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Clumber Park SSSI Recreation Impact Assessment - a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council

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Cover photograph: Clumber Bridge, Clumber Park - © Tim Heaton (cc-by-sa/2.0)

Summary

This report relates to Clumber Park Site of Special Scientific Interest (SSSI) and has been commissioned by Bassetlaw District Council and Newark and Sherwood District Council. The report provides the results of bird surveys (including targeted surveys for 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

- Woodlark were recorded from across the National Trust site, including at multiple localities within the SSSI boundary, equating to approximately 7 to 9 territorial birds/pairs.
- Nightjar were distributed more thinly across the site and were mainly recorded from areas outside of the SSSI boundary. It was estimated that 5 to 6 churring/territorial males were present.
- The presence of 7 to 9 pairs of Woodlark, and 5 to 6 territorial Nightjar, within the National Trust Clumber Park boundary indicate that the locality potentially supports a significant proportion of the populations associated with the Sherwood Forest ppSPA.

Other notable bird species

- 41 other notable bird species, either listed on Schedule 1 of the Wildlife and Countryside Act 1981 or the Red or Amber List of Birds of Conservation Concern, were recorded from the National Trust Clumber Park site.
- Notable bird species were distributed across Clumber Park SSSI and the wider National Trust Clumber Park site, and included rare and declining species susceptible to disturbance, such as Turtle Dove and Lesser Spotted Woodpecker.

Habitats and recreation impacts

- A range of habitats were recorded (and mapped) within Clumber Park SSSI, including semi-natural broad-leaved woodland, plantation woodland, heathland and grassland, marginal vegetation, and ornamental plantings.
- Trampling damage was widespread across the site, and was notable in areas where visitors congregated, such as at Clumber Bridge.
- Trampling of roots and den building were identified as particular issues for the SSSI's veteran trees.
- Damage from car parking and associated trampling was identified as being extreme along Lime Tree Avenue, with attempts already being made to mitigate the former by the National Trust.
- Contamination, particularly from dog faeces, is a major issue across the SSSI.
- Recreation is affecting both woodland and heathland designated features of the SSSI.

- Localised but widespread compaction and associated loss of leaf litter and loss or modification of vegetation is apparent throughout most SSSI units.
- This is likely to be having a detrimental impact on affected veteran trees and their associated invertebrate fauna in particular.
- There is significant localised loss of habitat along Lime Tree Avenue and the loss or modification (though trampling and eutrophication from dog faeces) of path-side vegetation in areas with higher visitor pressure.
- Some small areas however do exist where trampling is increasing the diversity of the sward (with appropriate species) and overall, there are significant areas where the vegetation is little affected by recreational pressure.

Number of visitor interviews and tally counts

- A total of 239 visitor interview surveys were carried out over spring and summer 2021, at 4 survey points spread across the National Trust site.
- 2 survey locations were surveyed in both spring and summer, with 2 others surveyed in only one of either season.
- An approximately equal number of interviews were carried out during the week and at the weekend.
- Tally counts recorded 572 groups in total, comprising 1,233 individuals, across 3 survey locations in the spring, with 478 groups, comprising 1,109 individuals, recorded from 3 survey locations in the summer.
- Survey points along Lime Tree Avenue were generally much quieter than those within the central portion of the National Trust Clumber Park site.

Types of visit and activities undertaken

- The majority of interviews carried out across all survey locations, during both the spring (76.4%) and summer (90.6%) survey periods, were with those who had undertaken a day trip or short visit directly from home that day.
- The exception was at the Lime Tree Avenue North survey point during the spring, at which 59.5% of those interviewed comprised holidaymakers, mostly originating from the nearby caravan site.
- The most frequently recorded main activity across all 4 survey locations across the combined survey periods was walking (56.1% of interviewees), followed by dog walking (26.0%), and cycling/mountain biking (12.2%), with the remaining activities combined comprising approximately 7% of responses.

Visitor behaviour

- Approximately one quarter of all interviewees across all survey locations visited the survey area 1 to 3 times per week, whilst another quarter visited less than once per month.
- Dog walkers were the group who visited the most frequently, with >16% visiting most days or daily, and with a further quarter visiting 1 to 3 times a week.

- Approximately one third of interviewees (33.5%) across all survey locations spent 1 to 2 hours on site, with another third (34.4%) spending 2 to 3 hours on site.
- Of the 3 most commonly represented activity types, dog walkers exhibited the shortest visit duration, with more than half (51.7%) spending 1 to 2 hours on site, and a further 13% spending less than 1 hour.
- The majority of interviewees (57.4%) indicated that they tended to visit equally all year.
- Four fifths (79.9%) of interviewees had arrived by car/van, with most of the remainder (12.7%) having travelled on foot.
- Proximity to home was by far the most commonly given reason for site choice, accounting for 18% of responses. Scenery/variety of views was also important, with membership, familiarity, 'other', and an absence of other people also influential.

Use of other sites

- Approximately a third (30%) of interviewees across all 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.
- A variety of other sites were regularly visited by interviewees, with Sherwood Forest being that most commonly identified across the survey locations.
- 70% of interviewees indicated that they would be likely to use a novel area of local greenspace, with 13.7% suggesting that they would not, and 16.6% suggesting potential use.

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

- Approximately 70% of interviewees across all survey locations and activity types were members of the National Trust, with 11.4% also members of the RSPB.
- Websites were the most frequently used information sources used to plan visits, followed by online or paper map, and smartphone apps.
- Half of interviewees (49.5%) were unable to name any sensitive ecological features present on site, with breeding birds (14.7% of responses), heathland (4.5%), and rare insects and invertebrates (3.8%) those most frequently named.

Visitor origins

- A total of 226 interviewee postcodes were 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 to the east, with smaller clusters located around Manchester and Hull.
- Across all visit types during the spring survey period (138 interviewees) the mean straight-line distance between the interview location and the interviewees home postcode was 34.7km and the median was 18.5km (i.e. 50% of all interviewees during this period had come from a radius of <18.5km around the survey locations).

- The third quartile (75th percentile) distance was 38.5km (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.
- When holidaymakers were removed from the dataset the overall straight-line distances decreased substantially, with the overall spring mean distance being 22.4km, the median 15.1km, and the 75th percentile 27.8km.
- There was still some variation between survey locations, with the Lime Tree Avenue South survey point, in particular, recording larger than average distances.
- Interviewees who visited at least once a week and/or accessed the site on foot were more likely to originate from closer home postcodes than those who visited less frequently and/or accessed the site by car or bicycle.

Routes on site

- The route taken by the majority of interviewees (65.3%) was reflective of their normal route length.
- Previous knowledge/experience of the site was the most frequently provided reason behind route choice (24.5%), followed by time constraints (15.8%), weather conditions (11.2%), the activity undertaken (9.4%), and the presence of a marked trail.
- A total of 239 visitor routes were mapped, with the majority of visitors undertaking routes between 6.4km and 8.0km in length within the Clumber Park boundary.
- Amongst the three most frequently recorded main activity types, cyclists exhibited the longest mean routes (9.0km), with walkers the second longest (6.7km), and dog walkers the third (5.9km).
- Interviewee footfall was concentrated along a circular route around the periphery of Clumber Lake, with pinch points at Clumber Bridge and at Hardwick Grange Weir (to a lesser extent) comprising density hotspots.
- Dog walker density was highest along the circular Clumber Lake route, although the roads and tracks running north-west from Hardwick village, and areas in proximity to Lime Tree Avenue, were also well-used.
- Dog walkers also showed greater evidence of minor track use, and of potentially going 'off piste' in comparison to the other user types.
- Cyclist route density was focussed upon the better maintained/surfaced tracks and roads, with an indication of a larger, potentially circular, route along the southern edge of Clumber Lake, north from Hardwick village, and along Lime Tree Avenue.

Access points

- Peripheral access points in the vicinity of the Normanton Gate, South Lodge, and to the east of Truman's Lodge were those most frequently used.
- Few visitors accessed the site via Apleyhead Lodge, or via other points in the study area's northernmost apex, in closest proximity to the location of the proposed Bassetlaw Garden Village.

Views on site management

- Suggestions from interviewees concerning potential improvements to the 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, additional seating, improved access and path maintenance, fewer people, and conflict between user groups.
- Many people enjoy the peace and quiet on site, and generally like what the National Trust is doing in terms of management.
- There were some complaints about the admission price, and parking provision and access were also key themes, with parking management on Lime Tree Avenue, in particular, singled out for both positive and negative responses.
- A small proportion of respondents did not like the Longhorn cattle, and conflict with other site users (cyclists in particular) was also identified as an issue.

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 site.
- Enrichment from dog faeces and urine is another key impact, with dog walkers particularly prevalent within areas in proximity to Lime Tree Avenue.
- A major issue for the SSSI is damage caused to veteran trees, including that arising from the building of dens in proximity to them.

Recreation Impacts on breeding birds

- Impacts resulting directly from recreation are potentially relatively minimal for the bird species associated with dense scrub and woodland.
- Ground nesting species are however more susceptible to disturbance, and potentially predation by dogs, arising from recreation.
- Nightjar on site appear to currently favour less heavily utilised areas of National Trust Clumber Park. As such, there is potential for any increase in footfall within these areas to have a negative impact upon the birds present.
- Woodlark are more widely distributed across the SSSI and are therefore more susceptible to visitor mediated disturbance.

Changes in housing numbers and visitor rates

- The majority of new housing detailed in the Bassetlaw Local Plan is located within 7.5km of the Clumber Park SSSI boundary, with a large component comprising the 500 properties within Bassetlaw Garden Village.
- 17% of the new housing identified in the Newark and Sherwood Local Plan (comprising 1,487 dwellings) is located within 7.5km of the SSSI boundary.
- In the absence of mitigation, it is predicted that there will be an increase in visitor use of 55% within the SSSI compared to current use (i.e. at the time of survey) as a result of the increase in dwellings from the allocations in the Bassetlaw and Newark and Sherwood Local Plans.

- 9% of this increase is attributable solely to Bassetlaw Garden Village.

Recreational Zone of Influence

- Clumber Park receives visitors from a wide area and many people are travelling some distance to access the site. The nearby motorway facilitates the ease of accessing the site and it has a regional draw.
- Using only the three most frequent activity types (walkers, dog walkers, and cyclists), and those who visit at least once a month, a recreational Zone of Influence of 24.7km 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 Strategic Access Management and Monitoring (SAMM) and Suitable Alternative Natural Greenspace (SANG)/infrastructure projects away from the SSSI. 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 SSSI to address recreation impacts and make them more resilient to increased recreation. SAMM could comprise:
    - Management of paths to limit desire lines and focus use on particular paths that are appropriately managed;
    - Fencing of key areas of ecological importance;
    - Increased staff presence and wardening resource;
    - Additional resources for signage and interpretation relating to visitor behaviour and sensitive features (such as 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;
    - Measures to address contamination (particularly dog fouling);
    - Parking and travel related measures to influence the distribution of visitors; and
    - Monitoring.
- Any SANG/infrastructure project would dovetail with SAMM in providing additional space for recreation and realistic alternatives to Clumber Park SSSI.
- With SAMM in place, visitors would become more aware of their impacts and access would be better managed, with some visitor use deflected away from the SSSI entirely.

1. Introduction

Overview

1.1 This report was commissioned by Bassetlaw District Council and Newark and Sherwood District Council and is an evidence document to support the emerging Bassetlaw Local Plan.

1.2 The report (and associated survey work), as well as the separate Recreation Impact Assessment of Birklands & Bilhaugh SAC/Sherwood NNR (Saunders et al., 2022), and the earlier review of available historic ecological and recreation data for the two sites (Saunders and Liley, 2021), has been reviewed 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 Clumber Park SSSI, the findings of which will inform the preparation and implementation of the Bassetlaw District Council Draft Local Plan. The latter includes proposals for a new Garden Village in close proximity to Clumber Park and employment allocations at nearby Apleyhead. The report has informed the Habitats Regulations Assessment of the Local Plan, and will help 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 Birklands & Bilhaugh SAC/Sherwood NNR (Saunders et al., 2022).

Aims of this work

1.5 This report has been commissioned in order to collect: (a) information on the distribution of notable bird species (including Nightjar and Woodlark) within the study area; (b) the distribution of habitats within Clumber Park SSSI 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 housing development might result in recreation impacts for Clumber Park SSSI. This includes the production of a recreational Zone of Influence for the SSSI and an assessment of potential increases in visitor numbers resulting from Local Plan allocations.

1.7 The implications are then discussed with respect to housing and mixed use allocations in both the Bassetlaw and Newark and Sherwood Local Plans, including those allocations sited in close proximity to the site along with detailed recommendations, where relevant, to minimise the impacts of any increased levels of recreation access resulting from the Local Plan allocations.

Other reports

1.8 The work forms part of a series of reports that relate to understanding the impacts of new housing 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 & Liley, 2021).

2. Methodology

2.1 This report details the results of a variety of surveys carried out within Clumber Park SSSI in spring and summer 2021, comprising:

- Breeding bird surveys (including targeted surveys for Nightjar *Caprimulgus europaeus* and Woodlark *Lullula arborea*);
- Habitat mapping; and,
- A recreation impact assessment walkover, and two tranches of visitor interview surveys.

2.2 Note that all survey work was carried out against the backdrop of the Coronavirus pandemic. Please refer to Paragraphs 7.38 to 7.40 for more information.

Study area

2.3 The study area comprises the full extent of the National Trust's Clumber Park site, which includes the entirety (of the smaller) Clumber Park SSSI. The site is located within west central Nottinghamshire, to the south-east of Worksop, in the Bassetlaw District Administrative area (see Map 1). It incorporates a range of woodland, heathland, arable, and wetland habitats, and the National Trust site is a well-known and popular visitor destination.

Breeding bird surveys

2.4 Monthly breeding bird survey visits were carried out by experienced ornithological surveyors between April and June 2021, along the 9 transect routes identified in Map 2. The transects comprised fixed lines across the survey area along which observations were made. The locations and routes of the transects mirrored those used by Tyler Grange during their 2013 surveys carried out on site, and included in the Appendices of the Clumber Park – Parkland Conservation Plan (Askew Nelson Ltd, 2014). 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).

2.5 During each survey visit the transects were walked at a steady pace, and all birds observed or heard, including those overflying the study area, were identified to species and 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 later in the spring was noted.

Woodlark

2.6 An additional survey visit was made to the study area in March 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. The March survey visit specifically targeted areas of suitable habitat identified from aerial photographs, historical records, and following consultation with National Trust staff (see Map 3). All of these key areas were subsequently incorporated within the transect routes used during the April to June breeding bird surveys on site.

Nightjar

2.7 Nightjar are a late-season 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 three transect routes identified in Map 3, with the first visit undertaken at the start of June and the second at the end of the month. The transect routes again specifically targeted areas of suitable habitat identified from aerial photographs, historical records, and following consultation with on-site National Trust staff.

2.8 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

2.9 Habitat mapping was solely carried out within the Clumber Park SSSI boundary and was based upon the previous mapping exercise carried out on site by the National Trust in 2011 (National Trust - National Consultancy, 2012). The map produced as part of that work was reassessed during the recreation impact assessment walkover (see section 2.10), with the habitats classified using UK Habs[1] categories and minor amendments made, as required, to ensure that the map reflected the current distribution and extent of the habitat types present.

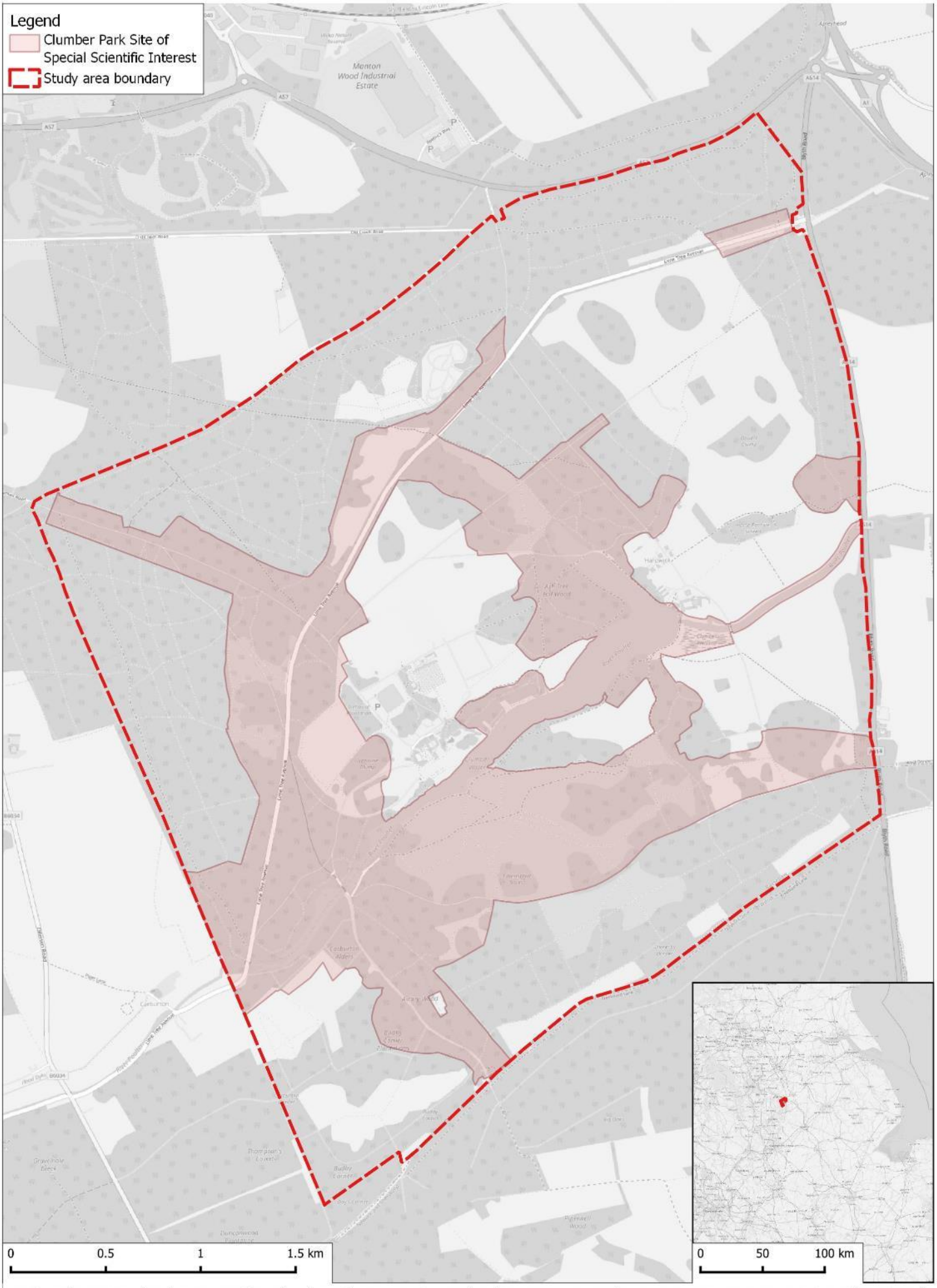
[1] UK Habitats Classification - https://ukhab.org/

Recreation impact assessment walkover

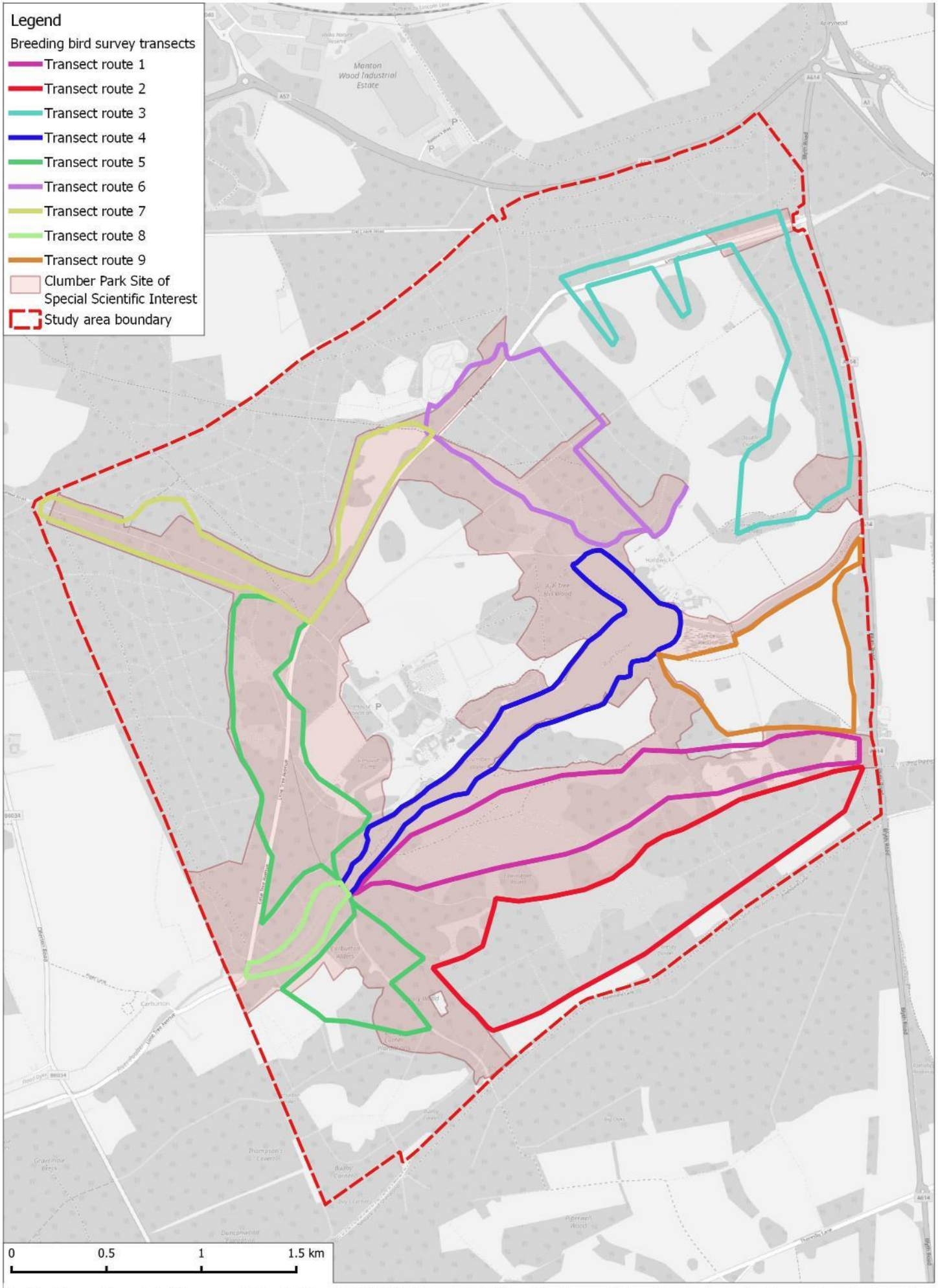
2.10 A walkover survey was carried out within the Clumber Park SSSI boundary in May 2021. As much of the site as possible was covered during this period, and instances of recreational pressure mapped and recorded and the severity of the impact noted (light, moderate, severe), using our standard approach.

