



Birklands & Bilhaugh SAC Recreation  
Impact Assessment - a report prepared  
for Bassetlaw District Council in  
conjunction with Newark and Sherwood  
District Council

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Birklands & Bilhaugh SAC Recreation Impact  
Assessment Report

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Footprint Contract Reference: 622

Date: 15<sup>th</sup> October 2021

Version: Draft v.1

Recommended Citation: Saunders, P., Lake, S. & Liley, D. (2021). Birklands & Bilhaugh SAC Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council

## Summary

This report relates to Birklands & Bilhaugh Special Area of Conservation Special Area of Conservation (SAC)/Sherwood Forest National Nature Reserve (NNR) and has been commissioned by Bassetlaw District Council. The report provides the results of bird surveys (targeting Woodlark and Nightjar), a walk-over recreation impact assessment and a visitor survey. The implications of the findings are discussed in relation to the statutory protection afforded to the site and the impacts associated with recreation.

Key findings:

### Woodlark and Nightjar

- 4-6 Woodlark territories were identified and mapped, with observations were concentrated in the western half of the RSPB Reserve;
- Nightjar were distributed more widely across the study area and it was estimated that 4 to 5 churring/territorial males were present over the spring.

### Other notable bird species

- Incidental records of other notable bird species (i.e. Birds of Conservation Concern or listed on Schedule 1 of the Wildlife and Countryside Act included Tree Pipit, Yellowhammer, Cuckoo, Lesser Redpoll, Hawfinch, Woodcock and Tawny Owl. In addition, 2 broods of Long-eared Owls were found.

### Habitats and recreation impacts

- The habitats recorded (and mapped) within the study area boundary included a mix of semi-natural broad-leaved woodland, broad-leaved, mixed, and coniferous plantation, and open areas of heathy grassland mosaic with scattered trees;
- Trampling damage included a loss of heath vegetation from paths in otherwise heathy areas, having been replaced by acid grassland and in places this acid grassland has in turn been replaced by trampling-resistant rosette species of less conservation interest;
- More extreme trampling damage was evident through a loss of vegetation and compacted bare ground;
- Trampling damage was much more apparent within Sherwood Forest than Budby South Forest and trampling damage was particularly evident close to the new Visitor Centre and along the routes to the Major Oak.
- Within this area, all veteran trees that are visible from the paths have desire lines leading to them (sometimes through fences), these paths are often compacted and denuded of vegetation, and the trees generally have a similarly compacted area beneath the canopy;
- Within Sherwood Forest evidence of direct damage was also recorded, including bike jumps, scuff marks and broken branches on trees (as a result of tree climbing) and loss of habitat through visitor infrastructure.
- Contamination was noted in terms of eutrophication (e.g. from dog fouling) and was evident from the vegetation present at Budby South Forest and Sherwood Forest.

## Number of visitor interviews and tally counts

- Counts of people passing indicated that the Sherwood Forest NNR Main Entrance was much busier than the Budby Forest car park in terms of people and the number of dogs;
- 151 interviews were conducted, with 82 conducted in the spring and 70 during the summer.

## Types of visit and activities undertaken

- Most interviewees (84% in the spring, 87% in the summer) were on a short visit and had travelled directly from home that day;
- Holiday-makers and those staying with friends and family accounted for 10% of interviewees in the spring and 13% in the summer;
- The most frequently recorded main activity across both survey locations across the combined survey periods was walking (47% of interviewees), followed by dog walking (36%) and bird/wildlife watching (5%);
- Walking was the most commonly cited main activity at Sherwood Forest NNR Main Entrance (59% of interviewees) while dog walking was the most commonly cited activity at Budby South Forest RSPB Reserve Car Park (53%).

## Visitor behaviour

- Approximately a fifth of all interviewees across both survey locations visited the survey area 1 to 3 times per week, whilst another fifth visited less than once per month;
- Dog walkers were the group who visited the most frequently, with >40% visiting most days or daily;
- More than one third of interviewees (38.9%) spent 1 to 2 hours on site, with another fifth (16.9%) spending between 30 minutes and 1 hour on site;
- Of the 3 most commonly represented activity types in the dataset, dog walkers exhibited the shortest visit duration, with more than half (54.6%) spending less than an hour on site;
- The majority of interviewees (51.6%) indicated that they tended to visit equally all year round;
- Overall, three quarters (75.0%) of interviewees had arrived by car/van, with most of the remainder (23.1%) having travelled on foot;
- Overall, proximity to home was by far the most commonly given reason for site choice, accounting for 23.5% of responses. Visiting the Major Oak, familiarity, the dog's enjoyment, and particular wildlife interest were also influential.

## Use of other sites

- Approximately a third (34.8%) of interviewees across both survey locations stated that 75% or more of their visits (for the activity they were undertaking when interviewed) took place at the survey location;
- Amongst the more frequently recorded main activity types, dog walkers showed the highest level of site fidelity amongst user groups;

- A variety of other sites were regularly visited by interviewees, with Clumber Park being that most commonly identified across the survey locations;
- 60% of interviewees indicated that they would be likely to use a novel area of local greenspace, with 15.4% suggesting that they would not, and 18.7% suggesting potential use.

### Memberships, resources used to plan visits, and awareness of sensitive ecological features

- Approximately 22% of interviewees across all survey locations and activity types were members of the RSPB, with 9.4% also members of the National Trust;
- Online or paper maps were the most frequently used information sources used to plan visits, followed by websites, and smartphone apps;
- A third of interviewees (38.1%) were unable to name any sensitive ecological features present on site, with breeding birds (20.2% of responses) and rare insects and invertebrates (6.9%) those most frequently named.

### Visitor origins

- A total of 146 interviewee postcodes could be accurately mapped.
- The greater proportion of recorded postcodes were centred within an area bordered by Derby and Nottingham to the south, Sheffield and Doncaster to the north, and Lincoln and Newark to the east;
- Across all visit types during the spring survey period (79 interviewees) the mean straight-line distance between the interview location and the interviewees home postcode was 37.1km and the median was 9.6km (i.e. 50% of all interviewees during this period had come from a radius of <9.6km around the survey locations);
- The third quartile (75th percentile) distance was 38.6km (i.e. 75% of all spring survey period interviewees lived within this distance of the survey location).
- These values were similar during the summer survey period, but varied between the survey locations, with much larger distances travelled to the Sherwood Forest NNR Main Entrance;
- When holidaymakers are removed from the dataset the overall straight-line distances decreased substantially (see Table 18), with the overall spring mean distance being 19.7km, the median 8.7km, and the 75th percentile 28.3km;
- Interviewees who visited more frequently and/or accessed the site on foot were more likely to originate from closer postcodes than those who visited less frequently and/or accessed by car or bicycle.

### Routes on site

- The route taken by the majority of interviewees overall (57.3%) was reflective of their normal route length.
- Previous knowledge/experience of the area was the most frequently provided reason behind route choice (24.5%), followed by visiting a particular feature or viewpoint (15.2%), the activity undertaken (14.6%), the presence of a marked trail (10.8%), and "other" (10.8%);

- A total of 142 visitor routes were mapped, with the majority of visitors to the study area undertaking routes between 3.2km and 4.9km in length.
- Amongst the three most frequently recorded main activity types, bird/wildlife watchers exhibited the longest mean routes within the study area (4.4km), with dog walkers the second longest (3.4km), and walkers the third (3.1km).
- Interviewee footfall was most concentrated along the entrance track heading northwest from the Visitor Centre into Sherwood Forest, along the main east-west/northwest-southeast access routes radiating from the Budby South Forest RSPB Car Park, and on trails in the vicinity of the Major Oak;
- Dog walker density mirrored the overall footfall pattern although routes leading from the RSPB car park were favoured. A preference for circular routes was also potentially indicated by the concentration of routes along the main east-west, north-south, and peripheral trails running across the study area.

### Access points

- The main entrance to Sherwood Forest NNR, in proximity to the Visitor Centre and car park, was by far the busiest access point, with the access point adjacent to the Budby South Forest RSPB Reserve car park (on the eastern border of the study area) also heavily used;
- Access along the northern and western perimeter of the study area is more diffuse, although relatively large numbers of visitors appear to access/egress the site via western end of the main east-west footpath forming the border between Sherwood Forest and Budby South Forest RSPB Reserve.

### Views on site management

- Suggestions from interviewees concerning potential improvements to management of other sites they visited primarily centred upon better/more parking provision and parking fees, the provision/maintenance of dog waste and litter bins, improved access and path maintenance, entry fees, provision of better signage, and improved facilities (toilets and café in particular);
- Many people enjoying the wildness and open spaces present, the friendly management team, and the presence of a large area of accessible greenspace on their doorstep.
- There was also a small cohort of local people who were not happy at all with RSPB management of the site or with the relocation/contents of the new Visitor Centre;
- Other issues identified included parking provision and fees, potholes, nudists, and horse dung, as well as conflicts between different user groups and the site managers (dog walkers and RSPB/birdwatchers in particular).

### Recreation Impacts on habitats

- Trampling and compaction of ground flora and soils, alongside damage to tree roots within woodland areas, is an important impact throughout the SAC. These are less of an issue within the RSPB Reserve;
- Enrichment from dog faeces and urine is another key impact within the SAC. Limited effects are also evident along path edges within the RSPB Reserve;



- A major issue for the SAC is damage caused to veteran trees, including that arising from the building of dens in proximity to them.

### Recreation Impacts on Woodlark and Nightjar

- Ground nesting Woodlark and Nightjar are susceptible to disturbance, and potentially predation by dogs, arising from recreation.
- Nightjar on site appear to currently favour less heavily utilised areas of the RSPB Reserve and the periphery of the SAC. As such, there is potential for any increase in footfall within these areas to have a negative impact upon the birds present;
- Woodlark are distributed across the two western thirds of the RSPB Reserve, and show a preference for fenced enclosures. They are nevertheless susceptible to disturbance from adjacent paths, free-ranging dogs, etc;
- The presence of 4 to 6 pairs of Woodlark, and 4 to 5 territorial Nightjar, within the NNR boundary indicate that the locality potentially supports a significant proportion of the qualifying populations of the Sherwood Forest ppSPA.

### Recreational Zone of Influence

- Sherwood Forest NNR/Birklands & Bilhaugh SAC are predominantly accessed by visitors within the local region and are particularly used by the local dog walking community;
- Using only the two most frequent activity types (walkers and dog walkers), and those who visit at least once a month, a recreational Zone of Influence of 8.9km was identified.
- Within this zone there will be a differential effect relating to distance, such that new development closer to the SSSI is likely to result in proportionally greater impact.

### Mitigation

- In line with other mitigation approaches around the country, mitigation could consist of both SAMM and SANG/infrastructure projects away from the SAC/NNR. Dedicated staff would be key in delivering and implementing any mitigation and providing an on-the ground wardening presence;
- SAMM would comprise measures within the SAC/NNR to address recreation impacts and make them more resilient to increased recreation. SAMM could comprise:
  - Surfacing of heavily used paths at bottleneck localities, alongside additional fencing to prevent spillover;
  - Increased staff presence and wardening resource;
  - Additional resources for signage and interpretation relating to visitor behaviour and sensitive features (such as veteran trees and ground nesting birds);
  - Education & awareness raising initiatives with visitors around where to go, the need to pick-up after their dog, dogs off lead etc;
  - Wider engagement with the local community on site management (via e.g. public forums);
  - Measures to address contamination (particularly dog fouling); and,

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- Monitoring
- Any SANG/infrastructure project would dovetail with SAMM in providing additional space for recreation and realistic alternatives to Birklands & Bilhaugh SAC/Sherwood Forest NNR;
- With SAMM in place, visitors would become more aware of their impacts and access better managed, and some use would be deflected away from the SAC entirely.



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## Acknowledgements

This report was commissioned by Bassetlaw District Council, and we are grateful to Kathy Bibby, Shukri Masseri, and Karen Johnson for overseeing the work. Our thanks also to Torri Crapper, Sara Gacem, Gareth Jones, Kim Miller, and Jago Moles (all National Trust), Carl Cornish, Sally Granger, and David Terry (all RSPB), and Adrian Allenbury (Newark & Sherwood District Council) for very helpful discussion, provision of background information.

All photographs: Footprint Ecology

# 1. Introduction

## Overview

- 1.1 This report was commissioned by Bassetlaw District Council and is part of a series that relates to understanding the impacts of recreation (arising from new housing development) upon:
- Clumber Park Site of Special Scientific Interest (SSSI), and;
  - Birklands & Bilhaugh Special Area of Conservation (SAC)/Sherwood Forest National Nature Reserve (NNR).
- 1.2 The series of reports for each of the two sites, and associated survey work, has been informed by a range of organisations, including Natural England, the National Trust, the RSPB, and seven Local Authorities. The latter comprise: Bassetlaw District Council, Newark & Sherwood District Council, Bolsover District Council, Mansfield District Council, Rotherham Metropolitan Borough Council, Ashfield District Council, Gedling Borough Council, and Nottinghamshire County Council.
- 1.3 This report comprises a Recreation Impact Assessment of Birklands & Bilhaugh SAC/Sherwood Forest NNR, the findings of which will inform the preparation and implementation of the Bassetlaw District Council Draft Local Plan. The report will inform the Habitats Regulations Assessment of the Local Plan, as well as helping inform other relevant Local Plans, the preparation of masterplan frameworks for housing allocations, and supplementary planning documents (such as the Worksop Central Development Plan Document).
- 1.4 The report should be read in conjunction with the separate Recreation Impact Assessment of Clumber Park SSSI (Saunders, Lake, & Liley, 2021. *In prep*).

## Aims of this work

- 1.5 This report has been commissioned in order to collect: (a) information on the distribution of Nightjar and Woodlark within the study area; (b) the distribution of habitats within Birklands & Bilhaugh SAC/Sherwood NNR and any evidence of recreation impacts upon them; and (c) detailed visitor information (including the activities undertaken on site, reasons for site choice, and routes taken on site).
- 1.6 The aim of the work is to identify the level of recreation impacts currently observable on site, the distribution of recreation in relation to sensitive ecological features, and where new development might result in recreation impacts for Birklands & Bilhaugh SAC. The implications are then discussed with respect to

allocations in both the Bassetlaw and Newark and Sherwood Local Plans, including those allocations sited in close proximity to the site along with recommendations, where relevant, to minimise the impacts of any increased levels of recreation access resulting from the Local Plan allocations.

## Other reports

- 1.7      The work forms part of a series of reports that relate to understanding the impacts of new development upon Clumber Park SSSI and Birklands & Bilhaugh SAC/Sherwood Forest NNR. This Recreation Impact Assessment report follows the production of the stand-alone report: Clumber Park SSSI & Birklands and Bilhaugh SAC/Sherwood Forest NNR – review of available historic ecological and recreation data (Saunders, P. & Liley, 2021).

## 2. Methodology

- 2.1 This report details the results of a variety of surveys carried out within Birklands and Bilhaugh SAC/Sherwood Forest NNR in spring and summer 2021, comprising:
- Targeted bird surveys for Nightjar *Caprimulgus europaeus* and Woodlark *Lullula arborea*;
  - Habitat mapping; and,
  - A recreation impact assessment walkover, and two tranches of visitor interview surveys.

### Study area

- 2.2 Birklands and Bilhaugh SAC/Sherwood Forest NNR consists of, and is located within west central Nottinghamshire, to the south-east of Worksop, in Sherwood and Newark Administrative area (see Map 1). The SAC incorporates an internationally important area of ancient oak woodland, whilst the bordering northern half of the NNR (itself comprising a large proportion of Budby South Forest RSPB Reserve) predominantly consists of heathland habitat. The SAC consists of two discrete parcels; one forming the southern half of Sherwood Forest NNR with the other, smaller, component located within the privately owned and administered Thoresby Estate, to the north-east. The majority of Sherwood Forest NNR is also designated as the larger part of Birklands & Bilhaugh SSSI, which narrowly extends along the eastern boundary of the NNR and along A616/Worksop Road.
- 2.3 The study area incorporates the entirety of Sherwood Forest NNR, including the larger component parcel of Birklands & Bilhaugh SAC, and the majority of Budby South Forest RSPB Reserve and Birklands & Bilhaugh SSSI. The smaller, Thoresby Estate, component of the SAC has been excluded from the study area due to the absence of public access within the site, and a resultant assumption that any recreation impacts occurring within it will be minimal.

### Woodlark and Nightjar surveys

#### Woodlark

- 2.4 Two survey visits were made to the study area in March and April 2021 in order to specifically map the presence of Woodlark. This species returns to breeding territories earlier in the spring than most, with single survey visits in March and April therefore required, as a minimum, to identify likely presence/absence on site. Both visits specifically targeted areas of suitable habitat identified from aerial

photographs, historical records, and following consultation with on-site RSPB staff (see Map 2).

- 2.5 Each survey visit was made in suitable weather conditions (i.e. avoiding days with heavy rainfall or strong winds), and commenced approximately half an hour after sunrise and was completed prior to 11am (when bird territorial behaviour is usually reduced). During each visit the path network across the key areas was walked at a steady pace, and all Woodlark observed or heard, including those overflying the study area, were mapped using standard British Trust for Ornithology field codes. The behaviour of each bird was also recorded (i.e. in song, calling, with food, etc) and the presence of any juvenile birds or family parties noted.

### *Nightjar*

- 2.6 Nightjar are a late arriving, nocturnal, migrant species, and additional species-specific surveys were therefore carried out to record the distribution of this species within the study area. Repeat survey visits were made to the transect route identified in Map 2, with the first visit undertaken at the start of June and the second at the end of the month. The transect route again specifically targeted areas of suitable habitat identified from aerial photographs, historical records, and following consultation with on-site RSPB staff.
- 2.7 Each survey visit commenced half an hour after sunset and was concluded within a subsequent 2.5 hour period. During each visit the transect was walked at a steady pace and all Nightjars heard or seen were mapped, with the behaviour observed (e.g. churring, wing clapping, in flight, etc) also recorded.

## **Habitat mapping and recreation impact assessment walkover**

### *Habitat mapping*

- 2.8 Habitat mapping was based on an appraisal of aerial photography and historical habitat maps of the site (from 1977 and 1997). These were re(assessed) during the recreation impact assessment walkover (see section 2.9), with the habitats classified using UK Habs<sup>1</sup> categories (modified to differentiate different broad-leaved woodland types on site) and minor amendments made, as required, to any observed changes to the habitat types present in the intervening period.

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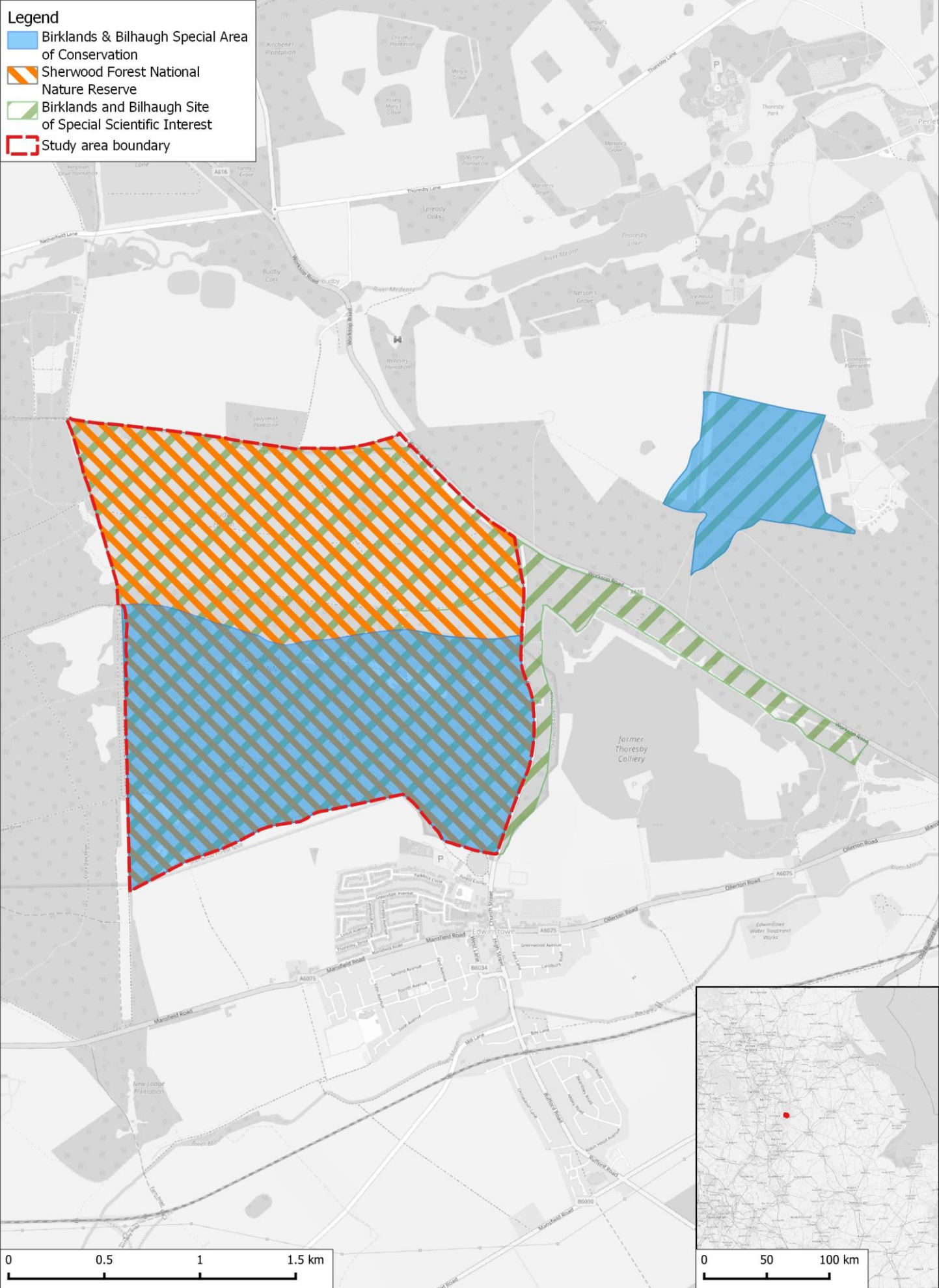
<sup>1</sup> <https://ukhab.org/>

### *Recreation impact assessment walkover*

- 2.9        A walkover survey was carried out within the Sherwood Forest NNR boundary in May 2021. As much of the site as possible was covered during the visit, and instances of recreational pressure mapped and recorded and the severity of the impact noted (light, moderate, severe), using our standard approach.
- 2.10       Impacts characterised as “light” were those that were either very highly localised (e.g. bare ground around a bench) or where the vegetation was somewhat modified but species characteristic of the habitat were still present (e.g. trampling pressure creating a shorter sward with more annuals and rosette species and little or no bare ground). Moderate impacts were generally those where vegetation was modified and no longer characteristic of the habitat (e.g. comprising ruderal or nitrophilous species such as Nettle) or bare ground was more extensive. “Severe” impacts were those where there was widespread loss of vegetation and compaction (not just confined to a path), for example at honeypot areas (such as the expanded main routes from the Visitor Centre into Sherwood Forest).

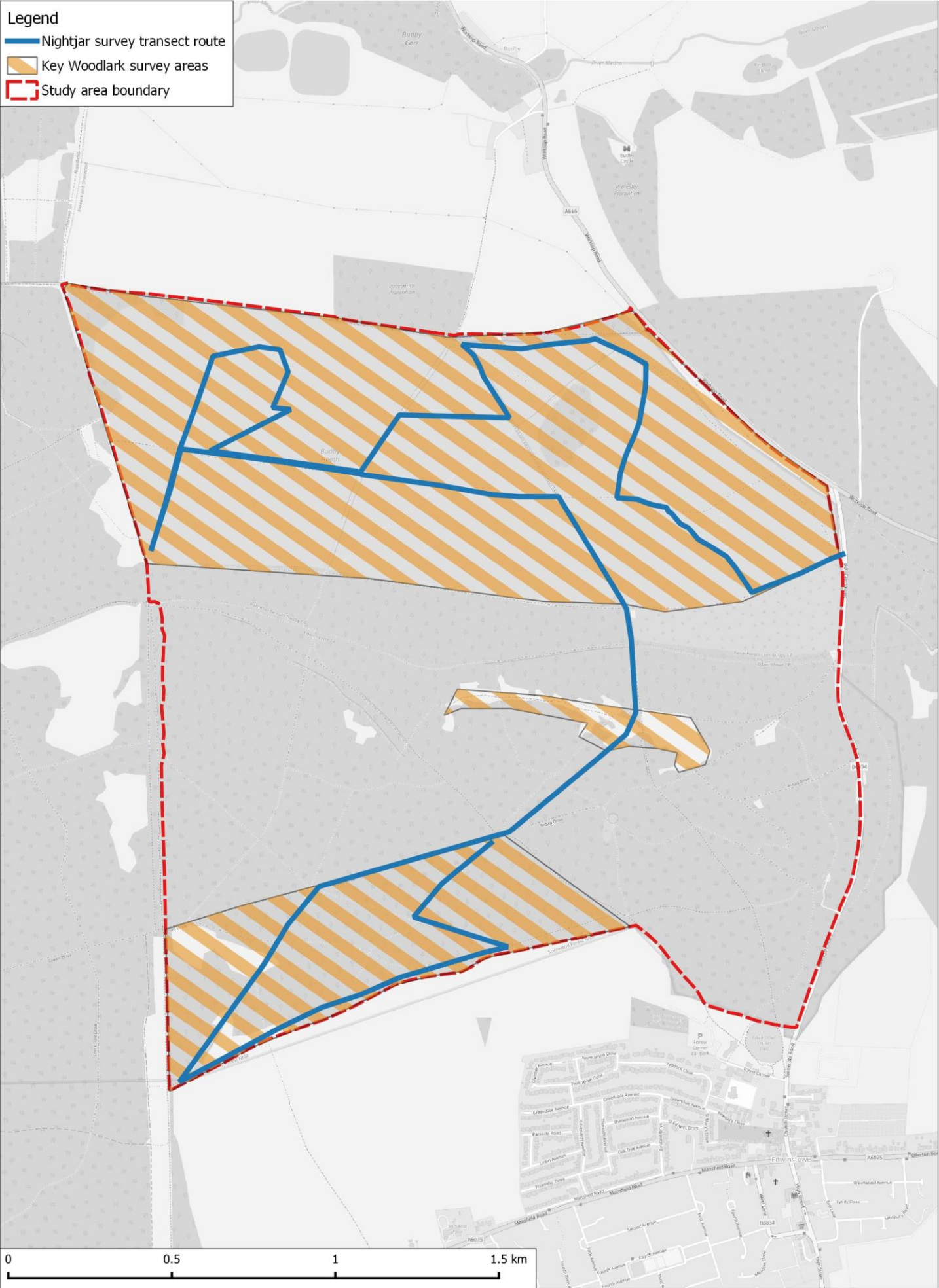


Map 1: Study area (inset provides wider geographic context)



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Map 2: Key Woodlark survey areas and Nightjar survey transect location



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## Visitor surveys

- 2.11 Visitor interviews and tally counts were carried out at 2 survey locations within the Birklands & Bilhaugh SAC/Sherwood Forest NNR study area (see Table 1 and Map 3) in 2021, during two separate survey periods (with both points surveyed during each). The first of these was in the spring during school term time (27<sup>th</sup> May to 12<sup>th</sup> June) and the second during the summer school holiday period (12<sup>th</sup> August to 21<sup>st</sup> August).

