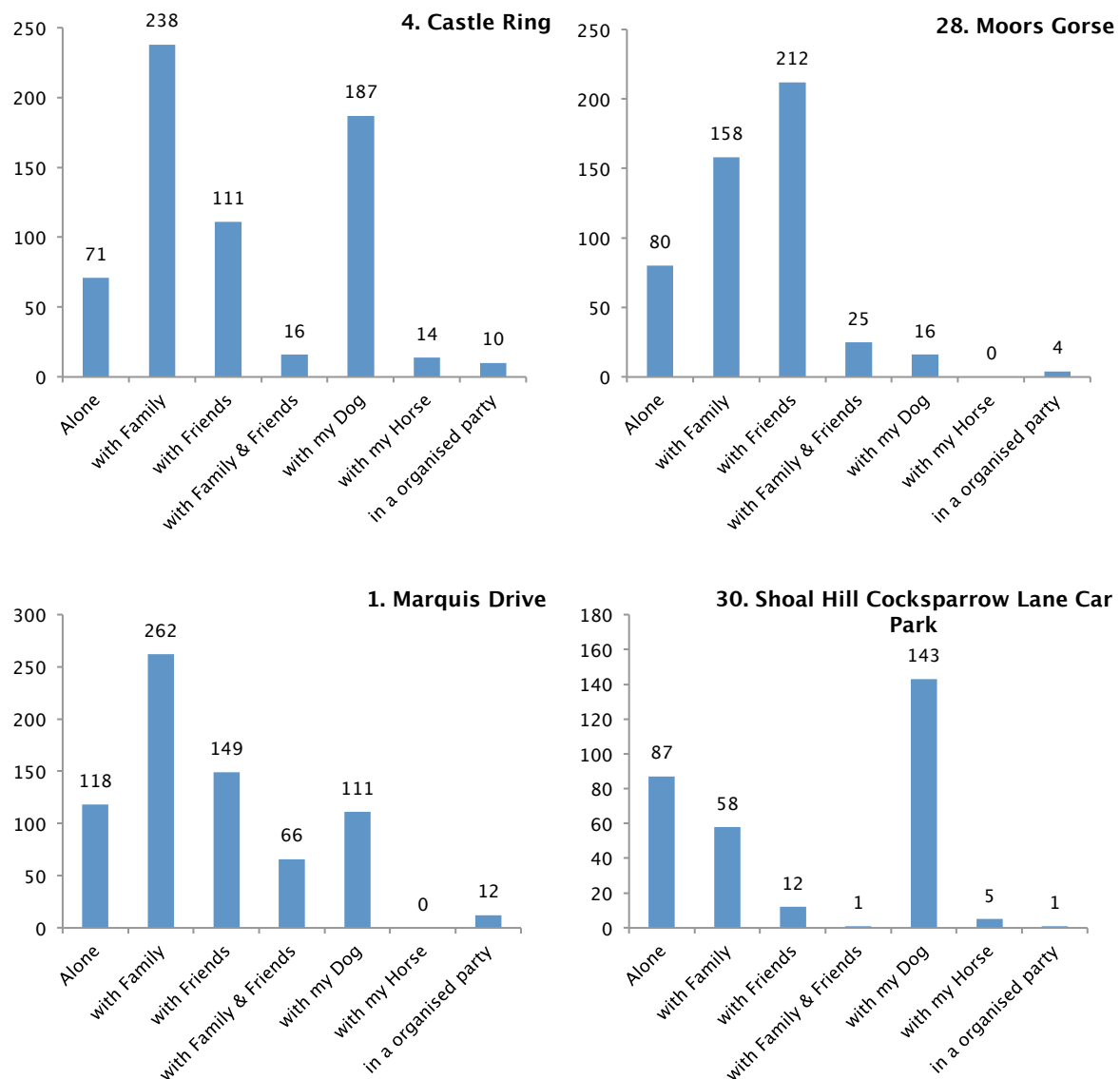


**Figure 5.6:** Visiting times at selected sites

## 5.8 Group Demographics

- 5.8.1 Group demographics represent information about who visits the Chase either alone, with family, friends or pets. In **Figure 5.7**, four sites have been selected to look at group demographics in more detail.
- 5.8.2 Castle Ring's demographic data shows that large proportions of recorded visitors are "with family" (238) or "with my dog" (187). Prevailing activity at the site includes walking and dog walking.
- 5.8.3 Moor's Gorse is used overwhelmingly by cyclists with minimal other activity use. Visitor demographic information reveals that people visit mostly "with family" (158) or "with friends" (212).





**Figure 5.7:** Group demographics for a selection of sites

5.8.4 Marquis Drive is among the most popular of the surveyed sites. It demonstrates significant variation of activity including walking, dog walking and a significant number of "other" activities. This site has significant proportions of visitors from most demographic categories.

5.8.5 Shoal Hill has strong demographic trends for visits "with my dog". This links with the primary activity at the site which is dog walking. The site is located within the southerly spur of the AONB and is in close proximity to residential areas, which may account for the demographic patterns at this location.

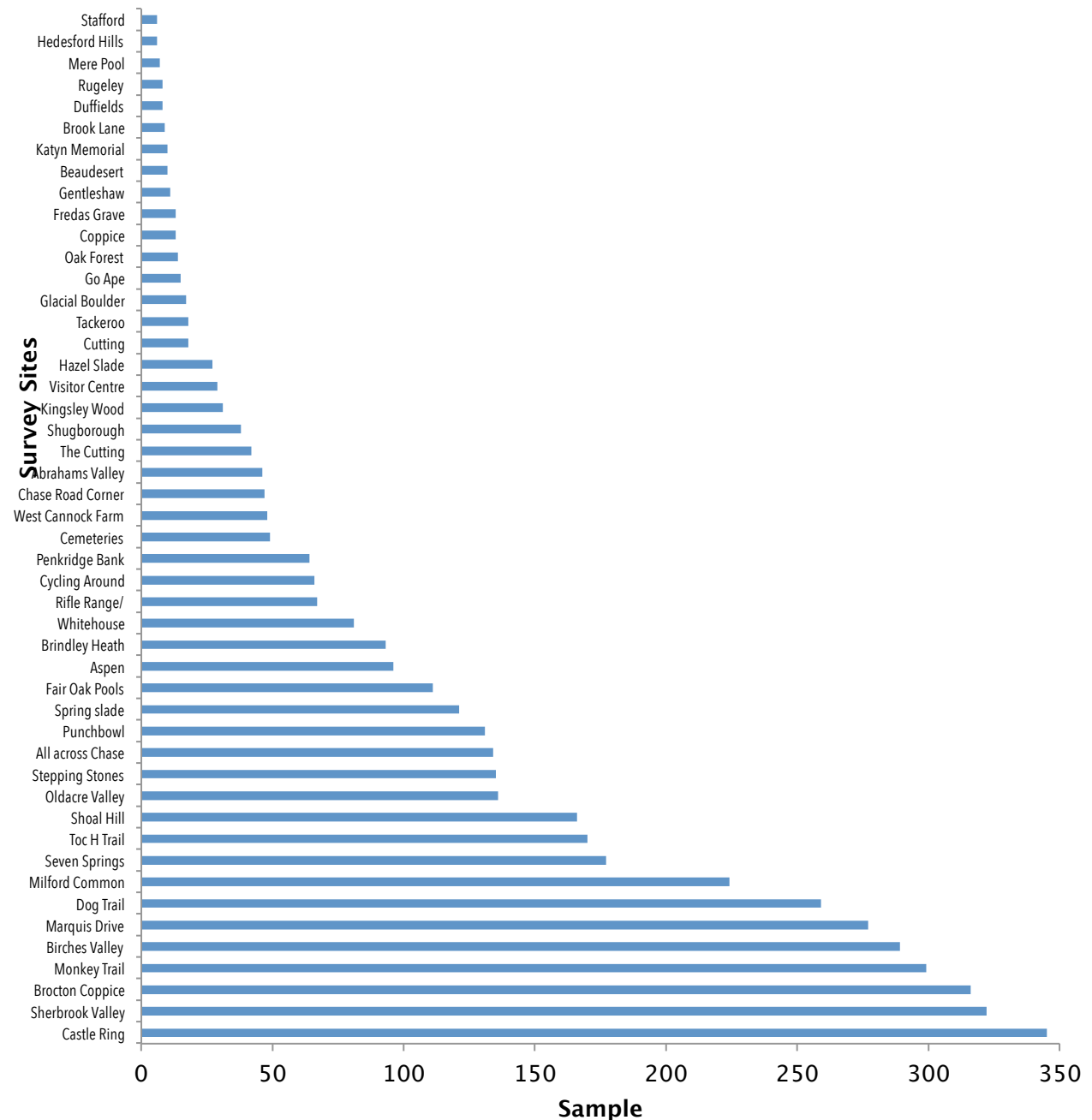
## 5.9 Why do people visit Cannock Chase AONB?