2.11 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 where those where there was widespread loss of vegetation and compaction (not just confined to a path), for example at honeypot areas (such as beside Clumber Bridge).

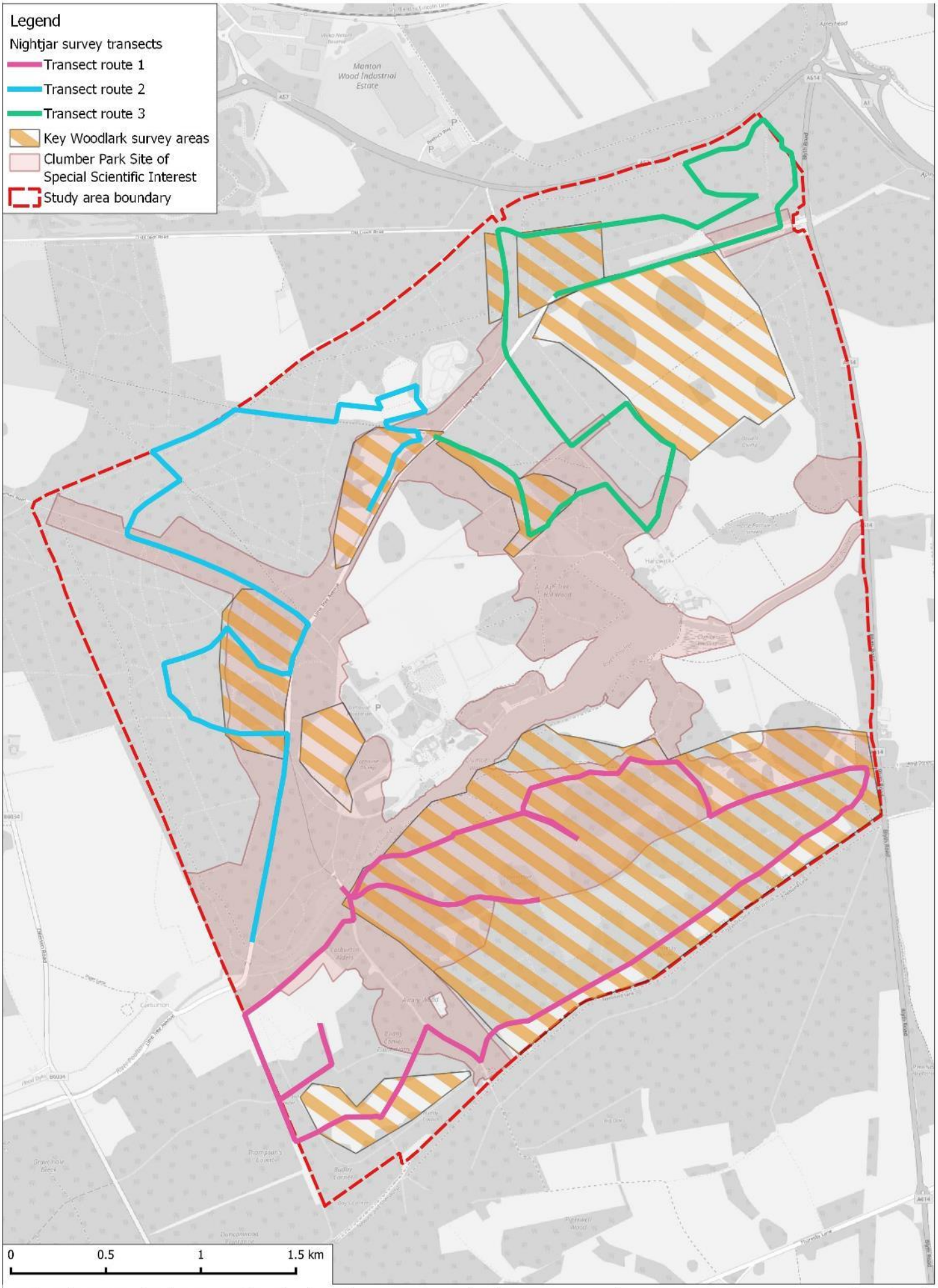
Map 1: Study area (inset provides wider geographic context)



Map 2: Breeding bird survey transect locations



Map 3: Key Woodlark survey areas and Nightjar survey transect locations



Visitor surveys

2.12 Visitor interviews and tally counts were carried out at 4 survey locations within the Clumber Park study area (see Table 1 and Map 4) in 2021, during two separate survey periods. The first of these was in the spring during school term time (20th May to 13th June) and the second during the summer school holiday period (5th August to 18th August).

Table 1: Survey locations (also see Map 4)

Location number & name	Location details	Periods surveyed
1 – Lime Tree Avenue North	Alongside access gate on northern flank of Lime Tree Avenue, due south of caravan park.	Term time only
2 – Hardwick Grange Weir	Confluence of paths immediately north of weir, in proximity to toilets, pop up café, and Hardwick Grange.	Term time & school holidays
3 – Clumber Bridge	Immediately south of Clumber bridge, prior to path/road splitting.	Term time & school holidays
4 – Lime Tree Avenue South	Alongside access gate on western flank of Lime Tree Avenue, south of NT Clumber Park main vehicular entrance.	School holidays only

2.13 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. The location of all survey locations was reviewed and agreed with Bassetlaw District Council and the National Trust.

2.14 Survey Points 2 and 3 were surveyed in both spring and summer 2021, whilst Survey Point 1 was only surveyed in the spring, with the latter Survey Point relocated to Survey Point 4 for the summer survey period. This relocation was undertaken due to: (1) planned (but ultimately non-occurring) National Trust alterations to parking provision on road verges at the locality, and: (2) the prevalence of interviewees from the nearby Clumber Park Caravan Club site in the spring interview survey dataset.

2.15 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 (under 18 year olds), and dogs passing through the site across the interview survey period recorded.

2.16 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.

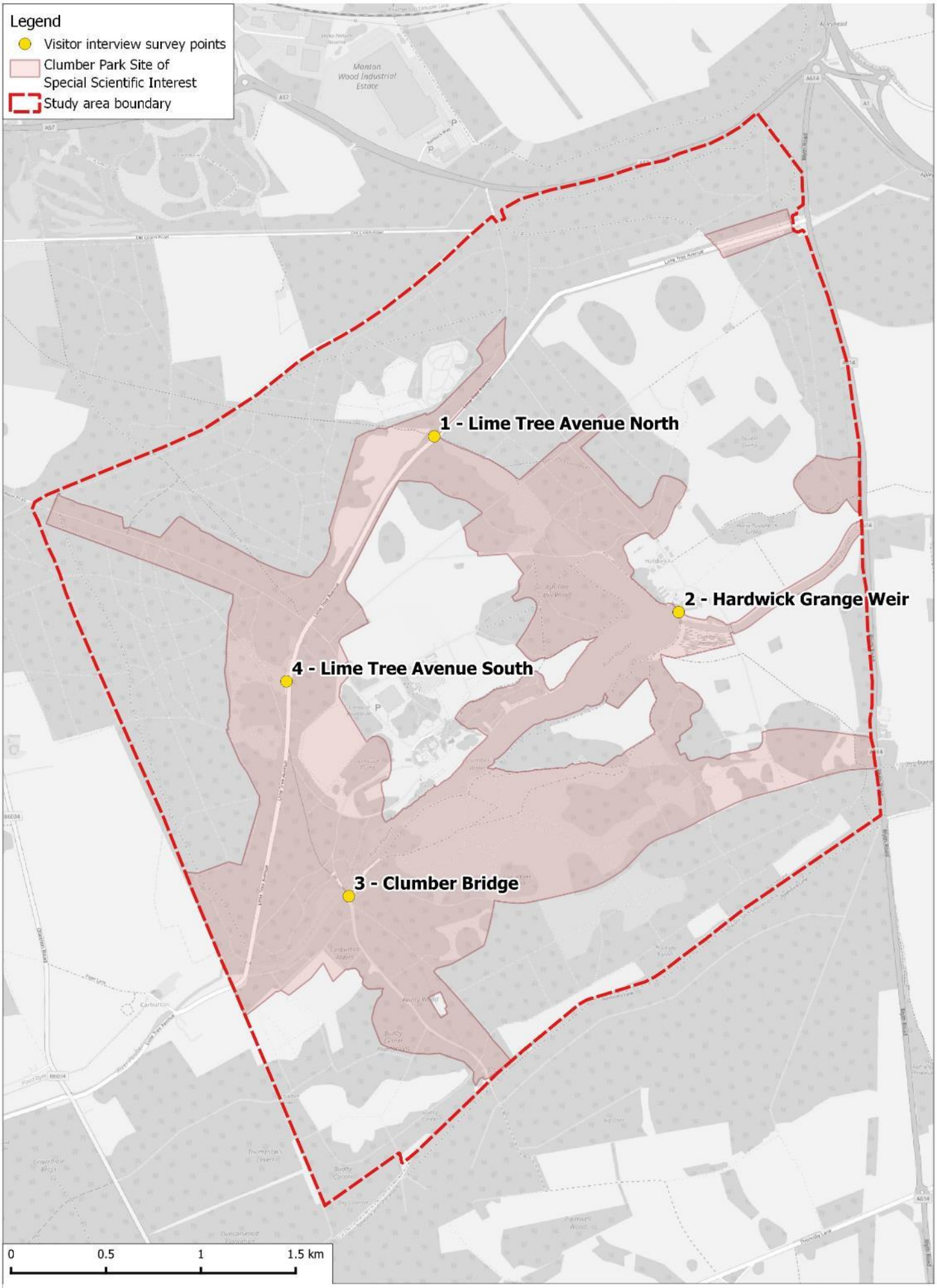
2.17 Surveys were conducted on tablets hosting SNAP[2] survey software, a dedicated market research software which allows surveys to be done on mobile devices. The software allowed the questionnaire to be tailored, e.g. only asking dog-walkers about dog related behaviour. A GPS facility ensured that the surveyor was standing in the correct place, and each questionnaire took less than, or approximately, 10 minutes to complete.

2.18 Interviewees were also asked to identify the route they had taken whilst undertaking their specific recreational activity 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.

2.19 The surveyors spent 16 hours at each of the 4 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.

[2] https://www.snapsurveys.com/

Map 4: Visitor interview survey locations



Modelling changes in housing and visitation

Changes in housing numbers

2.20 The level of housing increase in the area surrounding Clumber Park SSSI, as a result of allocations detailed the Bassetlaw and Newark and Sherwood Local Plans, was assessed using a national postcode database. This allowed the total number of existing residences surrounding the SSSI to be extracted using concentric buffers drawn at 500m intervals (out to 30km).

2.21 Bassetlaw District Council and Newark and Sherwood District Council provided GIS shapefiles of the relevant allocations detailed in their respective Local Plans. These comprised "DPD_Allocations_Ho", "DPD_Allocations_Mu_H", "NAP2" and "ShAP4" from Newark and Sherwood and "Garden Village", "Mixed use allocation", and "New Housing" from Bassetlaw. Points representing the relevant proposed maximum number of dwellings within each of the allocations, using information in the relevant Local Plan, were then randomly distributed within their respective boundaries (with a minimum of 10m between each dwelling).

2.22 We then used the same concentric 500m buffers to extract the number of new residences within them resulting from allocations in the two Local Plans. The percentage increase in housing in each of the 500m bands as a result of the allocations was then calculated using the two extracted datasets.

Changes in visitation

2.23 The home postcode data collected from interviewees was used to model potential changes in visitor rate to the survey area resulting from residential allocations detailed in the Bassetlaw and Newark and Sherwood Local Plans.

2.24 The number of interviewees recorded in an area relative to the level of housing can be used to assess the 'visit rate' in relation to distance from the site. Visit rates decrease with increased distance from the site (i.e. people who live close to sites are more likely to visit them), although the slope of this relationship, when presented graphically/statistically, often differs between locations and describes variation in their relative draw.

2.25 We again used the national postcode database to extract the total number of existing residences surrounding each survey point (extracting information using concentric rings drawn at 500m intervals around each point, out to 30km). We then extracted the number and location of all interviewee residences surrounding each respective survey point. This allowed us to calculate the number of interviewees

(from 16 hours of survey) per household (i.e. the visit rate). These rates were then plotted in increasing distance bands from the survey point, with a curve then manually fitted to describe the relationship shown (i.e. how the visit rate at each survey location changed with distance).

2.26 The fitted curves for the interview survey postcode data were then used to predict the potential increase in visits for the combined allocations, and for the proposed Bassetlaw Garden Village in isolation, based upon distance from the different survey points.

3. Breeding bird survey results

Overview

3.1 A total of 80 bird species were recorded during the bird surveys carried out within the Clumber Park study area between March and June 2021, with 41 of these comprising notable species (see Table 2). The latter have been identified via either their inclusion on Schedule 1 of the Wildlife and Countryside Act 1981[3] and/or their identification as a Bird of Conservation Concern (BoCC)[4]. The BoCC species showing the greatest level of decline/threat are identified on the Red List, with those species subject to a slightly lower level of concern identified on the Amber List.

3.2 The approximate location of Nightjar and Woodlark territories (see Map 5a) 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 on the South Lawn) was far from straightforward, and the territories presented in Map 5a are considered precautionary.

3.3 Map 5b shows the distribution of all notable bird records in relation to the boundaries of both the study area and the Clumber Park SSSI boundary. Maps detailing the exact locations of the individual bird species recorded, grouped by habitat/taxon, are provided in (confidential) Appendix 2.

Species distribution within the study area

Woodlark and Nightjar

3.4 Woodlark were recorded from across the study area (see Map 5a), including at multiple localities within the SSSI boundary, equating to approximately 7 to 9 territorial birds/pairs. Woodlark were regularly recorded across the South Lawn (where a pair was observed visiting a nest site), and within the extensive clearfell

[3] Schedule 1 – Wildlife and Countryside Act 1981
[4] Birds of Conservation Concern

areas located to the south of there. Birds were also recorded from acid grassland/heathland areas to the north and south of Lime Tree Avenue, south of Clumber Bridge, and along the south-eastern border of the study area. There was an indication that singing males were present within optimal areas of acid grassland/clearfell habitat early in the year, prior to potentially moving to sub-optimal sites away from visitor and grazing pressure as the spring went on.

3.5 Nightjar were distributed more thinly across the study area (see map 5a) and were mainly recorded from areas outside of the SSSI boundary. It was estimated that 5 to 6 churring/territorial males were present over the spring, with records concentrated within four main locations within the study area. These comprised birds on territory along Clumber Lane, north of Apleyhead Lodge (in the extreme northern corner of the study area), in Budby Corner Plantation (in the southern extremity of the study area), and along the study area's south-eastern perimeter. Birds were recorded from areas of acid grassland/heathland, along woodland rides, and in areas of clearfell.

Other notable species

3.6 Other notable bird species were found across Clumber Park SSSI, as well as in adjacent areas of arable, woodland, and acid grassland/heathland habitat outside of the SSSI boundary (see Map 5b). Only two of the species recorded (Lesser Spotted Woodpecker and Yellow Wagtail) were not recorded within the SSSI boundary. It should be noted that the apparent absence of notable bird species records from within woodland areas situated north and west of the SSSI boundary, and in the central section of the study area (also outside the SSSI), reflect the absence of survey transects within those areas rather than an absence of birds.

3.7 Species associated with mixed scrub and/or mature woodland habitats, such as Bullfinch, Dunnock, Mistle Thrush, Song Thrush, Stock Dove, and Tawny Owl, were recorded from widespread localities across the study area and within the SSSI boundary.

3.8 Cetti's Warblers (a minimum of 5 singing birds) and Reed Buntings were only found within riparian habitats in proximity to Clumber Lake and the River Poulter in the easternmost section of the SSSI. All waterfowl were similarly restricted to the environs of the lake and river, with Gadwall and Oystercatcher pairs present early in the spring, but with no broods seen subsequently.

3.9 Cuckoo were predominantly recorded in the southern half of the study area, both in and outside the SSSI boundary, with concentrations within, and to the south of, the South Lawns area. Hawfinch were recorded during every visit, mostly around

the cafe 'courtyard', but also flying over South Lawns, and in the south-western corner of the study area. House Martins were also largely associated with National Trust buildings, whilst House Sparrows were only recorded in proximity to Hardwick village.

3.10 Lesser Spotted Woodpeckers were recorded along Lime Tree Avenue in June and were reported from the vicinity of Clumber Bridge earlier in the spring. Spotted Flycatchers (4 or 5 territories in total) were frequently recorded at the southern end of Sharp's Hill at the eastern extent of the study area, and at disparate points along Lime Tree Avenue, as well as at isolated localities in the south. Willow Warblers were widespread within suitable habitat across the study area and SSSI, whilst Tree Pipits were largely concentrated within the remaining areas of heathland and acid grassland. Two family parties of Marsh Tits were noted within the SSSI boundary during June, with four Redstart territories also spread across the SSSI (and with fledged juveniles noted in June).

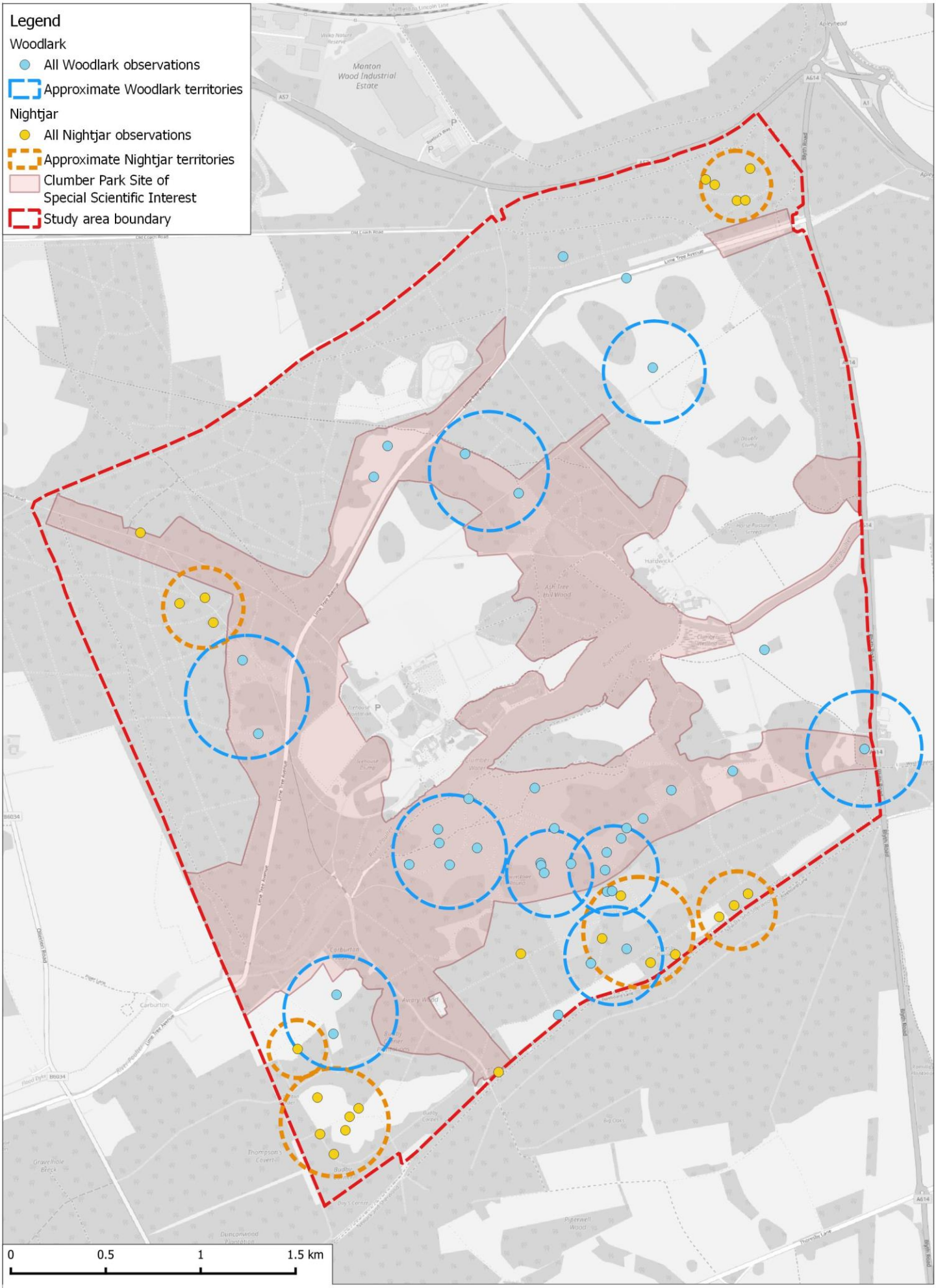
3.11 Skylark were predominantly recorded from arable areas outside of the SSSI boundary in the eastern half of the study area, and up to three Yellowhammer territories were noted in the vicinity of the South Lawns and at the north-western end of Clumber Lane. Woodcock were widespread in all wooded areas on site, with multiple birds seen during each Nightjar survey visit.

3.12 Finally, two male and a single female Turtle Dove were seen at a single location south of the South Lawns (in young forestry) in May, with a singing male recorded at a different location in the north of the study area (again within young forestry) in June. According to local birdwatchers, there were only two other males recorded across the Dukeries in spring 2021, making Clumber Park an important site for this rapidly declining species.

Table 2: Notable species recorded within the Clumber Park study area during 2021 breeding bird surveys. Red highlighted rows comprise Red Listed Birds of Conservation Concern, and orange highlighted rows comprise Amber Listed Birds of Conservation Concern.