**Table 1: Survey locations**

Location number & name	Location details	Periods surveyed
1 – Budby South Forest RSPB Car Park	In small formal RSPB car park on eastern side of reserve, alongside access gate.	Term time & school holidays
2 – Sherwood Forest NNR Main Entrance	Alongside information board on main southern access track into Sherwood Forest NNR, in proximity to large formal car parks and Visitor Centre.	Term time & school holidays

- 2.12 The survey locations were selected to give a good geographic spread across the site and were at parking localities and/or pinch points where visitors could easily be intercepted, with Survey Point 2 comprising the main access point into the woodland/SAC component of the NNR, in proximity to the Visitor Centre.
- 2.13 All visitor interviews and counts were conducted by trained, experienced, Footprint Ecology visitor surveyors. A tally was kept of visitors using the site whilst interviews were being conducted, with the numbers of groups, people, minors, and dogs passing through the site across the interview survey period recorded.
- 2.14 Face to face interviews were carried out with a random selection of visitors, with the surveyors interviewing the first person/s they saw after completing the previous interview. When groups were encountered, only one person within each was interviewed, and no unaccompanied minors were approached. Interviewees were asked a range of questions, including their point of origin (home postcode), their reasons for using the area, and their mode of transport. A full copy of the questionnaire is provided in Appendix 1.
- 2.15 Surveys were conducted on tablets hosting SNAP<sup>2</sup> survey software, a dedicated market research software which allows surveys to be done on mobile devices. The

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<sup>2</sup> <https://www.snapsurveys.com/>

software allowed the questionnaire to be tailored, e.g. only asking dog-walkers about dog related behaviour. A GPS facility ensured that the surveyor was standing in the correct place, and each questionnaire took less than, or approximately, 10 minutes to complete.

- 2.16 Interviewees were also asked to identify the route they had taken whilst within the site boundary, with the routes and access/egress points used drawn on suitably scaled field maps. Each interview and field map were given the same unique identifier so that they could be cross-referenced during subsequent analyses.
- 2.17 The surveyors spent 16 hours at each of the 2 survey points, during each of the relevant spring and summer survey tranches, with this period split evenly between a weekday and weekend day. Surveys were carried out within the following time periods: 0700-0900hrs; 1030-1230hrs; 1400-1600hrs, and 1700-1900hrs, and were all completed in daylight hours.

Map 3: Visitor interview survey locations



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### 3. Woodlark and Nightjar

#### Overview

- 3.1 The approximate location of Nightjar and Woodlark territories (see Map 4) have been identified using standard territory mapping techniques (Bibby et al., 2000), whereby clusters of records of territorial birds or birds in song, as well as those visiting nest sites, have been grouped when observed over multiple dates. This had been further informed by the identification of synchronously singing birds, allowing the presence of two different abutting territories to be delineated. It should be noted however that the identification of territories within localities with an abundance of registrations (e.g in the central area of Budby South Forest RSPB Reserve) is far from straightforward, and the territories presented in Map 4 are considered precautionary.
- 3.2 Incidental records of a range of other notable bird species were also noted during the Nightjar and Woodlark surveys.

#### Species distribution within the study area

##### *Woodlark and Nightjar*

- 3.3 Woodlark were recorded exclusively from heathland and acid grassland habitats within Budby South Forest RSPB Reserve (see Map 4), equating to approximately 4 to 6 territorial birds/pairs. Observations were concentrated in the western half of the RSPB Reserve. Pairs were recorded collecting food on the extreme western boundary of the study area, and within the central area of the RSPB Reserve, and it was considered likely that the former birds were visiting a nest site within the immediate vicinity of the observation. Birds were often observed in song flight over the heath or perched in trees/foraging in areas adjacent to the path network running across the site.
- 3.4 Nightjar were distributed more widely across the study area (see map 4) and it was estimated that 4 to 5 churring/territorial males were present over the spring. Records were concentrated within two disparate locations within the study area. These comprised several birds on territory across heathland areas within the RSPB Reserve and at least one just outside the extreme south-western corner of the study area, alongside an area of plantation woodland managed by Forestry England.

### *Other notable species*

- 3.5 Although outside the scope of the targeted Woodlark and Nightjar surveys, a range of other notable bird species (comprising those listed on Schedule 1 of the Wildlife and Countryside Act 1981<sup>3</sup> and/or on the Red or Amber List of Birds of Conservation Concern<sup>4</sup>) were anecdotally recorded during the survey visits.
- 3.6 These species included multiple territorial Tree Pipit within the heathland/acid grassland areas of Budby South Forest RSPB Reserve, as well as Yellowhammer, Cuckoo, and Lesser Redpoll. Hawfinch were also noted overflying the area on two separate occasions. During the Nightjar surveys Woodcock and Tawny Owl were both found to be widespread along the transect route (within both the SAC and the RSPB Reserve). Although not qualifying as notable under the criteria identified above, the presence of two recently fledged broods of Long-eared Owls within the RSPB Reserve was also notable, as this secretive and under-recorded species is highly susceptible to disturbance throughout its annual cycle.

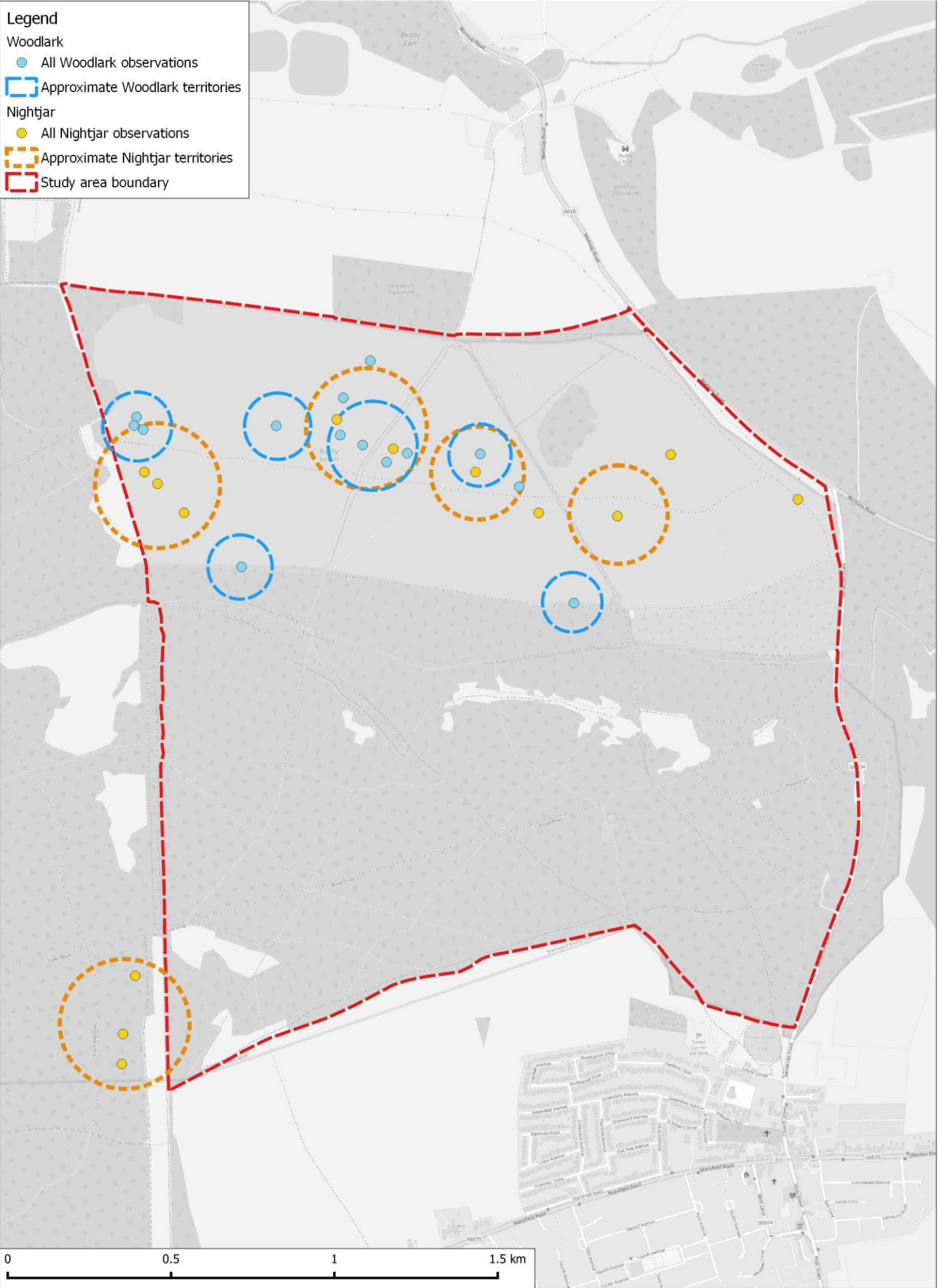
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<sup>3</sup> [Schedule 1 - Wildlife and Countryside Act 1981](#)

<sup>4</sup> [Birds of Conservation Concern](#)



Map 4: Distribution of Nightjar and Woodlark



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## 4. Habitats and recreation impacts

### Habitats present within study area

- 4.1 The habitats recorded within the study area boundary are depicted in Map 5. They include a mix of semi-natural broad-leaved woodland, broad-leaved, mixed, and coniferous plantation, and open areas of heathy grassland mosaic with scattered trees. It should be noted that a small number of the habitats present did not fall implicitly within standard UK Habs categories.

#### *Semi-natural broad-leaved woodland*

- 4.2 The Birklands and Bilhaugh SAC is designated for its old acidophilous oak woods with *Quercus robur* on sandy plains. Within Sherwood Forest, this largely takes the form of ancient wood pasture, with widely spaced, standing veteran oak trees (both Pendunculate and Sessile Oak) that have gradually become surrounded by secondary Silver Birch or planted oak. The site has one of the largest concentrations of ancient trees in the UK. The ground flora is generally dominated by Bracken, except where it has been modified by recreational pressure (e.g. around veterans, where it may be entirely absent) and along paths (where it has been replaced by more nitrophilous vegetation, often grassy and including Nettle, Dandelion etc). The exact boundaries between plantation and woodpasture are often unclear on the ground but could be deduced from historic maps. The area where the visitor complex was previously situated has not yet recovered following the removal of the buildings and development of a new centre outside the SAC boundary.

#### *Plantation woodland*

- 4.3 Plantation woodland is frequent throughout both Budby South Forest and Sherwood Forest. In Budby South Forest, there are numerous clearly defined areas of oak and pine plantation, including Church Road, Crown Hill and Pigeon Pond plantations, plus smaller areas. In some places the boundaries are a little blurred with secondary woodland (mainly Silver Birch and Scot Pine). In general, these areas are unaffected by recreational pressure.
- 4.4 Several areas within Sherwood Forest have also been planted. In some cases this is apparent in the regular spacing of trees and even age structure, but boundaries are not always clear. In some places where restoration to wood pasture is taking place, planted trees have been removed, resulting in dense growth of young

birch. Some of these areas are affected by trampling and contamination along paths, although this reduces with distance from the Visitor Centre and Major Oak.

### *Heathland/grassland mosaic*

- 4.5 Much of Budby South Forest RSPB Reserve is dominated by heath. In places this is grassy, whilst other areas are Heather dominated, and Bracken is abundant and forms continuous cover in patches. The heather is general even-aged (mature) although linear strips have been cut in some areas, presumably to diversify the structure. There are also some scrapes with associated banks (mainly dominated by more mesotrophic grasses such as Yorkshire Fog). Other species include Heath Bedstraw and Sheep's Sorrel.
- 4.6 The acid grassland is generally quite species poor (with Common Bent, Sweet Vernal-grass and occasional Mat Grass and Wavy Hair-grass). In areas experiencing intermediate levels of disturbance (such as along paths) a shorter, more diverse sward supports a range of annual species including Birdsfoot, Common Whitlowgrass, Parsley Piert, Squirrel's-tail Fescue, as well as Buck's-horn Plantain and Procumbent Pearlwort (e.g. point 18).
- 4.7 Bare ground is generally limited to tracks, paths and desire lines. The bare ground along the PRoW is of limited interest – these have been surfaced in the path and are pebbly and compacted. Within the grazing compartments the bare ground is of more interest and there are also some scraped strips parallel to tracks, presumably created for invertebrates.
- 4.8 The heathland areas support scattered trees, particularly Silver Birch with some open-grown oak. There are also heathy glades within Sherwood Forest, mostly dominated by Wavy Hair-grass with Heather, Tormentil and Heath Bedstraw.

### *Grassland margins*

- 4.9 Within Budby South Forest, the larger tracks tend to support a more mesotrophic, rank, sward along the ungrazed margins, particularly on the periphery of the site; these include Hogweed, Cow Parsley, Cock's-foot, etc, and are likely to be a result of lack of grazing combined with some eutrophication e.g. from dog faeces and also in places from the dry deposition of nitrous oxides from road traffic.



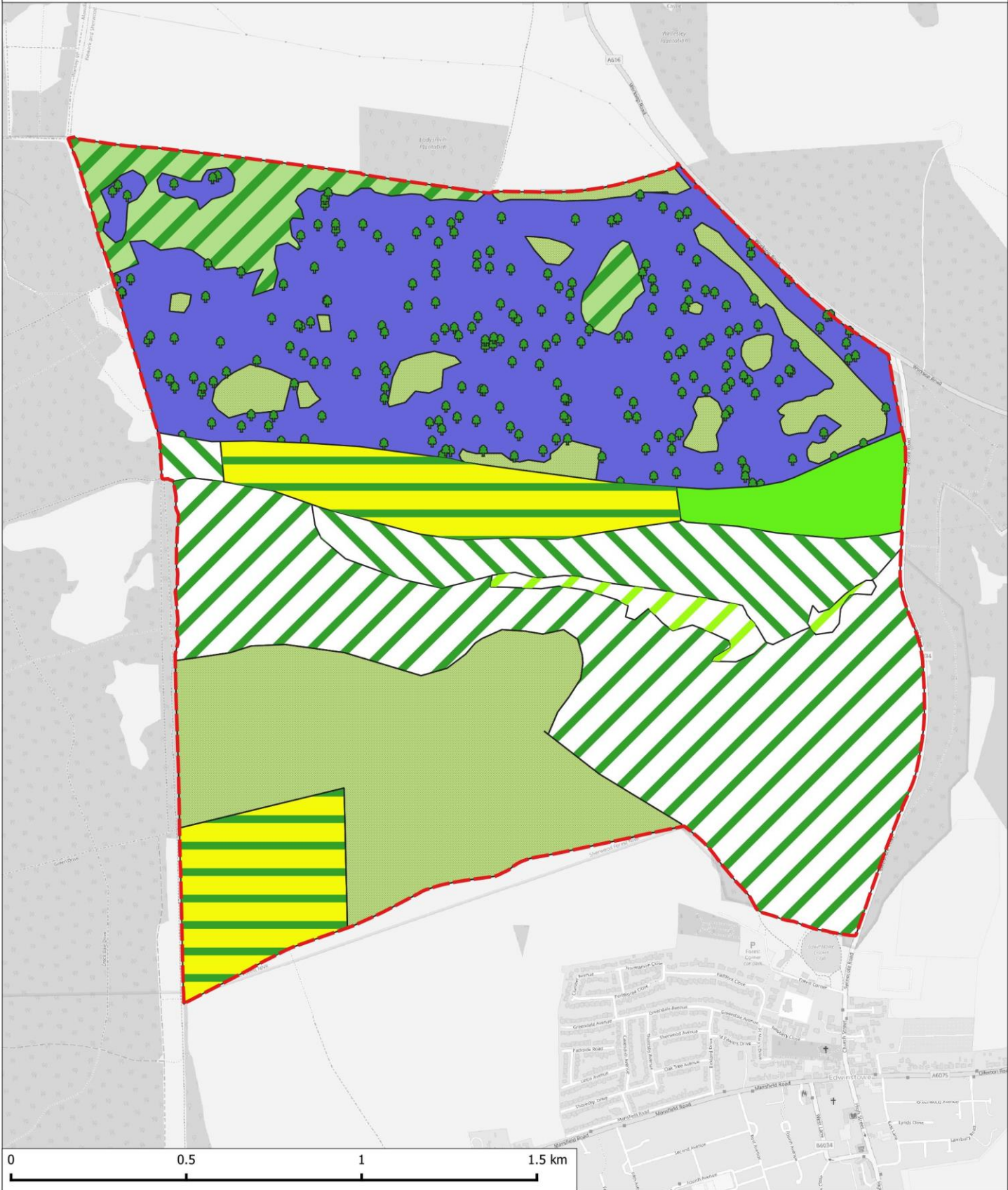
Map 5: Broad-scale UK Habitats classification of Birklands & Bilhaugh SAC/Sherwood Forest NNR

Legend

UK Habitats classification (modified to account for habitat heterogeneity on site)

- Acid grassland
- Modified grassland
- Broadleaved woodland - Ancient Oak woodland
- Broadleaved woodland - Birch high forest

- Broadleaved plantation woodland
- Mixed plantation woodland
- Coniferous plantation woodland
- Mixed heathland and shrub with acid grassland and scattered trees
- Study area boundary



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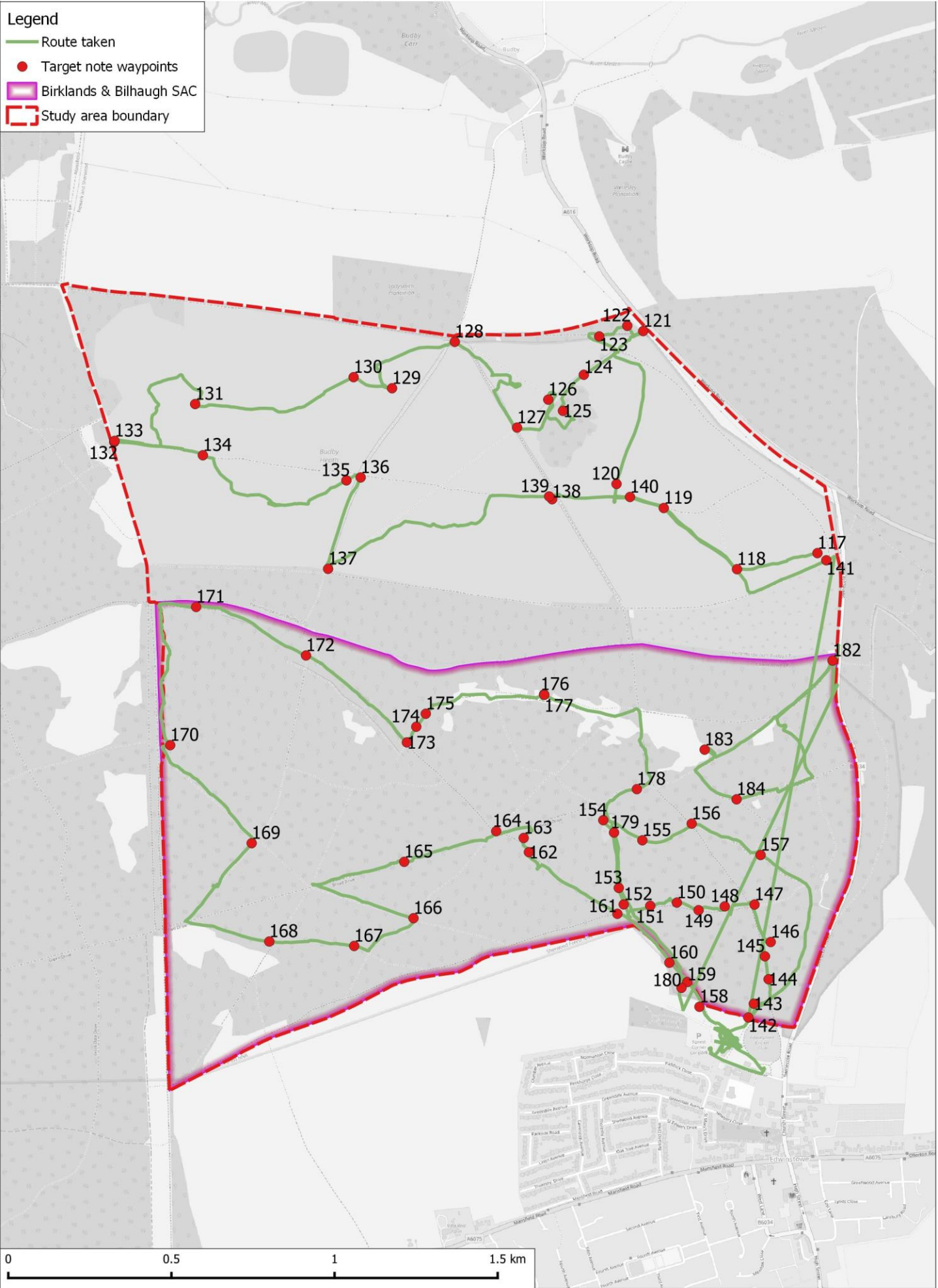
## Recreation impacts on habitats

### *Overview*

- 4.10 The route taken during the recreation impacts walkover within the study area, and the location of any recreation and habitat target notes made, are depicted in Map 6. Table 2 provides a summary of the observed recreational impacts on habitats within Birklands and Bilhaugh SAC/SSSI. Further background and context on these recreation impact pathways is set out in the earlier review report Saunders & Liley (2021).
- 4.11 Note that the table summarises impacts that were observable at the time of the site visit. Other impacts (such as fire) may not necessarily be picked up in our approach due to the likely sporadic (and weather dependent) occurrence. It should also be noted that the assessment is solely based on a walkover and visual assessment by experienced ecologists and long-term subtle effects, for example associated with veteran tree health, may not necessarily have been recorded. The observed recreation impacts are described more fully below, with detailed target notes provided in Appendix 2.



Map 6: Recreation impacts walkover route



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Table 2: Summary of recreational impacts on habitats of Birklands and Bilhaugh SSSI/SAC

Habitat	Fire	Trampling	Physical Damage	Contamination
Heathland/acid grassland	Not observed	Localised loss of vegetation, soil compaction. Generally a light impact, restricted to paths and tracks with an expanded zone around path junctions	Not observed	Eutrophied path edges (replacement of characteristic heathland/grassland vegetation) on main routes/entrances
Wood pasture	Not observed	Loss of ground flora and leaf litter habitat plus compaction (inc. around veteran trees) – severe in places	Damage to exposed roots of veteran trees and some abrasion to tree limbs and trunks from climbing. Removal of deadwood from ground through creation of dens	Eutrophied path edges (loss of characteristic woodland ground flora); occasional rubbish
Plantation	Not observed	As above where features are present	Damage to exposed roots of veteran trees where present	Eutrophied path edges (replacement of characteristic woodland ground flora where present)



### *Fire*

- 4.13 No evidence of wildfire (including barbeques and campfires) was evident at the time of the survey.

### *Trampling*

- 4.14 Within Budby South Forest, trampling damage is apparent throughout but is generally light or highly localised. Heath vegetation is absent from paths in otherwise heathy areas, having been replaced by acid grassland (although it is occasionally present in the centre of less-used tracks, e.g. point 124). In places, this acid grassland has in turn been replaced by trampling-resistant rosette species of less interest, such as Broad-leaved Plantain (e.g. point 133). At major junctions where trampling is more severe, there are patches or strips of bare compacted ground (e.g. point 128). However, in places, moderate trampling is providing additional diversity through the creation of suitable conditions for annual plants species that are outcompeted in the thicker swards characteristic of most of the site (e.g. point 118). The main Rights of Way, which are fenced out of the grazing compartments, have a pebbly compacted surface generally of little conservation interest (see point 127).
- 4.15 Trampling impacts are therefore currently largely localised and limited in Budby South Forest, and in some places are beneficial. However, there are frequent small desire lines and livestock paths (e.g. point 120) and also occasional disused tracks or temporary tracks caused by management work – all of these are likely to become more heavily used should visitor pressure increase. This would increase the area of affected vegetation and reduce the area of undisturbed heathland.
- 4.16 In contrast, within Sherwood Forest, the impact of trampling is very evident. The main paths (e.g. point 152) are generally much widened and compacted and lack vegetation and leaf litter, and with modified margins, where these are still present (see contamination). Some unsurfaced paths are also quite poached. These impacts are greatest close to the new Visitor Centre and along routes to the Major Oak. Within this area, all veteran trees that are visible from the paths have desire lines leading to them (sometimes through fences). These paths are often compacted and denuded of vegetation (e.g. point 148a), and the trees generally have a similarly compacted area beneath the canopy (e.g. point 148). Even many of those further afield have similar, although less intense, impacts evident. Trampling is also exposing the roots of trees adjacent to paths (e.g. point 160).

### *Physical damage*

- 4.17 No signs of physical damage were observed in Budby South Forest during the survey.
- 4.18 In Sherwood Forest, damage included bike jumps (some now dismantled). Repeated climbing is likely to damage trees (e.g. breaking branches, damaging bark) and this was evident from scuffs on trees with low branches (see point 176). There were also numerous dens, which both remove deadwood from the forest floor (destroying habitat for invertebrates) and cause people to approach them, leading to desire lines and associated trampling which results in soil compaction and the loss of vegetation and leaf litter. There is also significant impact in the vicinity of the Major Oak, a consequence of the long-term status of the site as a key visitor attraction. This includes loss of habitat through provision of picnic areas etc. (e.g point 154).