5.9.1 The data for this component is not consistent with site-by-site analysis due to the large number of categories, their subjective nature and the possible differences in how people provided answers during the interview.

## 5.10 Where is the most popular destination in the Chase?

5.10.1 **Table 3.1** and **Table E2** show that Birches Valley is the most visited site and Brindley Bottom Car Park receives the least amount of visitors.

## 5.11 Where else might visitors end up during their visit?

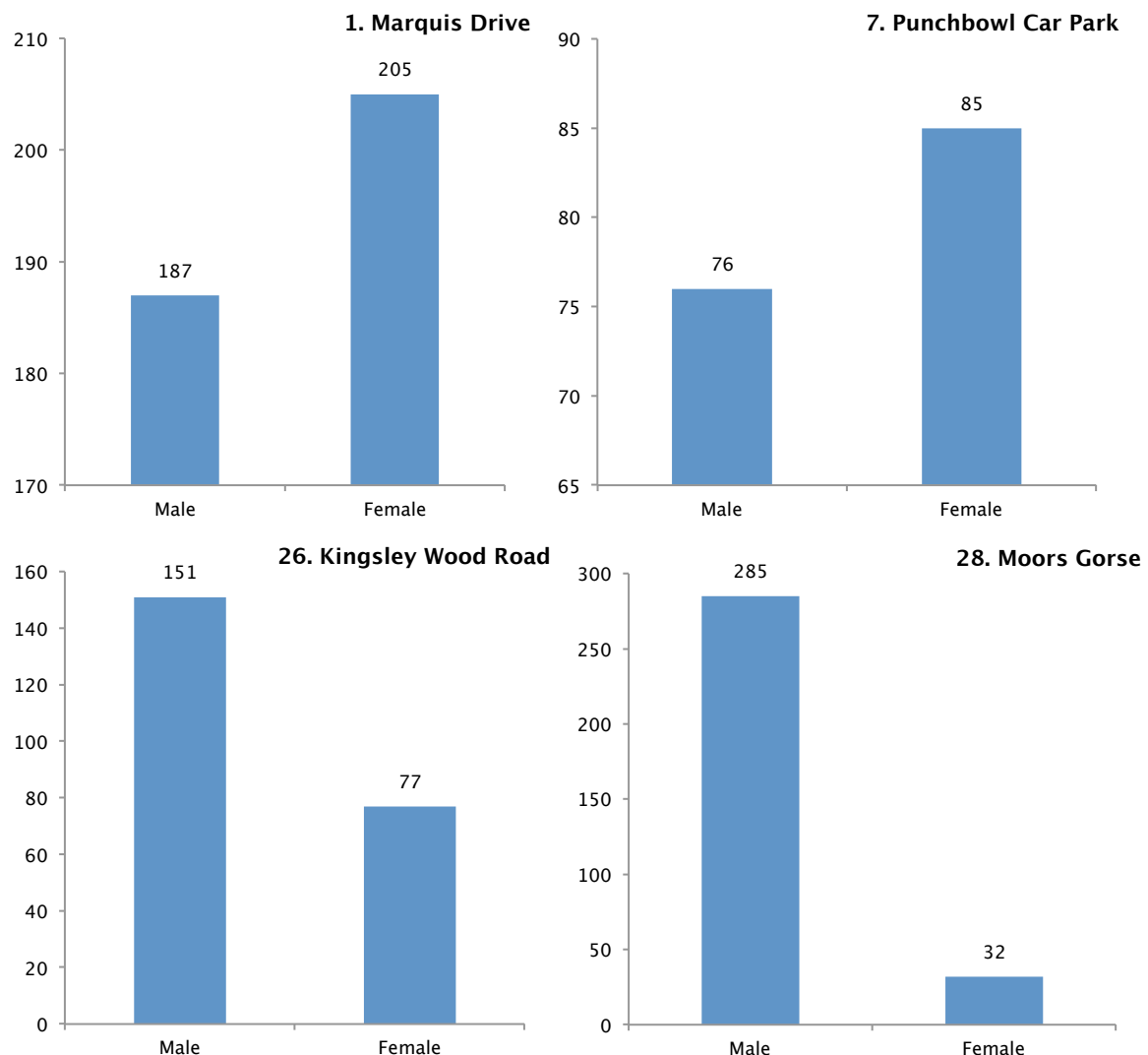


**Figure 5.8:** Other locations cited as desirable to visit

5.11.1 Question 11 of the survey questionnaire asked about other locations the respondents visited within the AONB. **Figure 5.8** shows the most popular alternative sites as derived from the questionnaire data.

- 5.11.2 The data indicates that Castle Ring is the most popular alternative site, closely followed by Sherbrook Valley, Brocton Coppice and the Forestry Commission's promoted Monkey Trail, a mountain bike route.
- 5.11.3 Many sites not included in the survey sample were referenced with 41 destinations experiencing less than ten mentions. The most popular sites not surveyed were the various walking/cycling trails throughout the central portion of the AONB. These sites include the Monkey Trail, Dog Trail and Toc H Trail. The Dog and Monkey Trail are primarily trails for use by cyclists. Due to the level of traffic and topography, other users are specifically discouraged (Forestry Commission, 2012).

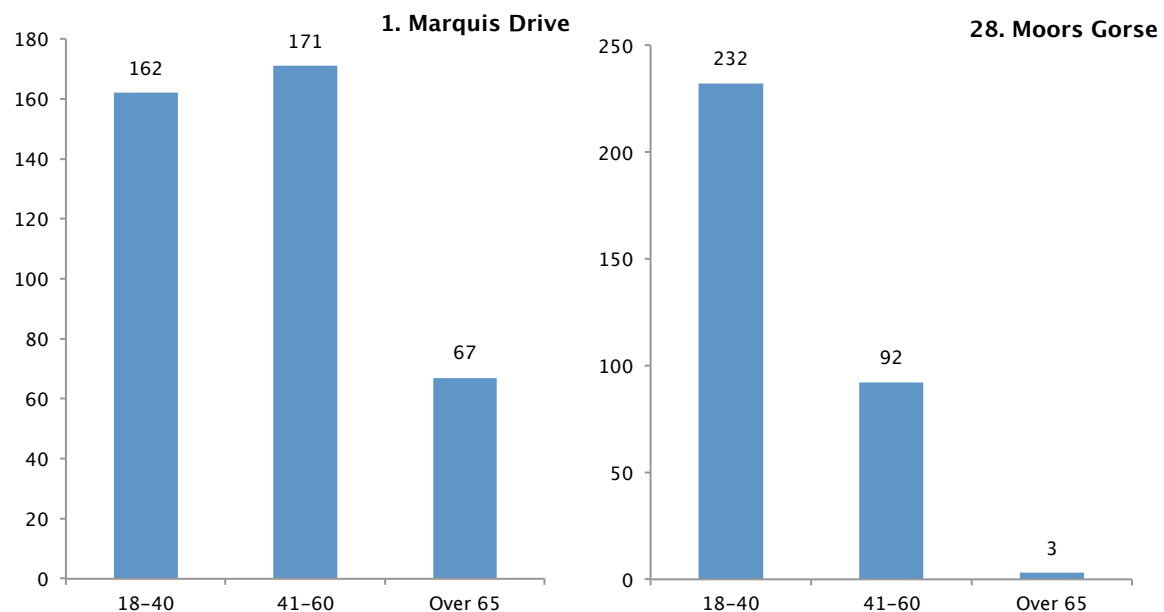
## 5.12 Gender



**Figure 5.9:** Gender differences at four sites

- 5.12.1 Numbers of men and women vary at different locations. There is not a consistent pattern. One anomaly is evident at Moor's Gorse, where the high number of cyclists is male.

## 5.13 Age demographics



**Figure 5.10:** Age demographics

- 5.13.1 The AONB-wide trends show that the majority of visitors fall within the 41-65 category, followed by 18-40's and over 60's. The two sites in **Figure 5.10** have been selected as they do not conform to the prevailing trends and may provide additional information for interpretation.
- 5.13.2 Marquis Drive has similar proportions of visitors within the 18-40 and 41-65 category and relatively high numbers of visitors over 65. This may be a result of the site's status as one of the most popular sites within the AONB.
- 5.13.3 Moor's Gorse deviates from the AONB-wide patterns of age by having a larger proportion of survey respondents within the 18-40 category (232), this feature is repeated at Birches Valley. No other sites have this feature. It is likely that cycling has a strong influence over age at these locations.
- 5.13.4 At no survey sites across the AONB does the over 65 category exceed either of the other two categories. It is unknown as to the extent of usage by those under the age of 18, as the survey methodology prohibits this.