Species	Scientific name	Schedule 1 WCA	Recorded within SSSI boundary
Barn Owl	*Tyto alba*	✓	
Bullfinch	*Pyrrhula pyrrhula*		✓
Cetti's Warbler	*Cettia cetti*	✓	✓
Crossbill	*Loxia curvirostra*	✓	✓
Cuckoo	*Cuculus canorus*		✓
Dunnock	*Prunella modularis*		✓
Gadwall	*Mareca strepera*		✓
Greylag Goose	*Anser anser*		✓
Hawfinch	*Coccothraustes coccothraustes*		✓
Hobby	*Falco subbutea*	✓	
House Martin	*Delichon urbicum*		✓
House Sparrow	*Passer domesticus*		✓
Kestrel	*Falco tinnunculus*		✓
Kingfisher	*Alcedo atthis*		✓
Lesser Black-backed Gull	*Larus fuscus*		✓
Lesser Redpoll	*Acanthis cabaret*		✓
Lesser Spotted Woodpecker	*Dryobates minor*		
Linnet	*Linaria cannabina*		✓
Mallard	*Anas platyrhynchos*		✓
Marsh Tit	*Poecile palustris*		✓
Mistle Thrush	*Turdus viscivorus*		✓
Mute Swan	*Cygnus olor*		✓
Nightjar	*Caprimulgus europaeus*		✓
Oystercatcher	*Haematopus ostralegus*		✓
Redstart	*Phoenicurus phoenicurus*		✓
Reed Bunting	*Emberiza schoeniclus*		✓
Shelduck	*Tadorna tadorna*		
Skylark	*Alauda arvensis*		✓
Song Thrush	*Turdus philomelos*		✓
Spotted Flycatcher	*Muscicapa striata*		✓
Starling	*Sturnus vulgaris*		✓
Stock Dove	*Columba oenas*		✓
Swift	*Apus apus*		✓
Tawny Owl	*Strix aluco*		✓
Tree Pipit	*Anthus trivialis*		✓
Turtle Dove	*Streptopelia turtur*		✓
Willow Warbler	*Phylloscopus trochilus*		✓
Woodcock	*Scolopax rusticola*		✓
Woodlark	*Lullula arborea*		✓
Yellow Wagtail	*Motacilla flava*		
Yellowhammer	*Emberiza citrinella*		✓

Map 5a: Distribution of Woodlark and Nightjar territories



Map 5b: Distribution of other notable bird species

4. Habitats and recreation impacts

Habitats present within study area

4.1 The habitats recorded within the Clumber Park SSSI boundary are depicted in Map 6. They include a mix of semi-natural broad-leaved woodland (including old wood pastures with secondary regrowth), broad-leaved and coniferous plantation, open areas of heathy grassland, open standing water with marginal tall herb vegetation and modified habitats within the pleasure grounds. There is also an area of wetland that was not visited due to inaccessibility for both surveyors and visitors. The habitats corresponded well to those described in the 2011 survey in general, although it was noted that fewer ephemeral species characteristic of shorter grassland swards were present.

Semi-natural broad-leaved woodland

4.2 Much of Clumber Park SSSI is characterised by mature semi-natural broad-leaved woodland. Varying management over the centuries has resulted in a patchy structure with various areas of plantation and secondary woodland that has grown up around ancient and mature trees. The woodlands largely comprise oaks (both native species), Sycamore and birches with Beech, Sweet Chestnut, Scots Pine, Yew and occasionally Small-leaved Lime in places. The understory often comprises young trees, although some areas, such as The Knob have a more distinct understory of Holly and Bird Cherry. In general, the ground flora is dominated by Bracken and Bramble with Honeysuckle, also some Nettle, Herb Robert, Wood Avens etc, although there are some limited areas with a Bluebell dominated ground flora. Wetter areas along the river and around the lake support willows, Alder and Ash.

Plantation woodland

4.3 Areas of plantation woodland are common throughout and are in some places difficult to distinguish from natural regeneration (and support a similar ground flora). Other areas are more uniform with stands of conifers or Beech and in some places the ground flora is more modified with species such as Snowberry and Rhododendron.

Heathland and Grassland

4.4 Open areas tend to be heathy with a fairly thick sward of generally lightly grazed Common Bent, Sheep's Sorrel, Mat Grass and Wavy Hair-grass with typical acid grassland herbs such as Sheep's Sorrel, Heath Bedstraw and Common Cat's-ear and, in some places, patches of Heather. There are usually scattered clumps of trees and south of the Lake there are large veterans, including oaks, Beech and Sweet Chestnut. The more diverse swards with small ephemeral species, such as Little Mouse-ear, Annual Knawel, Thyme-leaved Sandwort and Common Cudweed, mentioned in the 2012 survey were not observed in 2021. More nutrient rich patches support Yorkshire Fog, White Clover and Dandelion.

Grassland - road verges

4.5 On the whole the grassy road verges are relatively species poor, particularly where impacted by car parking along Lime Tree Avenue, with Perennial Ryegrass, White Clover, Creeping Buttercup and plantains present and frequent bare, compacted, areas under a double avenue of hybrid Lime that form a closed canopy. Where undamaged, the verges are more diverse, with species such as Bluebell, Sorrel, Dandelion, Rough Meadow-grass, Meadow Vetchling, Common Vetch, Germander Speedwell, Chickweed, Self-heal, Creeping Bent, etc. In some areas there are more neutral patches with Cowslip, Common Knapweed and Lady's Bedstraw (e.g. at Apley Head).

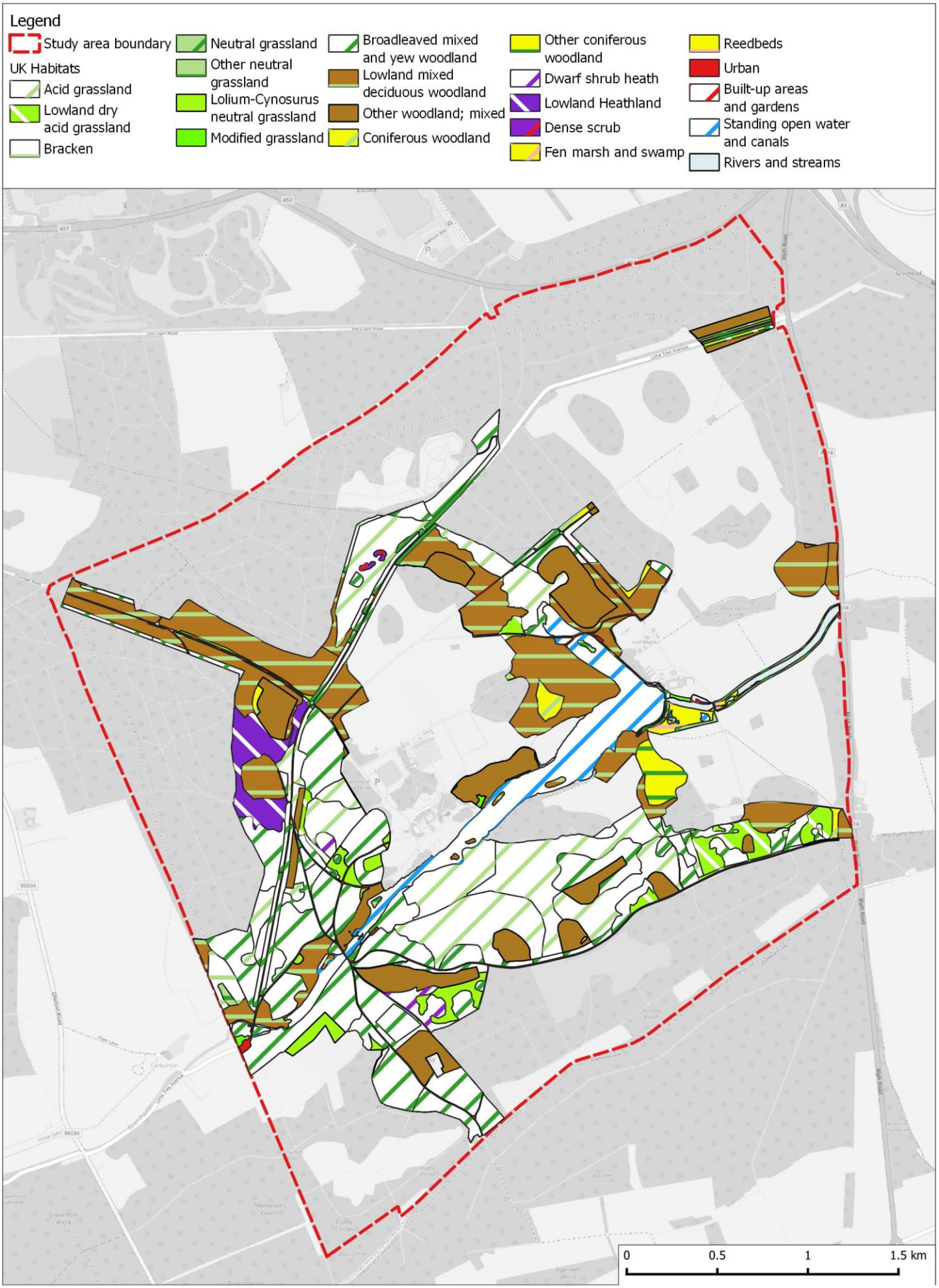
Marginal vegetation

4.6 Much of the shoreline of Clumber Lake supports natural vegetation with pond sedges, Common Reed, Anglica, Watermint, Trifid Bur-marigold, Bittersweet, Yellow Flag, etc, although these are absent where hard engineering has taken place (e.g. in the pleasure grounds) and where visitor pressure is particularly intense (e.g. Clumber Bridge).

Pleasure Grounds

4.7 The SSSI also includes part of the pleasure ground, which are manged as gardens, and incorporate ornamental species, including Rhododendron with oaks, Sweet Chestnut, Lime, Yew, Cedar and firs.

Map 6: UK Habitats classification of Clumber Park SSSI



Recreation impacts on habitats

Overview

4.8 The route taken during the recreation impacts walkover within Clumber Park SSSI, and the location of any recreation and habitat target notes made, are depicted in Map 7. Table 3 provides a summary of the observed recreational impacts on habitats at Clumber Park SSSI. Further background and context on these recreation impact pathways is set out in the earlier review report (Saunders & Liley, 2021).

4.9 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. The wetland habitats have been excluded as there is no permitted public access and no indication of recreational impacts. The observed recreation impacts are described more fully below, with detailed target notes provided in Appendix 3.

Map 7: Recreation impacts walkover route

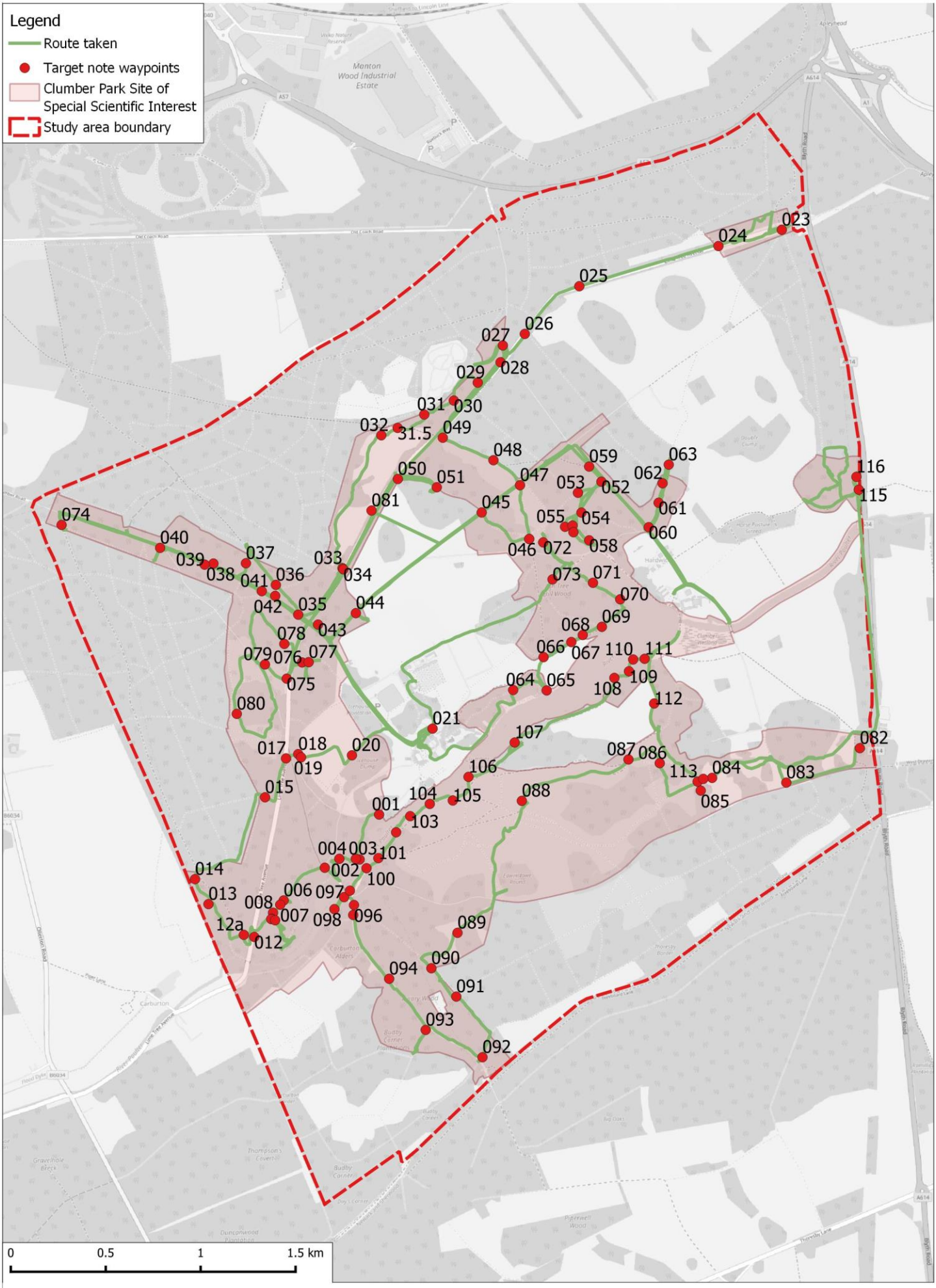


Table 3: Summary of recreational impacts on habitats of Clumber Park SSSI.

Habitat	Fire	Trampling	Physical Damage	Contamination
Heathy acid grassland	Not observed	Localised reduction in sward height/loss vegetation, decreased or changes species composition, soil compaction, particularly on road verge	Not observed	Eutrophied path edges (replacement of characteristic heathland vegetation)
Mixed woodland	(Very localised, no impact)	Loss of ground flora and leaf litter habitat plus compaction (inc. around veteran trees)	Damage to exposed roots of veteran trees; incised graffiti (rare); localised interference with deadwood habitat to create dens etc	Eutrophied path edges (replacement of characteristic woodland ground flora); occasional rubbish
Plantation	Not observed	Loss of ground flora and leaf litter habitat plus compaction (inc. around veteran trees)	Damage to exposed roots of veteran trees; incised graffiti (rare)	Eutrophied path edges (replacement of characteristic woodland ground flora)
Standing Freshwater	N/A	Localised loss of marginal vegetation at honeypots and points where dogs access the water	Not observed	Not observed

Fire

4.10 There was little evidence of damage from fire at the time of the survey. The remains of a campfire were recorded on a path at point 15 near Westfield Wood, which caused little damage.

Trampling

4.11 Trampling damage was widespread across the site and particularly notable in areas where visitors concentrate such as around Clumber Lake, for example at Clumber Bridge (point 99). Here trampling has destroyed vegetation (woodland ground flora and marginal lakeside vegetation) and caused erosion of the banks where dogs enter the water. Trampling damage is particularly striking under the Lime avenue, near access points. Elsewhere, trampling damage varied from a reduction in sward height and some limited changes in species composition (such as in the acid grassland at point 105 on South Lawn) to the complete loss of vegetation along paths and around features of note.

4.12 This is a particular issue around veteran trees, which were often bare of vegetation and leaf litter under the canopy and appeared compacted (e.g. point 66), which may affect the long term health of the trees, for example through affecting mycorrhizal associates. In several places, dens have been built, usually under a dense canopy where the ground flora is naturally more sparse. These dens then appear to attract visitors, resulting in the loss of vegetation and leaf litter and in compaction. In general, the woodland ground flora is typically dominated by Bracken and Bramble, so there is not a significant impact on species composition, but areas with a vernal flora (such as Bluebells) may be more impacted. Path widening was evident in many places (thought to be a result of social distancing during the Covid pandemic) (e.g. at point 64, which although in the pleasure gardens, falls within the SSSI).

4.13 Cycling is promoted at Clumber, with a Bike Hub and downloadable trail maps, covering 20 miles of open trails[5] and 5 miles of lakeside trails[6] in addition to two bridleways. However, bikes are not permitted off these trails and Public Rights of Way. Nonetheless, there was evidence of bike use on almost every path, and informal bike routes had been created by riders in several locations, particularly where there was an element of topographical variety (such as at point 116 on the Knob, or point 58 near Clumber Lake in Hardwick Woods). An attempt at building

[5] https://nt.global.ssl.fastly.net/clumber-park/documents/clumber-park-cycle-routes-map.pdf
[6] https://nt.global.ssl.fastly.net/clumber-park/documents/enjoy-over-5-miles-of-lakeside-cycle-trails.pdf

bike jumps was noted in the wood pasture grazing unit by the Clumber Park Caravan and Motorhome Club Campsite (point 31).

4.14 In this category, we have included loss of vegetation and compaction caused by cars. This is a striking feature of much of Lime Tree Avenue, with damage from car parking apparent wherever access by cars is feasible, with additional damage from pedestrian trampling. For example, point 49 (1km north of the main entrance) where the grassy ground flora under the shade of the trees is absent and the soil heavily compacted, or point 75, south of the entrance towards Carburton Hills, where heathy vegetation and acid grassland has been almost completely lost from extensive areas. These areas can be compared with nearby verges that are not used for parking such as an untrampled verge on Clumber Lane and a fenced off heathy area near point 75 (see images). The installation of low-level timber posts by the National Trust, as part of ongoing mitigation to prevent parking along stretches of Lime Tree Avenue, was also noted.

Other physical damage

4.15 Physical damage was recorded in numerous places where trampling has resulted in soil erosion and the exposure of tree roots (e.g. at point 55, where bankside erosion and the loss of marginal plants is also evident), or where roots at the base of tree trunk have been rubbed bare of epiphytic plants (e.g. the Beech veteran also on Clumber Lane, point 39). There were also occasional instances of graffiti cut into tree trunks (e.g. point 9, near Nursery Wood).

4.16 The building of dens can be damaging as it results in the removal of deadwood from the ground, reducing habitat for saprophytic invertebrates and fungi that require damp conditions and contact with the ground. Dens are present at multiple localities through the woodland areas, particularly near paths and where the ground flora is reduced.

Contamination

4.17 Contamination is an issue throughout the site, particularly from dog faeces. The vegetation lining the majority of paths is modified and includes species characteristic of eutrophic conditions, including Nettle, but also grass species within woodlands (e.g. at point 61, just north of Hardwick Village). In the more nutrient poor acid grassland/heath areas, replacement of characteristic acid grassland species with others such as such as Daisy and Perennial Ryegrass indicate unwanted nutrient-enrichment (also trampling).

4.18 Litter (rubbish) was not a widespread problem at the time of the walkover survey, with only a couple of significant instances noted.

Point 15, campfire remains

Point 58, bike track

Point 99, severe trampling

Point 116, bike track

Point 105, tramping parallel to path

Point 31, bike jumps

Point 66, trampling around trees and dens

Point 49, severe compaction (avenue)

Point 49, grassy verge with no impact

Point 75 severe compaction (heath)

Point 75 heathy verge with no impact

Point 55, exposed roots, erosion and loss of marginal vegetation

Point 39, damage to roots of veteran tree, Clumber Lane

Point 9, graffiti damage

Point 61, eutrophied verges

Recreation impacts in relation to SSSI features

4.19 Table 4 lists the SSSI units, summarises the latest condition assessment undertaken by Natural England, and provides details of recreational impacts observed during the 2021 survey. Map 8 details the location of the individual SSSI units.

4.20 Recreation is affecting both woodland and heathland designated features. However, in general, there is no direct relation between the failed targets in Natural England's condition assessment (which is a broad-brush assessment, not necessarily designed to pick up specific recreation impacts) and the recreational impacts within the woodland units (e.g. age class of trees, standing and attached deadwood, nectar sources). However, this does not mean that recreational impacts are not negatively impacting the site – localised but widespread compaction and associated loss of leaf litter and loss or modification of vegetation is apparent throughout most units and is likely to be having a detrimental impact on affected veteran trees and their associated invertebrate fauna in particular.

4.21 Similarly, failed targets within heathland areas relate to wider management issues such as grazing, scrub encroachment etc. Nonetheless, there is significant localised loss of habitat along Lime Tree Avenue and the loss or modification (though trampling and eutrophication from dog faeces) of path-side vegetation in areas with higher visitor pressure. There are, however, small areas where trampling is increasing the diversity of the sward (with appropriate species) and overall, there are significant areas where the vegetation is little affected by recreational pressure (e.g. much of South Lawn).

Table 4: Summary table of the condition of SSSI units (drawn from Natural England's condition assessment[7] (dated 2009 for units in favourable condition and 2020 for other units) and recreational impacts observed during the 2021 survey.