### *Contamination*

- 4.19 At Budby South Forest, there is evidence of long-standing eutrophication at some access points and within the fenced bridleway and path (e.g. point 127), with ranker grasses and nitrophilous species such as nettles in places (although sward height is in part also due to lack of grazing). Where most flowery (e.g. with Hogweed – see point 141) this may provide needed nectar sources for invertebrates.
- 4.20 Within Sherwood Forest, the effects of contamination (from dog faeces) are apparent on the edges of paths (where vegetation has not already been destroyed by trampling) (point 173). Typically, the ground flora of acidic, well-drained wood pasture would be characterised by acid grassland and heathland species in open areas (including Wavy Hair-grass, Heather, Bilberry, Heath Bedstraw, Tormentil) and Bracken and Creeping Softgrass under a closed canopy. However, path edges within Sherwood Forest more frequently support species such as docks, Nettle, Cleavers, Dandelion, Cock's-foot and Perennial Ryegrass. Wood Avens and Creeping Soft grass are present where recreational pressure is lower.

# Birklands & Bilhaugh SAC Recreation Impact Assessment Report



Point 124, heathy track



Point 127, surfaced and fenced PRow



Point 133, degraded vegetation



Point 120, livestock path



Point 128, grassy junction, bare patch



Point 152, e.g. of path widening



Point 118, moderate trampling



Point 148, desire line to veteran



# Birklands & Bilhaugh SAC Recreation Impact Assessment Report



Point 148, compaction around veteran



Point 141, more mesotrophic sward with nectar sources



Point 176, scuffing associated with low branches



Point 173, grassy, eutrophied verges



Point 160, loss of soil and compaction resulting in exposed roots



Point 154, picnic area



Point 127, eutrophied verges

## Recreation impacts in relation to SSSI features

- 4.21 Table 3 provides a summary of Natural England's condition assessment of the Birklands and Bilhaugh SSSI in relation to the recreational impacts observed during the 2021 survey. Map 7 details the location of the individual SSSI units.
- 4.22 Budby South Forest condition was assessed as unfavourable recovering largely due to dense bracken, scrub and insufficient structural variation in the sward, issues which are being addressed through a Higher Level Stewardship (HLS) scheme. The current recreational impacts do not appear to be contributing to the unfavourable condition. The minor loss/degradation of habitat caused by trampling and nutrient enrichment along paths has not been identified as a problematic. In localised areas, a degree of recreational pressure may be contributing to recovery through (i) an increase in ephemeral acid grassland plants, (ii) a small increase in nectar sources through conversion of heathland to more mesotrophic swards with flowering umbellifers, and (iii) the creation of bare ground (although this is often too compacted to be suitable for invertebrates). These benefits are at a very small scale and are entirely dependent on the level of recreational pressure – an increase in recreation could increase the distribution of such impacts but increased intensity at existing locations would ultimately destroy the feature of interest.
- 4.23 Sherwood Forest was also assessed as unfavourable recovering. It is being restored to wood pasture from more closed canopy woodland (both secondary woodland and plantation) and failed to meet a range of targets relating to a suitable age structure in the trees, canopy competition of veterans, cover of bracken and long grass and a lack of nectar and seed sources. Again, this is being addressed through HLS and is a long-term project. Most of the recreational impacts observed do not directly relate to the failed targets. However, issues such as compaction will affect the long-term health of trees and the loss of habitat through path widening is cumulative. The requirement for a high level of visitor management work means less resources and staff time are available for the required habitat management. SSSI units 001 and 002 are unfavourable.

Table 3 Summary table of the condition of SSSI units (drawn from Natural England's condition assessment<sup>5</sup>(undertaken in 2016) and recreational impacts observed during the 2021 survey.

SSSI unit	Status	Summary of negative recreational impacts	Summary of positive recreational impacts	Relevance to condition status
001, 002	<b>Unfavourable recovering</b> Failed target for dense bracken cover, dominance of Wavy Hair-grass, scrub cover, lack of nectar sources for invertebrates, lack of pioneer stage Heather (002)	<ul style="list-style-type: none"> <li>• Loss of heathland vegetation and conversion to grassland along paths and notably at path junctions (historic)</li> <li>• Modification of path edge vegetation along PRowS and near access points to more mesotrophic stands (although this can provide nectar source for inverts where flowery)</li> <li>• Change of vegetation on paths from acid grassland to ruderal species that can withstand trampling and compaction</li> </ul>	<ul style="list-style-type: none"> <li>• Localised creation of bare ground (although not always suitable for inverts)</li> <li>• Increase in species diversity of acid grassland along moderately trampled paths through creation of conditions suitable for ephemeral and smaller acid grassland species</li> </ul>	<ul style="list-style-type: none"> <li>• Small scale reduction in dominance of Wavy Hair-grass and bracken with associated increase in diversity</li> <li>• Small contribution to limited provision of nectar sources</li> </ul>
004 – 006, 007	<b>Unfavourable recovering</b> Failed targets for appropriate variation in tree size classes, young oak (too low), fallen dead wood (too low), presence of grass characteristic of NVC type, cover of bracken and associated litter, canopy competition of	<ul style="list-style-type: none"> <li>• Trampling leading to path widening and compaction, loss of woodland understorey and litter along paths</li> <li>• Modification of path edge vegetation to more mesotrophic swards</li> </ul>		<ul style="list-style-type: none"> <li>• Modification of path edges is potentially contributing to the failure of the characteristic grass type and presence of nectar sources target</li> <li>• Den building detracts from dead wood target (localised)</li> <li>• Necessity for significant visitor management may be detracting from time</li> </ul>

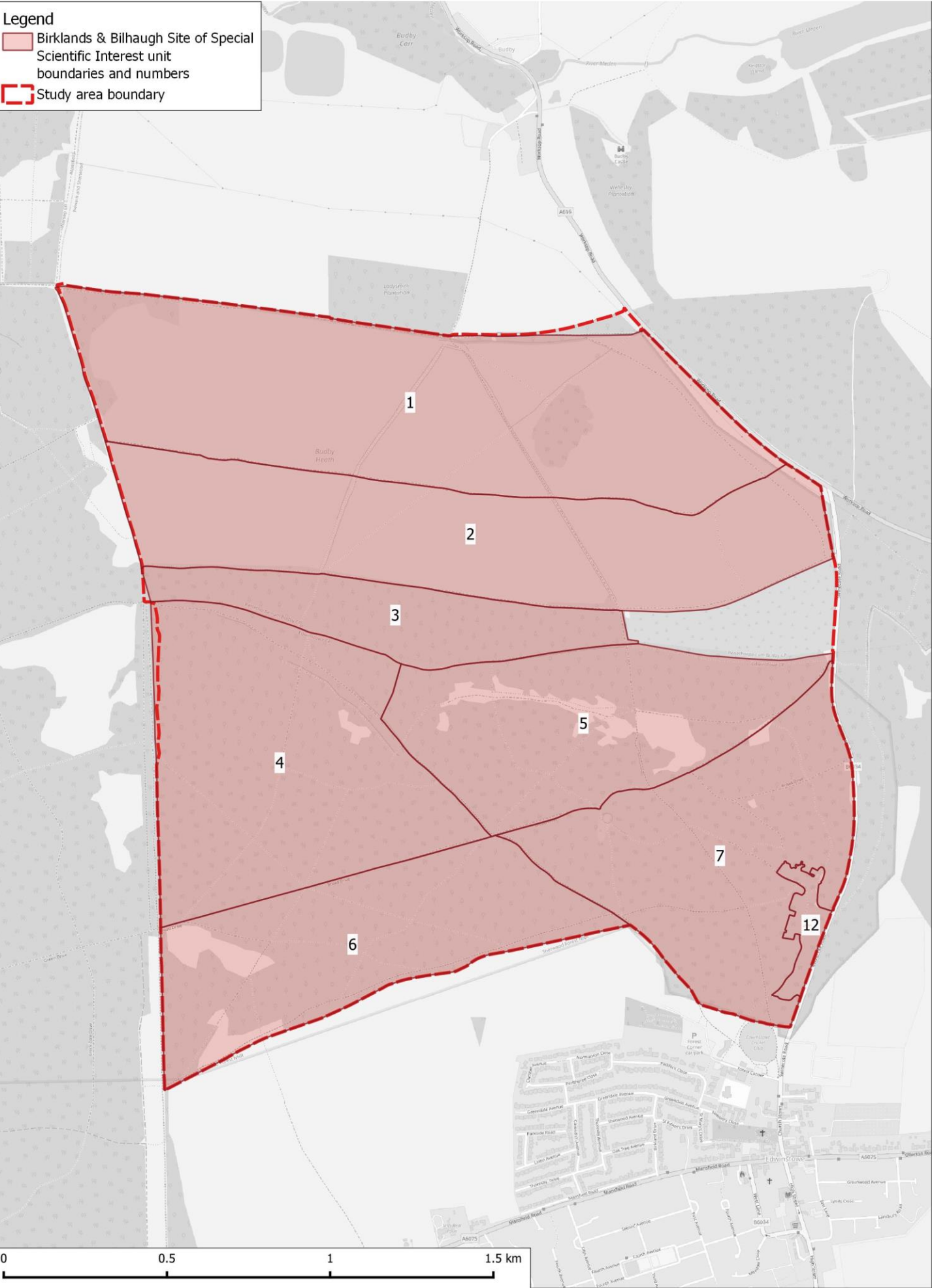
<sup>5</sup> <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003476&ReportTitle=Birklands%20and%20Bilhaugh%20SSSI>

B i r k l a n d s   &   B i l h a u g h   S A C   R e c r e a t i o n   I m p a c t   A s s e s s m e n t   R e p o r t

SSSI unit	Status	Summary of negative recreational impacts	Summary of positive recreational impacts	Relevance to condition status
	the Ancients, presence of seed heads for overwintering invertebrates, presence of nectar sources- sward and shrubs, over long grass			and resources for the necessary habitat management



Map 7: Birklands & Bilhaugh SSSI unit boundaries and numbers



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## Recreation impacts in relation to SAC features

- 4.24 The designated feature at Birklands and Bilhaugh SAC is Annex I habitat H9190 Dry oak-dominated woodland, which at this site takes the form of ancient wood pasture. A number of issues are currently impacting or threatening the condition of the features. The 2015 [Site Improvement Plan](#) for the site<sup>6</sup> identified public access/disturbance as the foremost pressure. Since the SIP was produced, the Visitor Centre has been removed from within the SAC and the location is being restored to wood pasture.
- 4.25 However, the SIP notes that *"the use of the SAC as a public park is relatively recent and, in common with other wood pasture sites like Burnham Beeches and Epping Forest, can cause localised soil compaction, nutrient enrichment, direct loss of trees (vandalism, health and safety), introduction of non-native species (including new diseases) as well as an altered ecological succession. Such impacts can affect the health of soils, tree roots and the associations with mycorrhizal fungi which in turn can have impacts on the health of the veteran and ancient trees as well as emerging cohorts"*. The recreation impacts survey undertaken for this report suggests that there is clearly an ongoing problem with localised soil compaction, nutrient enrichment and damage to trees.

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<sup>6</sup> <http://publications.naturalengland.org.uk/publication/6727956374224896>

## 5. Visitor survey results

5.1 The following section details the results of the visitor interview surveys carried out during spring and summer 2021 at Birklands & Bilhaugh SAC/Sherwood Forest NNR. An overall summary is provided, in addition to the results of the tally counts, followed by in-depth analyses of responses to the questionnaire (see Appendix 1).

### Summary

5.2 A total of 299 individuals were approached for interviews across the two survey periods (see Table 4). Approximately half of the individuals approached were receptive to being interviewed. 38% of those approached refused to be interviewed, with approximately 12% having already been interviewed during a previous session. The latter category comprised approximately 23% of those approached at Survey Point 1 (Budby South Forest RSPB Reserve Car Park), potentially indicating a large proportion of frequent visitors at that location.

Table 4: Summary of visitor interviews carried out and reasons for refusals, stratified by survey location

Survey location	Interviews carried out	Already interviewed	Number of refusals		Total approached
			Language issues	Other reasons	
1 - Budby South Forest RSPB Car Park	56 (51.9%)	25 (23.2%)	0 (0.0%)	27 (25.0%)	108 (100%)
2 - Sherwood Forest NNR Main Entrance	95 (49.8%)	10 (5.3%)	3 (1.6%)	83 (43.5%)	191 (100%)
<b>Total</b>	<b>151 (50.6%)</b>	<b>35 (11.8%)</b>	<b>3 (1.1%)</b>	<b>110 (36.8%)</b>	<b>299 (100%)</b>

### Tally Counts

5.3 Tally counts were maintained by the surveyor when on-site conducting interviews. These tallies included the number of people entering, leaving, and passing through at the survey point, therefore providing an indication of total 'footfall' within the relevant survey window (32 daylight hours, across seasons, at each Survey Point). Nevertheless, it was noted during the study that a large proportion of those interviewed were carrying out circular walks on site, with tally counts of those entering and leaving at each Survey Point being similar. Therefore, in order to avoid duplication, only counts of those entering at the Survey Point are provided here.

5.4 Data are summarised in Table 5 and Map 8, which present the combined daily weekend and weekday tally totals for those entering at each survey location, stratified by survey period. The total counts of both minors and bicycles (cyclists) are also incorporated in the total number of individuals column in the table.

**Table 5: Tally counts of groups, individuals, minors, dogs, and bicycles recorded entering at each survey location, stratified by survey period. Grey shading reflects the largest two values in each column, with the darker shading highlighting the larger value.**

Survey location	Survey period	Total groups	Total individuals	Total minors	Total bicycles	Total dogs
1 - Budby South Forest RSPB Car Park	Spring	42	94	21	3	26
	Summer	43	79	17	0	31
2 - Sherwood Forest NNR Main Entrance	Spring	277	820	172	37	86
	Summer	576	1,871	517	41	176
Total	Spring	319	914	193	40	112
	Summer	619	1,950	534	41	207

5.5 Overall, similar tally totals were recorded across the survey locations during both the spring and summer survey periods. A total of 319 groups, comprising 914 individuals, were recorded entering the study area during the spring survey period, with 619 groups and 1,950 individuals recorded during the summer survey period. The tally data varied between survey locations however, with that from Survey Point 2 (Sherwood Forest NNR Main Entrance) being consistently much larger than at Survey Point 1 (Budby South Forest RSPB Car Park).

5.6 A marked seasonal effect was also apparent at Survey Point 2, with much larger tallies made during the summer survey period, whereas the tallies from Survey Point 1 were relatively similar across the two survey periods. The largest total number of minors (517), bikes (41), and dogs (176) were all made from Survey Point 2 during the summer survey period. The extreme scarcity of bicycle counts within the tally data from Survey Point 1 was also noteworthy.

5.7 The figures in Table 5 can be used to calculate ratios of people and dog numbers with respect to group size at each of the survey locations. These are provided in Table 6. Survey Point 2 (Sherwood Forest NNR Main Entrance) recorded the largest mean number of people per group (2.4) during the

summer survey period, with Survey Point 1 (Budby South Forest RSPB Car Park) recording the largest mean number of people per group (2.3) during the spring survey period. The smallest mean number of people per group (1.9) was recorded from Survey Point 1 during the summer survey period.

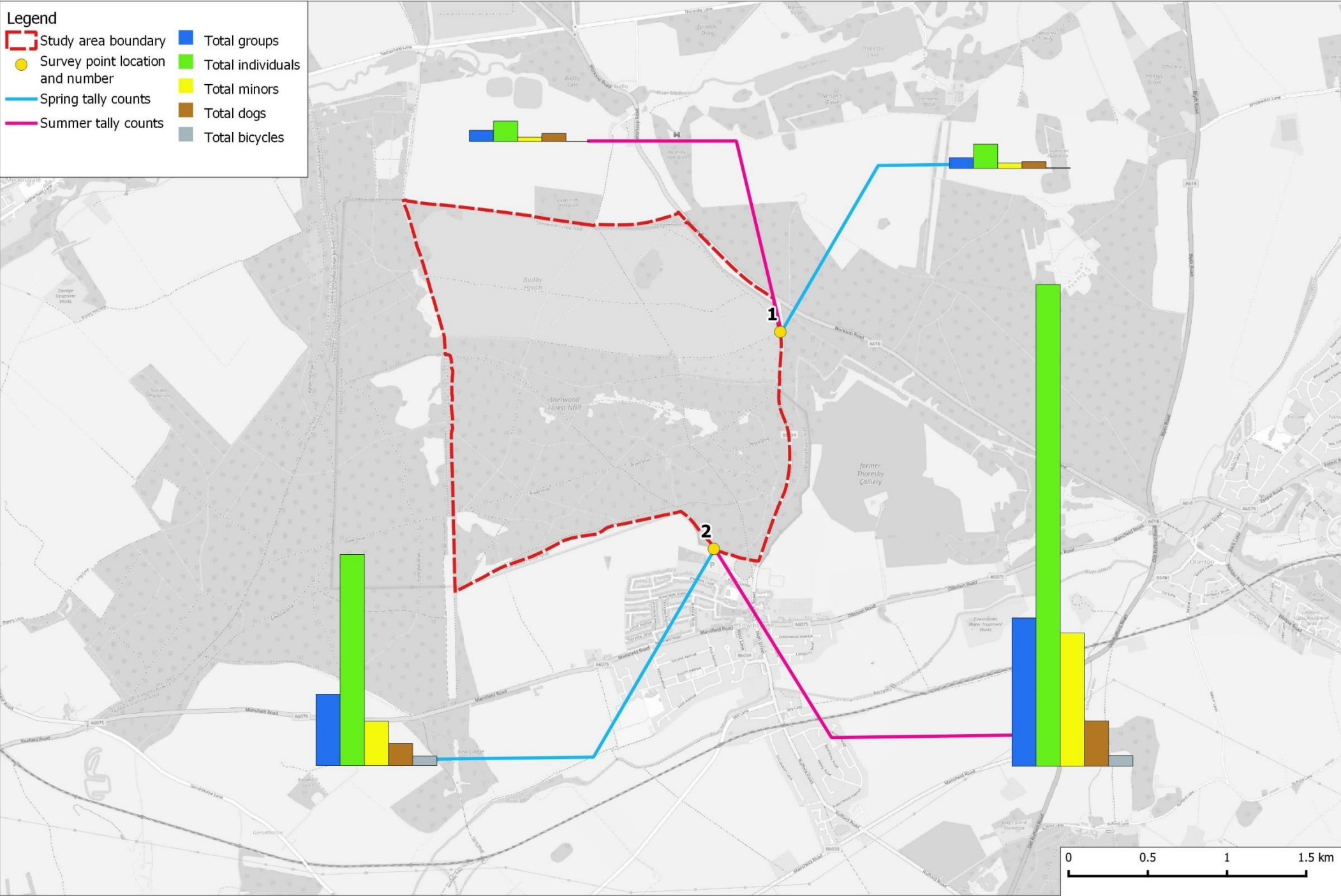
- 5.8 The joint largest mean number of minors per group (0.5) were recorded from Survey Point 1 (Budby South Forest RSPB Car Park) in the spring and from Survey Point 2 (Sherwood Forest NNR Main Car Park) in the summer. The largest mean number of dogs per group (0.8) was recorded from Survey Point 1 during the summer survey period, with the joint second largest value (0.7) recorded from both survey locations during the spring. The smallest number of minors per group (0.3) was recorded from Survey Point 2 during the spring, whilst the smallest number of dogs per group (0.4) was recorded from Survey Point 2 during the summer survey period.

Table 6: Mean number of individuals, minors, and dogs per group at each survey location, stratified by survey period. Grey shading reflects the largest two values in each column, with the darker shading highlighting the larger value.

Survey location	Survey period	Mean no. individuals per group	Mean no. minors per group	Mean no. dogs per group
1 - Budby South Forest RSPB Car Park	Spring	2.3	0.5	0.7
	Summer	1.9	0.4	0.8
2 - Sherwood Forest NNR Main Entrance	Spring	2.2	0.3	0.7
	Summer	2.4	0.5	0.4
Total	Spring	2.9	0.6	0.4
	Summer	2.4	0.5	0.4



Map 8: Tally counts of visitors entering at survey locations, stratified by survey period



## Visitor survey: interviews

### Overview

5.9 A total of 82 interviews were conducted across the two Survey Points during the spring survey period (see Table 7), with a further 70 interviews undertaken in total during the summer survey period. The largest number of total interviews (82 combined across the spring and summer) were carried out at Survey Point 1 (Budby South Forest RSPB Car Park), and a larger number of interviews were carried out at both survey locations during the summer survey period than during the spring. More interviews were carried out at Survey Point 1 on weekdays during spring, and on weekends during the summer, with this pattern reversed at Survey Point 2 (Sherwood Forest NNR Main Entrance). Nevertheless, there was an approximately even split between weekday and weekend survey dates overall across the two survey locations combined.

Table 7: Number of interviews per survey location during each survey period, stratified by day type.

Survey location	Survey period	Number and % of interviewees		
		Weekday	Weekend	Total
1 - Budby South Forest RSPB Car Park	Spring	13 (43.4%)	17 (56.7%)	30 (100%)
	Summer	16 (59.3%)	11 (40.8%)	27 (100%)
2 - Sherwood Forest NNR Main Entrance	Spring	27 (52.0%)	25 (48.1%)	52 (100%)
	Summer	20 (46.6%)	23 (53.5%)	43 (100%)
Total	Spring	40 (48.8%)	42 (51.3%)	82 (100%)
	Summer	36 (51.5%)	34 (48.6%)	70 (100%)

### Type of visit (Q1)

5.10 The majority of interviews carried out across all survey locations, during both the spring (84.2%) and summer (87.2%) survey periods, were with those who had undertaken a day trip or short visit directly from home that day (see Table 8). This was the case at all of the survey locations during each relevant survey period. Amongst the remaining interviewees, a larger relative proportion comprised holidaymakers at Survey Point 2 (Sherwood Forest NNR Main Entrance: 11.6% and 11.7% in spring and summer, respectively). Overall, only 2.6% of interviewees consisted of people staying away from home with friends or family.

Table 8: Number (and %) of interviews at each survey location during each survey period, stratified by visit type. Grey shading reflects the largest value in each row.

Survey location	Survey period	Type of visit				Total
		Short visit from home	Staying away from home in a second home, mobile home, or on holiday	Staying away from home with friends or family	Other	
1 - Budby South Forest RSPB Car Park	Spring	28 (93.4%)	1 (3.4%)	0 (0.0%)	1 (3.4%)	30 (100%)
	Summer	26 (96.3%)	1 (3.8%)	0 (0.0%)	0 (0.0%)	27 (100%)
2 - Sherwood Forest NNR Main Entrance	Spring	41 (78.9%)	6 (11.6%)	1 (2.0%)	4 (7.7%)	52 (100%)
	Summer	35 (81.4%)	5 (11.7%)	3 (7.0%)	0 (0.0%)	43 (100%)
Total	Spring	69 (84.2%)	7 (8.6%)	1 (1.3%)	5 (6.1%)	82 (100%)
	Summer	61 (87.2%)	6 (8.6%)	3 (4.3%)	0 (0.0%)	70 (100%)

### *Main activities undertaken (Q2)*

- 5.11 The most frequently recorded main activity across both survey locations across the combined survey periods was walking (47.4% of interviewees; see Figure 1), followed by dog walking (36.2%), and bird/wildlife watching (5.3%), with the remaining activities combined comprising 12% of responses.



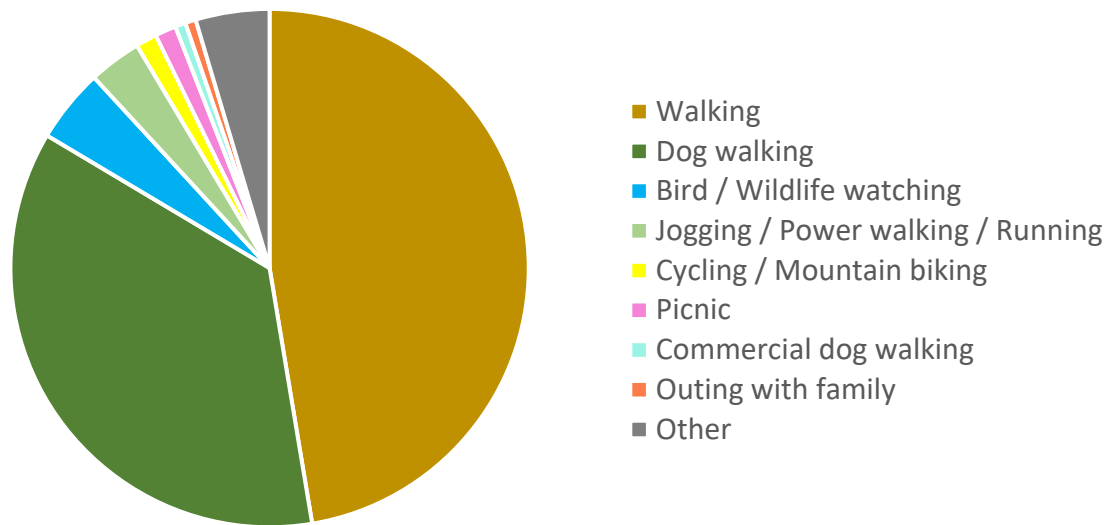


Figure 1: Main activities undertaken across all survey locations across all respondents.

- 5.12 Table 9 provides a breakdown of recorded main activities from each of the survey locations. Walking was the most commonly recorded main activity by far at Survey Point 2 (Sherwood Forest NNR Main Entrance), comprising 59.0% of responses, with dog walking the second most frequently recorded (26.4%). Dog walking was the most commonly recorded main activity at Survey Point 1 (Budby South Forest RSPB Reserve Car Park) however, comprising approximately half of the responses at that locality, with walking the second most frequently recorded main activity there (28.1% of interviewees).
- 5.13 Bird/wildlife watching comprised 12.3% of responses at Survey Point 1 (Budby South Forest RSPB Reserve Car Park), but only 1.1% at Survey Point 2 (Sherwood Forest NNR Main Entrance). Of the remaining named main activities, only jogging/running comprised >4% of the observations made at either of the Survey Points (4.3% of observations at Survey Point 2).

Table 9: Main activities undertaken at each survey location across all respondents, arranged in order of overall prevalence. Grey shading reflects the largest two values in each column, with the darker shading highlighting the larger value.