## 6 Comparative Analysis 2000-2011

### Chapter Summary

This part of the report considers patterns that can be derived from comparison between the 2010-2011 survey and an earlier survey undertaken ten years ago in 2000. The chapter cites the restrictions to this approach. In terms of activities it finds that cycling has increased, at Birches Valley in particular. Sites which appear to have dropped in popularity between the survey periods include Marquis Drive, Milford Common and to a lesser extent, Castle Ring. Two sites in particular, Whitehouse and Aspen reveal consistently increasing visitor numbers for most activity types.

### 6.1 The 2000 visitor survey

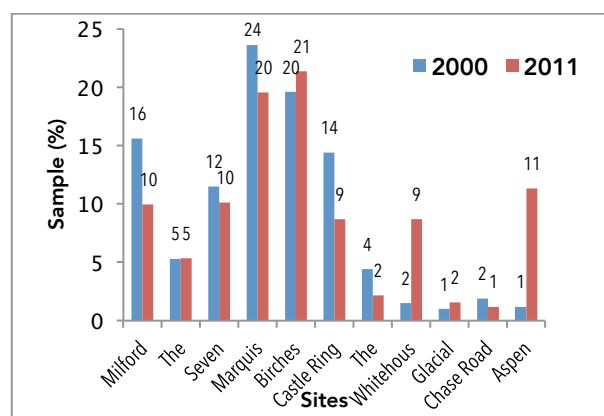
6.1.1 The Visitor Survey (2000) was prepared by the University of Staffordshire. The survey collected data from interviews that were undertaken face to face and over the telephone. A total of approximately 2,000 people were interviewed between May and December at eleven sites across Cannock Chase AONB. All eleven sites sampled in the 2000 survey were resurveyed in the 2010-2011 survey. See **Table 1.2** for the full list of sites. The questionnaire used in 2000 differed from that used in 2010-2011.

**Table 6.1:** Comparison of surveys

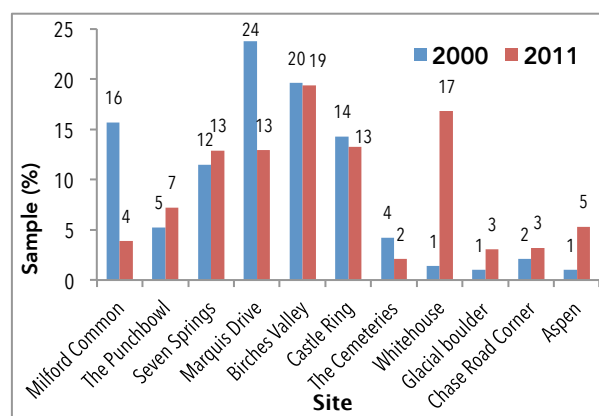
Survey attributes	2000 Survey	2010-2011 Survey
Total number people interviewed	c.2000	4,809 (28,000 total observed visitors)
Number of sites sampled	11	30
Duration of survey	8 months (May – Dec)	12 months (Sept – Sept)
Survey methods	Interview and telephone survey	Interview and observed visitor numbers
Survey team	University	Volunteers

6.1.2 Some parts of the dataset assembled in 2000 are comparable with the 2010-2011 survey. To contrast the two surveys, a proportional percentage comparison has been made between the 2000 and the 2010/11 data by site and by activity. Salient differences are presented in **Table 6.1**.

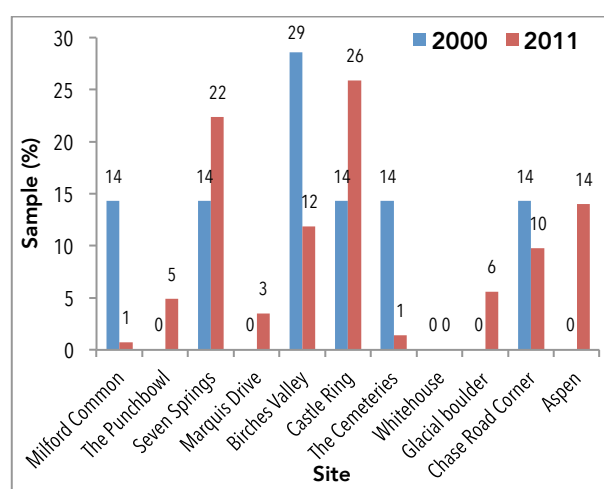
6.1.3 As the data is proportional and not directly comparable, any observations must be caveated: comparison of these datasets is not robust and any interpretation is subjective and consequently restricted. Looking at visitor numbers in **Figures 6.1-6.6**, survey effort may contain hidden bias since changing patterns between each survey are similar across most survey components.



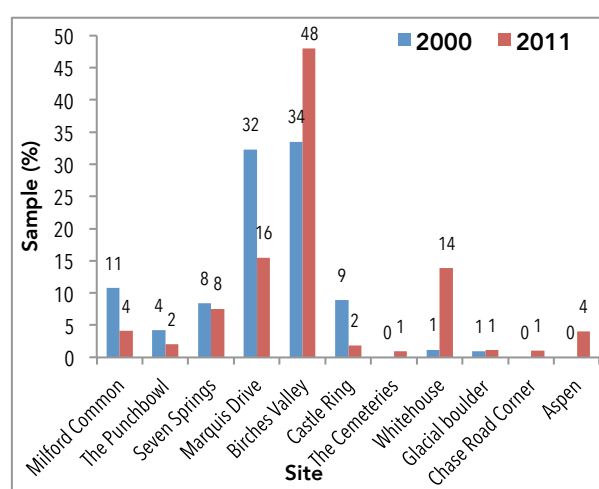
**Figure 6.1:** Proportional walking comparison 2000 - 2011



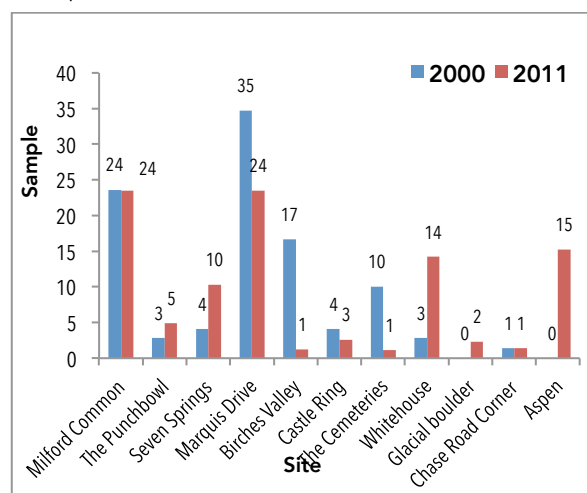
**Figure 6.2:** Proportional Dog Walking Comparison 2000 - 2011



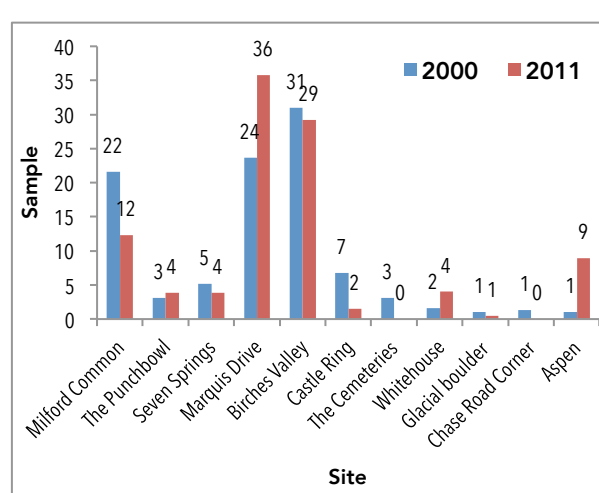
**Figure 6.3:** Proportional Horse Riding Comparison 2000 - 2011



**Figure 6.4:** Proportional Cycling Comparison 2000 - 2011



**Figure 6.5:** Stay-in Car/Car Park Proportional Comparison 2000 - 2011



**Figure 6.6:** Other Activities Proportional Comparison 2000 - 2011



6.1.4 With this limitation in mind, the following data has been presented in **Figures 7.1-7.6**:

- Walking;
- Dog walking;
- Horse Riding;
- Cycling;
- Car park only;
- Other activities.

## 6.2 Walking

6.2.1 In terms of walking statistics, the most popular sites are focused at the centre of the AONB, adjacent to the main visitor centres. The popularity of these sites may be due to their proximity to transport links, coupled with nearby population centres. Other attractive features including scheduled ancient monuments and visitor facilities.

6.2.2 Milford Common and Castle Ring are located towards to outer edges of the AONB. Both sites are popular but have seen a drop in the relative total number of walkers. Two sites showed significant gains in visitor numbers: Whitehouse and Aspen. Reasons for visiting these sites includes being good for walking; other reasons recorded during the 2010-2011 survey include being close to home and the presence of attractive scenery.