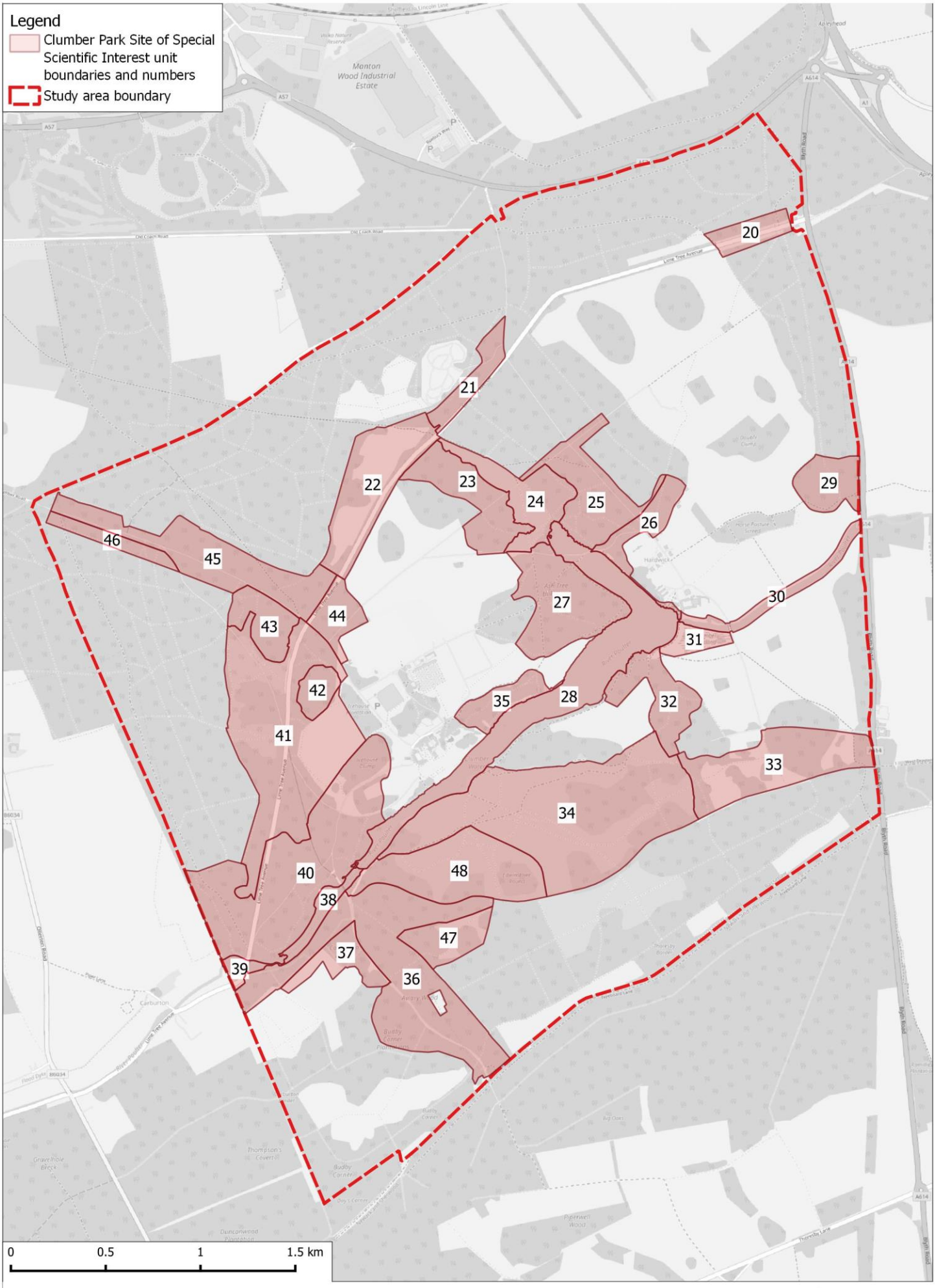
Unit no.	Condition and reasons targets not met	Summary of negative recreational impacts	Summary of positive recreational impacts	Relevance to condition status
20	Lowland acid grassland: favourable	Verge parking resulting in loss of vegetation.		Localised impact. In general, this unit provides an example of healthy roadside grassland
47	Lowland acid grassland: unfavourable recovering. Lack of positive indicator species; Cover of coarse grasses too high	Localised light trampling		Trampling is not significantly contributing to issues
42	Dwarf shrub heath: favourable [however unit is mostly woodland]	No impacts recorded		None
24, 33, 34, 41, 43, 46	Dwarf shrub heath; unfavourable recovering. Dwarf shrub cover too low, especially pioneer phase; degenerate and dead heather too high, bare ground too low; coarse grasses too high. Inappropriate scrub structure or degree of cover; high cover of non-native trees/shrubs [43]; bracken cover and lack of positive indicators [46]	24 - loss/modification of vegetation along tracks; 33, very localised trampling/modified vegetation along paths; 34 mostly very localised, but more significant area of affected vegetation parallel to lake; 41 - severely degraded vegetation along road; 43 - no significant impact; 46 - compaction along woodland paths	Moderately trampled paths near lake support a greater diversity of characteristic acid grassland species	Mainly localised modification of acid grassland component of heathland, not contributing to failed targets. Severe impact along road.

[7] https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1000664&ReportTitle=Clumber%20Park%20SSSI

Unit no.	Condition and reasons targets not met	Summary of negative recreational impacts	Summary of positive recreational impacts	Relevance to condition status
37	Dwarf shrub heath: unfavourable recovering. Woodpasture habitat. Lack of deadwood, nectar, and tree structure [no heath located in assessment]	No heath found		N/A
23, 26, 27, 29, 35, 36	Broad-leaved mixed and Yew woodland: favourable	23 - very localised loss of vegetation/compaction; 26 - modified path edge vegetation; 27 - more significant vegetation loss through path expansion, trampling under veterans, localised deadwood removal due to dens; 29 - very localised compaction from bikes and eutrophication from dog waste; 35 & 36- significant localised vegetation loss and compaction of marginal vegetation at lake; 36 -		Localised compaction and vegetation loss (including under veterans) and modification of vegetation e.g. through eutrophication and trampling not preventing conditions targets from being met
21, 25, 40, 44, 45	Broad-leaved mixed and Yew woodland: unfavourable recovering - insufficient age classes of trees; haloing needed; insufficient standing/attached deadwood; insufficient nectar sources	21 - localised impacts of dens, swings, trampling and compaction; 25 - exposed roots, bike tracks, compaction; 40 & 45 - compaction around veterans, loss and/or modification of ground flora; 44, 45 - localised compaction		Recreational impacts locally significant (e.g. changes to ground flora) and some may impact health of individual veterans, but not otherwise contributing to failed targets.

Unit no.	Condition and reasons targets not met	Summary of negative recreational impacts	Summary of positive recreational impacts	Relevance to condition status
48	Broad-leaved mixed and Yew woodland: unfavourable recovering. Fails on number of positive indicator species [around half unit is acid grassland]	Localised compaction and loss of vegetation near lake; acid grassland largely unaffected		Localised recreation impacts not contributing to failed targets
38	Fen, marsh, and swamp: Unfavourable recovering - lack of reedswamp cover (improving)	Localised impact on marginal vegetation (e.g. trampling and where dogs enter water)		Recreational pressure detracting from desired increase in reedswamp e.g. around bridge (localised)
28	Fen, marsh, and swamp: Unfavourable recovering - shaded and too narrow	Not assessed (no access)		N/A
30, 31, 39	Fen, marsh, and swamp: favourable	Not assessed (no access)		N/A

Map 8: Clumber Park SSSI unit boundaries and numbers



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 National Trust Clumber Park. 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 317 individuals were approached for interviews across the two survey periods (see Table 5). Approximately 75% of the individuals approached were receptive to being interviewed, although note that a small number of respondents did not answer all of the questions asked due to a variety of time constraints (this is highlighted when relevant in subsequent sections of this report). Approximately 21% of those approached refused to be interviewed, with approximately 4% having already been interviewed during a previous session. The latter category comprised approximately 10% of those approached at Survey Point 1 (Lime Tree Avenue North), potentially indicating a large proportion of frequent visits at that location.

Table 5: 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 - Lime Tree Avenue North	37 (71.2%)	5 (9.7%)	0 (0%)	10 (19.3%)	52 (100%)
2 - Hardwick Grange Weir	98 (76%)	1 (0.8%)	0 (0%)	30 (23.3%)	129 (100%)
3 - Clumber Bridge	91 (75.9%)	4 (3.4%)	3 (2.5%)	22 (18.4%)	120 (100%)
4 - Lime Tree Avenue South	13 (81.3%)	1 (6.3%)	0 (0%)	2 (12.5%)	16 (100%)
Total	**239 (75.4%)**	**11 (3.5%)**	**3 (1%)**	**64 (20.2%)**	**317 (100%)**

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 (16–32 daylight hours, across seasons, dependent upon

the 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 6 and Map 9, 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 6: 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 - Lime Tree Avenue North	Spring	24	44	2	10	18
2 - Hardwick Grange Weir	Spring	201	451	65	110	68
	Summer	154	348	45	73	45
3 - Clumber Bridge	Spring	347	738	94	213	91
	Summer	309	732	152	261	110
4 - Lime Tree Avenue South	Summer	15	29	3	0	12
Total	**Spring**	**572**	**1,233**	**161**	**333**	**177**
	Summer	**478**	**1,109**	**200**	**334**	**167**

5.5 Overall, similar tally totals were recorded across the survey locations during both the spring and summer survey periods. A total of 572 groups, comprising 1,233 individuals, were recorded entering the study area during the spring survey period, with 478 groups and 1,109 individuals recorded during the summer survey period. The tally data varied between survey locations however, with the largest total number of groups (347) and individuals (738) recorded from Survey Point 3 (Clumber Bridge) during the spring. The largest total number of minors (152), bikes (261), and dogs (110) were also recorded from Survey Point 3, albeit during the summer survey period.

5.6 Survey Point 2 (Hardwick Grange Weir) comprised the second busiest survey location, with 201 groups and 451 individuals recorded entering there during the spring survey period, and 154 groups and 348 individuals tallied there during the summer. Both Lime Tree Avenue survey locations (Survey Points 1 and 4) recorded extremely small tallies in comparison to the other survey locations, with a maximum of 24 groups and 44 individuals recorded from Survey Point 1 during the spring survey period. The two Survey Points also recorded very small numbers of minors (2 and 3, respectively) and bicycles (10 and 0, respectively) in comparison to the other survey locations.

5.7 The figures in Table 6 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 7. Survey Point 3 (Clumber Bridge) recorded the largest mean number of people per group (2.4) during the summer survey period, with Survey Point 2 (Hardwick Grange Weir) 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 (Lime Tree Avenue North).

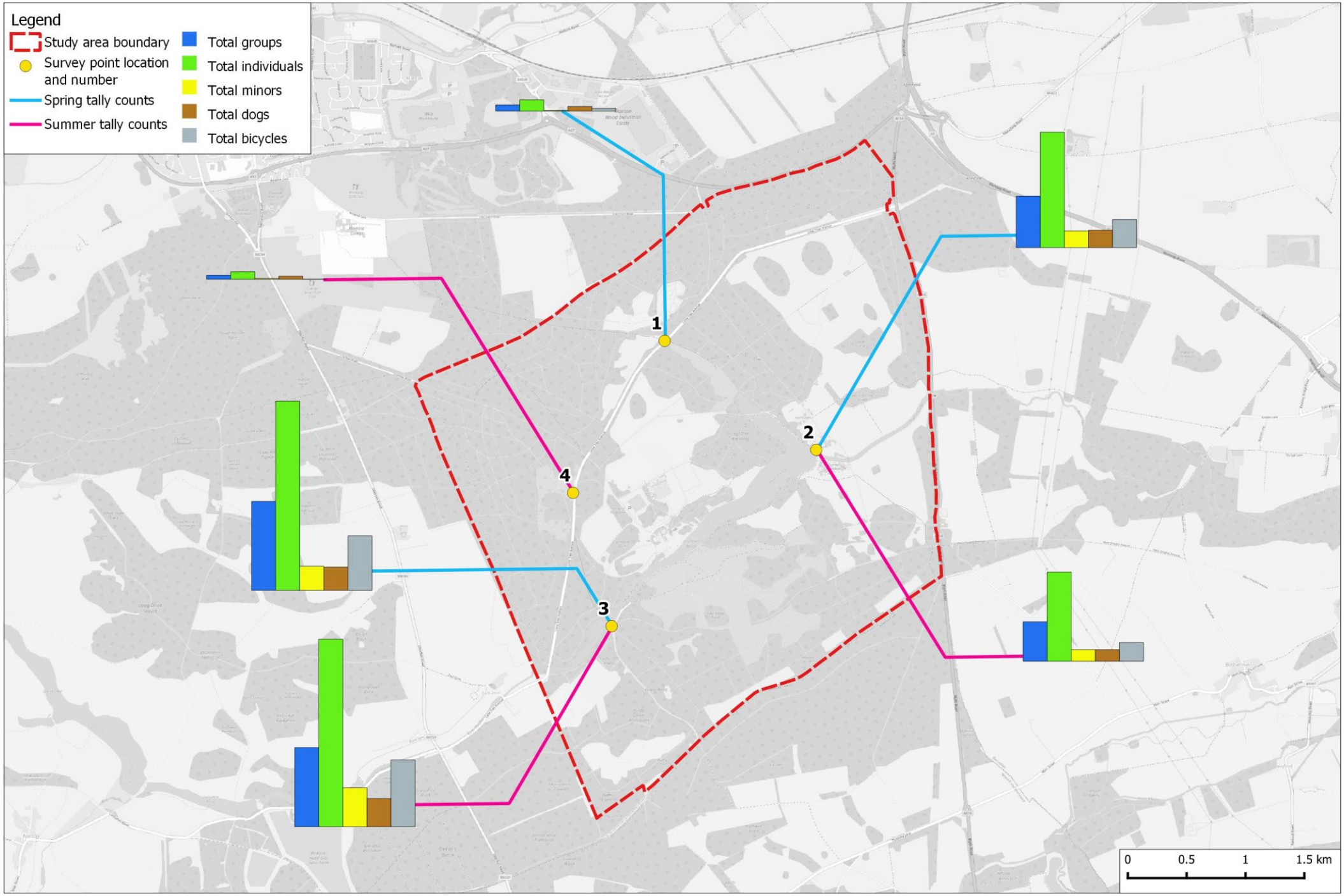
Table 7: Mean number of individuals, minors, and dogs per group at each survey location, stratified by survey period. Grey shading reflects the largest two values in each column, with the darker shading highlighting the larger value.

Survey location	Survey period	Mean no. individuals per group	Mean no. minors per group	Mean no. dogs per group
1 - Lime Tree Avenue North	Spring	1.9	0.1	0.8
2 - Hardwick Grange Weir	Spring	2.3	0.4	0.4
	Summer	2.3	0.3	0.3
3 - Clumber Bridge	Spring	2.2	0.3	0.3
	Summer	2.4	0.5	0.4
4 - Lime Tree Avenue South	Summer	2.0	0.2	0.8
Total	**Spring**	**2.2**	**0.3**	**0.4**
	Summer	**2.4**	**0.5**	**0.4**

5.8 The largest mean number of minors per group (0.5) was also recorded from Survey Point 3 (Clumber Bridge) during the summer, with the smallest number (0.1) recorded from Survey Point 1 (Lime Tree Avenue North) during the spring. The equal largest mean number of dogs per group (0.8) was recorded from Survey Point 1 (Lime Tree Avenue North) and Survey Point 4 (Lime Tree Avenue South) during the spring and summer, respectively. The equal smallest mean number of

dogs per group (0.3) was recorded from Survey Point 2 (Hardwick Grange Weir) and Survey Point 3 (Clumber Bridge) during the summer and spring survey periods, respectively.

Map 9: Tally counts of visitors entering at survey locations, stratified by survey period



Visitor survey: interviews

Overview

5.9 A total of 144 interviews were conducted across Survey Points 1 (Lime Tree Avenue North), 2 (Hardwick Grange Weir), and 3 (Clumber Bridge) during the spring survey period (see Table 8). A further 95 interviews were undertaken in total across Survey Points 2, 3, and 4 (Lime Tree Avenue South) during the summer survey period. The largest number of total interviews (98 combined across the spring and summer) were carried out at Survey Point 2 (Hardwick Grange Weir), and the smallest number (13) at Survey Point 4 (Lime Tree Avenue South) during the spring survey period only. A similar number of interviews were carried out at Survey Points 2 and 3 during the spring and summer survey periods, with a slightly larger number of interviews carried out at the weekend (across all survey locations/periods) overall.

Table 8: Number of interviews per survey location during each survey period, stratified by day type. Spring surveys are highlighted blue and summer surveys are highlighted pink.

Survey location	Survey period	Number and % of interviewees		
		Weekday	Weekend	Total
1 - Lime Tree Avenue North	Spring	15 (40.6%)	22 (59.5%)	37 (100%)
2 - Hardwick Grange Weir	Spring	22 (38%)	36 (62.1%)	58 (100%)
	Summer	20 (50%)	20 (50%)	40 (100%)
3 - Clumber Bridge	Spring	27 (55.2%)	22 (44.9%)	49 (100%)
	Summer	25 (59.6%)	17 (40.5%)	42 (100%)
4 - Lime Tree Avenue South	Summer	4 (30.8%)	9 (69.3%)	13 (100%)
Total	**Spring**	**64 (44.5%)**	**80 (55.6%)**	**144 (100%)**
	Summer	**49 (51.6%)**	**46 (48.5%)**	**95 (100%)**

Type of visit (Q1)

5.10 The majority of interviews carried out across all survey locations, during both the spring (76.4%) and summer (90.6%) survey periods, were with those who had undertaken a day trip or short visit directly from home that day (see Table 9). This was the case at all of the survey locations, during each relevant survey

period, with the exception of Survey Point 1 (Lime Tree Avenue North) during the spring, at which 59.5% of those interviewed comprised holidaymakers. This resulted from a sizeable proportion of interviewees at that location originating from the Clumber Park Caravan and Motorhome Campsite, located to the north of the Survey Point. With the exception of Survey Point 1, a similar split was seen across the survey locations amongst the other visit types, with 0-15% on holiday/staying in a second home/mobile home, and 0-5% staying away from home with friends or family.

Table 9: 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. Spring surveys are highlighted blue and summer surveys are highlighted pink.

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 - Lime Tree Avenue North	Spring	15 (40.6%)	22 (59.5%)	0 (0%)	0 (0%)	37 (100%)
2 - Hardwick Grange Weir	Spring	55 (94.9%)	2 (3.5%)	1 (1.8%)	0 (0%)	58 (100%)
	Summer	37 (92.5%)	2 (5%)	1 (2.5%)	0 (0%)	40 (100%)
3 - Clumber Bridge	Spring	40 (81.7%)	7 (14.3%)	2 (4.1%)	0 (0%)	49 (100%)
	Summer	37 (88.1%)	5 (12%)	0 (0%)	0 (0%)	42 (100%)
4 - Lime Tree Avenue South	Summer	12 (92.4%)	0 (0%)	0 (0%)	1 (7.7%)	13 (100%)
Total	**Spring**	**110 (76.4%)**	**31 (21.6%)**	**3 (2.1%)**	**0 (0%)**	**144 (100%)**
	Summer	**86 (90.6%)**	**7 (7.4%)**	**1 (1.1%)**	**1 (1.1%)**	**95 (100%)**

Main activities undertaken (Q2)

5.11 The most frequently recorded main activity across all 4 survey locations across the combined survey periods was walking (56.1% of interviewees; see Figure 1), followed by dog walking (26.0%), and cycling/mountain biking (12.2%), with the remaining activities combined comprising approximately 7% of responses.

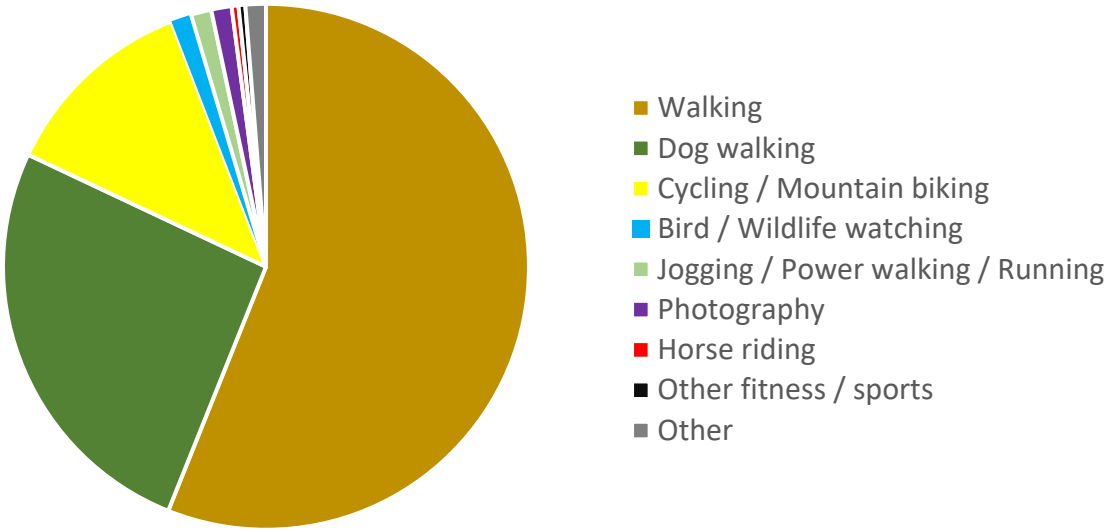


Figure 1: Main activities undertaken across all survey locations across all respondents.

5.12 Table 10 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 (Hardwick Grange Weir) and Survey Point 3 (Clumber Bridge), comprising 63.3% and 57.2% of responses, respectively. Dog walking was the most commonly recorded main activity at both of the Lime Tree Avenue survey locations (Survey Points 1 and 4), comprising approximately half of the responses at each locality, with walking the second most frequent main activity at both. Dog walking was the second most frequently recorded main activity at Survey Point 2 (Hardwick Grange Weir: 22.5%), whilst cycling/mountain biking was the second most frequently recorded at Survey Point 3 (Clumber Bridge: 22.0%).

5.13 Cycling/mountain biking also comprised 10.9% of responses at Survey Point 1 (Lime Tree Avenue North) and 5.2% at Survey Point 2 (Hardwick Grange Weir), whilst bird/wildlife watching comprised 7.7% of responses at Survey Point 4

(Lime Tree Avenue South). None of the other main activities recorded comprised >4% of the observations made at each of the Survey Points.

Table 10: 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 - Lime Tree Avenue North	2 - Harwick Grange Weir	3 - Clumber Bridge	4 - Lime Tree Avenue South	
Walking	15 (40.6%)	62 (63.3%)	52 (57.2%)	5 (38.5%)	134 (56.1%)
Dog walking	18 (48.7%)	22 (22.5%)	15 (16.5%)	7 (53.9%)	62 (26.0%)
Cycling / Mountain biking	4 (10.9%)	5 (5.2%)	20 (22.0%)	0 (0.0%)	29 (12.2%)
Bird / Wildlife watching	0 (0.0%)	1 (1.1%)	1 (1.1%)	1 (7.7%)	3 (1.3%)
Jogging / Power walking / Running	0 (0.0%)	3 (3.1%)	0 (0.0%)	0 (0.0%)	3 (1.3%)
Photography	0 (0.0%)	2 (2.1%)	1 (1.1%)	0 (0.0%)	3 (1.3%)
Horse riding	0 (0.0%)	1 (1.1%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
Other fitness / sports	0 (0.0%)	0 (0.0%)	1 (1.1%)	0 (0.0%)	1 (0.5%)
Other	0 (0.0%)	2 (2.1%)	1 (1.1%)	0 (0.0%)	3 (1.3%)
Total	**37 (100%)**	**98 (100%)**	**91 (100%)**	**13 (100%)**	**239 (100%)**

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 114 interviewees, across both survey periods, identified a secondary activity (see Table 11). Walking comprised the most frequently recorded secondary activity overall (28.1% of responses), with this pattern holding at Survey Points 1 (Lime Tree Avenue North: 39.3%), 2 (Hardwick Grange Weir: 23.6%), and 3 (Clumber Bridge: 29.1%).