Activity	Survey location		Total
	1 – Budby South Forest RSPB Reserve Car Park	2 – Sherwood Forest NNR Main Entrance	
Walking	16 (28.1%)	56 (59.0%)	72 (47.4%)
Dog walking	30 (52.7%)	25 (26.4%)	55 (36.2%)
Bird / Wildlife watching	7 (12.3%)	1 (1.1%)	8 (5.3%)
Jogging / Power walking / Running	1 (1.8%)	4 (4.3%)	5 (3.3%)
Cycling / Mountain biking	0 (0%)	2 (2.2%)	2 (1.4%)
Picnic	0 (0%)	2 (2.2%)	2 (1.4%)
Commercial dog walking	1 (1.8%)	0 (0%)	1 (0.7%)
Outing with family	0 (0%)	1 (1.1%)	1 (0.7%)
Other	2 (3.6%)	4 (4.3%)	6 (4%)
<b>Total</b>	<b>57 (100%)</b>	<b>95 (100%)</b>	<b>152 (100%)</b>

### *Secondary activities (Q3)*

- 5.14 Interviewees were also asked to identify any secondary activity that they were undertaking at the survey location on the day of the interview. A total of 53 interviewees, across both survey periods, identified a secondary activity (see Table 10). Bird/wildlife watching comprised the most frequently recorded secondary activity overall (32.1% of responses), although it only comprised the second most frequently reported secondary activity at Survey Point 1 (Budby South Forest RSPB Reserve Car Park).
- 5.15 Walking was the second most frequently recorded secondary activity overall (24.6%), although it formed the most frequently recorded secondary activity at Survey Point 1 (Budby Forest South RSPB Car Park). Meeting up with friends (15.7%) was the second most frequently recorded secondary activity at Survey Point 2 (Sherwood Forest NNR Main Entrance), with picnicking the only other secondary activity comprising >10% of responses at either survey location (12.5% at Survey Point 2).

Table 10: Secondary activities undertaken at each survey location across all respondents, arranged in order of overall prevalence. Grey shading reflects the largest two values in each column, with the darker shading highlighting the larger value.

Activity	Survey location		Total
	1 – Budby South Forest RSPB Reserve Car Park	2 – Sherwood Forest NNR Main Entrance	
Bird / Wildlife watching	6 (28.6%)	11 (34.4%)	17 (32.1%)
Walking	10 (47.7%)	3 (9.4%)	13 (24.6%)
Picnic	2 (9.6%)	4 (12.5%)	6 (11.4%)
Meeting up with friends	0 (0.0%)	5 (15.7%)	5 (9.5%)
Dog walking	1 (4.8%)	3 (9.4%)	4 (7.6%)
Other fitness / sports	0 (0.0%)	2 (6.3%)	2 (3.8%)
Jogging / Power walking / Running	0 (0.0%)	1 (3.2%)	1 (1.9%)
Other	2 (9.6%)	3 (9.4%)	5 (9.5%)
<b>Total</b>	<b>21 (100%)</b>	<b>32 (100%)</b>	<b>53 (100%)</b>

### *Temporal visiting patterns, frequency of visit, time of year etc. (Q4-5 & 7-8)*

- 5.16 Overall, approximately a fifth of interviews across both survey locations visited the survey area 1 to 3 times per week, with another fifth visiting less than once a month, and another fifth making their first visits to the survey location (see Table 11). Nevertheless, approximately a fifth of interviewees at Survey Point 1 (Budby South Forest RSPB Reserve Car Park), and a quarter of interviewees at Survey Point 2 (Sherwood Forest NNR Main Entrance), visited daily or on most days.

Table 11: Number (row %) of all interviewees and frequency of visit (Q7), stratified by survey location. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value.

Survey location	Frequency of visit											Total
	More than once a day (365+ visits a year)	Daily (300-365 visits)	Most days (180-300 visits)	1 to 3 times a week (40-180 visits)	2 to 3 times per month (15-40 visits)	Once a month (6-15 visits)	Less than once a month (2-5 visits)	Less than annually	First visit	Other	Don't know	
1 - Budby South Forest RSPB Car Park	2 (3.6%)	7 (12.3%)	2 (3.6%)	21 (36.9%)	2 (3.6%)	5 (8.8%)	10 (17.6%)	0 (0%)	8 (14.1%)	0 (0%)	0 (0%)	57 (100%)
2 - Sherwood Forest NNR Main Entrance	9 (9.5%)	9 (9.5%)	6 (6.4%)	12 (12.7%)	1 (1.1%)	2 (2.2%)	20 (21.1%)	5 (5.3%)	26 (27.4%)	2 (2.2%)	3 (3.2%)	95 (100%)
<b>Total</b>	<b>11 (7.3%)</b>	<b>16 (10.6%)</b>	<b>8 (5.3%)</b>	<b>33 (21.8%)</b>	<b>3 (2%)</b>	<b>7 (4.7%)</b>	<b>30 (19.8%)</b>	<b>5 (3.3%)</b>	<b>34 (22.4%)</b>	<b>2 (1.4%)</b>	<b>3 (2%)</b>	<b>152 (100%)</b>

5.17 Dog walkers (both commercial and non-commercial) were the group who visited the most frequently (see Figure 2), with >40% of the latter visiting most days or daily, and the sole commercial dog walker interviewed visiting more than once a day. Furthermore, >13% of walkers visited most days at least, with another fifth visiting 1 to 3 times per week. The sample sizes of the other activities recorded were generally too small to make meaningful assessments of the relevant interviewees visit frequency.

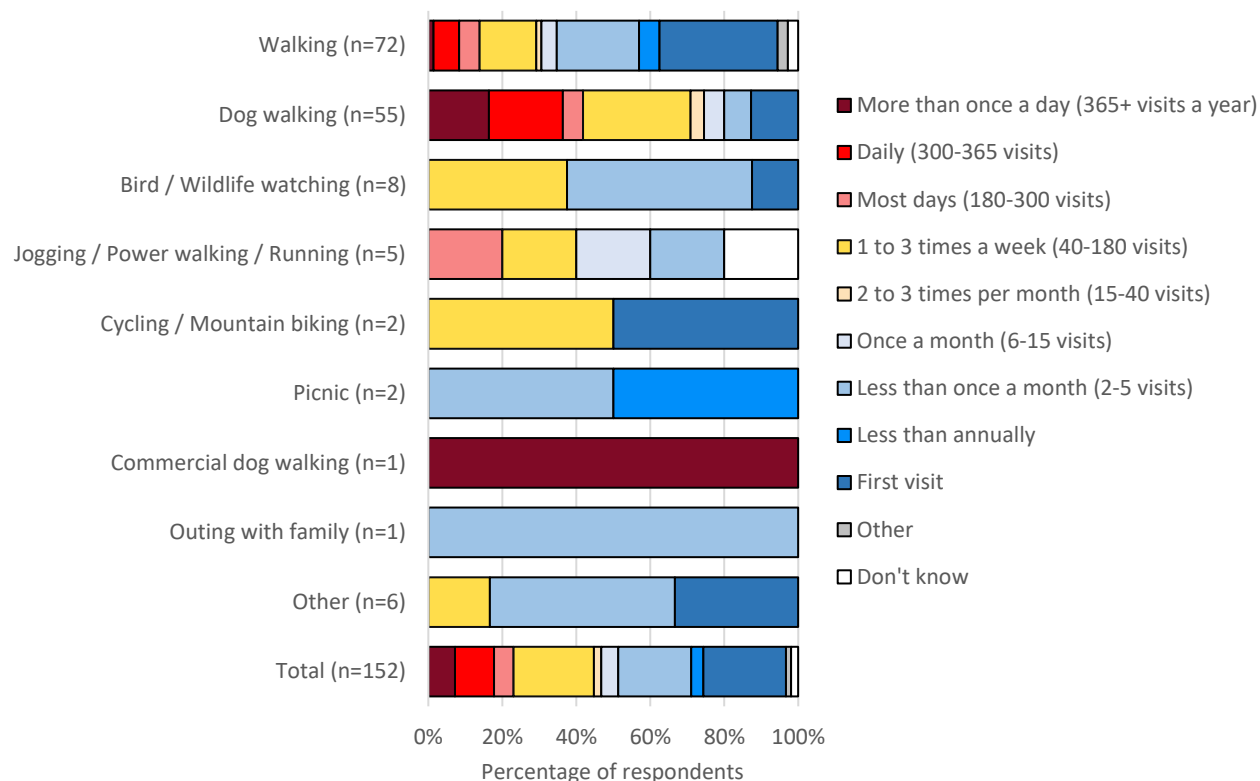


Figure 2: Summary of respondents visit frequency, stratified by main activity. Values in brackets indicate the number of respondents for each activity.

5.18 More than a third of interviewees (38.9%) across both survey locations spent 1 to 2 hours on site (see Table 12), with another fifth (27.7%) spending between 30 minutes and an hour on site. These two visit duration periods were the most frequent at each of the survey locations. Nevertheless, nearly a fifth (16.9%) of interviewees at Survey Point 2 (Sherwood Forest NNR Main Entrance) spent 2-3 hours on site, with another fifth (20.1%) spending more than 3 hours there. In contrast, 79.1% of interviewees at Survey Point 1 (Budby South Forest RSPB Reserve Car Park) spent between 30 minutes and 2 hours at the survey location, with approximately a third (33.4%) spending less than an hour there.



Table 12: Number (row %) of interviewees and duration of visit (Q5) stratified by survey location. Grey shading reflects the largest two values in each row, with the darker shading highlighting the larger row value.

Activity	Duration of visit						Total
	Less than 30 minutes	Between 30 minutes and 1 hour	1-2 hours	2-3 hours	3-4 hours	4 hours +	
1 - Budby South Forest RSPB Car Park	4 (7.1%)	19 (33.4%)	26 (45.7%)	4 (7.1%)	1 (1.8%)	3 (5.3%)	57 (100%)
2 - Sherwood Forest NNR Main Entrance	4 (4.3%)	23 (24.3%)	33 (34.8%)	16 (16.9%)	12 (12.7%)	7 (7.4%)	95 (100%)
<b>Total</b>	<b>8 (5.3%)</b>	<b>42 (27.7%)</b>	<b>59 (38.9%)</b>	<b>20 (13.2%)</b>	<b>13 (8.6%)</b>	<b>10 (6.6%)</b>	<b>152 (100%)</b>

5.19 Of the 3 most commonly represented activity types in the dataset, dog walkers exhibited the shortest visit duration, with more than half (54.6%) spending less than an hour on site (see Table 13). More than fifth of walkers (20.9%) also spent a similar length of time at the survey location, although nearly half (47.3%) spent 1-2 hours on site. The majority of bird/wildlife watchers (62.5%) spent between 30 minutes and 2 hours on site, although the remaining third of those interviewed spent a minimum of 3 hours at the survey location.

**Table 13: Number (row %) of interviewees and duration of visit (Q5) stratified by main activity. Grey shading reflects the largest two values in each row, with the darker shading highlighting the larger row value.**

Activity	Duration of visit						Total
	Less than 30 minutes	Between 30 minutes and 1 hour	1-2 hours	2-3 hours	3-4 hours	4 hours +	
Walking	2 (2.8%)	13 (18.1%)	34 (47.3%)	12 (16.7%)	6 (8.4%)	5 (7%)	72 (100%)
Dog walking	5 (9.1%)	25 (45.5%)	19 (34.6%)	3 (5.5%)	1 (1.9%)	2 (3.7%)	55 (100%)
Bird / Wildlife watching	0 (0%)	2 (25.0%)	3 (37.5%)	0 (0%)	2 (25.0%)	1 (12.5%)	8 (100%)
Jogging / Power walking / Running	1 (20.0%)	2 (40.0%)	1 (20.0%)	1 (20.0%)	0 (0%)	0 (0%)	5 (100%)
Cycling / Mountain biking	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100.0%)	0 (0%)	2 (100%)
Picnic	0 (0%)	0 (0%)	0 (0%)	1 (50.0%)	1 (50.0%)	0 (0%)	2 (100%)
Commercial dog walking	0 (0%)	0 (0%)	1 (100.0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Outing with family	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100.0%)	1 (100%)
Other	0 (0%)	0 (0%)	1 (16.7%)	3 (50.0%)	1 (16.7%)	1 (16.7%)	6 (100%)
<b>Total</b>	<b>8 (5.3%)</b>	<b>42 (27.7%)</b>	<b>59 (38.9%)</b>	<b>20 (13.2%)</b>	<b>13 (8.6%)</b>	<b>10 (6.6%)</b>	<b>152 (100%)</b>

5.20 The majority of interviewees across all survey locations (51.6%) indicated that they tended to visit equally all year round, with the summer months the next most preferred time of year overall (15.6%). A similar pattern was seen amongst walkers and dog walkers, when interviewees were stratified by activity type (see Table 14), whilst 36.4% of responses from bird/wildlife watchers indicated that they preferred to visit in the spring. Amongst the less frequently recorded main activity types there was an indication that respondents generally preferred to visit during the summer months.

Table 14: Number (row %) of interviewees and time of year (Q8) that they tend to visit, stratified by main activity. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value. Interviewees could give multiple responses and the percentages, based upon the row totals, may therefore total >100.

Activity	Time of year					Don't know	First visit	Total
	Equally all year	Spring (Mar-May)	Summer (Jun-Aug)	Autumn (Sept-Nov)	Winter (Dec-Feb)			
Walking	34 (46.0%)	1 (1.4%)	11 (14.9%)	2 (2.8%)	1 (1.4%)	2 (2.8%)	23 (31.1%)	74 (100%)
Dog walking	41 (73.3%)	0 (0%)	4 (7.2%)	1 (1.8%)	2 (3.6%)	1 (1.8%)	7 (12.5%)	56 (100%)
Bird / Wildlife watching	3 (27.3%)	4 (36.4%)	2 (18.2%)	1 (9.1%)	0 (0%)	0 (0%)	1 (9.1%)	11 (100%)
Jogging / Power walking / Running	3 (42.9%)	1 (14.3%)	1 (14.3%)	1 (14.3%)	0 (0%)	1 (14.3%)	0 (0%)	7 (100%)
Cycling / Mountain biking	0 (0%)	1 (33.4%)	1 (33.4%)	0 (0%)	0 (0%)	0 (0%)	1 (33.4%)	3 (100%)
Picnic	1 (50.0%)	0 (0%)	1 (50.0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Commercial dog walking	0 (0%)	0 (0%)	1 (100.0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Outing with family	0 (0%)	0 (0%)	1 (100.0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Other	1 (16.7%)	0 (0%)	3 (50.0%)	0 (0%)	0 (0%)	0 (0%)	2 (33.4%)	6 (100%)
<b>Total</b>	<b>83 (51.6%)</b>	<b>7 (4.4%)</b>	<b>25 (15.6%)</b>	<b>5 (3.2%)</b>	<b>3 (1.9%)</b>	<b>4 (2.5%)</b>	<b>34 (21.2%)</b>	<b>161 (100%)</b>

5.21 Nearly half of interviewees overall (47.4%), across both survey locations, indicated that the frequency of their visits to the survey location had not changed since the onset of the Coronavirus pandemic (see Figure 3). More than a tenth of interviewees overall (15.8%) indicated that they had visited more during this period however, with another tenth (9.9%) stating that they had made fewer visits than before.

5.22 This pattern was repeated across the two most commonly recorded main activity types (walking and dog walking), although a larger proportion of walkers (32%) were making their first visit to the site and a larger proportion of dog walkers (71%) were visiting with the same frequency as previously. Furthermore, the admission that more than third of bird/wildlife watchers

(37.5%) were visiting less frequently than before the onset of the pandemic was of note.

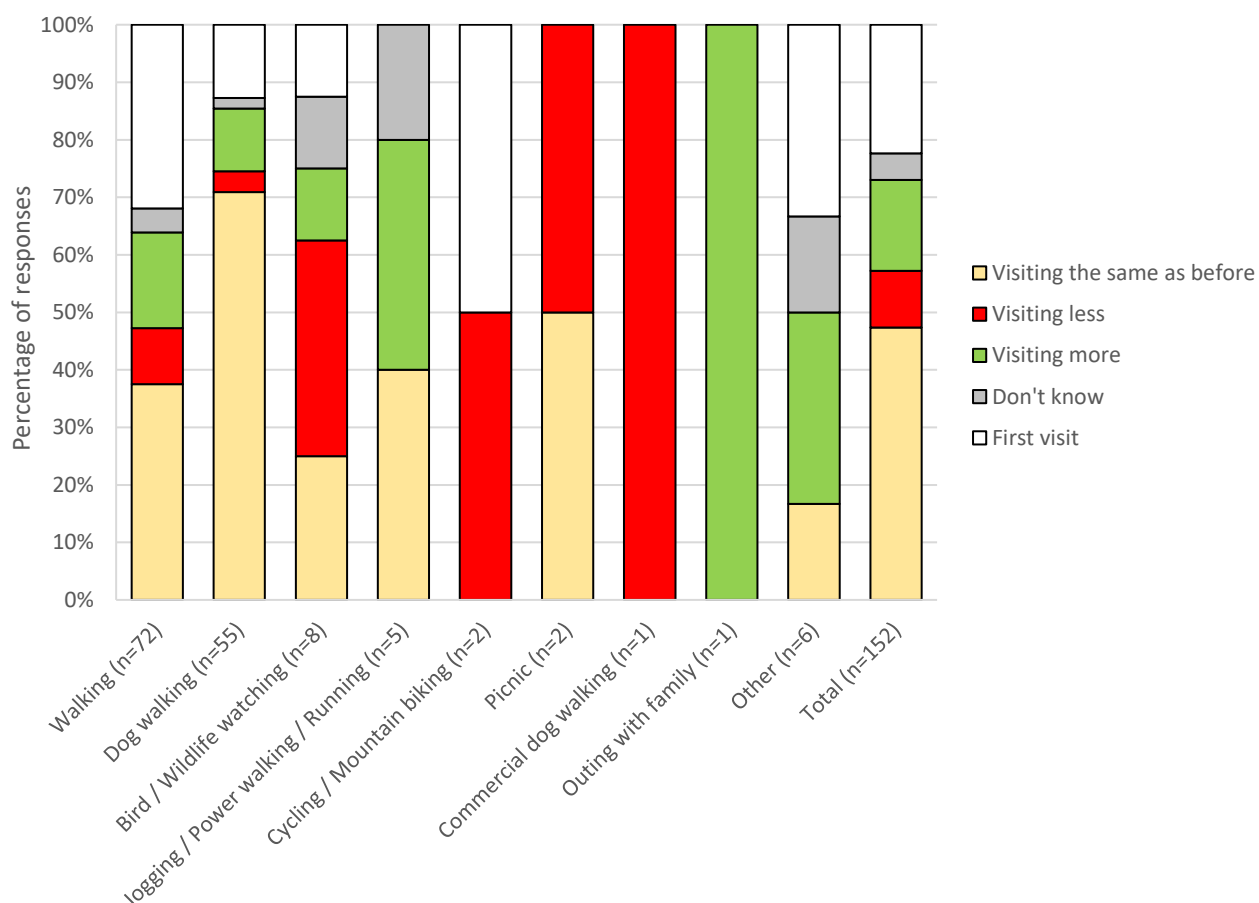


Figure 3: Changes in the visit frequency of interviewees due to the Coronavirus pandemic (Q6), stratified by main activity.

### Mode of transport (Q4)

5.23 Overall, three quarters (75.0%) of interviewees had arrived by car/van, with most of the remainder (23.1%) having travelled on foot (see Table 15). With the exception of the 2 cyclists interviewed, the majority of all main activity types arrived by car, with >70% of walkers (75.0%), dog walkers (72.8%), and bird/wildlife watchers (87.5%) doing so. None of the interviewees used public transport to access the study area.

Table 15: Number (row %) of interviewees and mode of transport (Q4), stratified by main activity. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value.

Activity	Mode of transport			Total
	Car/van	On foot	Bicycle	
Walking	54 (75.0%)	17 (23.7%)	1 (1.4%)	72 (100%)
Dog walking	40 (72.8%)	15 (27.3%)	0 (0.0%)	55 (100%)
Bird / Wildlife watching	7 (87.5%)	1 (12.5%)	0 (0.0%)	8 (100%)
Jogging / Power walking / Running	3 (60.0%)	2 (40.0%)	0 (0.0%)	5 (100%)
Cycling / Mountain biking	0 (0.0%)	0 (0.0%)	2 (100%)	2 (100%)
Picnic	2 (100%)	0 (0.0%)	0 (0.0%)	2 (100%)
Commercial dog walking	1 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)
Outing with family	1 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other	6 (100%)	0 (0.0%)	0 (0.0%)	6 (100%)
<b>Total</b>	<b>114 (75.0%)</b>	<b>35 (23.1%)</b>	<b>3 (2.0%)</b>	<b>152 (100%)</b>

### *Reasons for site choice (Q9)*

- 5.24 Reasons for site choice are summarised in Figure 4. Interviewees were asked why they chose to visit the specific location where interviewed, rather than another local site, with answers categorised by the surveyor, using pre-determined categories which were not shown to the interviewee.
- 5.25 Overall, proximity to home was by far the most commonly given reason, accounting for 23.5% of responses. 'Other' reasons comprised the second most frequent reason provided (12.0%), with a visit to the Major Oak (8%), habit/familiarity (5.8%), enjoyment of the dog (4.9%), and particular wildlife interest (4.9%) also influential. 'Other' reasons comprised those not identified by the pre-determined options in advance, including an interest in Robin Hood, naturism, volunteering, shade, and exploring a novel area. All remaining reasons comprised <4.9% of the responses recorded.



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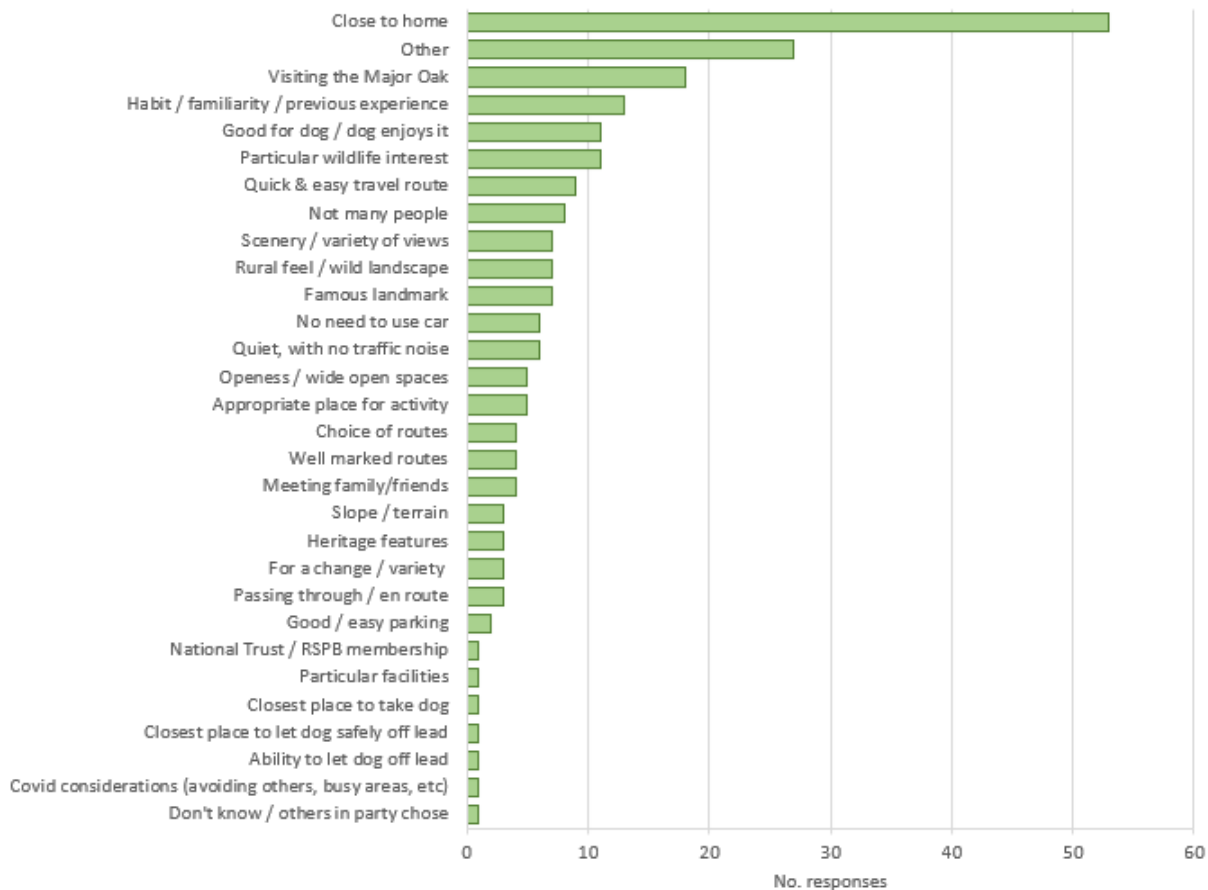


Figure 4: Reasons for site choice (Q9). Note that interviewees could give multiple responses.

### *Use of other sites (Q17-20)*

5.26 Approximately a third (34.8%) of interviewees overall across both survey locations stated that 75% or more of their visits (for the activity they were undertaking when interviewed) took place at the survey location (see Table 16). This figure was slightly higher at Survey Point 2 (Sherwood Forest NNR Main Entrance: 38.5%) than at Survey Point 1 (Budby South Forest RSPB Reserve Car Park: 28.4%). Nevertheless, a third of interviewees at Survey Point 1 (37.8%) indicated that <25% of their visits took place at the survey location, and nearly half of interviewees at Survey Point 2 (46.2%) were either on their first visit to the locality or were unsure of their visit frequency.

Table 16: Number (row %) of interviewees and proportion of weekly visits to the site (Q17), stratified by survey location. Grey shading reflects the two largest values in each row, with the darker shading highlighting the larger value.

Activity	Proportion of visits						Total
	All take place here	75% or more	50-74%	25-49%	less than 25%	Not sure / don't know / first visit	
1 – Budby South Forest RSPB Car Park	3 (5.7%)	12 (22.7%)	11 (20.8%)	2 (3.8%)	20 (37.8%)	7 (13.3%)	53 (100%)
2 – Sherwood Forest NNR Main Entrance	15 (16.5%)	20 (22.0%)	6 (6.6%)	2 (2.2%)	8 (8.8%)	42 (46.2%)	91 (100%)
<b>Total</b>	<b>18 (12.5%)</b>	<b>32 (22.3%)</b>	<b>17 (11.9%)</b>	<b>4 (2.8%)</b>	<b>28 (19.5%)</b>	<b>49 (34.1%)</b>	<b>144 (100%)</b>

5.27 Amongst the more frequently recorded main activity types, dog walkers showed the highest level of site fidelity amongst user groups (see Table 17), with more than half (56.7%) stating that 75% or more of their weekly visits took place at the interview location. A fifth of walkers (21.0%) also fell into that category, although this proportion increase to 46% if those on their first visit or who are unsure (comprising nearly half of the relevant dataset) are excluded. Half of bird/wildlife watchers (50.0%) carried out <25% of their visits for the activity at the survey location. Patterns for the other recorded activities were less obvious due to the smaller sample sizes, although there was an indication that joggers/runners may comprise a frequent visitor type.