## 6.3 Dog Walking

6.3.1 Relative trends reveal sustained dog walking activity at most sites ten years after the first survey was undertaken. Like walking, Milford Common has seen a drop in visitors whilst Whitehouse and Aspen have both seen increases. In contrast, Castle Ring remains an important location for dog walks. The possible impact of *Phytophthora* access management procedures to the south and east of Milford Common may explain some of the reduced visitor numbers at these locations. Marquis Drive, so popular with many open air activities during the 2000 survey, has dropped significantly.

## 6.4 Horse Riding

6.4.1 There is no consistent pattern between the two surveys. This is most likely due to the fact that horse riding represents only a small proportion of total observed visitors in both surveys.

## 6.5 Cycling

6.5.1 Participation in cycling has grown nationally and locally at the AONB. Sites which have seen gains include Birches Valley, Whitehouse and Aspen. Birches Valley is shown to be the primary location for cycling based activities within the AONB with almost 50% of all recorded visitors. Again, like walking and dog walking, Milford Common and Marquis Drive have seen a drop in numbers. Castle Ring has also lost cyclists.

## 6.6 Car parks

- 6.6.1 Car park only activities whereby visitors do not leave their cars constitutes very low numbers of visitors. In contrast to other activities, Milford Common sees no change in this activity. Elsewhere increases at Whitehouse and Aspen, together with decreases at Marquis Drive are in keeping with the main activities of walking, dog walking, horse riding and cycling.
- 6.6.2 The category of "other", which was used in both surveys, is poorly defined. The comparison graph is consequently asymmetrical. The only notable patterns are increases during the 2010-2011 survey at almost every site; Birches Valley demonstrates a drop. This is countered by increases in cycling.

## 7 Future Visitor Surveys

### Chapter Summary

The achievement and delivery of such a large scale survey is a valuable piece of baseline data from which will inform several issues including management of the AONB for visitors. This chapter reviews the approach to the survey and considers whether or not it might be done in the same way or differently if it is to be repeated in future years. Various suggestions are made.

### 7.1 Hindsight

7.1.1 The current survey data provides a useful insight into recent visitor patterns and trends over the last 10 years. Its value is also enhanced given the comparatively modest size of the AONB, which means that the proportion of sampling points is relatively high for such a designation. The involvement of volunteers in the data gathering process also helps with wider aims for increasing stakeholder engagement and wider understanding of the management and challenges for the AONB.

7.1.2 Notwithstanding the above, the examination of these data has also highlighted opportunities to increase the robustness, relevance and comparability of any future surveys. These issues and recommendations are detailed below:

### 7.2 Extent of survey

7.2.1 Given the interest in the potential impact of increased housing development in and around the AONB, it is recommended that additional sampling points are established to cover sites that are already visited and readily accessible from existing dwellings but currently have comparatively few or no survey points (e.g. Shugborough and other areas to the north of the A513, Chetwynd's Coppice). New sample points also need to be established for currently unvisited areas adjacent to planned new housing to determine baseline data prior to development.

7.2.2 It is also important to identify and measure displacement of visitor activity. For example, while reducing the numbers of visitors to the SAC may itself be a management aim, to truly assess any such strategic success, identifying consequential displacement is important. Otherwise, unwanted visitor behaviour on the SAC may simply be moved to other sites (which potentially may have been less disturbed in the past), rather than reduced across the AONB as a whole.

### 7.3 Weather

7.3.1 The visitor survey collected information regarding prevailing weather conditions throughout the year long survey period. Unfortunately the information was recorded in no fixed style resulting in a wide variety of weather observations. These observations would need to be interpreted into a fixed number of categories to provide an appraisable dataset. This dataset would only provide general trends as a limited number of categories could not encompass the variety of weather conditions experienced in the region.



**Plate 6:** *View from Castle Ring*

- 7.3.2 Prevailing weather conditions can have an effect upon visitors to the Cannock Chase AONB. This is usually a seasonal phenomenon with the colder and wetter winter months resulting in fewer visitors. The warm and long days of the summer months, coupled with the extensive school holidays, increase visitor numbers from daytrips and visitors from further afield. The use of the AONB from a local perspective will likely remain relatively static throughout the year, though some slight seasonal fluctuation in favour of the spring/summer months can be expected.

## **7.4 Revised methodology**

- 7.4.1 Data collection at this scale is suitable for providing a particular perspective about visitor patterns at the AONB. For example, high-level strategic data applied to a wide geographic scale with minimal site specific elements. Data collected at a single site does not necessarily allow for extrapolation to a greater scale. Interpretation of the data must be processed, and consequently applied, at the corresponding order of magnitude to deliver appropriate and pertinent analyses. Expectations in this respect must be managed. Awareness of these limitations is an important aspect of preparing project research and design. The resolution of the data to be collected and the site and scale of the dataset directly relates to the analysis stage.
- 7.4.2 It would be helpful in future to undertake some real-time control assessments within the survey teams, to identify and minimise inconsistencies that may arise from different interpretations or delivery of the survey. A pilot or trial survey would assist in ensuring the data is captured in the most useable form for analysis. This would help to identify the degree of accuracy and precision that is being obtained through the use of volunteers, and so assess if this is sufficient for the required data analysis and interpretation.

- 7.4.3 It may also be helpful to identify additional comparable or relevant data sets and methodologies (e.g. from neighbouring areas, partner organisations and other AONBs), so that any additional survey data can be fully supported, compared and contrasted with other surveys.

## 7.5 Recognition of temporary circumstances

- 7.5.1 The outbreak of *Phytophthora* to the south and east of Milford and Brocton with associated restrictions on access is likely to have influenced visitor patterns at a local level. This may well explain the significant reductions in visitors at Milford Common and increases at White House and Aspen.
- 7.5.2 Such temporary circumstances may occur in the future that could similarly produce atypical results or unexpected trends. On this basis, it is recommended that a documented assessment and decision is made as to the response to such events. One response would be to delay some or all of a survey until more typical conditions prevail.
- 7.5.3 Additional questions could be added which might give greater insight as to how the temporary circumstances have changed visitor behaviour. For example, in the case of the 2011 survey, a question could have been included to identify the effect of the management initiatives to cope with *Phytophthora*. Such data could then usefully inform how best to plan and implement planned changes in visitor behaviour.

## 7.6 Double counting

- 7.6.1 Given the large number of survey points, it is highly likely that some visitors, especially horse riders and cyclists, may be sampled at several survey points during their visit. This can introduce bias and distort the visitor profile, and thus the potential for positive or negative impacts, from such groups. The practical importance of this will depend on the management issues that are being influenced by the data.
- 7.6.2 One way to address this would be to interview a sample of such users to identify a typical usage profile, which can then be used to calibrate the user counts to suit the data and management needs in question.

## 7.7 Extended demographics

- 7.7.1 Additional insight into the practical management implications of the survey data on the ground, and in communication with visitors, would be gained by eliciting information on visitor disability and ethnicity in future surveys. This would also assist in further illustrating the commitment of the AONB and partners to responsibilities under the Equality Act 2010.

- 7.7.2 Such enhanced demographic data will increase the usefulness of future surveys, particularly for funders and partners for whom such issues are important criteria for promoting equality and accessibility. Such data would also be useful in identifying differing communication and engagement needs of groups who have been traditionally unrepresented in the countryside, especially if diversity and accessibility targets are included in future management plans. Forestry Commission monitoring data from 2010/11 at Birches Valley identified that around “20% of people living within the catchment suffer from limiting, long-term illness” with 40% of event participants categorising themselves to be other than “White British”.

## 7.8 Stakeholder involvement

- 7.8.1 It is recommended that future surveys are complemented by greater stakeholder involvement. The aim of the visitor survey was to ascertain how the AONB is used in relation to its management. Further participation of local groups including cycling clubs, local riding stables, amateur naturalists could add further value to future data and provide on-going progression to AONB management. This will be particularly important if management changes are planned which will impact on visitor access and amenity.
- 7.8.2 The work the AONB team undertook to secure greater engagement with dog owners in 2009, illustrates the creative opportunities to do this. Apart from helping to promote good management, such forward thinking initiatives can have public relations benefits. This work showed how the AONB team can facilitate the development of consistent messages and approaches across the AONB.
- 7.8.3 Stakeholder engagement will be particularly important if restrictions on access across, or to, the SAC are proposed. Whatever the ecological justification may be, in practice such changes are people management issues. Unless such issues are handled very carefully, they have the potential to be counterproductive, create bad publicity and mistrust of land managers. This is especially so if ecological principles are being applied without understanding and sensitivity to the social and political context in which the SAC sits. Moreover, such changes need to be applied in an integrated way, with consistent complementary messages and management from all partners. The AONB team would seem to be well placed to ensure this



**Plate 7:** Notice of *Phytophthora*



## 8 Management Implications and Recommendations

### Chapter Summary

This chapter draws on the findings of the analysis to inform a review of management implications to be considered as a new version of the management plan for 2014 is being drawn up. Twelve recommendations are suggested.