Table 11: 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 - Lime Tree Avenue North	2 - Harwick Grange Weir	3 - Clumber Bridge	4 - Lime Tree Avenue South	
Walking	11 (39.3%)	12 (23.6%)	9 (29.1%)	0 (0.0%)	32 (28.1%)
Dog walking	7 (25.0%)	8 (15.7%)	2 (6.5%)	2 (50.0%)	19 (16.7%)
Picnic	0 (0.0%)	8 (15.7%)	0 (0.0%)	0 (0.0%)	12 (10.6%)
Bird / Wildlife watching	1 (3.6%)	5 (9.9%)	0 (0.0%)	0 (0.0%)	11 (9.7%)
Meeting up with friends	1 (3.6%)	4 (7.9%)	0 (0.0%)	0 (0.0%)	7 (6.2%)
Photography	0 (0.0%)	3 (5.9%)	0 (0.0%)	0 (0.0%)	5 (4.4%)
Cycling / Mountain biking	1 (3.6%)	4 (7.9%)	0 (0.0%)	0 (0.0%)	5 (4.4%)
Outing with family	2 (7.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (2.7%)
Other fitness / sports	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.9%)
Fishing	0 (0.0%)	1 (2.0%)	0 (0.0%)	0 (0.0%)	1 (0.9%)
Jogging / Power walking / Running	0 (0.0%)	1 (2.0%)	0 (0.0%)	0 (0.0%)	1 (0.9%)
Other	5 (17.9%)	5 (9.9%)	5 (16.2%)	2 (50.0%)	17 (15%)
Total	**28 (100%)**	**51 (100%)**	**31 (100%)**	**4 (100%)**	**114 (100%)**

5.15 Dog walking was the most frequently recorded secondary activity overall (16.7%), with this also being the case at Survey Points 1 (Lime Tree Avenue North: 25.0%) and 2 (Hardwick Grange Weir: 15.7%), although this was tied with picnicking at the latter location. Dog walking and 'other' comprised the most frequently recorded responses from within the small number recorded overall at Survey Point 4 (Lime Tree Avenue South: both 50.0%).

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

5.16 Approximately one quarter of all interviewees across all survey locations visited the survey area 1 to 3 times per week, whilst another quarter visited less than once per month (see Table 12). Furthermore, approximately 10% of interviewees visited the study area most days or daily/more than once a day. Also noteworthy, >10% of interviewees across all Survey Points were undertaking their first visit to the location.

5.17 The differing pattern of visit frequencies seen at the four survey locations is partly explained by the composition of the interviewees at each, and the type of visit that they were undertaking (see Table 13). For example, the large number of holidaymakers interviewed at Survey Point 1 (Lime Tree Avenue North) decreased the overall visit frequency recorded at that location.

Table 12: 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. Note that one interviewee did not provide an answer for this question.

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)	Annually	Less than annually	First visit	Other	Don't know	
1 - Lime Tree Avenue North	0 (0.0%)	2 (5.5%)	1 (2.8%)	6 (16.3%)	4 (10.9%)	1 (2.8%)	16 (43.3%)	0 (0.0%)	2 (5.5%)	5 (13.6%)	0 (0.0%)	0 (0.0%)	37 (100%)
2 - Hardwick Grange Weir	1 (1.1%)	6 (6.2%)	4 (4.2%)	26 (26.9%)	14 (14.5%)	15 (15.5%)	19 (19.6%)	1 (1.1%)	1 (1.1%)	7 (7.3%)	2 (2.1%)	1 (1.1%)	97 (100%)
3 - Clumber Bridge	3 (3.3%)	3 (3.3%)	2 (2.2%)	24 (26.4%)	12 (13.2%)	8 (8.8%)	22 (24.2%)	1 (1.1%)	1 (1.1%)	13 (14.3%)	2 (2.2%)	0 (0.0%)	91 (100%)
4 - Lime Tree Avenue South	0 (0.0%)	1 (7.7%)	0 (0.0%)	1 (7.7%)	4 (30.8%)	3 (23.1%)	3 (23.1%)	0 (0.0%)	0 (0.0%)	1 (7.7%)	0 (0.0%)	0 (0.0%)	13 (100%)
Total	**4 (1.7%)**	**12 (5.1%)**	**7 (3.0%)**	**57 (24%)**	**34 (14.3%)**	**27 (11.4%)**	**60 (25.3%)**	**2 (0.9%)**	**4 (1.7%)**	**26 (11.0%)**	**4 (1.7%)**	**1 (0.5%)**	**238 (100%)**

Table 13: Number (row %) of all interviewees and frequency of visit (Q7), stratified by visit type. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value. Note that one interviewee did not provide an answer for this question.

Visit type	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)	Annually	Less than annually	First visit	Other	Don't know	
Short visit from home	4 (2.1%)	12 (6.2%)	7 (3.6%)	56 (28.8%)	32 (16.5%)	26 (13.4%)	39 (20.0%)	1 (0.6%)	1 (0.6%)	13 (6.7%)	3 (1.6%)	1 (0.6%)	195 (100%)
Staying away from home with friends or family	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4 (100%)
Staying away from home in a second home, mobile home, or on holiday	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.7%)	2 (5.3%)	0 (0.0%)	20 (52.7%)	1 (2.7%)	3 (7.9%)	10 (26.4%)	1 (2.7%)	0 (0.0%)	38 (100%)
Other	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)
Total	**4 (1.7%)**	**12 (5.1%)**	**7 (3.0%)**	**57 (24.0%)**	**34 (14.3%)**	**27 (11.4%)**	**60 (25.3%)**	**2 (0.9%)**	**4 (1.7%)**	**26 (11.0%)**	**4 (1.7%)**	**1 (0.5%)**	**238 (100%)**

5.18 Dog walkers were the group who visited the most frequently (see Figure 2), with >16% visiting most days or daily, and with a further quarter visiting 1 to 3 times a week. Furthermore, >11% of cyclists visited at least once a week, with another fifth visiting 1 to 3 times per week. Walkers were also relatively frequent visitors, with a fifth visiting 1 to 3 times per week, and >6% visiting at least daily. The sample sizes of the other activities recorded were generally too small to make meaningful assessments of the relevant interviewees visit frequency.

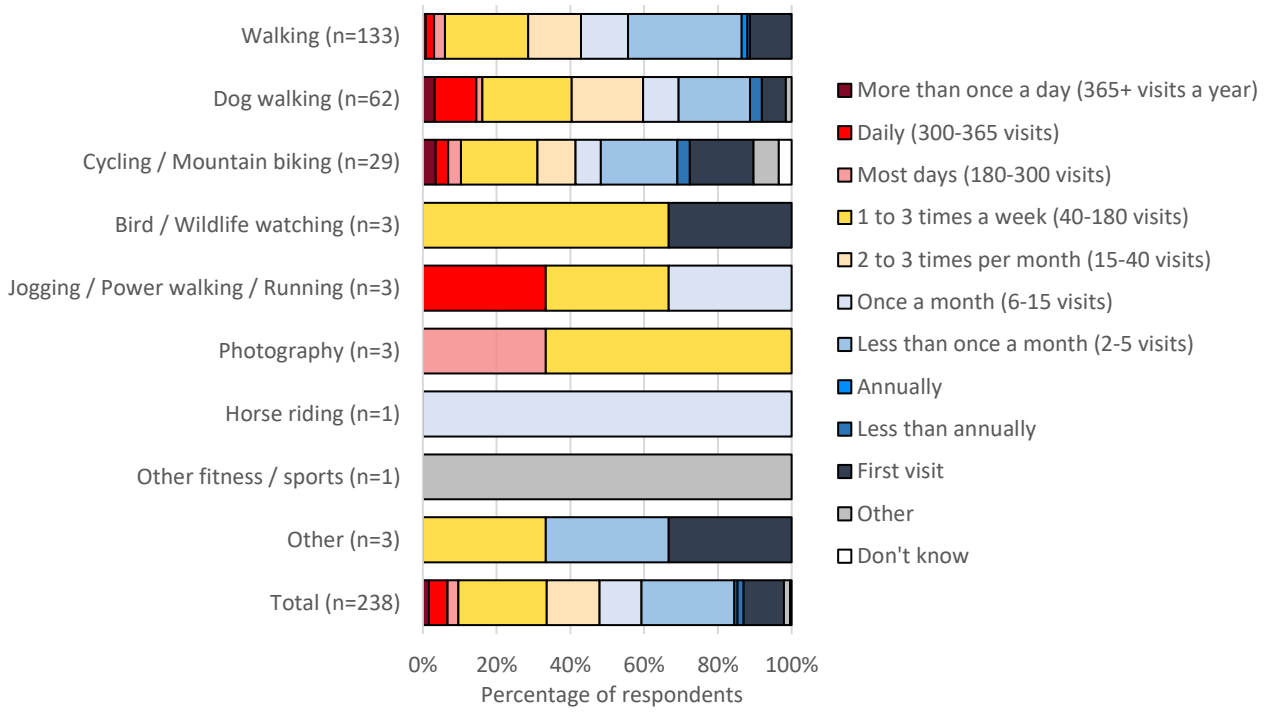


Figure 2: Summary of respondents visit frequency, stratified by main activity. Values in brackets indicate the number of respondents for each activity.

5.19 Approximately one third of interviewees (33.5%) across all survey locations spent 1 to 2 hours on site (see Table 14), with another third (34.4%) spending 2 to 3 hours on site. These two visit duration periods were the most frequent at each of the survey locations, with the exception of Survey Point 4 (Lime Tree Avenue South), where nearly a quarter of interviewees (23.1%) spent less than 30 minutes on site. Nevertheless, approximately one quarter (24.4%) of interviewees spent more than 3 hours on site, with just under 10% spending more than 4 hours.

Table 14: 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.

Survey location	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 - Lime Tree Avenue North	0 (0.0%)	2 (5.5%)	15 (40.6%)	13 (35.2%)	5 (13.6%)	2 (5.5%)	37 (100%)
2 - Hardwick Grange Weir	1 (1.1%)	4 (4.1%)	32 (32.7%)	39 (39.8%)	12 (12.3%)	10 (10.3%)	98 (100%)
3 - Clumber Bridge	0 (0.0%)	7 (7.7%)	32 (35.2%)	23 (25.3%)	18 (19.8%)	11 (12.1%)	91 (100%)
4 - Lime Tree Avenue South	3 (23.1%)	2 (15.4%)	1 (7.7%)	7 (53.9%)	0 (0.0%)	0 (0.0%)	13 (100%)
Total	**4 (1.7%)**	**15 (6.3%)**	**80 (33.5%)**	**82 (34.4%)**	**35 (14.7%)**	**23 (9.7%)**	**239 (100%)**

5.20 Of the 3 most commonly represented activity types in the dataset, dog walkers exhibited the shortest visit duration, with more than half (51.7%) spending 1 to 2 hours on site, and a further 13% spending less than 1 hour (see Table 15). More than 40% of cyclists also spent 1 to 2 hours on site, with another 17.3% between half an hour and 1 hour on site. Nevertheless, a further fifth of cyclists spent more than 4 hours on site. Walkers tended to spend longer on site overall, with nearly half making a visit of 2 to 3 hours, and a fifth (18%) spending 3 to 4 hours on site.

Table 15: 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	0 (0.0%)	4 (3%)	34 (25.4%)	60 (44.8%)	24 (18.0%)	12 (9.0%)	134 (100%)
Dog walking	3 (4.9%)	5 (8.1%)	32 (51.7%)	12 (19.4%)	6 (9.7%)	4 (6.5%)	62 (100%)
Cycling / Mountain biking	0 (0.0%)	5 (17.3%)	12 (41.4%)	4 (13.8%)	2 (6.9%)	6 (20.7%)	29 (100%)
Bird / Wildlife watching	1 (33.4%)	0 (0.0%)	0 (0.0%)	1 (33.4%)	1 (33.4%)	0 (0.0%)	3 (100%)
Jogging / Power walking / Running	0 (0.0%)	1 (33.4%)	1 (33.4%)	1 (33.4%)	0 (0.0%)	0 (0.0%)	3 (100%)
Photography	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (66.7%)	0 (0.0%)	1 (33.4%)	3 (100%)
Horse riding	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	0 (0.0%)	1 (100%)
Other fitness / sports	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other	0 (0.0%)	0 (0.0%)	1 (33.4%)	1 (33.4%)	1 (33.4%)	0 (0.0%)	3 (100%)
Total	**4 (1.7%)**	**15 (6.3%)**	**80 (33.5%)**	**82 (34.4%)**	**35 (14.7%)**	**23 (9.7%)**	**239 (100%)**

5.21 The majority of interviewees across all survey locations (57.4%) indicated that they tended to visit equally all year round, with the summer months the next most preferred time of year overall (14.8%: see Table 16). A similar pattern was seen when interviewees were stratified by activity type although dog walkers in particular also had a preference for visiting during the spring.

Table 16: 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	93 (64.2%)	9 (6.3%)	20 (13.8%)	5 (3.5%)	2 (1.4%)	1 (0.7%)	15 (10.4%)	145 (100%)
Dog walking	44 (59.5%)	9 (12.2%)	7 (9.5%)	5 (6.8%)	3 (4.1%)	2 (2.8%)	4 (5.5%)	74 (100%)
Cycling / Mountain biking	12 (30%)	7 (17.5%)	10 (25%)	4 (10%)	1 (2.5%)	1 (2.5%)	5 (12.5%)	40 (100%)
Bird / Wildlife watching	2 (66.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (33.4%)	3 (100%)
Jogging / Power walking / Running	2 (66.7%)	0 (0%)	1 (33.4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Photography	2 (66.7%)	0 (0%)	1 (33.4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Other fitness / sports	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Other	1 (33.4%)	0 (0%)	1 (33.4%)	0 (0%)	0 (0%)	0 (0%)	1 (33.4%)	3 (100%)
Total	**156 (57.4%)**	**26 (9.6%)**	**40 (14.8%)**	**14 (5.2%)**	**6 (2.3%)**	**4 (1.5%)**	**26 (9.6%)**	**272 (100%)**

5.22 40% of interviewees overall, across all 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). Approximately one quarter of interviewees indicated that they had visited more during this period however, with another quarter stating that they had made fewer visits than before. This pattern remained true across the three most commonly recorded main activity types (walking, dog walking, and cycling/mountain biking).

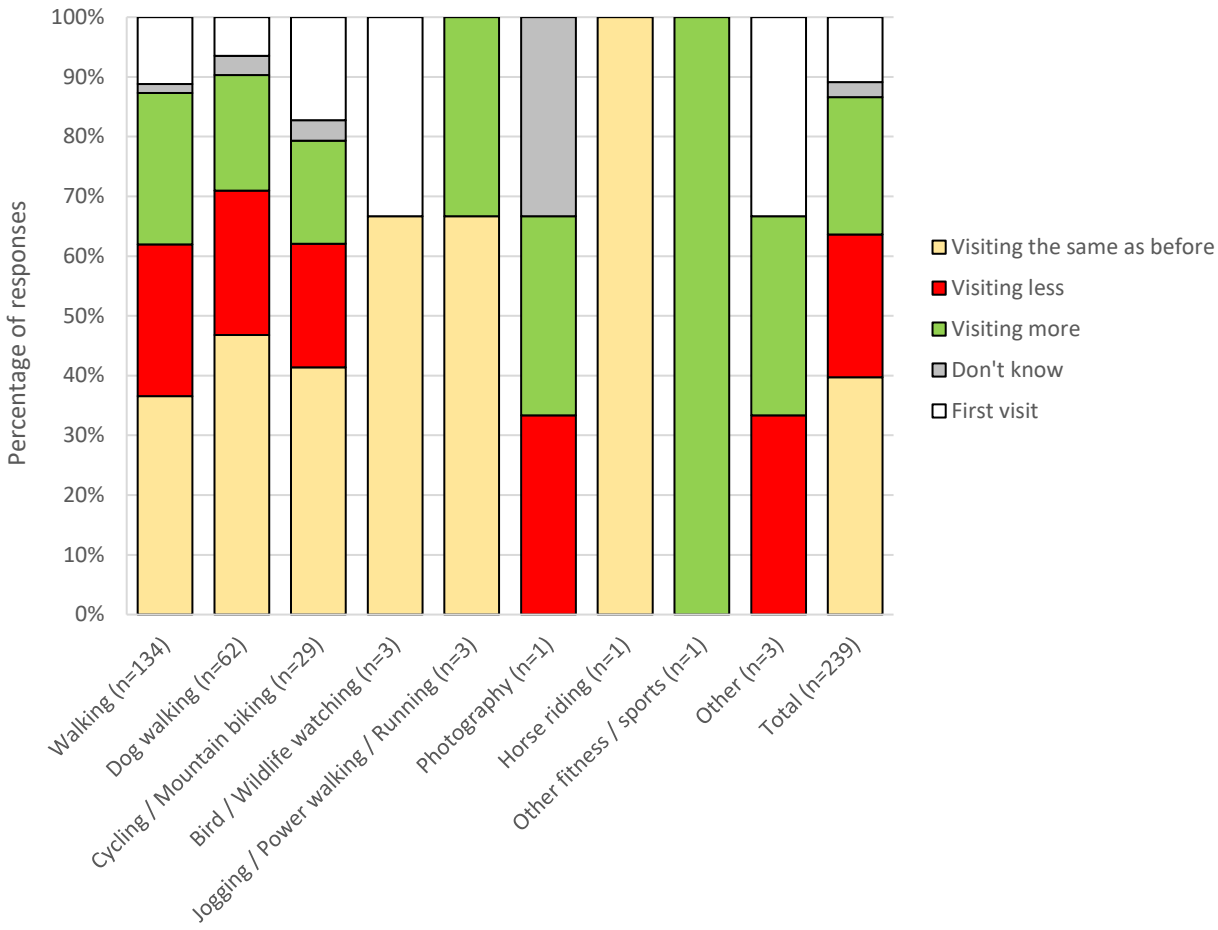


Figure 3: Changes in the visit frequency of interviewees due to the Coronavirus pandemic (Q6), stratified by main activity.

Mode of transport (Q4)

5.23 Overall, four fifths (79.9%) of interviewees had arrived by car/van, with most of the remainder (12.7%) having travelled on foot (see Table 17). Perhaps unsurprisingly, most cyclists (58.7%) had arrived by bicycle, although it was interesting to note that the majority of both dog walkers (80.7%) and walkers (88.8%) had arrived by car. With the exception of joggers/runners (66.7%), few interviewees had arrived on foot, although 17.8% of dog walkers had still arrived in that way. No interviewees had used public transport to access the survey location.

Table 17: 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	118 (88.8%)	15 (11.3%)	0 (0.0%)	133 (100%)
Dog walking	50 (80.7%)	11 (17.8%)	1 (1.7%)	62 (100%)
Cycling / Mountain biking	11 (38%)	1 (3.5%)	17 (58.7%)	29 (100%)
Bird / Wildlife watching	3 (100.0%)	0 (0.0%)	0 (0.0%)	3 (100%)
Jogging / Power walking / Running	1 (33.4%)	2 (66.7%)	0 (0.0%)	3 (100%)
Photography	3 (100.0%)	0 (0.0%)	0 (0.0%)	3 (100%)
Horse riding	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other fitness / sports	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other	2 (66.7%)	1 (33.4%)	0 (0.0%)	3 (100%)
Total	**190 (79.9%)**	**30 (12.7%)**	**18 (7.6%)**	**238 (100%)**

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 18% of responses. Scenery/variety of views was also important, with 10% of responses identifying this as a reason for site choice. Membership (7%), familiarity (6%), 'other' (5%), and an absence of other people (5%) were also influential. 'Other' reasons comprised those not identified by the pre-determined options in advance, including an absence of traffic/location away from the road, volunteering, and the peaceful setting. All remaining reasons comprised <5% of the responses recorded.

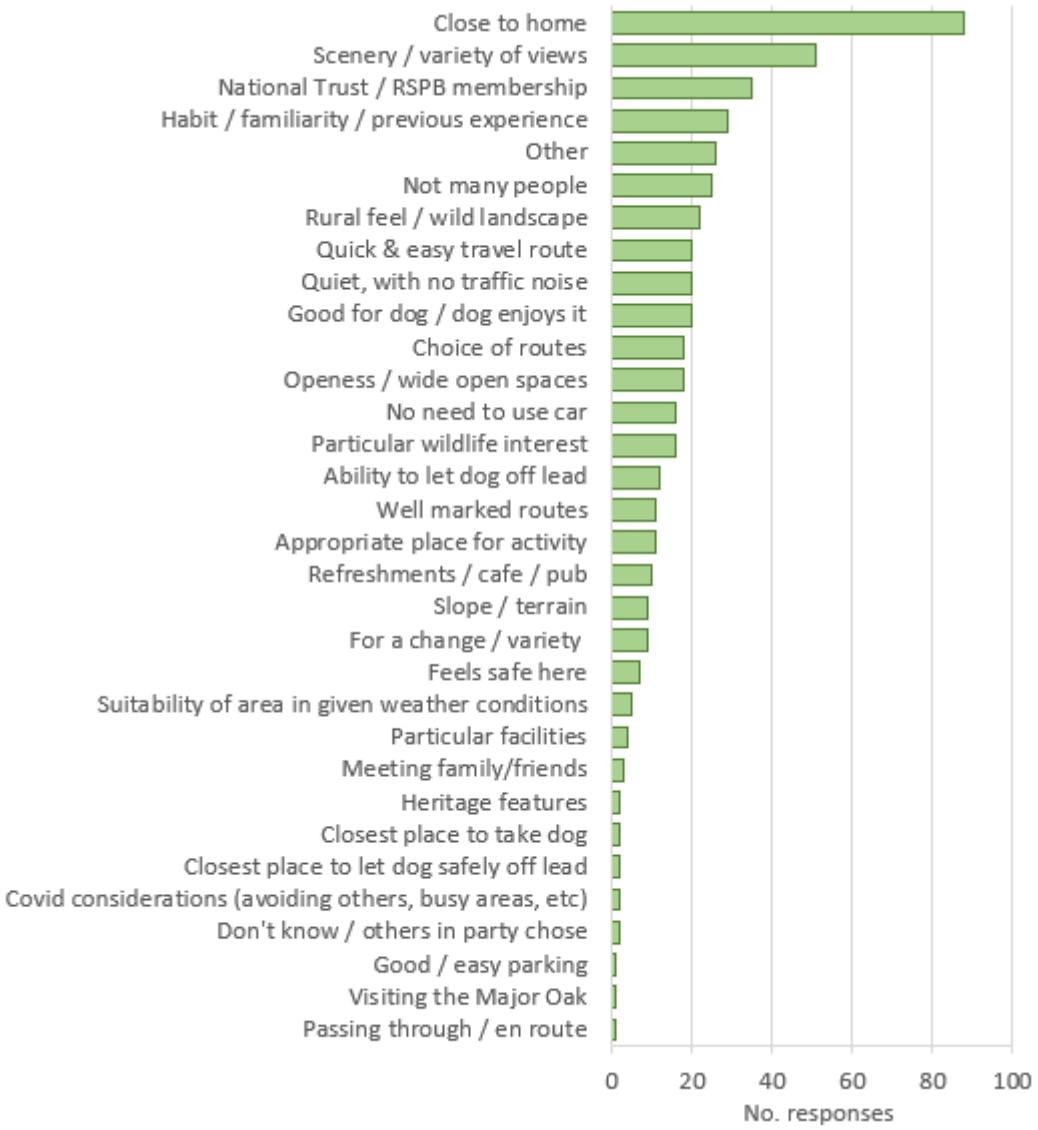


Figure 4: Reasons for site choice (Q9). Note that interviewees could give multiple responses.