**Table 17: Number (row %) of interviewees and proportion of weekly visits to the site (Q17), stratified by main activity. Grey shading reflects the two largest values in each row, with the darker shading highlighting the larger value.**

Activity	Proportion of visits						Total
	All take place here	75% or more	50-74%	25-49%	less than 25%	Not sure / don't know / first visit	
Walking	5 (7.5%)	9 (13.5%)	7 (10.5%)	3 (4.5%)	10 (15.0%)	36 (53.8%)	67 (100%)
Dog walking	10 (18.9%)	20 (37.8%)	6 (11.4%)	1 (1.9%)	11 (20.8%)	6 (11.4%)	53 (100%)
Bird / Wildlife watching	0 (0%)	1 (12.5%)	1 (12.5%)	0 (0%)	4 (50.0%)	2 (25.0%)	8 (100%)
Jogging / Power walking / Running	2 (40.0%)	0 (0%)	1 (20.0%)	0 (0%)	1 (20.0%)	1 (20.0%)	5 (100%)
Cycling / Mountain biking	0 (0%)	1 (50.0%)	0 (0%)	0 (0%)	0 (0%)	1 (50.0%)	2 (100%)
Picnic	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)	2 (100%)
Commercial dog walking	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Outing with family	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Other	1 (20.0%)	1 (20.0%)	1 (20.0%)	0 (0%)	1 (20.0%)	1 (20.0%)	5 (100%)
<b>Total</b>	<b>18 (12.5%)</b>	<b>32 (22.3%)</b>	<b>17 (11.9%)</b>	<b>4 (2.8%)</b>	<b>28 (19.5%)</b>	<b>49 (34.1%)</b>	<b>144 (100%)</b>

5.28 A variety of other sites were regularly visited by interviewees (see Figure 5), with Clumber Park (14 interviewees) being that most commonly identified across the survey locations. Only three other alternative locations were named by >5 interviewees however, namely: Rufford (8 interviewees), Sherwood Pines (8 interviewees), and Sherwood Forest (6 interviewees). It is nevertheless important to note that several of the localities named (e.g. “seaside”) potentially refer to multiple, disparate, sites, or are potentially synonyms for the same locations (e.g. “Rufford” and “Rufford Park”).



Figure 5: Word cloud detailing other sites given by interviewees (Q18-20). Graphic created using the [Wordclouds](#) app.

### *Memberships (Q12)*

- 5.29 Approximately a third (28.2%) of interviewees across both survey locations and all activity types were members of the National Trust (who manage nearby Clumber Park: see Table 18), with 9.4% also members of the RSPB. 12.8 % of interviewees were solely members of the RSPB. Nevertheless, more than half (58.4%) of all interviewees were not members of either organisation, with the majority of interviewees across almost all activity types falling into that category. The one exception was bird/wildlife watchers, with 75.0% of relevant interviewees being members of one or both organisations, although nearly half of walkers (46.5%) and a third of dog walkers (34.7%) were also members of at least one.

Table 18: Number (row %) of interviewees and membership of the National Trust and RSPB (Q12), stratified by main activity. Grey shading highlights the two largest values in each row, with darker shading identifying the larger value.

Activity	Memberships					Total
	Both National Trust and RSPB	National Trust only	RSPB only	Neither	Not sure / Don't know	
Walking	6 (8.7%)	19 (27.6%)	7 (10.2%)	36 (52.2%)	1 (1.5%)	69 (100%)
Dog walking	5 (9.1%)	6 (11.0%)	8 (14.6%)	36 (65.5%)	0 (0%)	55 (100%)
Bird / Wildlife watching	2 (25.0%)	1 (12.5%)	3 (37.5%)	2 (25.0%)	0 (0%)	8 (100%)
Jogging / Power walking / Running	0 (0%)	1 (20.0%)	0 (0%)	4 (80.0%)	0 (0%)	5 (100%)
Cycling / Mountain biking	0 (0%)	1 (50.0%)	0 (0%)	1 (50.0%)	0 (0%)	2 (100%)
Picnic	0 (0%)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2 (100%)
Commercial dog walking	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Outing with family	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Other	1 (16.7%)	0 (0%)	1 (16.7%)	4 (66.7%)	0 (0%)	6 (100%)
<b>Total</b>	<b>14 (9.4%)</b>	<b>28 (18.8%)</b>	<b>19 (12.8%)</b>	<b>87 (58.4%)</b>	<b>1 (0.7%)</b>	<b>149 (100%)</b>

### *Resources used to plan visit (Q13-16)*

- 5.30 Interviewees were asked whether they had used a range of information sources to plan their visit to the survey location, with 58 positive responses recorded (see Table 19). The use of online or paper maps was the most frequent response overall (38.0%), followed by websites (27.6%), and smartphone apps (15.6%). A small number of interviewees used recommendations from friends or family (13.8%), whilst social media, perhaps surprisingly, accounted for only 5.2% of responses overall.
- 5.31 Nearly half of the responses from walkers (43.6%) indicated that the interviewee used online or paper maps to plan their visit, with a third of walker responses (30.8%) stating that they used websites. Only a small number of responses were received from the other activity types, and no clear pattern was therefore discernible for them due to their small sample



sizes. Nevertheless, there was an indication that dog walkers, in particular, may be influenced by recommendations from friends or family.

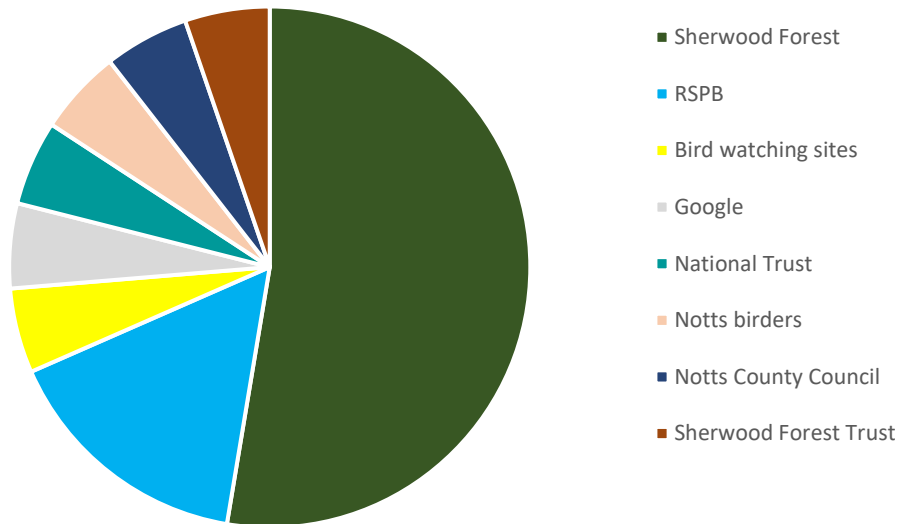
Table 19: Resources used to plan visit (Q13), stratified by main activity. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value.

Activity	Information used					Total
	Online or paper maps	Websites	Smartphone app	Recommendations from friends or family	Social media	
Walking	17 (43.6%)	12 (30.8%)	5 (12.9%)	4 (10.3%)	1 (2.6%)	39 (100%)
Dog walking	1 (20.0%)	1 (20.0%)	0 (0%)	3 (60.0%)	0 (0%)	5 (100%)
Bird / Wildlife watching	0 (0%)	2 (28.6%)	2 (28.6%)	1 (14.3%)	2 (28.6%)	7 (100%)
Jogging / Power walking / Running	1 (50.0%)	0 (0%)	1 (50.0%)	0 (0%)	0 (0%)	2 (100%)
Cycling / Mountain biking	1 (33.4%)	1 (33.4%)	1 (33.4%)	0 (0%)	0 (0%)	3 (100%)
Other	2 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)
<b>Total</b>	<b>22 (38.0%)</b>	<b>16 (27.6%)</b>	<b>9 (15.6%)</b>	<b>8 (13.8%)</b>	<b>3 (5.2%)</b>	<b>58 (100%)</b>

5.32 8 websites, and 4 apps, used to plan the interviewees visit were identified by a small number of respondents overall (see Figure 6). The most frequently used website was “Sherwood Forest” (assumed to indicate [www.visitsherwood.co.uk](http://www.visitsherwood.co.uk)) which comprised 52.7% of the responses recorded. The RSPB website was also frequently used (15.8% of responses), with all others identified by only a single interviewee.

5.33 Google maps (66.7% of responses) was the only app identified as being used to plan the visit by more than a single interviewee. Amongst social media users (not illustrated), 2 interviewees indicated that they had used Facebook to plan their visit.

***a: websites (n=19)***



***b: apps (n=9)***

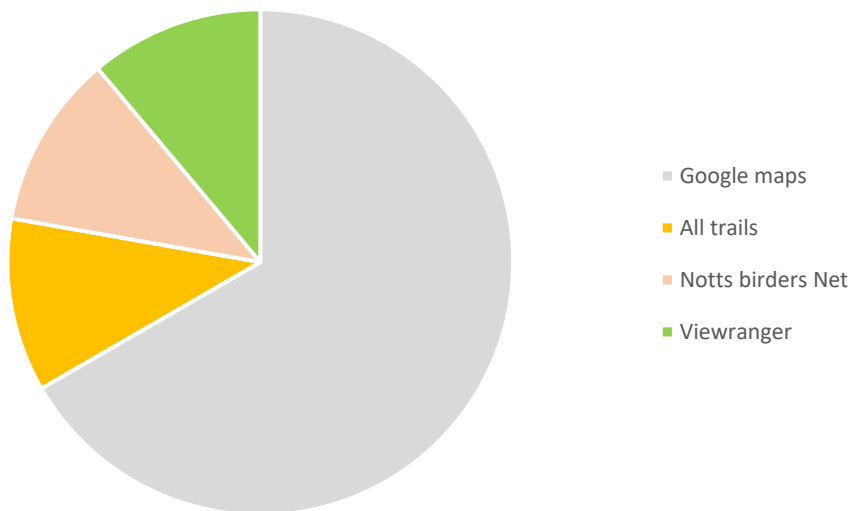


Figure 6: Websites (a) and smartphone apps (b) identified by interviewees that were used to plan their visit (Q14-16).

### *Awareness of sensitive features (Q24)*

- 5.34 Interviewees were asked whether they were aware of any sensitive habitats or species found within the study area. A third of interviewees (38.1%) were unable to name any (see Figure 7), with breeding birds (20.2% of responses), rare insects and invertebrates (6.9%), and Nightjar (5.3%) those most frequently named. 'Other' habitats and species comprised the second largest number of responses overall (18.6%), however, with this category mainly including specifically named invertebrates (with multiple mentions of Oil Beetles, for example), deer, and general awareness of the site's importance for biodiversity. Of particular note was the rarity of responses identifying heathland or woodland habitats and veteran/ancient trees (2.2%, 3.2%, and 3.8% of responses overall, respectively).
- 5.35 Nevertheless, a quarter of responses from dog walkers (26.1%) identified the presence of breeding birds on site, with a further 6.9% and 4.2% of dog walker responses specifically mentioning Nightjar and Woodlark, respectively. This compares with 13.0%, 2.4%, and 0.0% of responses from walkers within the same categories.

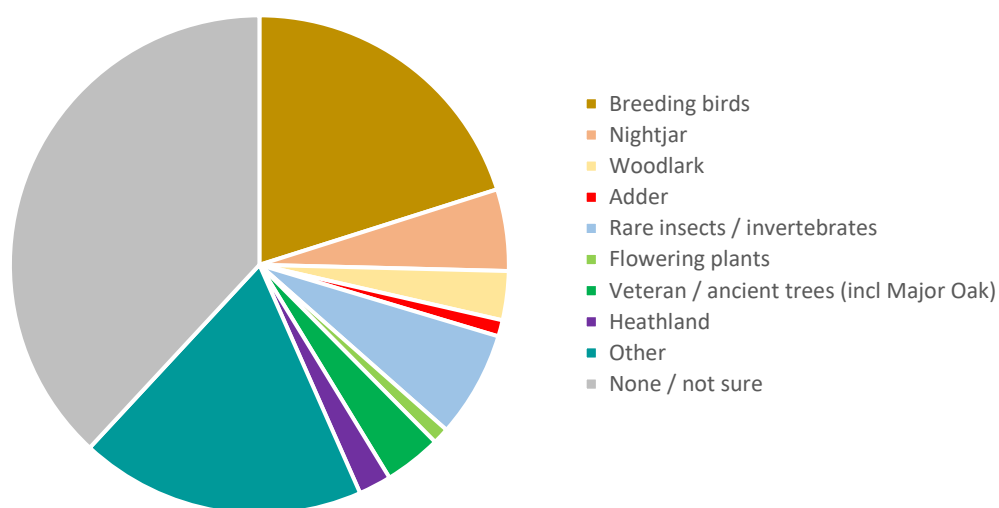


Figure 7: Sensitive habitats and species identified as present on site by interviewees (Q24).

### Potential use of alternative greenspace (Q22-23)

5.36 Interviewees were asked whether they would be likely to use a novel area of local greenspace for their main activity and, if so, what features they would like to see it incorporate. Overall, 60% of interviewees indicated that they would be likely to use such a novel destination, with 15.4% suggesting that they would not, and 18.7% suggesting potential use (see Figure 8). Amongst the three most frequently recorded main activity types, dog walkers (67.3%) were more likely to use novel greenspace than either bird/wildlife watchers or walkers (62.5% and 54.3%, respectively), with a larger proportion of bird/wildlife watchers (37.5%) equivocal about using such a site.

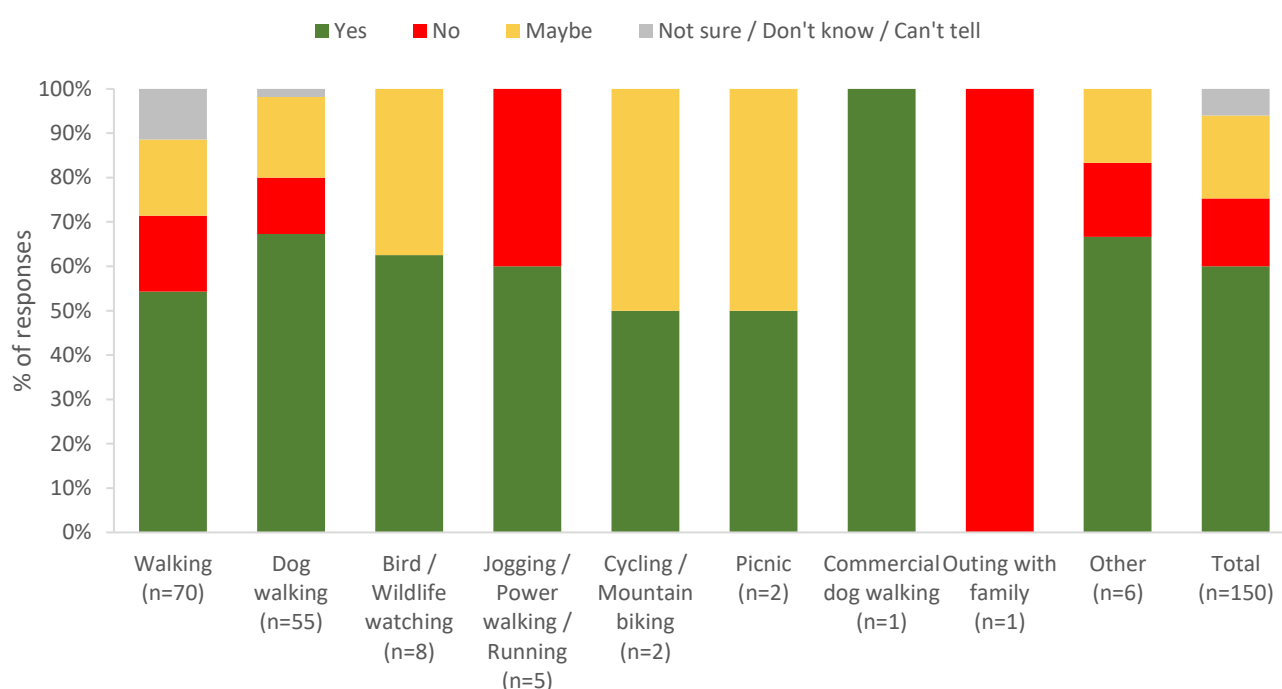


Figure 8: Potential use of novel local greenspace by interviewees, stratified by main activity (Q22).

5.37 A range of features that they would like to see incorporated into a new Country Park or area of greenspace were identified by the interviewees (see Figure 9Error! Reference source not found.). The presence of extensive/good walking routes (22.4% of responses), a café (16.3%), open water (14.6%), woodland (12.9%), and toilets (11.8%) were the most frequently identified features overall, with all other features identified in <10% of responses. Dog walkers also specifically identified the provision of off-lead areas for dogs (15.7%) and sufficient parking (13.8%).

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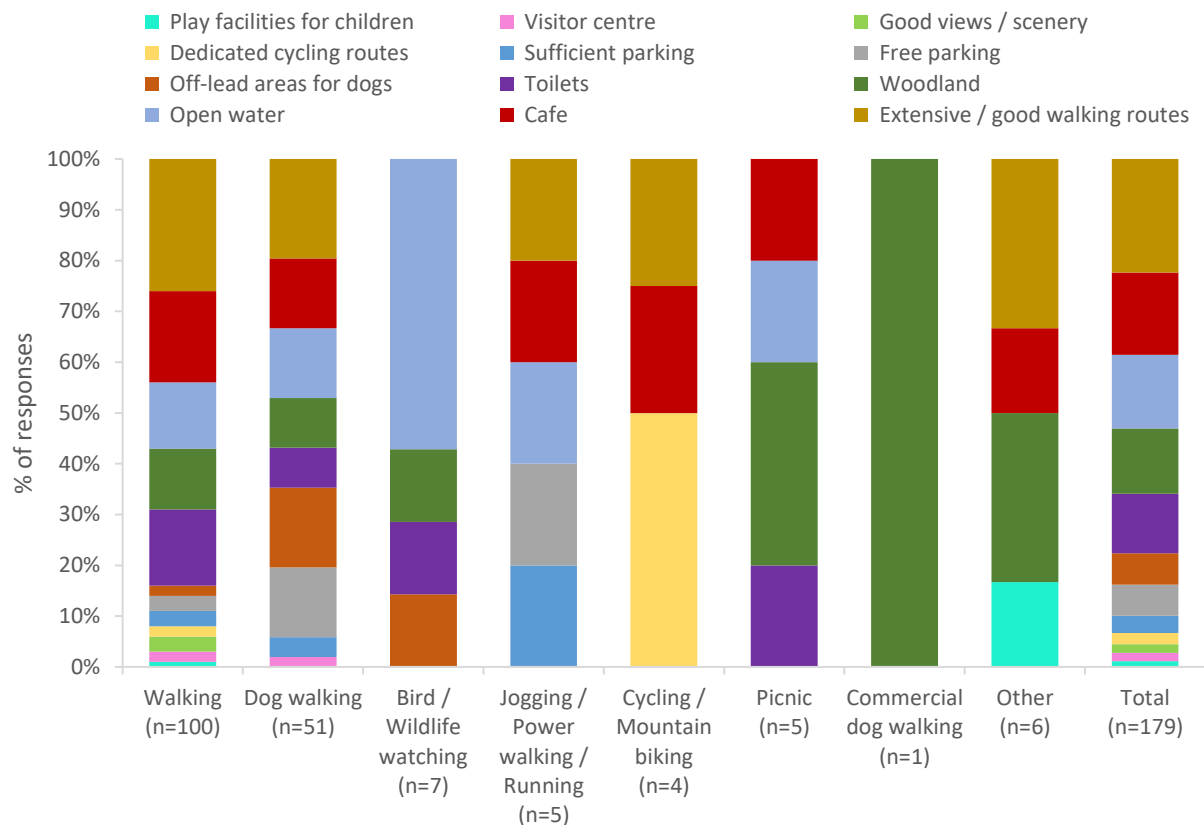


Figure 9: Features identified by interviewees which they would like to see in a novel Country Park or area of greenspace (Q23). Note that interviewees could give multiple responses.

## Visitor origins (Q25)

5.38 A total of 146 interviewee postcodes (96.1%) could be accurately mapped, with the full postcode given in the interview matching the standard national postcode database. A total of 6 interviews (4.0%) were therefore not assigned to a home postcode. The greater proportion of recorded postcodes were centred within an area bordered by Derby and Nottingham to the south, Sheffield and Doncaster to the north, and Lincoln and Newark to the east (see Map 9). The remaining scattering of postcodes spread from Kent and the Home Counties in the south-east and south Wales in the south-west, to Manchester in the west and then north to Sunderland.

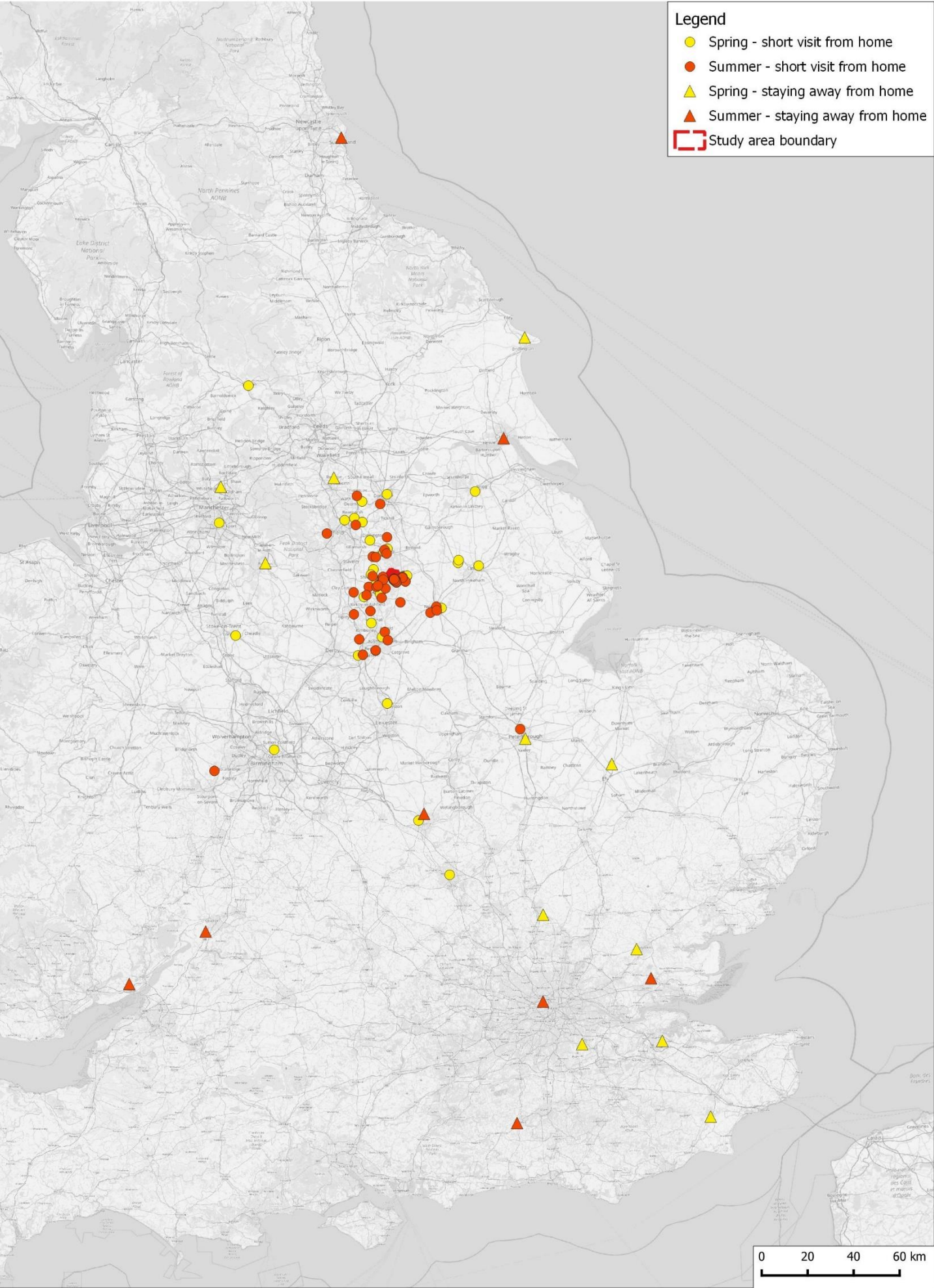
5.39 Maps 10 and 11 present the 75th percentile minimum convex polygons (MCPs) of straight-line home postcode interviewee distance from their respective survey locations. MCPs show the area in which the closest three-quarters of interviewees originated and provide a good way to summarise where most visitors to each survey location came from. Map 10a depicts the 75<sup>th</sup> percentile MCP for all interviewees, whereas Map 10b depicts that for

interviewees on a day trip/short visit from home only. Maps 11a and 11b depict the 75<sup>th</sup> percentile MCPs for day visit interviewees at each of the 2 Survey Points individually.

- 5.40      The 75th percentile MCPs of straight-line travel distance for all interviewees on a day visit from home (Map 10b) encompasses an area bordered by Nottingham to the south, Dinnington and Langold to the north, Newark to the east, and Alfreton to the west. The MCP stretches much further north, east, and southwards, in particular, if the postcodes of those interviewees on holiday/staying away from home are included (Map 10a).
- 5.41      Interviewees postcodes from home visits to Survey Point 1 (Budby South Forest RSPB Reserve Car Park: Map 11a) describe a much smaller MCP to that seen in the combined home visit dataset, incorporating the towns/areas of Edwinstowe, Ollerton, Warsop, north-east Mansfield, and Worksop. Conversely, the MCP produced for Survey Point 2 (Sherwood Forest NNR Main Entrance: Map 11b) incorporated an area much larger than that produced using the combined 75<sup>th</sup> percentiles for all home visits combined (Map 11b), indicative of an apparent wider geographic draw at Survey Point 2.