### 8.1 The importance of robust survey data

- 8.1.1 It is important to note that without additional data and long term monitoring, it is difficult to identify positive or negative impacts from the visitor survey data such as increasing public health through taking outdoor exercise, or impacts on nature conservation. These subjects are dependent on a wide range of other variables such as site carrying capacity, habitat robustness, qualitative aspects of the activities undertaken, climatic and seasonal factors.
- 8.1.2 Some activities may be widely held to cause disturbance to wildlife (e.g. kite flying, orienteering or dogs quartering land) the impacts of that on a given species at a population level are inherently difficult, if not impossible, to determine, without the use of controlled trials. Similarly, where events associated with recreation (e.g. enrichment of soils from dog urine and faeces), the actual impact of this on, for example, its status as a SAC also needs to be assessed in relative, as well as absolute terms. Any such assessment should also be closely related to the special features listed in the SAC's designation. Otherwise, undue prominence and management effort could be applied to observed behaviours of visitors, while other issues (for example encroachment by birch on heathland, or deficiencies in management and monitoring of action plans) may be a more significant issue.

### Recommendation 1



### Future survey work

If future visitor surveys are to provide greater insight into visitor behaviour, recreational impacts and future changes in management, additional measures need to be included in survey design.

Such measures should be capable of integration with other forms of data collection, such as landscape, habitat and wildlife surveys.

(Image: Castle Ring)

## 8.2 Influential management plan design

- 8.2.1 The survey data illustrates that visitors are an important consideration when addressing AONB management. Accordingly management plans have identified a wide range of actions and activities. Most are directly relevant to visitor experiences, behaviours and their management. The 2009-2014 plan has 92 actions and 55 monitoring mechanisms.
- 8.2.2 In view of all the evidence examined, it is questioned whether the current system of governance and monitoring, and/or how it is applied and supported, is the most effective or appropriate approach. This has fundamental implications on the degree to which any of the recommendations arising from the visitor survey data, or any other initiatives, will make a difference in practice. Clearly the AONB Unit is aware of the need for effective and measured actions, but these do not appear to be wholly followed through or adhered to by the AONB's ten partners who are key to their delivery, e.g. due to targets not being met or stated as "aspirational" with no timescale for delivery.
- 8.2.3 It is apparent that target slippage is not always rectified or addressed. Instead a cumulative list of challenging tasks may accrue. Review of their relevance, reason for non-achievement and subsequent changes are recommended. Partnership working remains an essential cornerstone of the success stories behind Cannock Chase AONB. The planning and design of work programmes and projects should be cognisant of this important principle.
- 8.2.4 Given the diverse range of partners within the AONB, there is also merit in reviewing who is best placed to deliver or manage each desired outcome; for example, events and working with volunteers are undertaken by several partners. This may provide a more efficient and integrated way of working, make better use of established delivery skills and networks, and free up additional resources within the AONB team to strategically facilitate and coordinate delivery by partners.
- 8.2.5 The AONB relies on partnership to achieve the many and varied strategic aspects of the management plan. Partnerships must be effective if actions are to be delivered. Under circumstances where actions are not being met by partners (for whatever reason) the AONB Unit may need additional political and/or managerial support to ensure that changes are made in light of any under-performance. This may need to be at a senior manager or member level.
- 8.2.6 Management planning might usefully consider a review of all areas of AONB service delivery that is, or could be, carried out by other partners. This would determine whether there is a duplication of effort and create opportunities to make savings in costs and staff time by consolidating such services across the AONB. This should also assess the merit of the AONB team focussing more closely on strategic facilitation of integrated management by partners, and a lesser degree of front line delivery of some services itself.

## Recommendation 2



### SMART objectives

The next AONB management plan should identify SMART and prioritised objectives and targets. These must be endorsed and supported by the responsible partners.

Progress against these targets should be measured. The management planning design must include the ability to adapt to monitoring triggers (see section 10.3).

(Image: Birches Valley)

## 8.3 Monitoring and response procedures

- 8.3.1 The AONB Officer currently reports to the Joint Committee on an annual basis. It is apparent that progress with management plan targets is sometimes delayed or postponed. To fulfil its role as facilitator and ambassador for the protection of this nationally important landscape, the AONB Unit needs to ensure that the management plan is measured using a series of metrics that are fit for purpose and readily understood by any officer, partner or member.
- 8.3.2 If a particular action is not, or cannot be progressed (for example due to limited resources or insufficient partner or political support), this should be clearly and honestly stated and a decision made to investigate alternative means of delivery, or, if the latter is not possible, remove the action from the programme.

## Recommendation 3



### Monitoring metrics

Develop enhancing monitoring metrics to inform (at least) annual measurement of progress towards all targets. Introduce an active and auditable review process to respond to monitoring triggers, and make changes/alterations, in light of any under or over performance.

(Image: Car parking tariffs)

- 8.3.3 If targets prove to be consistently challenging, management planning might like to consider whether a more tightly focussed and more limited range of actions would be a more effective way of delivering what is most important to the AONB.

## 8.4 Integrated management

- 8.4.1 To effectively influence visitor behaviour and/or meet their information needs, access management and the provision of information about where to go and what to do needs to be integrated across the AONB, be it pre-arrival, site orientation or along paths and trails. While there are notable exceptions (for example the FC's signing of its mountain bike routes where they pass over land in the ownership of others), generally visitor management and signage appear to be fragmented and based on administrative boundaries rather than visitor need.
- 8.4.2 As much of the access-related signage, where it exists, is deteriorating, incomplete, or overgrown, its replacement presents an opportunity for a more integrated approach. This could comprise a network of agreed interconnected routes across the AONB, based upon a progressive management strategy which will better meet the needs of visitors and improve efficiency and effectiveness of all partners. Wider promotional materials and information coupled with increased involvement of local groups would also enhance the opportunities to influence visitor behaviour.
- 8.4.3 A stronger identity for the AONB and support for its purposes could also be achieved by a more integrated approach to ranger, education and information services. While this again will require changes in policies and procedures, it can help better deliver all AONB partners' aims and objectives, while also improving the visitor experience.
- 8.4.4 Integrated management needs to be facilitated, and the AONB team would seem to be the natural catalyst for enhanced integration; it is the mechanism that is critical to the successful achievement of objectives and the delivery of initiatives through successful partnership working. While the principles of integrated management are strong themes in the current and past AONB management plans, this does not currently appear to occur as well as it could in practice. The reasons for this need examination at a high strategic level, to investigate opportunities for improved integration and more effective service delivery to occur.
- 8.4.5 Integrated management can help meet the needs and requirements of AONB users. Management of access issues must be mindful of seeking to guide particular activities to a specific part of the AONB. There are high levels of open access across and around the AONB. This means that activities can be easily displaced rather than managed to meet the strategic principles of the AONB management plan.

## 8.5 Land management: consents and control

- 8.5.1 The 2009-2014 AONB management plan identifies several issues where the cooperation of private sector partners and landowners is required (e.g. LA9, LA10, EA5, EA9), and unless there are sufficient personal, social or economic incentives to foster cooperation, progress against these targets will be difficult to achieve.



#### Recommendation 4



#### Management mechanisms

A review should be undertaken to confirm that the most effective management structures are being used across all areas of activity. The AONB Unit should have input into all management plans and policy documents prepared by partners to facilitate integration and help deliver value for money.

(Image: Partnership support for the AONB)

- 8.5.2 Much of the management plan's delivery in relation to visitor management, and other areas, can for the large part be delivered through public sector partners as major landowners, and bodies with statutory responsibilities for planning, access and biodiversity. As such bodies are partners in the AONB and have many shared objectives (be it out of choice or due to statutory responsibilities), one would thus generally assume that progress is more likely to occur with such partners, due to these shared goals, and the overall ethos of public service.
- 8.5.3 Thus, it may be worthwhile prioritising actions where there is a very high degree of public sector control or involvement, especially if the governance and monitoring issues as discussed above are addressed. This is especially so as a high proportion of the sites used by visitors are in public ownership and control. For example, the large amount of land owned by SCC gives in theory, a great deal of control to the public sector. If there is some fundamental blockage to public bodies agreeing and delivering management to meet shared aims, then this needs to be addressed.

#### Recommendation 5



#### Maximising partnership outcomes

The AONB management plan should consider prioritising actions where public ownership and effective governance and monitoring can ensure the highest level of cooperation and service delivery towards shared goals, particular where these can deliver some quick wins on important issues in the next 5 years.