Use of other sites (Q17-20)

5.26 Approximately a third (30%) of interviewees overall across all 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 18). This figure rose to nearly half of interviewees at Survey Point 2 (Hardwick Grange Weir; 42.8%), indicating a high degree of site faithfulness, with >20% of interviewees at Survey Point 1 (Lime Tree Avenue North) and Survey Point 3 (Clumber Bridge) also visiting with the same frequency. Nevertheless, a third of interviewees overall (33.2%) said that fewer than 25% of their weekly visits were to the survey location.

Table 18: 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 - Lime Tree Avenue North	5 (14.3%)	2 (5.8%)	3 (8.6%)	8 (22.9%)	4 (11.5%)	13 (37.2%)	35 (100%)
2 - Hardwick Grange Weir	16 (16.7%)	25 (26.1%)	8 (8.4%)	6 (6.3%)	33 (34.4%)	8 (8.4%)	96 (100%)
3 - Clumber Bridge	6 (6.9%)	13 (14.8%)	13 (14.8%)	10 (11.4%)	31 (35.3%)	15 (17.1%)	88 (100%)
4 - Lime Tree Avenue South	0 (0.0%)	2 (15.4%)	0 (0.0%)	1 (7.7%)	9 (69.3%)	1 (7.7%)	13 (100%)
Total	**27 (11.7%)**	**42 (18.2%)**	**24 (10.4%)**	**25 (10.8%)**	**77 (33.2%)**	**37 (16%)**	**232 (100%)**

5.27 Amongst the more frequently recorded main activity types, dog walkers showed the highest level of site fidelity amongst user groups (see Table 19), with 34% stating that 75% or more of their weekly visits took place at the interview location. A large proportion of cyclists (32.2%) also fell into this category, as did 25% of walkers. Patterns for the other recorded activities were less obvious due to the smaller sample sizes, although there was an indication that bird/wildlife watchers, joggers/runners, and photographers may comprise frequent visitor types.

5.28 A variety of other sites were regularly visited by interviewees (see Figure 5), with Sherwood Forest being that most commonly identified across the survey locations (see Table 20). It is nevertheless important to note that several of the localities named (e.g. “close to home”) potentially refer to multiple, disparate, sites, or are potentially synonyms for the same locations (e.g. “Rufford” and “Rufford Park”).

Table 19: 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	12 (9.1%)	21 (16.0%)	14 (10.7%)	18 (13.7%)	48 (36.4%)	19 (14.4%)	132 (100%)
Dog walking	12 (20.4%)	8 (13.6%)	5 (8.5%)	5 (8.5%)	21 (35.6%)	8 (13.6%)	59 (100%)
Cycling / Mountain biking	2 (7.2%)	7 (25.0%)	4 (14.3%)	2 (7.2%)	4 (14.3%)	9 (32.2%)	28 (100%)
Bird / Wildlife watching	0 (0.0%)	2 (66.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (33.4%)	3 (100%)
Jogging / Power walking / Running	1 (33.4%)	1 (33.4%)	0 (0.0%)	0 (0.0%)	1 (33.4%)	0 (0.0%)	3 (100%)
Photography	0 (0.0%)	2 (66.7%)	1 (33.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100%)
Horse riding	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	0 (0.0%)	1 (100%)
Other	0 (0.0%)	1 (33.4%)	0 (0.0%)	0 (0.0%)	2 (66.7%)	0 (0.0%)	3 (100%)
Total	**27 (11.7%)**	**42 (18.2%)**	**24 (10.4%)**	**25 (10.8%)**	**77 (33.2%)**	**37 (16.0%)**	**232 (100%)**

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

Table 20: Other sites named by five or more interviewees (number of respondents in parentheses).

Site name	
Sherwood Forest (25)	Rother Valley (7)
Sherwood Pines (20)	Ambleside (6)
Hardwick Hall (14)	Rufford Park (6)
Rufford (10)	Chesterfield Canal (5)
Chatsworth (9)	Creswell Crags (5)
Belton House (8)	Hardwick (5)
"Close to home" (8)	Idle Valley (5)
Peak District (7)	Thoresby (5)

Memberships (Q12)

5.29 Approximately 70% of interviewees across all survey locations and activity types were members of the National Trust (see Table 21), with 11.4% also members of the RSPB (who manage nearby Sherwood Forest NNR/Budby South Forest RSPB Reserve). Nevertheless, more than a quarter (28.2%) of all interviewees were not members of either organisation. Walkers (76.0%) were the most likely to be National Trust members amongst the more frequently recorded activity types, alongside 66.3% of dog walkers and 55.2% of cyclists. Nevertheless, nearly half of cyclists (44.9%) and a third of dog walkers (32.3%) were members of neither the National Trust nor the RSPB.

Table 21: 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	
Walking	19 (14.3%)	82 (61.7%)	1 (0.8%)	31 (23.4%)	133 (100%)
Dog walking	2 (3.3%)	39 (63.0%)	1 (1.7%)	20 (32.3%)	62 (100%)
Cycling / Mountain biking	2 (6.9%)	14 (48.3%)	0 (0.0%)	13 (44.9%)	29 (100%)
Bird / Wildlife watching	1 (33.4%)	0 (0.0%)	2 (66.7%)	0 (0.0%)	3 (100%)
Jogging / Power walking / Running	0 (0.0%)	2 (66.7%)	0 (0.0%)	1 (33.4%)	3 (100%)
Photography	2 (66.7%)	0 (0.0%)	1 (33.4%)	0 (0.0%)	3 (100%)
Horse riding	1 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other fitness / sports	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	1 (100%)
Other	0 (0.0%)	2 (66.7%)	0 (0.0%)	1 (33.4%)	3 (100%)
Total	**27 (11.4%)**	**139 (58.5%)**	**5 (2.2%)**	**67 (28.2%)**	**238 (100%)**

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 81 positive responses recorded (see Table 22). The use of websites was the most frequent response overall (35.9%), followed by online or paper maps (32.1%), and smartphone apps (18.6%). Other information sources were used by a relatively small number of individuals, with social media, perhaps surprisingly, accounting for only 5.0% of responses overall.

5.31 Over half of the responses from dog walkers (53.0%) indicated that the interviewee used websites to plan their visit, with approximately a third of the responses from walkers, and a quarter of those from cyclists, suggesting the same. Online or paper maps were also particularly important for the latter two activity types (42.9% and 31.9%, respectively), with more than a quarter (27.3%) of the responses from cyclists indicating that they had used a smartphone app to plan their visit. No clear patterns were discernible for the remaining activity types due to their small sample sizes.

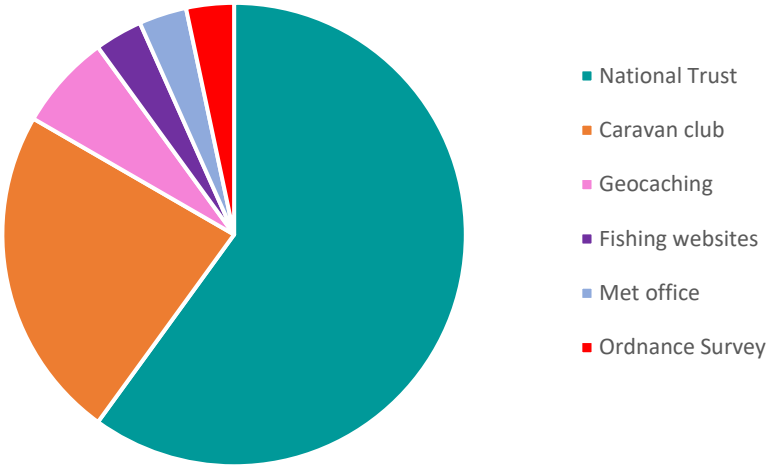
Table 22: Resources used to plan visit (Q13), stratified by main activity. Grey shading reflects the largest two values in each row, with darker shading highlighting the larger row value.

Activity	Information used						Total
	Websites	Online or paper maps	Smartphone app	Recommendations from friends or family	Social media	Leaflets	
Walking	12 (34.3%)	15 (42.9%)	5 (14.3%)	1 (2.9%)	1 (2.9%)	1 (2.9%)	35 (100%)
Dog walking	9 (53.0%)	3 (17.7%)	2 (11.8%)	2 (11.8%)	1 (5.9%)	0 (0.0%)	17 (100%)
Cycling / Mountain biking	6 (27.3%)	7 (31.9%)	6 (27.3%)	2 (9.1%)	1 (4.6%)	0 (0.0%)	22 (100%)
Bird / Wildlife watching	0 (0.0%)	0 (0.0%)	1 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Horse riding	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	1 (100%)
Other fitness / sports	1 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Other	1 (25.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4 (100%)
Total	**29 (35.9%)**	**26 (32.1%)**	**15 (18.6%)**	**5 (6.2%)**	**4 (5.0%)**	**2 (2.5%)**	**81 (100%)**

5.32 6 websites, and 10 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 that of the National Trust (60.0% of the responses recorded), although several interviewees indicated that that had only used it to pre-book entry to NT Clumber Park. The Caravan Club website was also frequently used (23.4% of responses), although this largely related to holidaymaking interviewees. Geocaching websites were the third most frequently identified resources (6.7% of responses), with all others comprising <4% of responses.

5.33 Google maps (29.5% of responses), Ordnance Survey (17.7%), and the National Trust (11.8%) were the only apps identified as being used to plan the visit by more than single interviewees. Amongst social media users (not illustrated), 2 interviewees indicated that they had used Facebook to plan their visit, with further singletons identifying Twitter and Instagram.

a: websites (n=30)



b: apps (n=17)

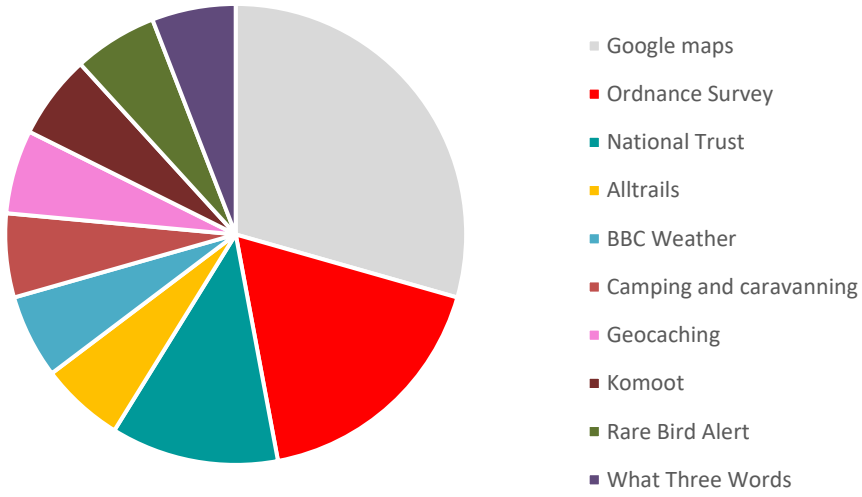


Figure 6: Websites (a) and smartphone apps (b) identified by interviewees that were used to plan their visit (Q14-16).

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. Half of interviewees (49.5%) were unable to name any (see Figure 7), with breeding birds (14.7% of responses), heathland (4.5%), and rare insects and invertebrates (3.8%) those most frequently named. 'Other' habitats and species comprised the second largest number of responses overall (18.8%), however, with this category including a variety of other rare breeding bird species and deer, with a few people also mentioning the SSSI, livestock, orchids, fungi, and other reptile species. Of particular note was the rarity of responses identifying woodland habitats and veteran/ancient trees (3.2% and 3.8% of responses, respectively).

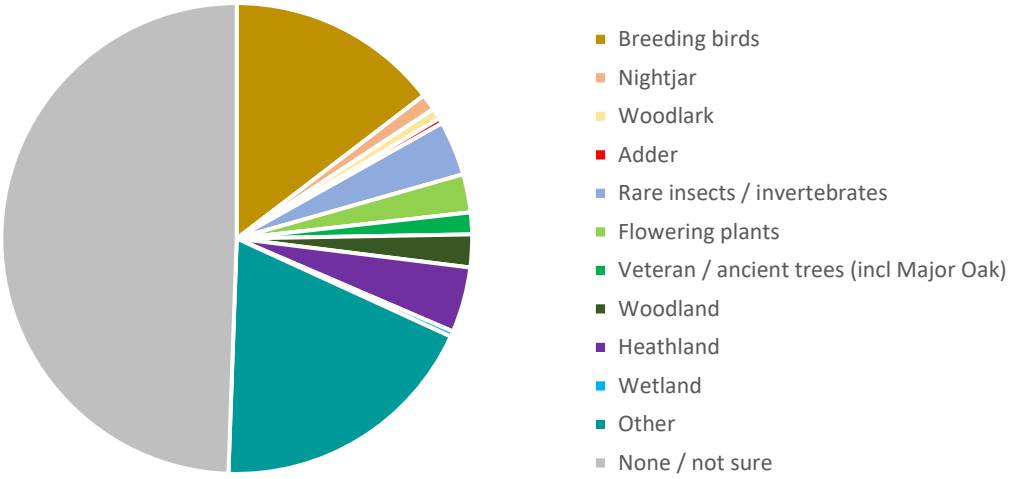


Figure 7: Sensitive habitats and species identified as present on site by interviewees (Q24).

Potential use of alternative greenspace (Q22-23)

5.35 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, 70% of interviewees indicated that they would be likely to use such a novel destination, with 13.7% suggesting that they would not, and 16.6% suggesting potential use (see Figure 8). Amongst the three most frequently recorded main activity types, cyclists (75.0%) were more likely to use novel greenspace then either walkers or dog walkers (66.2% and 60.7%,

respectively), with a larger proportion of dog walkers (21.4%) equivocal about using such a site.

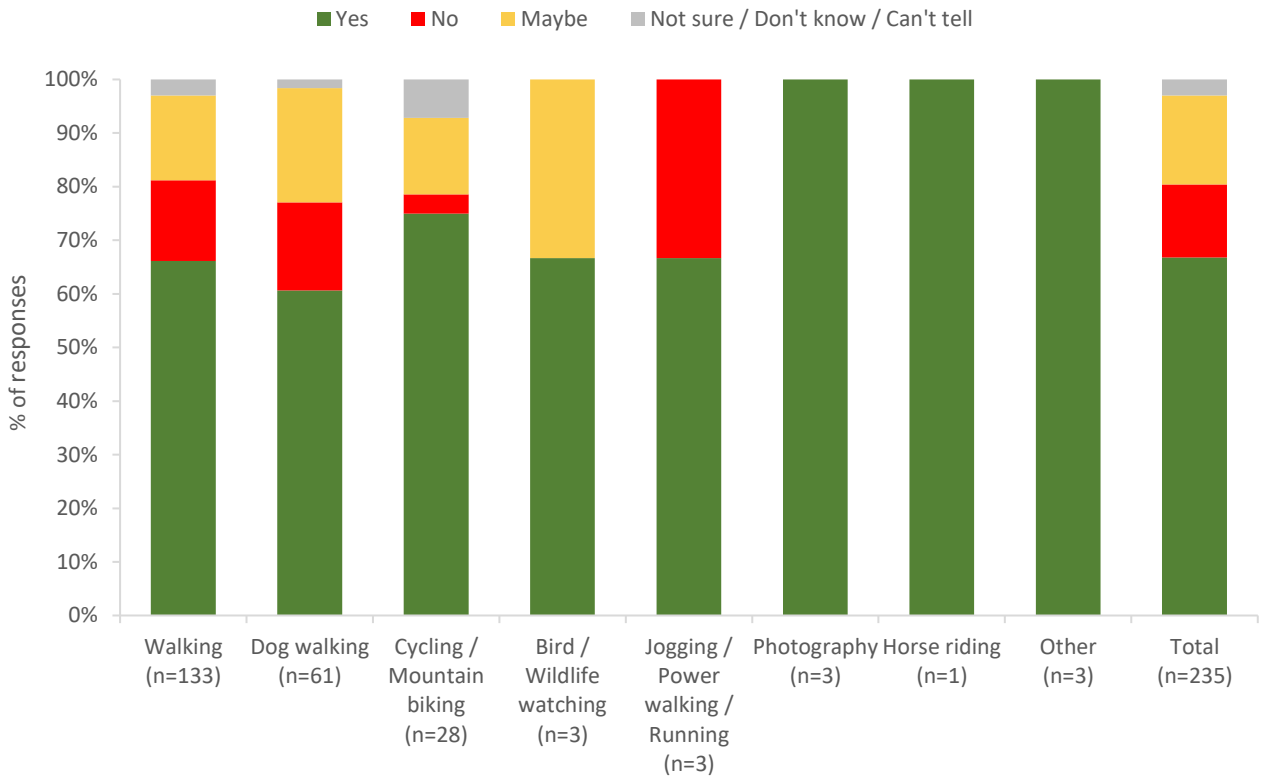


Figure 8: Potential use of novel local greenspace by interviewees, stratified by main activity (Q22).

5.36 A range of features that they would like to see incorporated into a novel Country Park or area of greenspace were identified by the interviewees (see Figure 9). The presence of a café (16.3% of responses), extensive/good walking routes (15.5%), open water (12.6%), and toilets (11.9%) 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 (15.2%) and sufficient parking (10.5%), whilst a large proportion of cyclists (48.8%), perhaps not unsurprisingly, requested the presence of dedicated cycling routes.

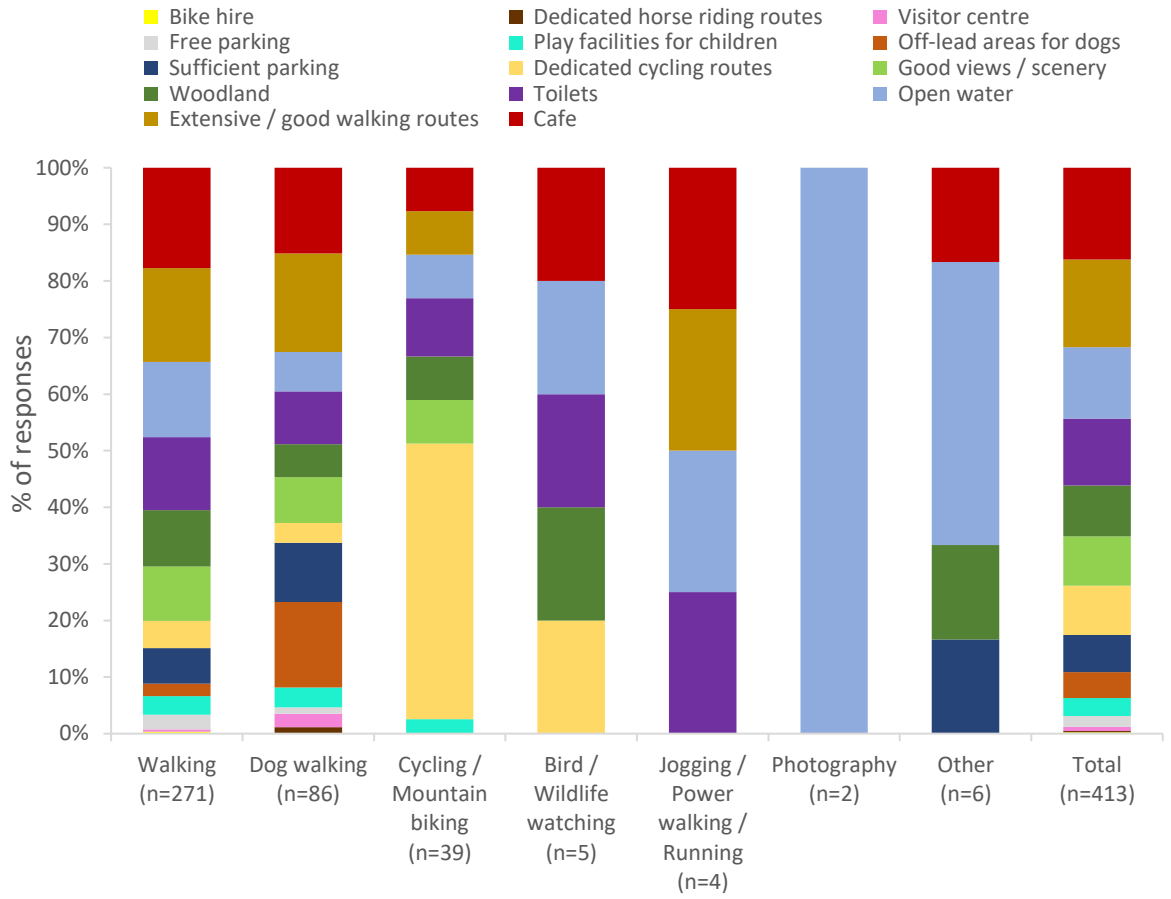


Figure 9: Features identified by interviewees which they would like to see in a novel Country Park or area of greenspace (Q23). Note that interviewees could give multiple responses.

Visitor origins (Q25)

5.37 A total of 226 interviewee postcodes (94.6%) could be accurately mapped, with the full postcode given in the interview matching the standard national postcode database. A total of 13 interviews (5.5%) 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 to the east (see Map 10), with smaller clusters located around Manchester and Hull. The remaining scattering of postcodes spread from coastal Dorset and Kent in the south and coastal Suffolk in the east, to Shropshire in the west and then north to Northumberland.