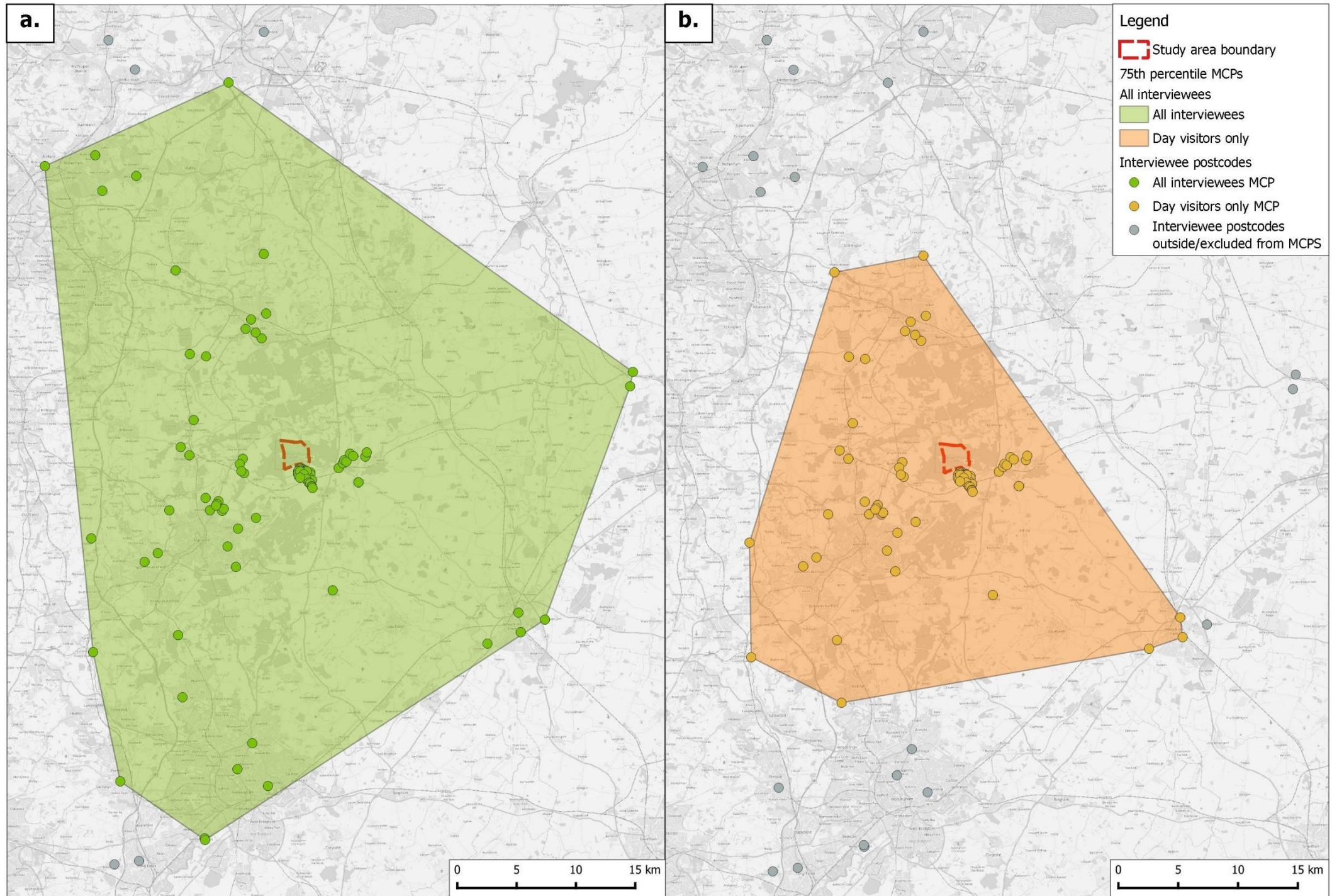
Map 9: Home postcodes of all interviewees, stratified by season and visit type



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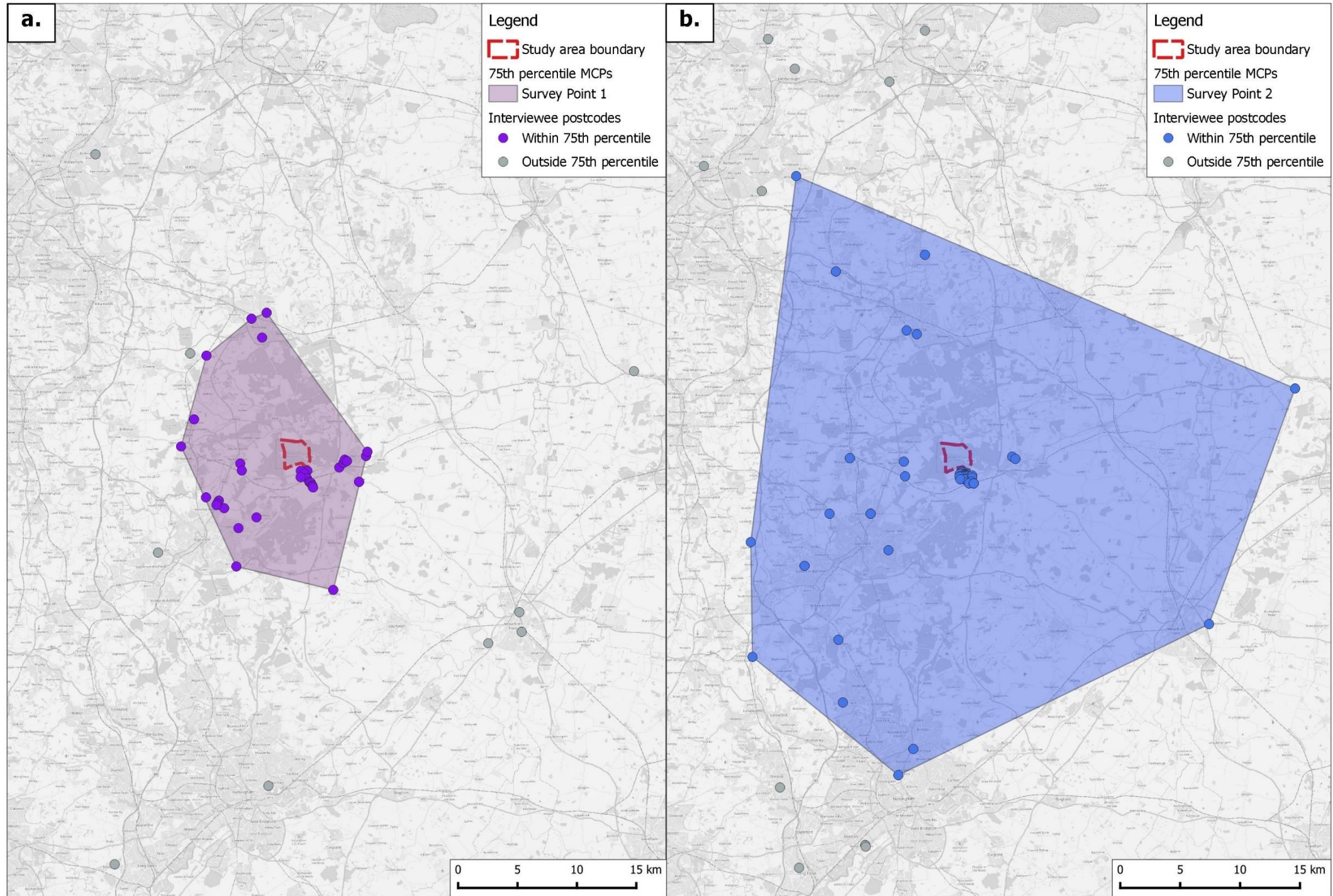


**Map 10: 75th percentile Minimum Convex Polygons of straight-line distances for (a) all interviewee postcodes and (b) only those interviewees carrying out day visits from home**





**Map 11: 75th percentile Minimum Convex Polygons of straight-line distances for all day visitor interviewee postcodes at: (a) Survey Point 1 (Budby South Forest RSPB Car Park); and, (b) Survey Point 2 (Sherwood Forest NNR Main Entrance)**



- 5.42 The straight-line distance ('as the crow-flies') from each interviewee's home postcode to the relevant survey location was calculated. Data from all interviewee visit types is provided in Table 20 **Error! Reference source not found.**, with data solely from interviewees undertaking day visits from home provided in Table 21.
- 5.43 It can be seen that across all visit types during the spring survey period (79 interviewees) the mean distance was 37.1km and the median was 9.6km (i.e. 50% of all interviewees during this period had come from a radius of <9.6km around the survey locations). The mean is much higher than the median as there are a few large values (up to 271.8km) that skew the data. The third quartile (75th percentile) was 38.6km (i.e. 75% of all spring survey period interviewees lived within this distance of the survey location). Overall distances for the summer survey period (67 interviewees) were similar, with a mean of 33.3km, a median of 10.3km, and a 75<sup>th</sup> percentile of 28.8km.
- 5.44 These statistics varied between the survey locations however, with much larger mean (44.4km in spring and 40.2km in summer) and 75<sup>th</sup> percentile (55.2km in spring and 35.6km in summer) distances recorded from Survey Point 2 (Sherwood Forest NNR Main Entrance). Mean and 75<sup>th</sup> percentile values at Survey Point 1 (Budby South Forest RSPB Car Park) were correspondingly smaller during both the spring and summer, although their medians were similar to the overall values.

Table 20: Summary statistics for the straight-line distances between the home postcode of each interviewee (all visit types) and their respective interview location. N is the sample size (number of valid postcodes) and Q3 is the 75<sup>th</sup> percentile.

Survey location	Survey period	N	Distance (km)				
			Mean (+1SE)	Min	Median	Q3	Maximum
1 – Budby South Forest RSPB Reserve Car Park	Spring	29	24.6 (+8.9)	1.8	6.0	20.1	233.7
	Summer	25	21.9 (+8.4)	2.0	10.3	18.8	192.2
2 – Sherwood Forest NNR Main Entrance	Spring	50	44.4 (+8.9)	0.4	20.9	55.2	271.8
	Summer	42	40.2 (+10.3)	0.3	10.8	35.6	243.2
Total	Spring	79	37.1 (+6.6)	0.4	9.6	38.6	271.8
	Summer	67	33.3 (+7.2)	0.3	10.3	28.8	243.2

- 5.45 When holidaymakers are removed from the dataset (leaving 126 interviewees in total) the overall straight-line distances decreased substantially (see Table 21), with the overall spring mean distance being 19.7km, the median 8.7km, and the 75th percentile 28.3km. Similar distances were calculated for the summer survey period, with a mean of 14.1km, a median of 8.8km, and a 75th percentile of 22.3km.
- 5.46 There was still some variation between survey locations, with Survey Point 1 (Budby South Forest RSPB Reserve Car Park) recording smaller than average distances during the spring and (marginally) larger than average values during the summer. Survey Point 2 (Sherwood Forest NNR Main Entrance) recorded (marginally) larger than average values in the spring, but values close to the overall means during the summer months.

**Table 21: Summary statistics for the straight-line distances between the home postcode of each interviewee (day visits from home only) and their respective interview location. N is the sample size (number of valid postcodes) and Q3 is the 75<sup>th</sup> percentile.**

Survey location	Survey period	N	Distance (km)				
			Mean (+1SE)	Min	Median	Q3	Maximum
1 – Budby South Forest RSPB Reserve Car Park	Spring	28	17.1 (+5.0)	1.8	5.5	11.8	104.6
	Summer	24	14.8 (+4.7)	2.0	9.6	14.8	116.2
2 – Sherwood Forest NNR Main Entrance	Spring	39	21.5 (+4.9)	0.4	9.3	32.6	131.4
	Summer	35	13.6 (+3.1)	0.3	5.1	23.8	85.4
Total	Spring	67	19.7 (+3.5)	0.4	8.7	28.3	131.4
	Summer	59	14.1 (+2.7)	0.3	8.8	22.3	116.2

- 5.47 Amongst the three most frequently recorded activity types (walkers, dog walkers, and bird/wildlife watchers), dog walkers exhibited the smallest straight-line distances (see Table 22) with a mean distance of 7.5km, a median of 3.2km, and a 75<sup>th</sup> percentile of 9.3km. Walkers reported a mean distance of 22.8km, a median of 18.3km, and a 75th percentile of 32.6km, whilst bird/wildlife watchers reported distances of 31.7km, 26.2km, and 80.2km for the same metrics. The small sample sizes for the other activity types did not allow for robust interpretation, although there was an indication that joggers/runners were likely to live in relative proximity to the survey location.



Table 22: Summary statistics for the straight-line distances between the home postcodes of all interviewees, stratified by main activity. Data from interviewees undertaking day trips from home are highlighted in mauve. N is the sample size (number of valid postcodes) and Q3 is the 75th percentile.

Activity	Visit type	N	Distance (km)				
			Mean (+ 1SE)	Min	Median	Q3	Maximum
Walking	All	67	53.8 (+8.4)	0.5	26.2	77.3	271.8
	Day visits only	51	22.8 (+3.9)	0.5	18.3	32.6	116.2
Dog walking	All	55	11.6 (+4.5)	0.3	3.4	9.3	233.7
	Day visits only	53	7.5 (+1.9)	0.3	3.2	9.2	91.3
Bird / Wildlife watching	Day visits only	6	31.7 (+10.8)	8.7	26.2	49.0	80.2
Jogging / Power walking / Running	All	5	19.7 (+17.6)	0.5	1.4	48.0	90.0
	Day visits only	4	2.2 (+1.3)	0.5	1.1	4.8	6.0
Cycling / Mountain biking	All	2	122.3 (+121.0)	1.4	N/A	N/A	243.2
	Day visits only	1	1.4	N/A	N/A	N/A	1.4
Picnic	Day visits only	2	28.1 (+8.4)	19.8	N/A	N/A	36.4
Commercial dog walking	Day visits only	1	2.8	N/A	N/A	N/A	2.8
Outing with family	Day visits only	1	85.4	N/A	N/A	N/A	85.4
Other	Day visits only	7	35.2 (+16.7)	6.0	15.7	36.9	131.4

5.48 Interviewees who visited the most frequently (i.e. most days as a minimum) were more likely to originate from closer postcodes than those who visited less frequently (see Table 23), with mean ranges of 1.9km to 2.1km and 9.2km to 107.2km, and 75th percentile ranges of 2.6km to 3.1km and 10.3km to 232.3km, respectively. Nevertheless, those who visited between once a week and once a month (i.e. relatively frequent visitors) were still likely to live within approximately 10km to 20km of the survey location. Interviewees undertaking either their first visit to the site, or visiting less than annually, travelled the largest distances, with means of 101.6km and 107.2km, and 75th percentiles of 178.9km and 232.3km, respectively.



**Table 23: Summary statistics for the straight-line distances between the home postcode of all interviewees at their respective interview locations and the regularity of their visits to the locality. N is the sample size (number of interviewees) and Q3 is the 75th percentile.**

Visit frequency	N	Distance (km)				
		Mean (+ 1SE)	Min	Median	Q3	Maximum
More than once a day (365+ visits a year)	11	1.9 (+0.1)	0.3	0.5	2.8	8.8
Daily (300-365 visits)	15	2.2 (+0.1)	0.4	1.8	3.1	8.8
Most days (180-300 visits)	8	2.1 (+1.2)	0.5	0.7	2.6	9.6
1 to 3 times a week (40-180 visits)	33	9.2 (+1.6)	0.4	7.9	12.1	32.5
2 to 3 times per month (15-40 visits)	3	10.2 (+6.8)	2.8	4.1	23.6	23.6
Once a month (6-15 visits)	7	7.3 (+2.2)	1.4	5.0	10.3	18.3
Less than once a month (2-5 visits)	29	30.7 (+5.2)	0.3	24.1	37.8	116.2
Less than annually	5	107.2 (+52.7)	18.9	32.6	232.3	271.8
First visit	30	101.6 (+14.1)	4.9	88.5	178.9	243.2
Other	2	11.5 (+10.6)	1.0	11.5	N/A	22.0
Don't know	3	71.2 (+34.5)	4.3	90.0	119.2	119.2

5.49 Amongst interviewees making a day trip from home, those who travelled to the survey location on foot were more likely to have travelled from a closer postcode than those who had travelled by bicycle or car/van, with mean values of 0.8km, 1.4km, and 22.8km, respectively (see Table 24).

Table 24: Summary statistics for the straight-line distances between the home postcode of interviewees at their respective interview locations and their mode of transport to the locality. Data from interviewees undertaking day trips from home are highlighted in mauve. N is the sample size (number of interviewees) and Q3 is the 75th percentile.

Mode of transport	Visit type	N	Distance (km)				
			Mean (+ 1SE)	Min	Median	Q3	Maximum
Car/van	All	110	43.3 (+5.8)	0.6	18.0	38.9	271.8
	Day visits only	93	22.8 (+2.8)	0.6	12.0	29.8	131.4
On foot	All	33	3.1 (+2.4)	0.3	0.6	0.9	77.3
	Day visits only	32	0.8 (+0.2)	0.3	0.6	0.8	5.1
Bicycle	All	3	100.5 (+73.2)	1.4	56.7	243.2	243.2
	Day visits only	1	1.4	N/A	N/A	N/A	1.4

### Visitor routes during their visit (Q10-11)

5.50 For the majority of interviewees overall (57.3%) the route they took was reflective of their normal route (see Table 25), with 22.4% on their first visit to the locality, and a further 7.9% who did not have a typical visit. This pattern held at both of the survey locations. A larger relative proportion of interviewees at Survey Point 2 (Sherwood Forest NNR Main Entrance) were on their first visit to the location.

Table 25: Number (row %) of all interviewees and the typicalness of their route (Q10), stratified by survey location. Grey shading reflects the largest value in each row, with darker shading highlighting the larger row value.

Activity	Route length				First vist	Total
	Typical visit	Much longer than normal	Much shorter than normal	Not sure/no typical visit		
1 – Budby South Forest RSPB Reserve Car Park	39 (68.5%)	0 (0.0%)	5 (8.8%)	4 (7.1%)	8 (14.1%)	57 (100%)
2 – Sherwood Forest NNR Main Entrance	48 (50.6%)	1 (1.1%)	11 (11.6%)	8 (8.5%)	26 (27.4%)	95 (100%)
<b>Total</b>	<b>87 (57.3%)</b>	<b>1 (0.7%)</b>	<b>16 (10.6%)</b>	<b>12 (7.9%)</b>	<b>34 (22.4%)</b>	<b>152 (100%)</b>

- 5.51 A range of factors influenced the interviewees' choice of routes (see Figure 10). Previous knowledge/experience of the area was the most commonly given response within the predetermined categories (20.9% of responses), followed by visiting a particular feature or viewpoint (15.2%), the activity undertaken (14.6%), the presence of a marked trail (10.8%), and "other" (10.8%). The remaining factors each comprised <10% of responses each. The non-predetermined 'other' category included varying of typical routes/wandering, exploring new areas, and staying within the "recommended" naturist area.



Figure 10: Factors influencing choice of route (Q11). Note that interviewees could give multiple responses.

- 5.52 A total of 142 visitor routes were mapped. Table 26 provides summary route length data for both survey locations, with the data provided separately for full routes (i.e. those that extended outside of the Sherwood Forest NNR/Budby South Forest RSPB Reserve study area boundary) and clipped to within the study area only. Mean full routes were similar for both survey locations (4.6km and 4.3km for Survey Point 1 (Budby South Forest RSPB Reserve Car Park) and Survey Point 2 (Sherwood Forest NNR Main Entrance), respectively), whereas mean clipped routes differed between locations. The mean clipped route at Survey Point 2 was 3.0km, whilst that at Survey Point 1 was 4.1km.
- 5.53 The median and 75th percentile values for both of the survey locations exhibited a similar pattern, with a maximum 75th percentile of clipped

routes (5.1km) recorded at Survey Location 2 (Sherwood Forest NNR Main Entrance). Overall, the data indicates that the majority of visitors to the study area undertake routes between 3.2km and 4.9km in length within the study area boundary.

Table 26: Summary statistics of interviewee route length (full extent and clipped to the survey area boundary) for each of the survey locations. Clipped extents are highlighted tan. N is the sample size (number of interviewees) and Q3 is the 75th percentile.

Survey location	Route extent	N	Length (km)				
			Mean (+1SE)	Min	Median	Q3	Maximum
1 – Budby South Forest RSPB Reserve Car Park	Full	53	4.6 (+0.3)	1.3	4.5	6.0	8.5
	Clipped	53	4.1 (+0.2)	1.2	4.2	5.1	6.9
2 – Sherwood Forest NNR Main Entrance	Full	89	4.3 (+0.4)	1.4	3.3	5.4	17.6
	Clipped	89	3.0 (+0.2)	1.1	2.3	4.3	7.3
Total	Full	142	4.4 (+0.3)	1.3	3.7	5.5	17.6
	Clipped	142	3.4 (+0.2)	1.1	3.2	4.9	7.3

5.54 Amongst the three most frequently recorded main activity types, bird/wildlife watchers exhibited the longest mean routes within the study area (4.4km: see Table 27), with dog walkers the second longest (3.4km), and walkers the third (3.1km).

Table 27: Summary statistics of interviewee route length (clipped to the survey area boundary) , stratified by main activity. N is the sample size (number of interviewees) and Q3 is the 75th percentile.

Activity	N	Length (km)				
		Mean (+ 1SE)	Min	Median	Q3	Maximum
Walking	67	3.1 (+0.2)	1.2	3.1	4.5	7.3
Dog walking	51	3.4 (+0.3)	1.1	3.9	5.0	6.9
Bird / Wildlife watching	8	4.4 (+0.6)	2.8	4.2	5.9	6.6
Jogging / Power walking / Running	5	3.9 (+0.9)	1.9	4.9	5.4	5.6
Cycling / Mountain biking	2	5.0 (+0.1)	4.9	N/A	N/A	5.0
Picnic	2	3.8 (+2.1)	1.7	N/A	N/A	5.9
Commercial dog walking	1	2.7	N/A	N/A	N/A	2.7
Outing with family	1	4.0	N/A	N/A	N/A	4.0
Other	5	3.2 (+1.0)	1.3	1.9	5.5	6.1
<b>Total</b>	<b>142</b>	<b>3.4 (+0.2)</b>	<b>1.1</b>	<b>3.2</b>	<b>4.9</b>	<b>7.3</b>

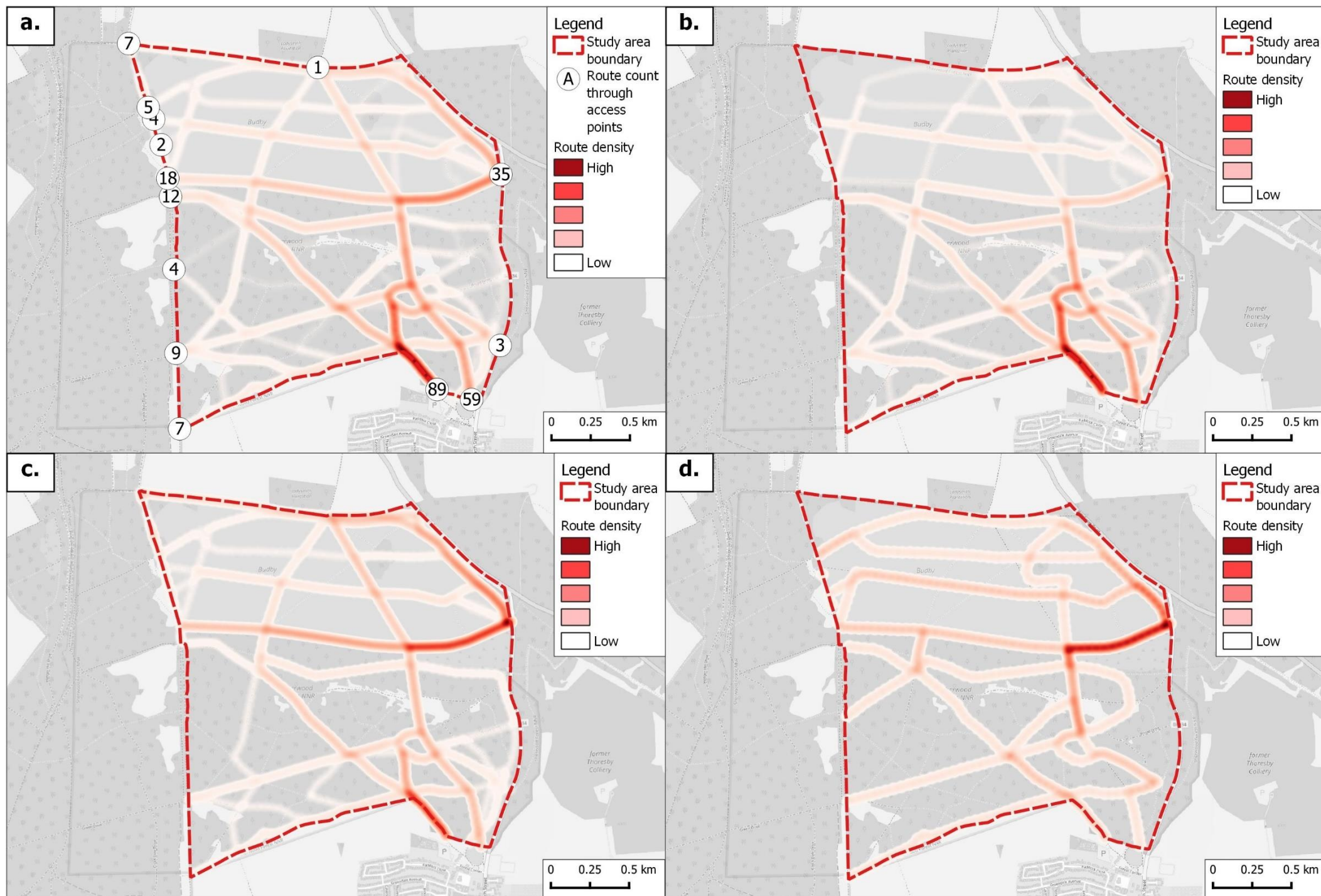
- 5.55 The routes recorded are shown in Map 12a to d, clipped to the study area, with route density indicated through the use of a heat map (with colour intensity congruous with route density). The maps highlight the areas with the highest level of use and broadly indicate where the largest volume of interviewee footfall occurred. Map 12a depicts route densities for all mapped interviewees (142) across both survey periods, with Maps 12b to 12d depicting the route densities for walkers, dog walkers, and bird/wildlife watchers in isolation, respectively.
- 5.56 Interviewee footfall was most concentrated along the entrance track heading northwest from the Visitor Centre into Sherwood Forest (see Map 12a), along the main east-west/northwest-southeast access routes radiating from the Budby South Forest RSPB Car Park, and on trails in the vicinity of the Major Oak. Trails/routes in the western half of the study area show a lower route density, and there is limited evidence of site users going 'off piste'.
- 5.57 Route counts through access points along the study area boundary are shown on Map 12a, and it can be seen that the main entrance to Sherwood Forest NNR, in proximity to the Visitor Centre and car park, is by far the busiest access point. Nevertheless, the access point adjacent to the Budby South Forest RSPB Reserve car park (on the eastern border of the study area) is also heavily used. Access along the northern and western perimeter of the

study area is more diffuse, although relatively large numbers of visitors appear to access/egress the site via western end of the main east-west footpath forming the border between Sherwood Forest and Budby South Forest RSPB Reserve.