(Image: Heathland management)

## 8.6 Established visitor behaviours

- 8.6.1 The survey data very clearly shows that the majority of visitors come regularly and have done so for over 5 years. As 77% arrive by car, these visitors have great flexibility to go wherever they please. Visitor patterns that become ingrained and habitual are difficult to change. Even if physical barriers (e.g. at car park entrances) can physically prevent access by cars, fly parking on verges and/or complaints in the media and to local politicians are likely consequences.
- 8.6.2 It may be even harder to change the visitor patterns of local residents who currently access the AONB without the use of a car; this is particularly apparent at Brocton Coppice and Gentleshaw Common. Visiting a less immediately accessible site for the once or twice daily dog walk will be more costly in time and financially, and increased use of cars can also add to congestion and atmospheric pollution.
- 8.6.3 The prospect of changing visitor patterns within the AONB is likely to be challenging and likely to create adverse publicity, especially if it is not introduced incrementally over a long period of time. Alternative destinations also need to be more attractive to visitors than the areas they currently choose to visit if changes in visitor behaviour are to be introduced effectively with minimal conflict.
- 8.6.4 There is the potential that similar loyalty and ingrained visitor patterns could be developed by people moving into new housing in the catchment area. Consequently, if changes are required, it is important that the desired alternative sites to visit are operational, before any new houses are occupied.
- 8.6.5 Any management changes that seek to influence where car borne visitors go must be introduced gradually over several years, and with high levels of consultation, to be as successful as possible. Attempting to restrict access on certain sites in isolation should be avoided.
- 8.6.6 Alternative sites that are more attractive for visitors should be the aim, to ensure the highest levels of compliance and minimise adverse publicity. Any alternative sites must be of high quality and well-established before visitors can be expected to be successfully diverted to these sites for example the Chasewater Innovation Centre and The National Forest.
- 8.6.7 Influencing visitors who take access from home without the use of cars requires careful consideration and should only be attempted where there is no alternative, given the very high loyalty to sites close to home, and the social, environmental and financial impacts of increasing car use.
- 8.6.8 Any alternative destinations aimed at people moving into the catchment area, need to be fully operational and sufficiently established by the time new homes are occupied.

## 8.7 Cannock Chase Country Park

- 8.7.1 Reviewing the 1997 management plan for Cannock Chase Country Park (CCCP) (the most recent and current version), highlighted a significant tension in the management ethos, aims and objectives for this area.



## Recommendation 6



## Visitor management plan

Management initiatives seeking to guide and control access throughout the Chase must be introduced gradually over several years. They should be informed by a strategic overview of the access resource and consider the relationship with any strategic nearby access destinations such as Chasewater Innovation Centre and The National Forest.

(Image: Car restrictions)

- 8.7.2 Although the precise purpose of formally designated Country Parks has evolved over time (Lambert, 2006), the overriding emphasis has always been on welcoming visitors for a wide range of recreational activities. The concept of country parks is recognised nationally, and while the CCCP is not recognised by Natural England as an “accredited” country park (in terms of its facilities) it is still promoted on its website as one in a family of such sites having “...a wide range of opportunities for recreation, health and education and improve the quality of life for their local communities.” It is also indicated as a Country Park on OS maps.
- 8.7.3 This focus on proactive provision of a wide range of visitor activities appears to contrast acutely with many policies within the current management plan for the Country Park. This is epitomised on page three where it is stated that the plan now “establishes the conservation of the site as a priority.... the demand for activity by the public cannot itself justify permission” for access and recreation. More generally, the management plan places more emphasis on access restrictions and limitations for nature conservation, than it does in relation to the national ethos of actively accommodating recreation. Moreover, in the 15 years since this management plan was written, a significant amount of land within the Country Park has been designated as a SAC, giving an even greater importance to nature conservation at a European level. This is not to say such conservation concerns are not legitimate, it is just that they do not sit well with continued designation as a Country Park.
- 8.7.4 From the 1997 management plan, more recent research and recommendations for the SAC, and observed management practises on site, it is strongly suggested that the Country Park designation is not now valid, if not in whole, in part. Moreover continuing this designation may be serving to heighten conflict due to the perception it gives visitors about the lands purpose. This situation may also be symptomatic of tension between/within AONB partners and stakeholders over unresolved land-use priorities and practical management.

- 8.7.5 Removing the designation of the area as a Country park, in whole or in part, must be reviewed as a priority, given the tension it now creates between management objectives and the nations, and this public perception of the area's purpose. While this may be socially and politically sensitive, removal of the Country Park designation would appear to be a more open and honest declaration about the currently stated management aspirations for the area, which currently seem increasingly divorced from the concept of Country Parks.
- 8.7.6 It is also recommended that identifying other area(s) as potential Country Park(s) at the same time would help any such changes: for example the Shugborough Estate (over which the Country Council has a great deal of control) could well be seen as a far more appropriate focus for the recreation activity that epitomises a Country Park.
- 8.7.7 Equally, public exploration of de-registering the Country Park may helpfully facilitate a wider debate (including with senior managers and elected Members) about the recreational needs of visitors. This can assist in identifying how these can best be accommodated with equal social merit alongside nature conservation.

### Recommendation 7



### Country Park Review

The country park designation should be reviewed in light of the other designations (including the AONB and SAC) and competing priorities to be found at this central site in the heart of the AONB.

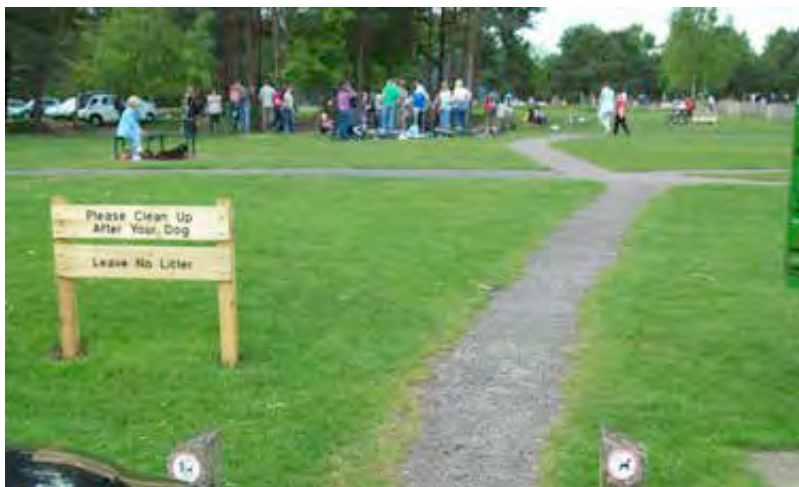
(Image: Sherbrook Valley)

## 8.8 Access management

- 8.8.1 The evidence shows that the provision of public rights of way, permissive access and statutory open access greatly influences where visitors choose to go. While the general comments regarding integrated management apply as much to access as all other aspects of visitor management, this is particularly so as access provision – or the lack of it – greatly influences where visitors go and what they do.
- 8.8.2 While restricting statutory access rights, permissive routes and even trespass can be difficult and legally complex. Promotion of high quality routes can be a very effective management tool, as the Forestry Commission mountain bike trails illustrate.

- 8.8.3 An integrated approach to access management and promotion would greatly help to both enhance visitor confidence in using and planning visits to the AONB, whilst productively influencing visitor patterns to meet wider management needs. At present, evidence on the ground suggests that access management largely reacts to circumstances and unmet demand, rather than trying to positively influence it.
- 8.8.4 A particular example of this is an approach where signage has been erected to prevent unwanted access use, for example “no horse riding” without identifying where riders can go instead (in the case of poor navigation). Or recognising that such access use, while unauthorised, can often be a sign of unmet demand that access users seek to meet somewhere.

### Recommendation 8



### Integrated access plan

An integrated access management plan should be developed to ensure a consistent approach to managing access within the AONB; this should be closely integrated with the car parking and traffic management strategies; ideally they should be produced as one document.

(Image: Marquis Drive)

## 8.9 Car parking

- 8.9.1 The surveys confirm that car parking plays a fundamental role in influencing where people go and what they do. In most, if not all cases, parking is taking place on land which is either in public ownership, or where public bodies have jurisdiction. Given that, it should in theory be possible to influence parking through cooperation between AONB partners.
- 8.9.2 While the survey itself did not seek to identify problems for the AONB or visitors in and around car parks, site visits illustrated a range of issues that are no doubt detrimental to the AONB's purposes and those of partners. For example, general littering, fly tipping, and official notices not being removed when expired. Of particular concern was the prevalence of sexual activity in several car parks during the day. Without judging the morality of any given activity between consenting adults, the fact remains that such activity is highly likely to exclude other visitors from these car parks due to concerns about personal safety, crime, observing unwanted behaviour, or simply being made to feel uncomfortable. Certainly when, as in this case a researcher with experience of surveying many car parks feels uncomfortable, and AONB staff feel the need to survey such sites in pairs, there is clearly an issue to address.