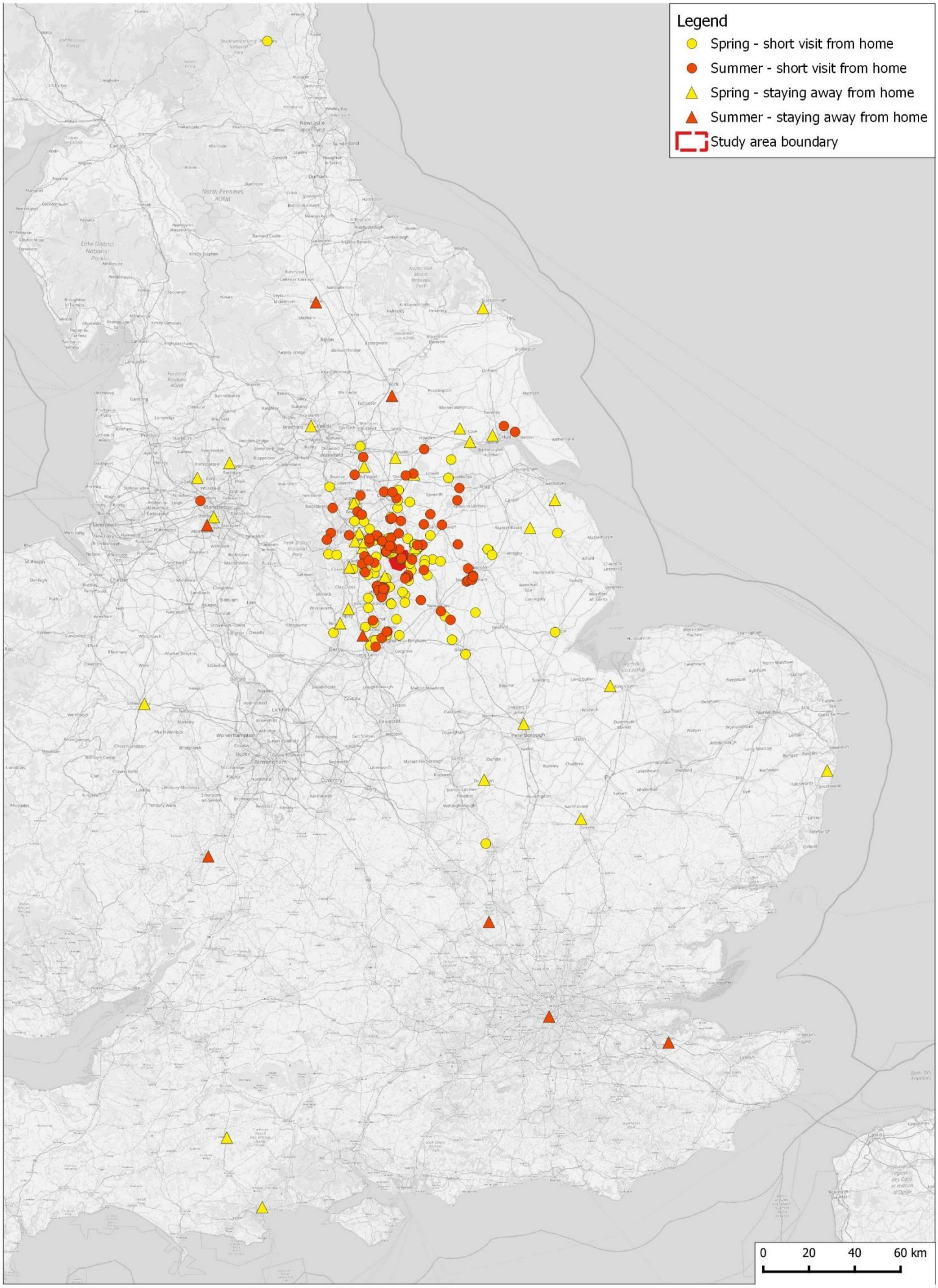
5.38 Maps 11 and 12 present the 75th percentile minimum convex polygons (MCPs) of straight-line home postcode interviewee distance from their respective survey locations. MCPs show the area in which the closest three-quarters of

interviewees originated and provide a good way to summarise where most visitors to each survey location came from. Map 11a depicts the 75th percentile MCP for all interviewees, whereas Map 11b depicts that for interviewees on a day trip/short visit from home only. Maps 12a to 12d depict the 75th percentile MCPs for day visit interviewees at each of the 4 Survey Points individually.

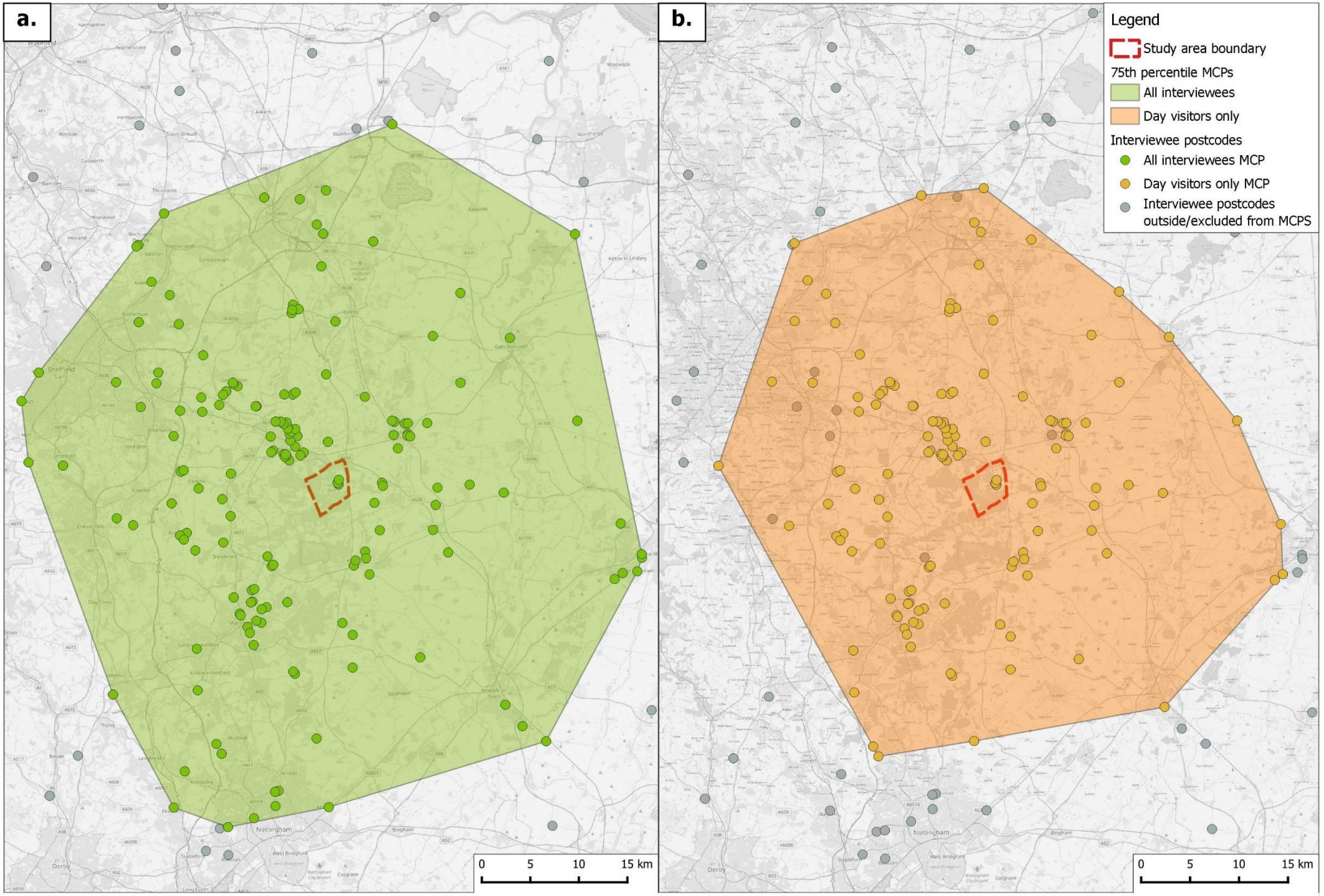
5.39 The 75th percentile MCPs of straight-line travel distance for all interviewees on a day visit from home (Map 11b) encompasses an area bordered by Nottingham to the south, Doncaster to the north, Lincoln to the east, and Sheffield to the west. The MCP stretches further west and north-eastwards, in particular, if the postcodes of those interviewees on holiday/staying away from home are included (Map 11a). The shape of both MCPs are relatively circular, centred upon the Clumber Park boundary.

5.40 Interviewees postcodes from home visits to Survey Point 2 (Hardwick Grange Weir: Map 12b) describe a similar MCP to that seen in the combined home visit dataset, with those from Survey Point 3 (Clumber Bridge: Map 12c) describing a slightly smaller area within the MCP and suggesting a south-westerly influence on visitor origins. The MCPs produced for Survey Point 1 (Lime Tree Avenue North: Map 12a) and Survey Point 2 (Lime Tree Avenue South: Map 12d) are skewed by the relatively small number of day-visiting interviewees within the respective datasets.

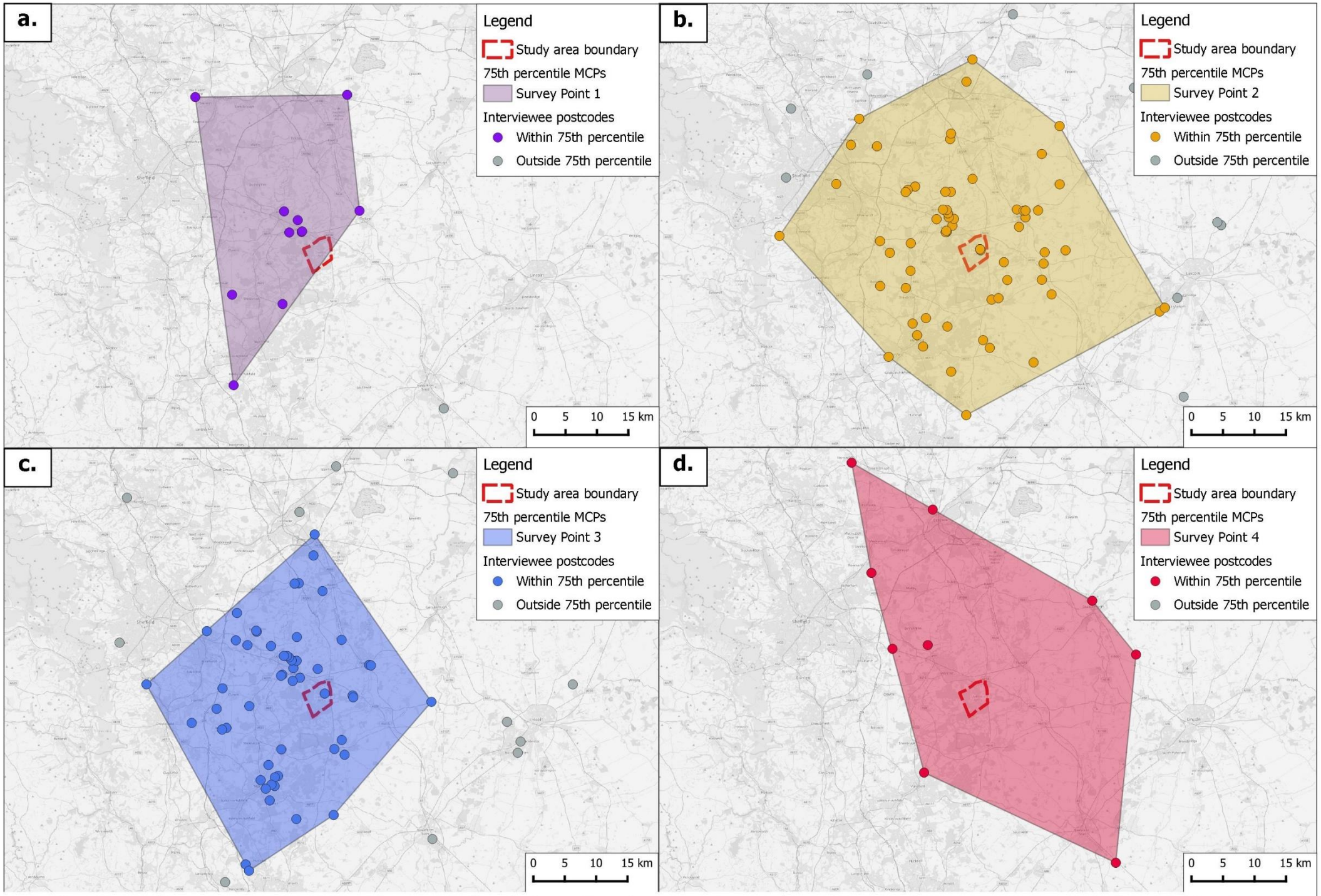
Map 10: Home postcodes of all interviewees, stratified by season and visit type



Map 11: 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 12: 75th percentile Minimum Convex Polygons of straight-line distances for all day visitor interviewee postcodes at: (a) Survey Point 1 (Lime Tree Avenue North); (b) Survey Point 2 (Hardwick Grange Weir); (c) Survey Point 3 (Clumber Bridge); and, (d) Survey Point 4 (Lime Tree Avenue South)



5.41 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 23, with data solely from interviewees undertaking day visits form home provided in Table 24.

5.42 It can be seen that across all visit types during the spring survey period (138 interviewees) the mean distance was 34.7km and the median was 18.5km (i.e. 50% of all interviewees during this period had come from a radius of <18.5km around the survey locations). The mean is much higher than the median as there are a few large values (up to 290.6km) that skew the data. The third quartile (75th percentile) was 38.5km (i.e. 75% of all spring survey period interviewees lived within this distance of the survey location). Overall distances for the summer survey period (88 interviewees) were similar, with a mean of 33.4km, a median of 21.7km, and a 75th percentile of 34.7km.

5.43 These statistics varied between the survey locations however, with much larger mean (57.8km) and 75th percentile (71.5km) distances recorded from Survey Point 1 (Lime Tree Avenue North) in the spring, due to the large proportion of holidaymakers within the dataset for that location. Survey Point 4 (Lime Tree Avenue South) also exhibited larger than average mean (45.3km) and 75th percentile (62.6km) distances in the summer, although these were calculated from a small sample size.

Table 23: 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 75th percentile. Spring surveys are highlighted blue and summer surveys are highlighted pink.

Survey location	Survey period	N	Distance (km)				
			Mean (+ 1SE)	Min	Median	Q3	Maximum
1 - Lime Tree Avenue North	Spring	36	57.8 (+11.8)	0.4	31.1	71.5	290.6
2 - Hardwick Grange Weir	Spring	57	27.5 (+4.9)	0.1	15.1	33.5	234.4
	Summer	37	30.0 (+6.0)	6.7	23.5	33.2	210.2
3 - Clumber Bridge	Spring	45	25.9 (+3.6)	5.1	17.6	33.3	107.4
	Summer	38	32.7 (+7.4)	2.7	15.9	33.4	241.0
4 - Lime Tree Avenue South	Summer	13	45.3 (+11.5)	10.7	30.6	62.6	163.3
Total	**Spring**	**138**	**34.7 (+4.0)**	**0.1**	**18.5**	**38.5**	**290.6**
	Summer	**88**	**33.4 (+4.4)**	**2.7**	**21.7**	**34.7**	**241.0**

5.44 When holidaymakers are removed from the dataset (leaving 185 interviewees in total) the overall straight-line distances decreased substantially (see Table 25), with the overall spring mean distance being 22.4km, the median 15.1km, and the 75th percentile 27.8km. Similar distances were calculated for the summer survey period, with a mean of 23.2km, a median of 18.3km, and a 75th percentile of 32.3km.

5.45 There was still some variation between survey locations, with Survey Point 4 (Lime Tree Avenue South), in particular, recording larger than average distances, with a mean of 35.5km and a median of 29.1km. This was again potentially a result of the smaller sample size at that location however, although a similar sample size was recorded at Survey Point 1 (Lime Tree Avenue North) which more closely resembled the results from Survey Point 2 (Hardwick Grange Weir) and Survey Point 3 (Clumber Bridge).

Table 24: 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 75th percentile. Spring surveys are highlighted blue and summer surveys are highlighted pink.

Survey location	Survey period	N	Distance (km)				
			Mean (+ 1SE)	Min	Median	Q3	Maximum
1 - Lime Tree Avenue North	Spring	14	24.5 (+8.8)	3.4	13.1	31.2	131.0
2 - Hardwick Grange Weir	Spring	54	23.9 (+4.6)	0.1	14.4	30.9	234.4
	Summer	34	21.9 (+2.0)	6.7	19.1	32.2	47.9
3 - Clumber Bridge	Spring	37	19.5 (+1.9)	5.1	15.2	27.2	44.7
	Summer	34	20.3 (+2.9)	2.7	15.0	31.0	90.4
4 - Lime Tree Avenue South	Summer	12	35.5 (+6.4)	10.7	29.1	48.1	76.4
Total	Spring	**105**	**22.4 (+2.7)**	**0.1**	**15.1**	**27.8**	**234.4**
	Summer	**80**	**23.2 (+1.9)**	**2.7**	**18.3**	**32.3**	**90.4**

5.46 Amongst the three most frequently recorded activity types (walkers, dog walkers, and cyclists) all interviewees undertaking a day trip from home exhibited similar straight-line distances (see Table 25). Walkers reported a mean distance of 23.5km, a median of 17.7km, and a 75th percentile of 32.5km, dog walkers reported distances of 23.0km, 13.3km, and 30.5km for the same metrics, and cyclists 18.6km, 14.4km, and 28.2km, respectively. The small sample sizes for the other activity types did not allow for robust interpretation, although there were indications that bird/wildlife watchers, joggers/runners, and photographers were likely to live in relative proximity to the survey location.

Table 25: 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	125	31.7 (+3.0)	0.1	19.8	35.5	210.2
	Day visits only	108	23.5 (+1.8)	0.1	17.7	32.5	130.9
Dog walking	All	60	31.5 (+5.6)	0.1	17.2	37.2	234.4
	Day visits only	47	23.0 (+5.1)	0.1	13.3	30.5	234.4
Cycling / Mountain biking	All	28	52.4 (+15.0)	2.7	23.2	43.9	290.6
	Day visits only	19	18.6 (+2.8)	2.7	14.4	28.2	41.5
Bird / Wildlife watching	All	3	61.5 (+51.0)	6.0	15.1	N/A	163.3
	Day visits only	2	10.6 (+4.6)	6.0	10.6	N/A	15.1
Jogging / Power walking / Running	Day visits only	2	9.6 (+1.7)	7.9	9.6	N/A	11.2
Photography	Day visits only	3	10.7 (+3.2)	7.0	8.1	N/A	17.0
Horse riding	Day visits only	1	32.2	N/A	N/A	N/A	N/A
Other fitness / sports	Day visits only	1	35.2	N/A	N/A	N/A	N/A
Other	All	3	44.8 (+24.5)	6.7	37.4	N/A	90.4
	Day visits only	2	48.5 (+41.9)	6.7	48.5	N/A	90.4

5.47 Interviewees who visited at least once a week were more likely to originate from closer postcodes than those who visited less frequently (see Table 26), with mean ranges of 6.9km to 13.1km and 22.5km to 69.7km, and 75th percentile ranges of 11.5km to 15.9km and 30.5km to 94.0km, respectively. Interviewees undertaking their first visit to the site travelled the largest distances of any category (mean of 69.7km and 75th percentile of 94.0km).

Table 26: 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)	4	8.0 (+2.3)	2.7	7.7	12.3	13.8
Daily (300-365 visits)	11	6.9 (+1.8)	0.1	6.1	11.5	16.3
Most days (180-300 visits)	6	10.5 (+1.7)	4.2	10.9	12.7	17.0
1 to 3 times a week (40-180 visits)	55	13.1 (+1.2)	0.3	11.4	15.9	52.8
2 to 3 times per month (15-40 visits)	32	22.5 (+2.1)	7.2	19.5	30.5	50.1
Once a month (6-15 visits)	27	26.2 (+3)	7.7	26.9	35.6	69.1
Less than once a month (2-5 visits)	58	59.7 (+8.6)	6.5	33.3	73.2	290.6
Annually	1	33.1	N/A	N/A	N/A	33.1
Less than annually	4	48.1 (+16.7)	16.7	45.4	80.4	84.8
First visit	24	69.7 (+11.7)	11.3	53.4	94.0	241.0
Other	3	19.1 (+8.2)	8.8	13.3	N/A	35.2
Don't know	1	22.4	N/A	N/A	N/A	22.4

5.48 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 75th percentiles of 9.8km, 12.0km, and 32.3km, respectively (see Table 27). Amongst other visit types, the information provided is of less relevance, as interviewees will have most likely originated from a much closer locality (e.g. holiday home) than their home address on the day of the interview.

Table 27: 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	180	30.5 (+2.7)	3.4	19.7	33.7	234.4
	Day visits only	164	24.7 (+1.9)	3.4	18.2	32.3	234.4
On foot	All	28	47.7 (+10.8)	0.1	25.6	66.2	241.0
	Day visits only	10	5.4 (+1.8)	0.1	3.8	9.8	15.9
Bicycle	All	17	54.1 (+21.6)	2.7	11.2	79.1	290.6
	Day visits only	10	9.2 (+1.2)	2.7	9.5	12.0	14.4

Visitor routes during their visit (Q10-11)

5.49 For the majority of interviewees overall (65.3%) the route they took was reflective of their normal route (see Table 28), with 10.9% on their first visit to the locality, and a further 4.2% who did not have a typical visit. This pattern held at each of the survey locations, with the second most frequent response from interviewees at Survey Point 1 (Lime Tree Avenue North), Survey Point 2 (Hardwick Grange Weir), and Survey Point 4 (Lime Tree Avenue South) indicating that their route had been shorter than usual. A larger relative proportion of interviewees at Survey Point 3 (Clumber Bridge) were on their first visit to the location.

Table 28: 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.

Survey location	Route length				First vist	Total
	Typical visit	Much longer than normal	Much shorter than normal	Not sure/no typical visit		
1 - Lime Tree Avenue North	14 (37.9%)	3 (8.2%)	10 (27.1%)	5 (13.6%)	5 (13.6%)	37 (100%)
2 - Hardwick Grange Weir	75 (76.6%)	2 (2.1%)	10 (10.3%)	4 (4.1%)	7 (7.2%)	98 (100%)
3 - Clumber Bridge	60 (66%)	5 (5.5%)	12 (13.2%)	1 (1.1%)	13 (14.3%)	91 (100%)
4 - Lime Tree Avenue South	7 (53.9%)	0 (0%)	5 (38.5%)	0 (0%)	1 (7.7%)	13 (100%)
Total	**156 (65.3%)**	**10 (4.2%)**	**37 (15.5%)**	**10 (4.2%)**	**26 (10.9%)**	**239 (100%)**

5.50 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 (24.5% of responses), followed by time constraints (15.8%), weather conditions (11.2%), the activity undertaken (9.4%), and the presence of a marked trail (9.1%). The remaining factors each comprised <8% of responses each. The non-predetermined 'other' category (7.6% of responses) included flat terrain/accessibility, scenery, varying of typical routes, proximity to parking, and the effects of gate closures.