- 5.58 The route density of walkers (see Map 12b) mirrors the overall route density map, although access routes from the RSPB car park appear to be less frequently used. Dog walker density (see Map 12c) again mirrors the overall route density map although routes leading from the RSPB car park are evidently favoured. A preference for circular routes is also potentially indicated by the concentration of routes along the main east-west, north-south, and peripheral trails running across the study area. Finally, although based on a much smaller sample, bird/wildlife watcher route density (see Map 12d) is very much focussed upon the main trail network, with an obviously higher route density in proximity to the RSPB car park and across the majority of the heathland area comprising the northern half of Sherwood Forest NNR.



Map 12: Route densities for: (a) all interviewees; (b) walkers only; (c) dog walkers only, and; (d) bird / wildlife watchers only



*Comments/views on recreation and site management (Q21, 28 &29)*

- 5.59        Suggestions from interviewees (Q21) concerning potential improvements to management of other sites frequented by the interviewees primarily centred upon better/more parking provision and parking fees, the provision/maintenance of dog waste and litter bins, improved access and path maintenance, entry fees, provision of better signage, and improved facilities (toilets and café in particular).
- 5.60        The last part of the questionnaire included free text boxes for the surveyors to log any changes interviewees would like to see regarding how the study area is managed for recreation and people (Q28). The subsequent question asked for any further comments or feedback about the interviewee's visit (Q29). Responses to both questions are summarised in Figure 11.





Figure 11: Word cloud giving free text responses to Q28 and Q29. Graphic created using the [Wordclouds](#) app.

5.61      The majority of feedback was positive with many people enjoying the wildness and open spaces present, the friendly management team, and the presence of a large area of accessible greenspace on their doorstep. Nevertheless, there was also a small cohort of local people who were not happy at all with RSPB management of the site or with the relocation/contents of the new Visitor Centre. Other issues identified included parking provision and fees, potholes, nudists, and horse dung, as well as conflicts between different user groups and the site managers (dog walkers and RSPB/birdwatchers in particular).

5.62      Furthermore, there were requests for:

- More waste bins to be deployed;
- The fixing of potholes;
- Earlier opening times;
- Reductions/changes to parking fees (including making it free for local people);
- Provision of additional parking areas, and stopping people parking on local roads;
- Increased access across the site for dog walkers;
- Provision of better signage;
- Improved access and facilities for disabled people;
- Cleaning up after horses;
- More information about Robin Hood in the Visitor Centre;
- More benches; and,
- Increased liaison between the RSPB and the local community.

## 6. Assessment of recreation impacts

- 6.1 In this section we synthesise the findings from the Woodlark and Nightjar surveys, habitats and recreation impact walkover, and visitor interviews to identify how recreation may be impacting the relevant interest features of Birklands & Bilhaugh SAC/Sherwood Forest NNR. It is important to note that the interest features may however also be impacted by other factors, such as climate change, atmospheric pollution, and natural processes, and in some cases these may interact with any identified recreation impacts.

### Visitor origins and use of the site

- 6.2 Sherwood Forest NNR, and its constituent components of Birklands & Bilhaugh SAC/SSSI and Budby South Forest RSPB Reserve, clearly comprises a destination site within the region, primarily attracting visitors on a day trip from home. Nevertheless, the site shows an interesting dichotomy, with Sherwood Forest/the SAC attracting visitors from much further afield than the RSPB Reserve to the north (which was primarily used by more local residents).
- 6.3 The majority of site users drive to the locality, although a quarter of both walkers and dog walkers arrive on foot. The larger proportion of visitors spend between half an hour and 2 hours on site, with more than half of dog walkers spending less than one hour there. People who live closer to the site tend to visit more frequently than those that live further afield, and dog walkers, in particular, generally originate from locations within the surrounding 9km.
- 6.4 Most site users either visit equally across the year or show a preference for the summer months. A significant proportion of site users (comprising approximately a third of interviewees) indicated that 75% or more of their visits for the activity they were undertaking took place within the National Nature Reserve boundary. The key reasons for site choice include proximity to home address, the presence of the Major Oak and the cultural importance of Robin Hood, and familiarity with the site, although site users also access websites and use online maps to plan their visits.
- 6.5 Visitors undertook a range of activities. Nevertheless, walkers and dog walkers comprise by far the most frequent users, comprising 84% of visitors. It can therefore be argued that the larger proportion of recreation impacts

observed on site are likely to be driven by these activities specifically. Although small in comparison, the site is also visited by a relatively large number of bird/wildlife watchers (comprising more than 5% of visitors).

- 6.6 These two most frequent user types show differences in the routes that they use, with walkers largely concentrated in the vicinity of the main entrance to the NNR and the Major Oak, whilst dog walkers predominantly access Budby South Forest RSPB Reserve or enter via the NNR main entrance prior to spreading across Sherwood Forest/the SAC. The routes used by site users are nevertheless mostly reflective of previous experience, the presence of the Major Oak/viewpoints, the activity being undertaken and the time available to undertake it, and the presence of a marked trail.
- 6.7 Access via the NNR site boundary is focussed upon three main access points, comprising the NNR main entrance near the Visitor Centre, and the access points at either end of the main east-west track delineating Sherwood Forest/the SAC from the RSPB Reserve. Nevertheless, lower levels of diffuse access also occur around the site (and along the western site boundary in particular).
- 6.8 The majority of site users have limited knowledge of the site's value for biodiversity, with few respondents identifying woodland or veteran trees as being susceptible to the impacts of recreation, in particular, during the interview surveys. Nevertheless, the presence of breeding birds was still identified by a relatively large proportion of interviewees, with the presence of Nightjar and rare invertebrates (perhaps surprisingly) also identified by a sizeable minority. Furthermore, more than half of site users indicate that they would use areas of alternative greenspace for their activity if it were provided, with 20% suggesting potential use.

## Impacts upon qualifying features and other sensitive receptors

### *Habitats*

- 6.1 Map 13 overlays all visitor routes upon the SAC qualifying habitats present and identified as being susceptible (and accessible) to recreation impacts during the walkover survey, with the intensity of the route line analogous with intensity of use. Within the SAC the greatest intensity of route use is focussed around the NNR Main entrance and in the vicinity of the Major Oak, with other well-used routes radiating north-west across the SAC and along its northern boundary.



- 6.2 A network of routes also radiates across Budby South Forest RSPB Reserve, outside the SAC boundary, although these are mostly located upon clearly defined tracks and paths between fenced enclosures. Nevertheless, the presence of several desire lines, livestock paths, and disused/temporary tracks indicate that lower levels of more diffuse access may already be occurring there. The latter routes are also likely to become more heavily used should visitor pressure increase.
- 6.3 Trampling and compaction of ground flora and soils, alongside damage to tree roots, are therefore important impacts throughout the woodland areas of the SAC. Several of the main routes within the SAC, including those in proximity to the NNR main entrance and the Major Oak, are completely denuded of vegetation and greatly widened, and desire lines/cut-throughs were noted across fenced boundaries. Conversely, trampling within the RSPB Reserve was localised and may be increasing the diversity of the sward in places.
- 6.4 Enrichment from dog faeces and urine is another key impact. The effects of enrichment are compounded in certain localities, especially alongside the heavily used routes within the SAC identified above, the effects of extreme footfall (leading to the total removal of ground flora in places). Enrichment is also prevalent along path edges within the RSPB Reserve.
- 6.5 A major issue for the SAC is damage caused to veteran trees, including that arising from the building of dens in proximity to them. The presence of dens potentially increases the level of footfall around nearby veterans, causing damage to exposed roots and potentially to the trees themselves. Any damage to veteran trees could also ultimately impact upon fungal communities identified in the SSSI citation, whilst removal of deadwood could also have knock on effects upon the SSSI's important saproxylic invertebrate community.

### *Woodlark and Nightjar*

- 6.6 Nightjar and Woodlark are also ground-nesting species and impacts from recreation have been widely reported for these species (Lowe et al., 2014; Mallord et al., 2007; Murison, 2002). Although much of the site is enclosed within grazing units, Nightjar appear to currently favour less heavily utilised areas of Budby South Forest RSPB Reserve, away from the most frequently used tracks (see Map 13). The presence of a Nightjar territory on the extreme south-western boundary of the SAC, away from heavily used routes, is also

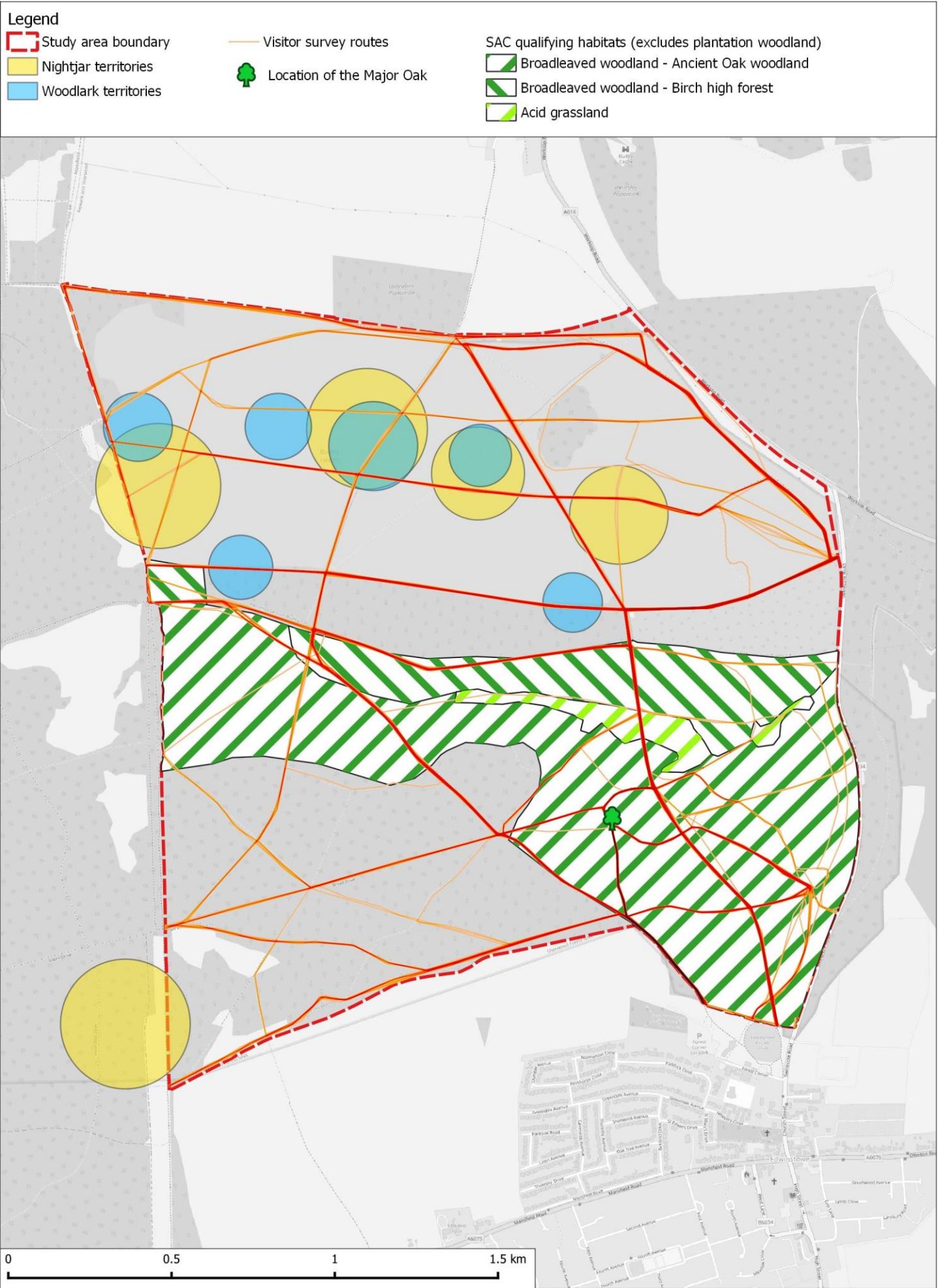
noteworthy. This may be due to disturbance arising from people and dogs on nearby tracks and paths. It is also considered likely that a proportion of dog walkers using the site will allow their dogs to roam freely (and potentially within fenced off areas), with such behaviour commonly witnessed within the SAC during site visits. The RSPB Reserve is also Open Access, and it is possible for visitors to access the majority of enclosures within it via gates or styles, if they wish. As such, there is potential for any increase in footfall within these areas to have a negative impact upon the Nightjars present.

- 6.7 Woodlark are more widely distributed across the RSPB Reserve (see Map 13), although there are indications that they possibly avoid the busier eastern third of the site. The presence of 4 to 6 pairs of Woodlark, and 4 to 5 territorial Nightjar, within the NNR boundary indicate that the locality potentially supports a significant proportion of the qualifying populations of the Sherwood Forest ppSPA<sup>7</sup>.

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<sup>7</sup> [Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region](#)

Map 13: Overlay of visitor routes upon qualifying SAC habitats and Woodlark and Nightjar territories



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## Identifying a recreational Zone of Influence

- 6.8 Using the visitor survey data it is possible to identify where changes in housing might result in increased recreational use of Birklands & Bilhaugh SAC/Sherwood Forest NNR and therefore cumulative impacts to the site/s. It has become a standard practice to define zones of influence using visitor survey information, including postcode data and the distance within which 75% of visitors originate (see Liley, et al., 2021 for review and discussion).
- 6.9 Sherwood Forest NNR/Birklands & Bilhaugh SAC are predominantly accessed by visitors within the local region and are particularly used by the local dog walking community. We have therefore filtered the postcode data to derive a zone using the data relevant to those types of visitor that are likely to pose a risk in terms of recreational impact.
- 6.10 The visitor data show that walkers and dog walkers account for >84% of interviewees/site users and we have focussed on these activities and only those visiting from home (i.e. excluding holidaymakers) from the postcode data. Furthermore, we have filtered the data to only include those who visit more frequently (at least once a month). This gives a sample of 67 postcodes in total (see Table 28).

Table 28: Summary statistics for the straight-line distances between the home postcode of all walkers and dog walkers carrying out a day visit from home (and who visit at least once a month) and their respective interview location. N is the sample size (number of valid postcodes) and Q3 is the 75<sup>th</sup> percentile.

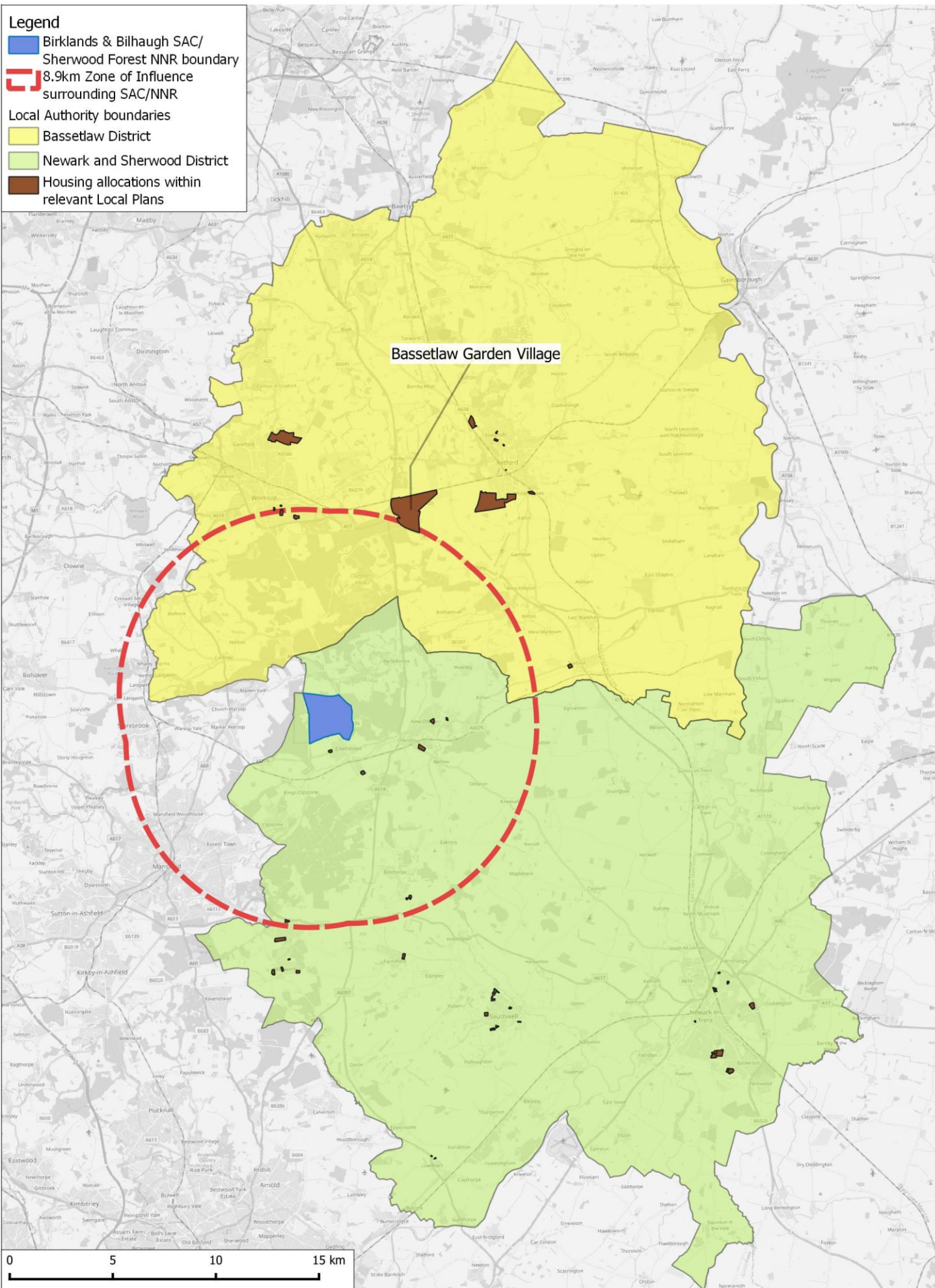
Activity	N	Length (km)				
		Mean (+ 1SE)	Min	Median	Q3	Maximum
Walking	24	7.7 (+2.2)	0.5	1.1	17.6	30.2
Dog walking	43	4.5 (+0.7)	0.3	3.1	8.8	12.9
<b>Total</b>	<b>67</b>	<b>5.7 (+0.9)</b>	<b>0.3</b>	<b>2.8</b>	<b>8.9</b>	<b>30.2</b>

- 6.11 It is important to note that those on their first visit to the site on the date of the interview have been excluded from the calculation. This does not mean, however, that either less frequent visitors, or those visiting whilst on holiday, do not potentially have negative recreational impacts upon the site. The zone simply identifies the area in which housing change is potentially likely to result in increased recreational use.

- 6.12      Using the parameters detailed above gives a distance of 8.9km (see Map 14). Within this zone there will be a differential effect relating to distance, such that new development closer to the SAC/NNR is likely to result in proportionally greater impact. The 8.9km, as mapped, includes portions of both Bassetlaw District and the Newark and Sherwood District Council area. It also incorporates sections of both Bolsover and Mansfield District Council areas.



**Map 14: Birklands & Bilhaugh SAC/Sherwood Forest NNR recreational Zone of Influence in relation to Local Authority boundaries and housing allocations within Local Plans**





## 7. Mitigation

- 7.1 Birklands & Bilhaugh SAC/Sherwood Forest NNR is clearly vulnerable to recreation impacts which extend to a range of habitat features and species interest, including ground nesting birds. Increased recreational use will bring risks and further pressure unless carefully managed. In this section we consider how these issues are addressed in other parts of the England and what measures might be relevant for the SAC/NNR.

### Protection afforded to European sites

- 7.2 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations'. Importantly, the most recent amendments (the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019<sup>8</sup>) take account of the UK's departure from the EU. The term 'European site' remains in use.
- 7.3 Regulation 105 *et seq* addresses the assessment of local plans and recent Government Guidance on the interpretation and application of the Regulations is available<sup>9</sup>.
- 7.4 'European sites' are the cornerstone of UK nature conservation policy. Each forms part of a 'national network' of sites that are afforded the highest degree of protection in domestic policy and law. They comprise Special Protection Areas (SPA) classified under the 1979 Birds Directive and Special Areas of Conservation (SAC) designated under the 1992 Habitats Directive. As a matter of policy, potential SPAs (pSPAs), possible SACs (pSACs) and those providing formal compensation for losses to European sites, are also given the same protection<sup>10</sup>.

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<sup>8</sup> The amending regulations generally seek to retain the requirements of the 2017 Regulations but with adjustments for the UK's exit from the European Union. See Regulation 4, which also confirms that the interpretation of these Regulations as they had effect, or any guidance as it applied, before exit day, shall continue to do so.

<sup>9</sup> Habitats regulations assessments: protecting a European site. Defra and Natural England. 24 February 2021. <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site> (accessed 4 March 2021)

<sup>10</sup> For the avoidance of doubt, the list of statutory European sites also comprises: A site submitted by the UK to the European Commission (EC) before Exit Day (a candidate SAC or cSAC) as eligible for selection as a Site of Community Importance (SCI) but not yet entered on the ECs

## Mitigation approaches in other parts of England

- 7.5 In other parts of the UK, strategic approaches to mitigation have been established where multiple local authorities have worked together to establish a series of avoidance and mitigation measures carefully designed to resolve the in-combination impacts associated with recreation from local development. Examples include European sites such as the Thames Basin Heaths, the Dorset Heaths, the Solent, Epping Forest, Burnham Beeches, South-east Devon, North Kent and Cannock Chase. Sites such as the Thames Basin Heaths and Dorset Heaths hold Nightjar and Woodlark – as occur within Birklands & Bilhaugh SAC/Sherwood Forest NNR.
- 7.6 On-site measures such as increased wardening/rangers (often termed SAMM – strategic access management and monitoring) and SANGs are common themes in strategic mitigation for European sites, and all schemes include monitoring to target and hone interventions. Other measures within these schemes have included dog projects, interpretation, changes to infrastructure, codes of conduct, and various engagement approaches.
- 7.7 Many of these interventions are widespread and commonly used and there are a range of studies that support their effectiveness (e.g. Allinson, 2018; Burger & Leonard, 2000; Medeiros et al., 2007; Williams et al., 2017), however there is little experimental work or similar to explicitly test or directly compare different approaches.
- 7.8 Many of the measures bring wider benefits besides simply providing mitigation. Enhancing access, providing better connections between local people and their environment, providing education resources and providing new green infrastructure all have wide benefits for society and potential economic benefits.

## Insights from the visitor survey to inform management

- 7.9 The access on the site appears to currently be at a moderate level overall, but with a clear split between hotspots in the vicinity of main access points

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list of SCI, until such time as the Appropriate Authority has designated the site or it has notified the statutory nature conservation body that it does not intend to designate the site. After Exit Day, no further cSACs will be submitted to the EU. Statutory European sites also include SCI included on a list of such sites by the European Commission from cSACs submitted by the UK before the UK left the EU, until such time as the UK designates the site when it will become a fully designated SAC.

and car parks and more diffuse access elsewhere. These hotspots differ for the two main user groups and therefore interventions for certain activity types will be more relevant in some areas compared to others – dog walkers accounted for >50% of interviewees at the RSPB Reserve survey point, whilst walkers comprised nearly 60% of interviewees at the NNR main entrance.

- 7.10      Approximately a fifth of interviewees were first-time visitors, with the majority of these recorded at the Sherwood Forest survey location (where most holidaymakers were also noted). These will be unfamiliar with the site layout and potentially most likely to refer to interpretation, on-line sources, and other information in order to decide where to go and how to plan their visit. Road signage and to a lesser extent information used to plan the visit will be key for first time visitors.
- 7.11      The majority of site users arrived by car and engagement activity should therefore be focussed within car parks and other parking locations, or at pinch point access locations (such as at the NNR main entrance). This may nevertheless miss the approximate quarter of users accessing the site on foot however, and it may be useful to carry out roving engagement at other pedestrian access points around the periphery of the SSSI.
- 7.12      The Major Oak is clearly a key honeypot locality, and the RSPB car park is important for dog walkers in particular, whilst other parts of the site appear to receive much lower levels of access. It is likely that these areas are used by different user groups, and engagement is likely to be more challenging with those visitors in the quieter/more remote areas where they may be harder to intercept.
- 7.13      The fencing of enclosures within the RSPB Reserve is apparently working to channel footfall and orientate access across the site in a way which minimises (human) footfall upon sensitive areas. However, given the higher level of visitors to Sherwood Forest/the SAC, and the honeypot nature of the Major Oak, it is recommended that visitors continue to be aggregated in time and space at that locality, with access focussed upon the main paths within areas of less vulnerable/valuable habitat (such as plantation woodland areas).
- 7.14      An alternative country park location would be popular, with more than half of interviewees suggesting that they would use such a site. For dog walkers, this was >60%. A new alternative site with a café, good walking routes, and areas of open water would be popular (based on responses to the questionnaire). Visitors however often select the SAC/NNR because it is close

to home and incorporates local attractions (such as the Major Oak) and it may therefore be difficult to emulate these criteria elsewhere.

## **Suggested mitigation approaches for Birklands & Bilhaugh SAC/Sherwood Forest NNR**

7.15 In line with other mitigation approaches around the country, mitigation could consist of both SAMM and SANG/infrastructure projects away from the SAC/NNR. These two approaches would dovetail and complement each other. We set out some initial suggestions of relevant mitigation approaches below, recognising that any such mitigation would need to be carefully planned, tailored to the site and agreed with stakeholders, in particular the RSPB, and would be dependent on the involvement and support of the latter organisation.

### *SAMM (Strategic Access Management and Monitoring)*

7.16 SAMM would comprise measures within the SAC/NNR to address recreation impacts and make them more resilient to increased recreation. SAMM could comprise:

- Surfacing of heavily used paths at bottleneck localities, alongside additional fencing to prevent spillover;
- Increased staff presence and wardening resource;
- Additional resources for signage and interpretation relating to visitor behaviour and sensitive features (such as veteran trees and ground nesting birds);
- Education & awareness raising initiatives with visitors around where to go, the need to pick-up after their dog, dogs off lead etc;
- Wider engagement with the local community on site management (via e.g. public forums);
- Measures to address contamination (particularly dog fouling); and,
- Monitoring.