- 8.9.3 Barriers are present at many car parks but these appear to not have been used for several years; moreover there is no apparent plan for strategic or practical management of car parking, even though this has a fundamental impact on where people go and what they do.
- 8.9.4 The need for a car park strategy is identified in current and past AONB management plans. While it is now proposed for this to arise from management planning for the Cannock Chase SAC, the significant issues arising from an apparently passive approach to car parking seem to have existed for many years; thus there are concerns that there may be some administrative, resource or political blockage to developing such an important policy.
- 8.9.5 For example, site inspections and the survey data illustrate car parking pressures around the Marquis Drive and Birches Valley centres. One practical outcome of the current approach is reported to be cyclists making use of free parking at the former and riding over to the mountain biking facilities at the latter, where parking is chargeable. Quite apart from these undermining attempts by the FC to recoup some trail management costs from mountain bikers, it also heightens pressure on the finite and at times insufficient parking at Marquis Drive.

### Recommendation 9



### Car Park Strategy

A car parking strategy must be developed, adopted and applied as the highest priority, within the next two years. Rather than a standalone document, it needs to be very tightly integrated with wider access and visitor management policies, given both its potential contentiousness and ability to significantly influence visitor patterns.

(Image: Birches Valley Car Park )

### 8.10 Car usage off vehicular highways

- 8.10.1 The survey data illustrates a high level of habitual use of two routes where the general public is understood to have no right to drive a car, but where this practice has been accommodated for several years. The routes in question are Chase Road and Kingsley Wood Road to Rifle Range corner.
- 8.10.2 This situation has become of heightened importance since the Cannock Chase SAC was established, as both routes allow public motor vehicles to drive into the SAC itself. The lack of any apparent signage or appropriate management action to suggest such access by cars and other motor vehicles is prohibited, may have resulted in the perception that this is no different to driving to many other locations with the AONB.



- 8.10.3 While the uneven and unsealed surface of Kingsley Wood Road makes it less attractive for cars, it is still clearly a valued amenity given the level of recorded and observed usage. Driving of motor vehicles on this lane appears to conflict with non-motorised users, encourages fly tipping and other undesirable activities, and allows greater visitor penetration into the SAC than may be desirable.
- 8.10.4 While the issues of private rights of vehicular access for neighbouring landowners, and issue of enforcement, can complicate any action to restrict access, it can be done. The merit of doing so, particularly in relation to SAC requirements deserves careful consideration. Whilst this is impacting the SAC it also applies to the AONB. The apparent current passive approach to the issue should not continue. Proactive and decisive management is required, even if this is to “do nothing” in the short term while other options are explored.
- 8.10.5 It should also be noted that reduced usage of Chase Road by cars, could increase use of the road and connecting routes by horse riders, cyclists and the mobility impaired; this brings with it a different set of management issues and opportunities. As in nature, some other visitor activity is likely to fill any vacuum caused by reduced car usage, especially if cars were generally banned from routes year-round or at peak times.

#### Recommendation 10



#### Kingsley Wood Road

The management of these two routes, and car parks accessed there from, should be defined and agreed as a matter of priority, albeit as a part of the overall access management strategy. Restricted motorised access should be considered.

(Image: Kingsley Wood Road)

#### 8.11 Special visitor management requirements of the SAC

- 8.11.1 While the statutory importance and potential sensitivities of the Cannock Chase SAC is noted in various documents and discussions, there is very little on the ground to help visitors understand why the areas so designated are particularly special, with limited explanation of the different behaviours required of them in these areas compared to elsewhere in the AONB.
- 8.11.2 For example, a visitor with a dog would generally not be aware of any different requirements for dog control (indeed if they exist) between the visitor survey points within and outside the SAC. Occasional signage was noted but this did not operate in a structured way that was likely to significantly influence visitor behaviour on the SAC.

- 8.11.3 The image in the recommendation box illustrates access signage for visitors to the SAC at Moor's Gorse. However, its location, orientation and wording, compounded by a lack of similar signs for visitors entering the same SAC unit from other directions, suggest that it will have little or no effect. Moreover the SAC at this point is also statutory open access land, with no official restrictions on access recorded on Natural England's publically accessible database. Thus, the sign appears misleading and unlawful (under s14 of the Countryside and Rights of Way Act 2000), even though it was apparently erected by the body charged with upholding such legislation.
- 8.11.4 The present visitor management structure currently in place does not positively indicate that visitors should behave differently towards SAC designated land, nor indeed that they are on an area with one of the highest designations for nature conservation.
- 8.11.5 It is not possible to derive any attitudinal or compliance data in relation to the specialness of the SAC from current visitor behaviour, due the absence of related management and visitor information.
- 8.11.6 If there is a need for visitors to change their behaviour on the SAC, AONB partners need to make a credible, clear and convincing case and management approach to change visitor behaviours that have not been challenged, and moreover have in many ways been encouraged, for several decades.

### Recommendation 11



### SAC visitor management

As part of the strategic access review and preparation of the integrated access management plan, special attention must be paid towards the international nature conservation designation (Cannock Chase SAC). This should consider awareness raising initiatives.

(Image: Entrance to SAC at Moor's Gorse)

## 8.12 Forestry Commission land

- 8.12.1 The Forestry Commission's 2,425ha holding within the AONB plays a fundamental role in accommodating a wide range of visitor facilities and events, especially those which may be perceived as less desirable on the SAC. Management documents and anecdotal discussions have generally assumed that FC land will continue to be managed in much the same supportive manner. However, the recent change in Government has made such assumptions far less reliable.



- 8.12.2 While the Independent Panel on Forestry (IPF) has thus far wholly endorsed the value of the public forest estate, and has published its Final Report (July, 2012) on the re-valuation of forests and woods for the benefits they provide. The report states that the public forest estate is a national asset, which should remain in public ownership. The IPF recommends an evolution of the Forestry Commission. The new organisations should have greater financial freedoms and investment to generate even greater benefits for people, nature and the economy.
- 8.12.3 Upon publication the Secretary of State for Environment, Food and Rural Affairs Caroline Spelman provided a statement welcoming the report and its findings. At this point the government standing is that *"Forests and woodlands are an important part of our heritage and future, and I want to see them make an increased contribution to the environment, economic-growth and personal wellbeing and for everyone to enjoy the many benefits they offer"*.
- 8.12.4 The Secretary of State agrees with the IPF that the publically owned forest estate provides a range of access and biodiversity benefits which need protection. However it is recognised that the way the FC estate is managed should evolve to meet future challenges, through the support of both public and private finance to facilitate wider and more comprehensive community support. A comprehensive and detailed response is in preparation and should be published by January 2013. Until this is published the government will continue with the general suspension of sales of FC land.
- 8.12.5 Until the publication of this full response some uncertainty is present which could place constraints upon management planning. The only access that is generally legally protected during a sale of FC land is conditional access for the public on foot. If the estate was sold, there may well be no requirement to work to further the AONB's integrated management aims. Accordingly there could be a significant shift in visitor behaviour if, for example, car parks were more expensive or closed, or the permissive access used by horse riders, cyclists and off-lead access by dogs (between March and July) was restricted. Given its proximity, the SAC is particularly likely to be affected.
- 8.12.6 In addition, while the FC currently recognises its potential to accommodate a greater number of visitors (for example to relieve any adverse or undue pressure on the SAC) there is no certainty a new owner would be as accommodating, or they may require payment and other financial incentives to do so.
- 8.12.7 Even if the FC's estate did remain in public ownership, accommodating more visitors is likely to incur costs. Under the current regime, funding would be sought from others (such as the County Council or housing developers), so as not to add to the FC's operating costs for the benefit of other AONB partners or interests. While more robust management decisions are likely to be taken once the FC's future in the AONB is more certain, some management issues may be seen as so pressing that progress needs to be made in the meantime.

### **Recommendations**

- 8.12.8 Until the government's decision on the future of the Forestry Commission, some uncertainty will be present. Any management discussions and decisions need to accommodate the reality that there is the potential of a loss of visitor amenity currently provided by the public forest estate.
- 8.12.9 The development of new management and monitoring systems should not be delayed due to this uncertainty; however, they must be flexible enough to accommodate the potential for significant changes in the extent and operation of the public forest estate.

---

#### **Recommendation 12**



#### **The Public Forest Estate**

Management discussions and decisions need to be flexible enough to accommodate the potential for significant changes in the extent and operation of the public forest estate.