7.17 Damage caused to veteran tree roots and surrounding vegetation via excessive trampling and path widening is particularly evident in the vicinity of the NNR main entrance and the Major Oak. The installation of surfaced pathways, with associated fencing at key points, alongside increased signage has been successfully trialled at other ancient woodland SAC's, such as Epping Forest<sup>11</sup>. This would not only protect sensitive features from current

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<sup>11</sup> [Land Use Consultants - Epping Forest SAC Mitigation Report](#)

footfall, but also provide a buffer for any increase in footfall arising from larger future visitor numbers.

- 7.18 Dedicated staff would be key in delivering and implementing any mitigation and providing an on-the ground wardening presence. A mobile ranger team is a feature of other mitigation schemes such as the Solent, the South-Devon sites, the Thames Basin Heaths and the Dorset Heaths. In these examples the rangers form a mobile team that spend the majority of their time outside, talking to visitors, influencing how visitors behave and showing people wildlife. The advantage of such an approach is that the staff can focus their time at particular locations as required. This means that as particular projects are set up, as development comes forward, or if access issues become a concern at a particular location, the staff can be present and target their time accordingly.
- 7.19 Monitoring data can help inform the ranger effort and ensure their work is directly linked to where development comes forward and where there are issues. Furthermore, with on-site ranger presence, there is the scope to expand/shrink this element to provide flexibility and the ability to respond to changes in the levels of growth coming forward.
- 7.20 The ranger post would provide an on-site presence, but this would need to be accompanied by a range of other measures and resources to raise awareness and communicate to visitors. This would include signage, interpretation, and digital communication.
- 7.21 Dog fouling is a particular contamination issue. While the heightened ranger presence would help address this, further measures could include provision of additional dog bins and resources to cover the removal of dog waste.
- 7.22 Monitoring would also be important to pick-up emerging trends, such as changes in access, and to ensure that mitigation measures are targeted to ensure value for money and effectiveness. For example, a common theme in many countryside areas is the changing pattern of cycling use as e-bikes become more affordable and popular. These make cycling a more realistic travel option for many and also influence where people go and how far they cycle. The pandemic has also influenced how people use the countryside, for example through more people working from home and visiting areas near to their homes, potentially seeking quieter areas of countryside. Monitoring is important to pick up such changes and ensure mitigation is targeted appropriately.

- 7.23 The visitor survey identified the fact that many local visitors feel disenfranchised from the site and are unaware or unsure about the reasoning behind certain aspects of site management. There is also an apparently limited understanding of the biodiversity value of the site, alongside a more prevalent valuing of Sherwood Forest's cultural significance. The instigation of a forum with which to directly liaise with the local community could therefore form part of the SAMM package, allowing site managers to start an ongoing conversation with local stakeholders concerning site access and management plans.
- 7.24 Measures relating to parking and travel could also help influence the distribution of visitors around the site in the long-term, although it is recognised that the SAC/NNR car park has already been relocated very recently as part of ongoing restoration work within the site.

*SANG (Suitable Alternative Natural Greenspace)/Infrastructure Projects (away from the SAC)*

- 7.25 SANG is the term given to greenspaces that are created or enhanced with the specific purpose of absorbing recreation pressure that would otherwise occur at European wildlife sites. SANGs are created, or existing greenspaces enhanced to create a SANG, in order to absorb the level of additional recreation pressure associated with new development. SANGs are however not the only way that green infrastructure can provide mitigation. There may be other opportunities, for example through providing dedicated cycle routes or linking up existing cycle routes to encourage use away from the SAC/NNR. In some other parts of the country, mitigation measures have included provision of dedicated cycling facilities (BMX tracks near heathlands) or very specific measures such as enhancements to parking to increase capacity at countryside sites away from a European site.
- 7.26 These SANG/infrastructure projects dovetail with SAMM in that they provide additional space for recreation and realistic alternatives to Birklands & Bilhaugh SAC/Sherwood Forest NNR. With SAMM in place, visitors would become more aware of their impacts and access better managed, and some use would be deflected away from the SAC/NNR entirely. Over time the emphasis for recreation use would shift to the sites enhanced for recreation – such as SANG – rather than the protected site.



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## Appendix 1: Interview survey questionnaire

Good morning / afternoon. I am conducting a survey on behalf of Bassetlaw District Council and partners who are interested in gathering the views of people who are visiting greenspaces in the area. Can you spare me a few minutes please?

Q1 Firstly...

- ☐ Are you on a short visit and have travelled directly from your home today ... tick if yes, if no then ask next
- ☐ Are you staying away from home with friends or family ... if no
- ☐ Are you staying away from home, for example in a second home, mobile home or on holiday
- ☐ If none of the above How would you describe your visit today?

Further details

Q2 What is the main activity you are undertaking today? *Single response only. Do not prompt. Follow with any further activities in the next question*

- ☐ Dog walking
- ☐ Commercial dog walking
- ☐ Walking
- ☐ Jogging / Power walking / Running
- ☐ Cycling / Mountain biking
- ☐ Meeting up with friends
- ☐ Outing with family
- ☐ Bird / Wildlife watching
- ☐ Fishing
- ☐ Photography
- ☐ Picnic
- ☐ Horse riding
- ☐ Other fitness / sports
- ☐ Other, please detail:

Further details:

**Q3 Are there any other activities you or other members in your group are undertaking today? Tick as many other activities as the interviewee gives**

Other (multiple responses ok here)

Dog walking	<input type="checkbox"/>
Commercial dog walking	<input type="checkbox"/>
Walking	<input type="checkbox"/>
Jogging / Power walking / Running	<input type="checkbox"/>
Cycling / Mountain biking	<input type="checkbox"/>
Meeting up with friends	<input type="checkbox"/>
Outing with family	<input type="checkbox"/>
Bird / Wildlife watching	<input type="checkbox"/>
Fishing	<input type="checkbox"/>
Photography	<input type="checkbox"/>
Picnic	<input type="checkbox"/>
Horse riding	<input type="checkbox"/>
Other fitness / sports	<input type="checkbox"/>
Other, please detail:	<input type="checkbox"/>

Further details:

**Q4 What mode of transport did you use to reach the site today? Multiple responses possible, to record all transport used (e.g. car then bike)**

- ☐ Car / van
- ☐ On foot
- ☐ Bicycle
- ☐ Bus
- ☐ Train
- ☐ Other, please detail

Further details:

**Q5** How long have you spent / will you spend at this site today? *Single response only. Tick closest.*

- ☐ Less than 30 minutes
- ☐ Between 30 minutes and 1 hour
- ☐ 1-2 hours
- ☐ 2-3 hours
- ☐ 3-4 hours
- ☐ 4 hours +

Further details:

**Q6** Has the coronavirus pandemic changed how often you visit this site? *Await answer and If yes follow with Have your visits increased or decreased? Do not prompt. Single response only.*

- ☐ No, visiting the same as before
- ☐ Don't know
- ☐ Yes, visiting more
- ☐ Yes, visiting less

Further details:

**Q7** Before the pandemic, roughly how often would you have visited this site? *Tick closest answer, single response only. Use example frequency or estimate of visits per year. Do not prompt.*

- ☐ More than once a day (365+ visits a year)
- ☐ Daily (300-365 visits)
- ☐ Most days (180-300 visits)
- ☐ 1 to 3 times a week (40-180 visits)
- ☐ 2 to 3 times per month (15-40 visits)
- ☐ Once a month (6-15 visits)
- ☐ Less than once a month (2-5 visits)
- ☐ Don't know
- ☐ First visit
- ☐ Other, please detail

Further details:



**Q8**   **Normally, do you tend to visit this site more at a particular time of year for [insert their given activity]? Multiple answers ok.**

- ☐ Spring (Mar-May)
- ☐ Summer (Jun-Aug)
- ☐ Autumn (Sept-Nov)
- ☐ Winter (Dec-Feb)
- ☐ Equally all year
- ☐ Don't know
- ☐ First visit

**Further details:**

--

**Q9 Why did you choose to visit this specific location today, rather than another local site? Tick all responses given. Do not prompt, tick closest answers. Use text box for answers that cannot be categorised and for further information.**

Don't know / others in party chose	<input type="radio"/>
Close to home	<input type="radio"/>
No need to use car	<input type="radio"/>
Quick & easy travel route	<input type="radio"/>
National Trust / RSPB membership	<input type="radio"/>
Good / easy parking	<input type="radio"/>
Particular facilities	<input type="radio"/>
Refreshments / cafe / pub	<input type="radio"/>
Choice of routes	<input type="radio"/>
Well marked routes	<input type="radio"/>
Slope / terrain	<input type="radio"/>
Feels safe here	<input type="radio"/>
Quiet, with no traffic noise	<input type="radio"/>
Not many people	<input type="radio"/>
Habit / familiarity / previous experience	<input type="radio"/>
Scenery / variety of views	<input type="radio"/>
Rural feel / wild landscape	<input type="radio"/>
Openness / wide open spaces	<input type="radio"/>
Visiting the Major Oak	<input type="radio"/>
Heritage features	<input type="radio"/>
Good for dog / dog enjoys it	<input type="radio"/>
Ability to let dog off lead	<input type="radio"/>
Closest place to take dog	<input type="radio"/>
Closest place to let dog safely off lead	<input type="radio"/>
Appropriate place for activity	<input type="radio"/>
Suitability of area in given weather conditions	<input type="radio"/>
Particular wildlife interest (e.g. birds, bluebells and other woodland plants)	<input type="radio"/>
For a change / variety	<input type="radio"/>
Covid considerations (avoiding others, busy areas etc.)	<input type="radio"/>
Other, please detail	<input type="radio"/>
Further details:	
<div></div>	

Now I'd like to ask you about your route today. Looking at the area shown on this map, can you show me where you started your visit today, the finish point, and your route please. Probe to ensure route is accurately documented and prompt for parking if needed. Use P to indicate where the visitor parked, E to indicate the start point and X to indicate the exit. If walking from home/holiday accommodation etc., then start the route from the nearest road. Mark the route with a line, using a solid line for the actual route and a dotted line for the expected or remaining route, and use a directional arrow on the route.

Q10 Is / was your route today the typical length when you visit here for [insert given activity]? Tick closest answer, do not prompt. Single response only.

- ☐ Yes, normal
- ☐ Much longer than normal
- ☐ Much shorter than normal
- ☐ Not sure / no typical visit
- ☐ First visit

Q11 What, if anything, determined your route today? Tick closest answers. Multiple responses ok. If interviewee struggles, prompt with: "What influenced where you went today?"

- ☐ Weather
- ☐ Daylight
- ☐ Time
- ☐ Other users (avoiding other people, busy area etc)
- ☐ Group members (e.g. kids, less able)
- ☐ National Trust / RSPB material
- ☐ Avoiding muddy tracks / paths
- ☐ Followed a marked trail / route
- ☐ Avoiding livestock
- ☐ Visiting livestock (positive response)
- ☐ Previous knowledge of area / experience
- ☐ Activity undertaken (e.g. presence of dog or needing to stick to cycle trails - add details)
- ☐ Location of pub / cafe / refreshments
- ☐ Passing public toilets
- ☐ Viewpoint / feature (inc. the Major Oak)
- ☐ Other, please detail

Further details:

**Q12** Are you a member of the National Trust or RSPB?

- ☐ Both National Trust and RSPB membership
- ☐ National Trust membership only
- ☐ RSPB membership only
- ☐ Neither
- ☐ Not sure / Dont know

Further details:

I'd now like to ask about information you used to plan your visit here today.

**Q13** Ask the following in turn, note order randomised.

	Yes	No	Don't know / Unsure
Did you use any websites when planning your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you use any social media when planning your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you use a smartphone app when planning your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you use any maps (online or paper) when planning your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you use any leaflets when planning your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you follow any recommendations from friends or family your visit today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q14** You indicated that you used websites to plan your visit today, which websites did you use? [Routed from above Q] Use further details to record particular feeds, channels or content.

**Q15** You indicated that you used social media to plan your visit today, which social media platform and accounts, posts or feeds did you use?[Routed from above Q] Use further details to record particular accounts, posts, feeds or content.

- Q16** You indicated that you used a smartphone app to plan your visit today, which app did you use? [Routed from above Q] Use further details to record particular app and if needed any channels or specific content.

Further details (record any other details):

I would now like to ask about other local sites that you visit for *[their given activity]*.

- Q17** What proportion of your weekly visits for *[their given activity]* take place here, compared to other sites. Can you give a rough percentage? *Do not prompt.*

- ☐ All take place here  
☐ 75% or more  
☐ 50-74%  
☐ 25-49%  
☐ less than 25%  
☐ Not sure / don't know / first visit

Please could you tell me the name of up to 3 other sites that you also visit for *[their given activity]*? Please list them starting with the one you visit most frequently. Record names as carefully as possible. Ask for spelling if necessary.

- Q18** Name of Site 1 *(most frequently visited)*

- Q19** Name of Site 2

- Q20** Name of Site 3

- Q21** Have you any suggestions as to how any of the sites you have mentioned could be improved to make them better for people to visit?



**Q22** If a new Country Park, or other area of greenspace, was created for [interviewee's given activity] locally do you think you would be likely to use it? *Do not prompt, tick closest answer.*

- ☐ Not sure / Don't know / Can't tell  
☐ Yes  
☐ Maybe  
☐ No

Further details:

**Q23** If a new site were created, such as a Country Park, or other area of greenspace, what features do you think it should include to make it work for [interviewee's given activity]? *Do not prompt. Tick any options as relevant.*

- ☐ Cafe  
☐ Visitor centre  
☐ Toilets  
☐ Sufficient parking  
☐ Free parking  
☐ Extensive / good walking routes  
☐ Dedicated cycling routes  
☐ Bike hire  
☐ Dedicated horse riding routes  
☐ Off-lead areas for dogs  
☐ Play facilities for children  
☐ Good views / scenery  
☐ Woodland  
☐ Open water  
☐ Other (give details)

Further details:

**Q24 Are you aware of any rare and / or sensitive habitats or species found on the site? If so, can you name them? Do not prompt. Tick any options as relevant.**

- ☐ None / not sure
- ☐ Breeding birds
- ☐ Woodlark
- ☐ Nightjar
- ☐ Veteran / ancient trees (incl Major Oak)
- ☐ Heathland
- ☐ Woodland
- ☐ Wetland
- ☐ Flowering plants
- ☐ Rare insects / invertebrates
- ☐ Adder
- ☐ Other (give details)

Further details:

**Q25 What is your full home postcode? This is an important piece of information, please make every effort to record correctly.**

**Q26 If visitor is unable or refuses to give postcode: What is the name of the town or village where you live?**

**Q27 If visitor is on holiday ask: Which town / village / campsite are you staying in?**

**Q28 Are there any changes you would like to see here with regards to how this area is managed for access?**

**Q29 Finally, do you have any further comments or general feedback about your visit?**

That is the end. Thank you very much indeed for your time.

**Q30 TO BE COMPLETED AFTER INTERVIEW FINISHED.**

Surveyor initials	<input type="text"/>
Survey location code	<input type="text"/>
Map Reference Number	<input type="text"/>
Sex of respondent	<input type="text"/>
Total number in interviewed group	<input type="text"/>
Total males in group	<input type="text"/>
Total females in group	<input type="text"/>
Total minors (under 18) in group	<input type="text"/>
Total 18 - 45 year olds in group	<input type="text"/>
Total 45 - 65 year olds in group	<input type="text"/>
Total 65+ year olds in group	<input type="text"/>
Total number of dogs	<input type="text"/>
Number of dogs seen off lead in group	<input type="text"/>

**Q31 Surveyor comments.** *Note anything that may be relevant to the survey, including any changes to the survey entry that are necessary, eg typos / mistakes / changes to answers / additional information.*

## Appendix 2: Habitat and recreation impact target notes

The following tables provide detailed target notes on the habitats and recreation impacts recorded during the walkover survey. They should be referred to in conjunction with Map 6 in the main body of the report.

Table A2.1: Habitat survey target notes.

Waypoint	Habitat	Notes
117	Woodland	Secondary multi-stemmed birch over grassy ground flora with occasional brambles; pine in canopy, very occasional oak. Opens into heathy/grassy area with Common Bent, Sweet Vernal-grass, Annual Meadow-grass, open grown oak and young birch regeneration with occasional mature Scots Pine and occasional Broom and European Gorse
118	Heath	Heathy sward with degenerate and mature Heather, Sheep's Fescue, Heath Bedstraw, Sheep's Sorrel.
121	Grassland	Rank mesotrophic sward with Hogweed, Cock's-foot, Cow Parsley along access from layby
122	Various	Bridleway runs outside of grazing unit. Birch regeneration in the corner gives way to mature Oaks that line the boundary with a grassy understory and younger heather than elsewhere
125	Plantation	Mature oak and pine plantation with birch regeneration and a patchy grassy ground flora
126	Other	Rushy hollow marked as pond on map
129	Heath	Scrapes support Yorkshire Fog, Sweet Vernal-grass, a little Heather, Heath Bedstraw, Pill Sedge, Mat Grass and Soft Rush
130a	Heath	Lush, grassy bank of scrape. Wet track with rushes, Mat Grass and Creeping Bent in valley bottom
131	Plantation	Oak and pine plantation with much regenerating birch over Bracken, quite open with little understorey. Wavy Hair-grass along MoD boundary
134	Plantation	Dense birch with occasional pine, Holly. Heath more bracken. Yorkshire Fog, Wavy Hair-grass, Heath Bedstraw, <i>Rhytidiadelphus squarrosus</i>

156	Woodland	Oak with young birch, both young and mature oaks over bracken and bramble
161	Woodland	Dense secondary birch to south with occasional hulks
164	Woodland	Oak over Bracken with secondary birch, Hawthorn
165	Woodland	Dense secondary birch with some oak and holly. Grassy margins with Creeping Softgrass, no nettles
166	Woodland	Veterans surrounded by young birch (some clearance around veterans), bracken dominated clearings with birch regeneration
169	Woodland	veteran oaks among oak plantation
170	Woodland	Planted oaks along western boundary, more birch to east, becoming more open with some open-grown trees
173	Woodland	Open with some sapling Beech and much young oak, some veterans
176	Woodland	Very open, with patches of young, planted, oaks

Table A2.2: Recreational impacts recorded during walkover survey at Birklands and Bilhaugh SAC.

Waypoint	Impact severity	Impact type	Notes
117	Light	Damage	Bare path about 1m wide leading through kissing gate into woods
118	Light	Damage	Path crosses main track - partly bare but with low growing annual or rosette species such as Buckhorn's Plantain, Sheep's Sorrel, Parsley Piert, Squirrel's-tail Fescue, Common Cat's-ear, also Heath Grass and Sweet Vernal-grass and Pill Sedge in less trampled areas



119	Light	Damage	Path 4m wide where meets with track from road. Ruts are bare but the sides have regenerated with Bird's-foot, Green Field Speedwell, <i>Pseudoscleropusium purum</i> , <i>Polytrichum juniperum</i> , Little Mouse-ear, Silver Hair-gass. Slightly wetter areas support rushes and more mesotrophic vegetation includes Self-heal, Dandelion, Ragwort.
120		Other	Occasional very well-defined livestock paths leading off the main track are possibly used by people (difficult to tell due to recent rain).
121	Moderate	Damage	Narrow, compacted bare path with Broad-leaved Plantain etc. through tall, mesotrophic sward near road gate.
122	Light	Damage	3 desire lines to pond, barely impacted
123	Moderate	Damage	Eutrophic edges to bridleway with Broad-leaved Plantain, Perennial Ryegrass, Annual Meadow-grass, Dandelion, White Clover etc. Joins gravelled track with similar, taller grassy margins with occasional Creeping Thistle
124	Light	Damage	Track supports Heather in the centre with Procumbent Pearlwort, Buckshorn Plantain, Bird's-foot etc, little sign of eutrophication
125	Light	Damage	Sunken track through woodland with lightly trampled path through litter. Second sunken track nearby has no sign of use
127	Light	Damage	Central track is fenced out of grazing unit - pebbly with grassy, heathery margins with occasional Common Knapweed, Nettles, Ribwort Plantain. Grassy edges maybe a combination of eutrophication, compression and past surfacing

128	Light	Damage	Path junction with access through fences into grazing compartments - wide grassy area with Perennial Ryegrass around gates, also Pineappleweed, plantains, Annual Meadow-grass and some bare patches
130	Light	Damage	Path 3m wide, bare (scraped), no contamination with dog faeces evident, little change to heath vegetation on verge
131	Light	Damage	Little-used grassy track through plantation
132	Light	Damage	Path through heath comprises a grassy sward with trampled areas supporting Annual Meadow-grass, Buck's-horn Plantain etc.
133	Light	Damage	Crossroads, grassy edges with bare patches
134	Light	Damage	Grassy tracks with little recreational pressure evident
135	Light	Damage	A few livestock paths and tracks used for site management, but little recreational pressure evident - slightly shorter vegetation on paths or bracken litter compacted.
136	Light	Damage	Path meets bridleway- expanded area of short grassland around junction
137	Light	Damage	Southern end of fenced footpath - gravelled with more mesotrophic/disturbed verges, including Mugwort, Dandelion, Bracken, Broad-leaved Dock, Creeping Buttercups, Nettle. Grassy path leads through kissing gate into compartment
138	Light	Damage	Crossroads with fenced bridleway and path - path into compartment bare and trampled around wheel ruts
139			Track double width where ruts are wet, with some bare areas
140		Other	Livestock path could be used as desire line

141	Light	Damage	Occasional desire lines near layby, slight indication of eutrophication from dog faeces
142	Light	Damage	Wide path protected by surfacing, eutrophic border of Nettle, Cleavers, Wood Aven
143	Moderate	Damage	Desire line leading to heavily trampled area overlooking field/visitor centre, desire lines every few metres into woods
144	Moderate	Damage	Trampling and compaction around all mature oaks near path
145	Moderate	Damage	Small path leading back to visitor centre
146	Moderate	Damage	Desire line to veteran tree blocked by fallen trunk, path Nettle-lined
147	Moderate	Damage	Veteran tree fenced off. Compaction at fence
148	Moderate	Damage	Trampling around and desire lines too all veterans near path that are not fenced off, with compaction and loss of vegetation/species change (Broad-leaved Plantain, Burdock, Ryegrass) Knee-high fences appear to be only partly effective.
149	Moderate	Damage	Another example of a desire line to fenced-off hulk. Main path 1m wide with grassy marginal strip with Nettle, Cock's-foot, Ryegrass, Cow Parsley, Wood Aven, Broad-leaved Plantain
150	Moderate	Damage	Some trees are engulfed by the path, trampled on all sides with exposed roots
151	Severe	Damage	Severe compaction around trees. Desire lines have been fenced off and filled with brash
152	Severe	Damage	Path expansion to 5m wide, no vegetation (fencing confining trampling)
153	Moderate	Damage	Bikes using path despite no cycling signs
153		Other	Some path edges have been cut - this is likely to encourage visitors to walk on the shorter vegetation to avoid people/mud and to explore off the paths

154	Severe	Damage	Area around the Major Oak heavily impacted by trampling (including vehicles) and by management as an amenity area (including benches, ice cream van etc.). Secondary birch woodland immediately adjacent (partly roped off but open) is also heavily impacted by trampling, dens etc. with no understorey
155	Moderate	Damage	Path expands where not surfaced/fenced, bike tracks.
156	Moderate	Damage	Unfenced bridleway crosses Purple Trail - path limited to +/- 1m, modified verges. Desire lines appear where fencing stops
157	Moderate	Damage	Surfaced track is fenced both sides, verges modified by strimming in addition to eutrophication/disturbance
158	Light	Damage	Official den-building area (trampling, removal of deadwood), currently closed.
159	Severe	Damage	Heavily trampled route from VC to Major Oak, no vegetation or litter, expanding where not fenced
159	Moderate	Damage	Desire lines into woodland (ignoring fence).
160	Moderate	Damage	Exposed, abraded, roots on all climbable trees
161	Moderate	Damage	Smaller (1-2m) path heading towards Budby South Forest, trampled and compacted around sign, edge vegetation not impacted, but some desire lines to characterful veterans
162	Moderate	Damage	Open area under mature oaks is compacted but with leaf litter still present, with some dens
163	Moderate	Damage	Double bike jumps constructed parallel with path (at right angles to the Bilberry Path)
164	Moderate	Damage	1.5m path into the grazing unit (Greenwood Trail)
165	Moderate	Damage	Main path 1-2m, modified verge. Singletrack path into Forestry area has grassy margin including Wood Brome

166	Moderate	Damage	Poached path used by horse riders, 3m wide, widening where walkers avoid mud. Grassy margins of Creeping Softgrass, but no nettles etc. Desire lines to hulks
167	Moderate	Damage	Bike tracks on path (path bare with a little litter, grassy margins)
168	Light	Damage	Paths 1m wide, grassy margins, lower impact
169	Moderate	Damage	Some trampling at path corners/short cuts but limited impact, no dens, some desire lines to veteran among oak plantation (retain litter)
170	Moderate	Damage	Desire lines (despite brash/chestnut paling) back to bridleway
171	Light	Damage	Desire lines continue just inside grazing compartment fence
172	Light	Damage	Surfaced track, modified edges with Dandelion, Broad-leaved Dock, White Clover, Creeping Softgrass
173	Light	Damage	Crossroads on Edwinstowe Path.
174	Light	Damage	Well established desire line into grazing compartment
175	Moderate	Damage	Unsurfaced path frequently widens to 3m, exposing roots
176	Light	Damage	Scuffing around low branches of veteran.
177	Light	Damage	Narrow trodden path. Dog faeces
178	Severe	Damage	Wide path around back on Major Oak reaches low fencing on either side, broadens out where fence is absent/at stiles
178	Severe	Damage	
178	Moderate	Damage	Tree climbed on (despite sign) (fenced into path)
179	Light	Damage	Trampling due to picnic benches
180	Moderate	Damage	Bike paths and dismantled jump just of main path

182	Moderate	Damage	Heavily impacted corner with Cow Parsley, Nettle, Deadnettle, Hogweed, Cock's-foot (due to historic management)
183	Light	Damage	Well-worn, narrow desire lines into glade
184	Light	Damage	Wide surfaced path, much less used than around Major Oak. Grassy edges remain intact
185	Light	Damage	Little used track with Creeping Buttercup, Cock's-foot, Cow Parsley, Creeping Softgrass, Dandelion, Timothy Grass, Red Campion, Perennial Ryegrass etc.