(Image: Go Ape at Birches Valley)

## 9 Summary of Recommendations & Next Steps

### 9.1 Summary of recommendations

1. **Future survey work:** If future visitor surveys are to provide greater insight into visitor behaviour, recreational impacts and future changes in management, additional measures need to be included in survey design. Such measures should be capable of integration with other forms of data collection, such as landscape, habitat and wildlife surveys.
2. **SMART objectives:** The next AONB management plan should identify SMART and prioritised objectives and targets. These must be endorsed and supported by the responsible partners. Progress against these targets should be measured. The management planning design must include the ability to adapt to monitoring triggers (see section 10.3).
3. **Monitoring metrics:** Develop enhancing monitoring metrics to inform (at least) annual measurement of progress towards all targets. Introduce an active and auditable review process to respond to monitoring triggers, and make changes/alterations, in light of any under or over performance.
4. **Management mechanisms:** A review should be undertaken to confirm that the most effective management structures are being used across all areas of activity. The AONB Unit should have input into all management plans and policy documents prepared by partners to facilitate integration and help deliver value for money.
5. **Maximising partnership outcomes:** The AONB management plan should consider prioritising actions where public ownership and effective governance and monitoring can ensure the highest level of cooperation and service delivery towards shared goals, particular where these can deliver some quick wins on important issues in the next 5 years.
6. **Visitor management plan:** Management initiatives seeking to guide and control access throughout the Chase must be introduced gradually over several years. They should be informed by a strategic overview of the access resource and consider the relationship with any strategic nearby access destinations such as Chasewater Innovation Centre and The National Forest.
7. **Country Park Review:** The country park designation should be reviewed in light of the other designations (including the AONB and SAC) and competing priorities to be found at this central site in the heart of the AONB.
8. **Integrated access plan:** An integrated access management plan should be developed to ensure a consistent approach to managing access within the AONB; this should be closely integrated with the car parking and traffic management strategies; ideally they should be produced as one document.

9. **Car Park Strategy:** A car parking strategy must be developed, adopted and applied as the highest priority, within the next two years. Rather than a standalone document, it needs to be very tightly integrated with wider access and visitor management policies, given both its potential contentiousness and ability to significantly influence visitor patterns.

10. **Kingsley Wood Road:** The management of these two routes, and car parks accessed there from, should be defined and agreed as a matter of priority, albeit as a part of the overall access management strategy. Restricted motorised access should be considered.

11. **SAC visitor management:** As part of the strategic access review and preparation of the integrated access management plan, special attention must be paid towards the international nature conservation designation (Cannock Chase SAC). This should consider awareness raising initiatives.

12. The **Public Forest Estate:** Management discussions and decisions need to be flexible enough to accommodate the potential for significant changes in the extent and operation of the public forest estate.

## 9.2 Project Initiatives

9.2.1 Associated with the recommendations are a number of project initiatives. These are a tangible suite of options that have been costed to provide an approximate scope of work. Each is presented with estimated costs, provided at the request of the AONB Management Team. Exact details for any project initiative will need to be carefully planned and prepared by a project manager at the AONB unit. Partnership support is likely to be an essential ingredient to success.

- Review and audit of car parking provision use across the AONB. Culminating in a detailed Car Parking Strategy.
- Direct visitors away from vulnerable areas of the AONB to other/alternative strategic destinations (e.g. Chasewater National Forest).
- The creation of a comprehensive AONB Visitor Management Plan.
- Review and update of the Cannock Chase AONB Strategy for Interpretation.
- Complete review and audit of all signage across the AONB.
- Continue to explore, in partnership, the carrying capacity of the SAC. Identify thresholds in relation to potential impacts from recreation.

**Table 11.1:** Cost estimates for suggested project initiatives.

Project Initiatives	Component Actions	Staff Days / Capital Items	Costs (£)
AONB-wide Car Parking Strategy	Research best practice in car parking strategies	2	£700
	Car parking surveys (over 12 months)	40	£14,000
	Analysis of findings	10	£3,500
	Consultation with partners	5	£1,750
	Report, review and finalise strategy	15	£5,250
	Total		£25,200
Alternative Strategic Visitor Destinations	Liaison with Highways Authority	20	£7,000
	New signage in area	Capital	£15,000
	Liaison with receptor sites	15	£5,250
	Report and review	15	£5,250
	Total		£32,500
AONB Visitor Management Plan	Surveys	10	£3,500
	Analysis	10	£3,500
	Consultation	5	£1,750
	Report and review	15	£5,250
	Total		£14,000
Strategy for Interpretation	Research best practice	2	£700
	Strategy design	30	£10,500
	Consultation	5	£1,750
	Report and review	15	£5,250
	Total		£18,200
Signage Audit	Understand signage at the Chase	2	£700
	Design of signage and branding	20	£7,000
	Consultation	5	£1,750
	Report and review	15	£5,250
	Total		£14,700
SAC	Having concentrated on visitor analysis, this report has not explicitly explored issues relating to potential impacts associated with visitor pressure, land management or climate change at the Cannock Chase SAC. The concept of this project initiative derives from predicted future growth in visitor numbers to the AONB. The ability to understand carrying capacity and be able to apply appropriate management solutions is a priority for partnership working at the Chase. Pricing this initiative includes a number of variables; for this reason no estimates have been prepared at the time of writing.		



**POLICE WARNING**

**POACHER WATCH**

Taking Deer or Game from  
this land without the written  
authority of the landowner  
is

**FORBIDDEN  
YOU HAVE BEEN WARNED**



**Working in Partnership**



Information  
about the  
National  
Trust



# References

Cannock Chase AONB (2012) Available at: <http://www.cannock-chase.co.uk/>

CCAONB (2004) Cannock Chase Area of Outstanding Natural Beauty Management Plan 2004-2009, Cannock Chase AONB / Natural England

CCAONB (2009) Cannock Chase Area of Outstanding Natural Beauty Management Plan 2009-14, Cannock Chase AONB / Natural England

Custom Insight (2012) Survey Random Sample Calculator, Available at:  
<http://www.custominsight.com/articles/random-sample-calculator.asp>

Department for Communities and Local Government (2008) The Community Infrastructure Levy, Available at:  
<http://www.communities.gov.uk/documents/planningandbuilding/pdf/communityinfrastructurelevy.pdf>

Department for Environment, Food and Agriculture - DEFRA (2011) Available at:  
<http://www.defra.gov.uk/news/2011/01/27/englands-forests/>

Department for Environment, Food and Agriculture - DEFRA (2012) Written Ministerial Statement on Independent Forestry Panel Report. Available at:  
[http://www.parliament.uk/documents/commons-vote-office/July\\_2012/04-07-12/4.DEFRA-Independent-Forestry-Panel-Report.pdf](http://www.parliament.uk/documents/commons-vote-office/July_2012/04-07-12/4.DEFRA-Independent-Forestry-Panel-Report.pdf)

E. Holdaway (2004) Cannock Chase AONB – State of the AONB 2004, Cannock Chase AONB

Forestry Commission – FC (2012) Available at: <http://www.forestry.gov.uk/cannockforest>

HM. Government (2000) Countryside and Rights of Way (CROW) Act 2000

Independent Panel on Forestry (2012) Final Report. Department of Environment, Food and Rural Affairs. Available at: <http://www.defra.gov.uk/forestrypanel/files/Independent-Panel-on-Forestry-Final-Report1.pdf>

Jenkinson, S. (2009) Project Report: Improving the management of access for walkers with dogs on Cannock chase. Cannock Chase AONB / Natural England

Joint Nature Conservancy Committee – JNCC (2011) Natura 2000 Standard Data Form. Available at:  
<http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030107>

Joint Nature Conservancy Committee – JNCC (2012) Available at:  
<http://jncc.defra.gov.uk/page-23>

Liley D, Underhill-Day J, White J & Sharp J. (2009) Evidence base relating to Cannock Chase SAC and the Appropriate Assessment of Local Authority Core Strategies, Footprint Ecology

Natural England (2012) Available at:  
[http://www.sssi.naturalengland.org.uk/special/sssi/sssi\\_details.cfm?sssi\\_id=1004497](http://www.sssi.naturalengland.org.uk/special/sssi/sssi_details.cfm?sssi_id=1004497)

Natural England (2011) Available at:

[http://www.naturalengland.gov.uk/regions/west\\_midlands/press\\_releases/2011/040311.aspx](http://www.naturalengland.gov.uk/regions/west_midlands/press_releases/2011/040311.aspx)

Red Kite Environmental (2010) Cannock Chase AONB – State of the AONB 2010, Cannock Chase AONB

Red Kite Environmental (2010) Cannock Chase AONB – Peace and Tranquillity, Cannock Chase AONB

Staffordshire University (2000) The Cannock Chase AONB Visitor Survey 2000, Staffordshire University

White J, Liley D & Underhill-Day J. (2010) Cannock Chase Visitor Impact Mitigation Strategy, Footprint Ecology