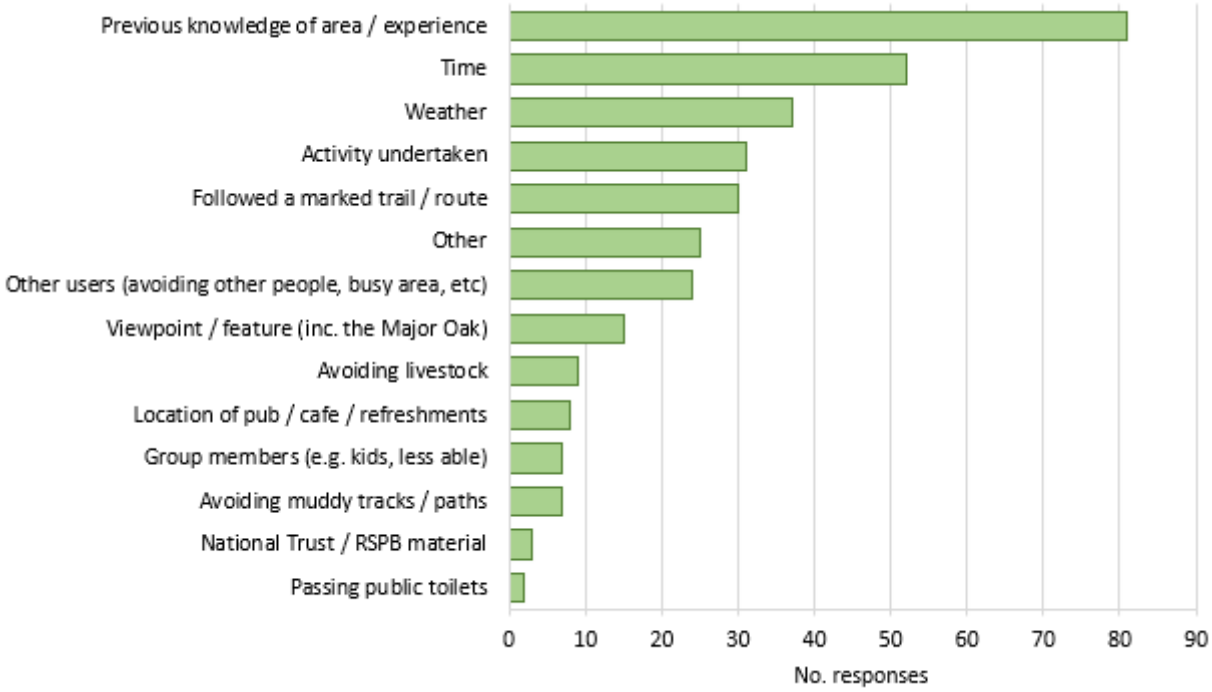


Figure 10: Factors influencing choice of route (Q11). Note that interviewees could give multiple responses.

5.51 A total of 239 visitor routes were mapped. Table 29 provides summary route length data for all survey locations, with the data provided separately for full routes (i.e. those that extended outside of the Clumber Park study area boundary) and clipped to within the study area only. The longest mean route full route (7.3km) was calculated for Survey Point 3 (Clumber Bridge), with the longest mean clipped route (7.0km) calculated for Survey Point 2 (Hardwick Grange Weir). It should however be noted that the mean route lengths at Survey Points 1 to 3 were extremely similar. The shortest mean route length (3.6km clipped and full) was recorded at Survey Point 4 (Lime Tree Avenue South).

5.52 The median and 75th percentile values for each of the survey locations exhibited a similar pattern, with a maximum 75th percentile of clipped routes (8.8km) recorded at Survey Location 1 (Lime Tree Avenue North) and the shortest (4.5km) at Survey Point 4 (Lime Tree Avenue South). Overall, the data indicates that the majority of visitors to the study area undertake routes between 6.4km and 8.0km in length within the Clumber Park boundary.

Table 29: 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 - Lime Tree Avenue North	Full	38	7.2 (+0.7)	0.2	6.5	9.4	15.9
	Clipped	38	6.3 (+0.6)	0.2	5.8	8.8	14.7
2 - Hardwick Grange Weir	Full	98	7.1 (+0.2)	2.2	6.5	8.2	16.6
	Clipped	98	7.0 (+0.2)	2.2	6.5	7.7	16.4
3 - Clumber Bridge	Full	91	7.3 (+0.3)	2.5	6.7	8.5	19.4
	Clipped	91	6.9 (+0.3)	2.5	6.7	8.3	15.5
4 - Lime Tree Avenue South	Full	12	3.6 (+0.9)	0.5	3.3	4.5	10.8
	Clipped	12	3.6 (+0.9)	0.5	3.3	4.5	10.8
Total	**Full**	**239**	**7.0 (+0.2)**	**0.2**	**6.5**	**8.4**	**19.4**
	Clipped	**239**	**6.7 (+0.2)**	**0.2**	**6.4**	**8.0**	**16.4**

5.53 Amongst the three most frequently recorded main activity types, cyclists exhibited the longest mean routes within the study area (9.0km: see Table 30), with walkers the second longest (6.7km), and dog walkers the third (5.9km).

Table 30: 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	133	6.7 (+0.2)	1.9	6.4	7.5	13.7
Dog walking	63	5.9 (+0.3)	0.2	5.7	7.1	11.7
Cycling / mountain biking	29	9.0 (+0.6)	3.9	8.8	10.6	16.4
Bird / wildlife watching	3	5.1 (+2.4)	0.5	6.3	N/A	8.4
Jogging / power walking / running	3	6.0 (+0.2)	5.8	6.1	N/A	6.2
Photography	3	6.2 (+1.6)	3.3	6.8	N/A	8.5
Horse riding	1	10.5	N/A	N/A	N/A	10.5
Other fitness / sports	1	6.2	N/A	N/A	N/A	6.2
Other	3	4.4 (+1.3)	2.7	3.6	N/A	6.8
Total	**239**	**6.7 (+0.2)**	**0.2**	**6.4**	**8.0**	**16.4**

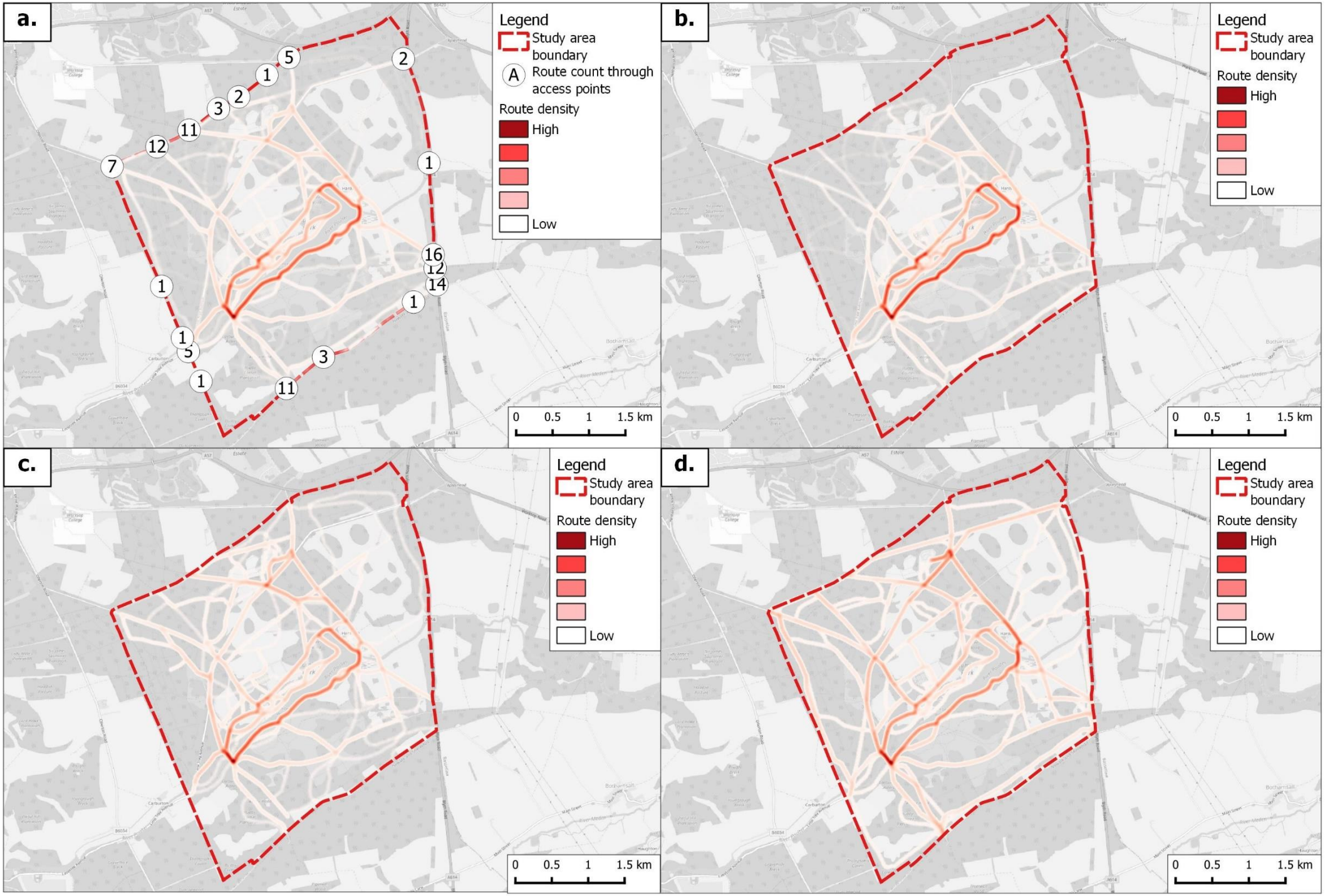
5.54 The routes recorded are shown in Maps 13a to d, clipped to the study area, with route density indicated through the use of a heat map (with colour intensity congruous with route density). The maps highlight the areas with the highest level of use and broadly indicate where the largest volume of interviewee footfall occurred. Map 13a depicts route densities for all mapped interviewees (239) across both survey periods, with Maps 13b to 13d depicting the route densities for walkers, dog walkers, and cyclists in isolation, respectively.

5.55 Interviewee footfall was concentrated along a circular route around the periphery of Clumber Lake (see Map 13a), with pinch points at Clumber Bridge, and at Hardwick Grange Weir to a lesser extent, comprising density hotspots. A slightly less well-used circular route is also apparent north of Clumber Lake, in the vicinity of the National Trust facilities and car parks on site. Other routes radiate along the existing paved roads and well-formed tracks on site. Nevertheless, footfall is also apparent across grassy areas within the South Lawns and along minor woodland tracks running across the study area.

5.56 Although the majority of interviewees were carrying out a circular route on site, having arrived by car and parked within the study area boundary, a proportion still accessed or egressed the site on foot/by bike, etc, during their visit. Non-motorised route counts through access points along the study area boundary are shown on Map 13a, and it can be seen that access points in the vicinity of the Normanton Gate (in the south-eastern corner of the study area), South Lodge (on the southern perimeter), and to the east of Truman's Lodge (in the north-western corner of the study area) were those most frequently used. Notably, few visitors were observed accessing the site via Apleyhead Lodge, or via other points in the study area's northernmost apex, which lie in closest proximity to the location of the proposed Bassetlaw Garden Village.

5.57 The route density of walkers (see Map 13b) mirrors the overall route density map. Dog walker density is also highest along the circular Clumber Lake route (see Map 13c), although the roads and tracks running north-west from Hardwick village, and areas in proximity to Lime Tree Avenue, are also well-used. Dog walkers also show greater evidence of minor track use, and of potentially going 'off piste' in comparison to the other user types depicted. Finally, cyclist route density (see Map 13d) is focussed upon the better maintained/surface tracks and roads within the study area, with an indication of a larger, potentially circular, route along the southern edge of Clumber Lake, north from Hardwick village, and along Lime Tree Avenue.

Map 13: Route densities for: (a) all interviewees; (b) walkers only; (c) dog walkers only, and; (d) cyclists only



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

5.58 Suggestions from interviewees (Q21) 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, additional seating, improved access and path maintenance, fewer people, and conflict between user groups.

5.59 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, with full responses provided in Appendix 4.

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

5.60 The majority of feedback was positive, with many people enjoying the peace and quiet on site, and generally liking what the National Trust is doing in terms of management. There were nevertheless some complaints about the admission price. Parking provision and access were also key themes, with parking management on Lime Tree Avenue, in particular, singled out for both positive and negative responses. A small proportion of respondents did not like the Longhorn cattle being present within the study area, and conflict with other site users (cyclists in particular) was also identified as an issue.

5.61 Furthermore, there were requests for:

- More waste bins to be deployed;
- Changes to the café;
- Later and earlier opening times;
- Reductions/changes to entrance fees;
- Provision of additional parking areas;
- The re-opening of Truman's Lodge gate (and others);
- Provision of better signage;
- Improved access and facilities for disabled people;
- Reduction of the speed limit on Lime Tree Avenue and the cessation of verge parking;
- Deployment of cattle in fewer areas;
- Increased open access;
- More benches; and,
- Seperate paths for cyclists and better control of the cyclists using them.

6. Assessment of recreation impacts

6.1 In this section we synthesise the findings from the breeding bird surveys, habitats and recreation impact walkover, and visitor interviews to identify how recreation may be impacting the relevant interest features of Clumber Park SSSI. 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 National Trust Clumber Park, and the encapsulated Clumber Park SSSI, is clearly a destination site within the region, attracting both day visitors and holidaymakers from further afield. The presence of a caravan park within the confines of the National Trust site, adjacent to the SSSI, ensures that a large proportion of visitors (to certain areas of the site at least) were classified as holiday makers, comprising those visiting from further afield and/or on vacation. Nevertheless, the site has a similar draw geographically for all visitor types, as evidenced by the similar radii of the 75th percentile MCPs for both day visitors in isolation and all visitor types combined.

6.3 The majority of site users drive to the locality and spend between 1 and 3 hours on site. People who live closer to the site tend to visit more frequently than those that live further afield, and 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 Trust site. The key reasons for site choice include proximity to home address, familiarity, and membership of the National Trust, although many site users also access websites and use online or paper maps to plan their visits.

6.4 Visitors undertook a range of activities. Nevertheless, walkers and dog walkers comprise by far the most frequent users, with cyclists also well represented. It can therefore be argued that the larger proportion of recreation impacts observed on site are likely to be driven by these activities specifically.

6.5 These three most frequent user types show differences in the routes that they use, with walkers concentrated around the periphery of Clumber Lake, whilst dog walkers use a wider scattering of formal and informal routes across the site (including along Lime Tree Avenue and across the South Lawn). Cyclists show a preference for longer, potentially circular routes, and appear to largely stick to clearly marked tracks. The routes used by site users are nevertheless mostly reflective of previous experience, the time available to undertake it, prevailing weather conditions, the activity being undertaken, and the presence of a marked trail.

6.6 Although the majority of users drive to the site, there is evidence that certain access points along the periphery of National Trust Clumber Park are frequently used for foot or bicycle access. Of particular note are the relatively large numbers of visitors who access directly across the Clumber Park SSSI boundary at Truman's Lodge and South Lodge, and via the Normanton Gate in the south-eastern corner of the SSSI.

6.7 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 susceptive to the impacts of recreation, in particular, during the interview surveys. Nevertheless, the presence of breeding birds was identified by a small proportion of interviewees. Furthermore, the majority of site users indicate that they would use areas of alternative greenspace for their activity if it were provided.

Impacts upon qualifying features and other sensitive receptors

Habitats

6.8 Map 14a overlays all visitor routes upon those broad-scale habitats identified as being susceptible (and accessible) to recreation impacts during the walkover survey (grassland, woodland, and heathland areas), with the intensity of the route line analogous with intensity of use. The greatest intensity of route use overall is focussed upon the periphery of Clumber Lake, and there is potential for site users to trample areas of riparian habitat if straying off the path or at pinch points (as observed at Clumber Bridge). This circular route also passes through several woodland blocks and along the northern periphery of the South Lawn.

6.9 Other busy, but less heavily used, routes are also located within the expansive woodland areas comprising the western extent of Clumber Park

SSSI, directly traversing the South Lawn grassland areas, and within the remaining heathland areas located in the south and west of the SSSI. A myriad of less intensively used routes cross all of the other habitat parcels identified in Map 14a.

6.10 Trampling and compaction of ground flora and soils, alongside damage to tree roots within woodland areas, is therefore an important impact throughout the site. Cyclists, in particular, appear to cover more ground than other user types, with compaction and damage from bicycles noted throughout. This is despite bicycles being prohibited from certain routes yet still using them, as evidenced by the walkover results and identified as an issue by other site users during the interview surveys.

6.11 Enrichment from dog faeces and urine is another key impact, with dog walkers particularly prevalent within areas in proximity to Lime Tree Avenue. The effects of enrichment are compounded in certain localities, especially along Lime Tree Avenue, by the effects of off-road parking (leading to the almost total removal of ground flora in places). The grassland road verges on site are consequently species poor and the ephemeral sward species historically recorded on site may have been lost in the past decade.

6.12 A major issue for the SSSI 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 ultimately disturb or impact upon roosting bat species and cavity nesting birds, whilst removal of deadwood could also have knock on effects upon the SSSI's saproxylic invertebrate community.

Breeding birds

6.13 Notable bird species, as well as commoner species forming part of the SSSI's breeding bird assemblage, are widespread across the SSSI. This includes a suite of fast declining species of national conservation value, including Turtle Dove, Spotted Flycatcher, Cuckoo, Lesser Spotted Woodpecker, Marsh Tit, Lesser Redpoll and Hawfinch. The presence of these species is notable, and they are all priorities for conservation.

6.14 Nevertheless, impacts resulting directly from recreation are perhaps relatively minimal for many of the bird species associated with dense scrub and woodland (although confirmation of this would require further investigation). Those nesting or feeding in more open habitats or those

nesting on the ground will be more vulnerable and include Willow Warbler, Skylark, Tree Pipit, Turtle Dove, and Woodcock.

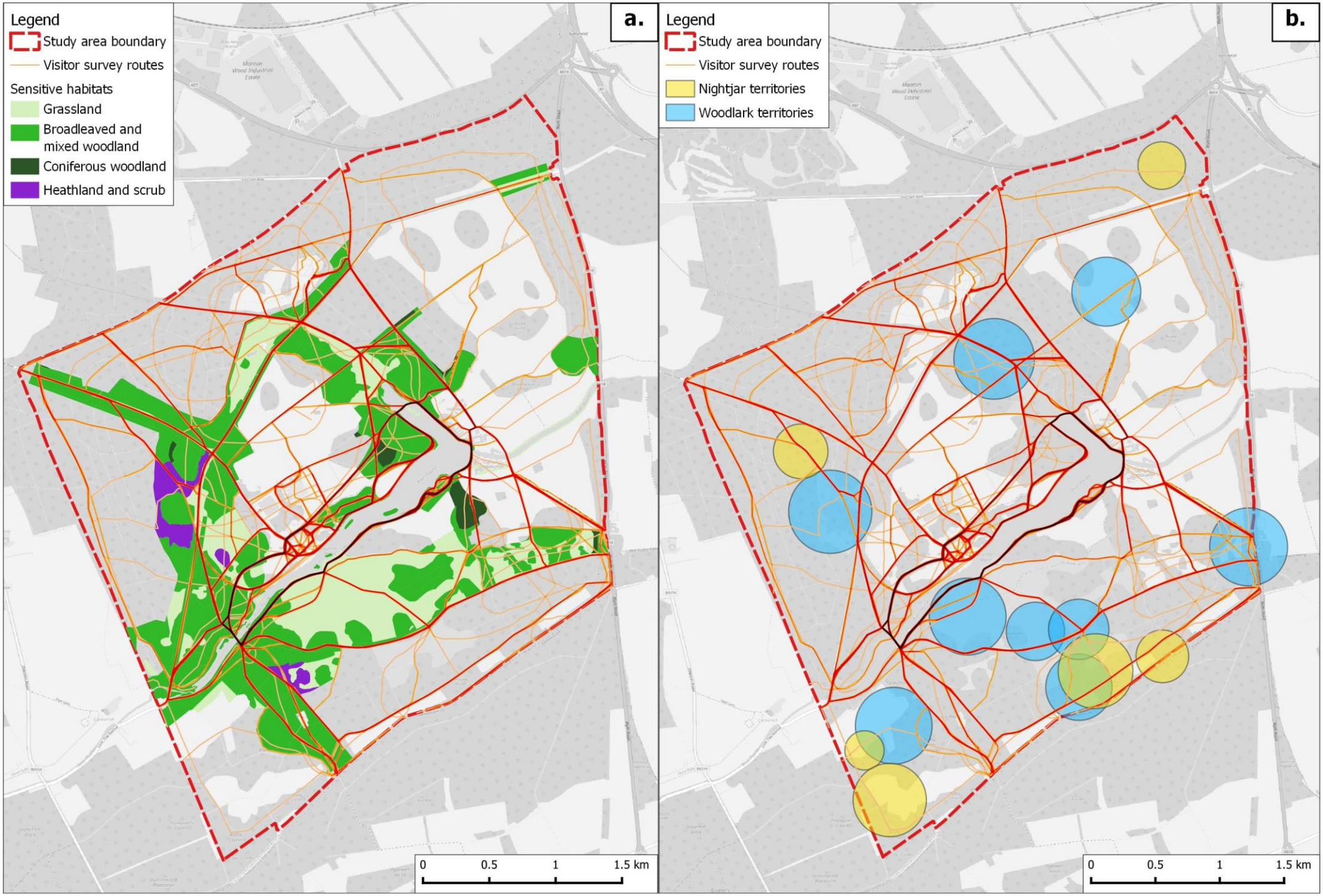
6.15 Nightjar and Woodlark are also ground-nesting species and impacts from recreation have been widely reported for these species(Lowe et al., 2014; Mallord et al., 2007; Murison, 2002). The data presented here for Nightjar, in particular, appear to show that they currently favour less heavily utilised areas of the National Trust Clumber Park site (see Map 14b). As such, there is potential for any increase in footfall within these areas to have a negative impact upon the Nightjars present. This is of particular relevance to territorial Nightjars recorded in proximity to Apleyhead Lodge, which lies in close proximity to the proposed Bassetlaw Garden Village.

6.16 Woodlark are more widely distributed across the SSSI (see Map 14b), including the extensive grassland area forming the South Lawn. The presence of 7 to 9 pairs of Woodlark, and 5 to 6 territorial Nightjar, within the National Trust Clumber Park boundary indicate that the locality potentially supports a significant proportion of the populations associated with Sherwood Forest ppSPA[8], and further consideration of recreation impacts upon the (potential) European Site are therefore of relevance.

6.17 Wetland and riparian breeding species, such as Gadwall and Mute Swan, are also potentially susceptible to terrestrial disturbance. Nevertheless, the majority of visitors to Clumber Lake and the River Poulter appear to follow marked routes around the perimeter of the lake, and damage to riparian habitats was identified as localised during the recreation impact walkover, so regular disturbance to waterbird species is probably relatively low.

[8] 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 14: Overlay of visitor routes upon: (a) sensitive habitats, and: (b) Nightjar and Woodlark records



Modelling visitor rates and potential future changes

Increases in residential housing

6.18 Map 15 provides the location of all residential allocations within the GIS shapefiles provided by Bassetlaw and Newark and Sherwood District Councils. It also depicts the incremental 500m buffer surrounding Clumber Park SSSI used to extract postcode information to inform our understanding of levels of housing change. The number of existing residential postcodes, the number of proposed allocation dwellings, and the percentage increase between them within each distance band are provided in Appendix 5. Figure 12 summarises the data graphically, stratified by Local Authority.

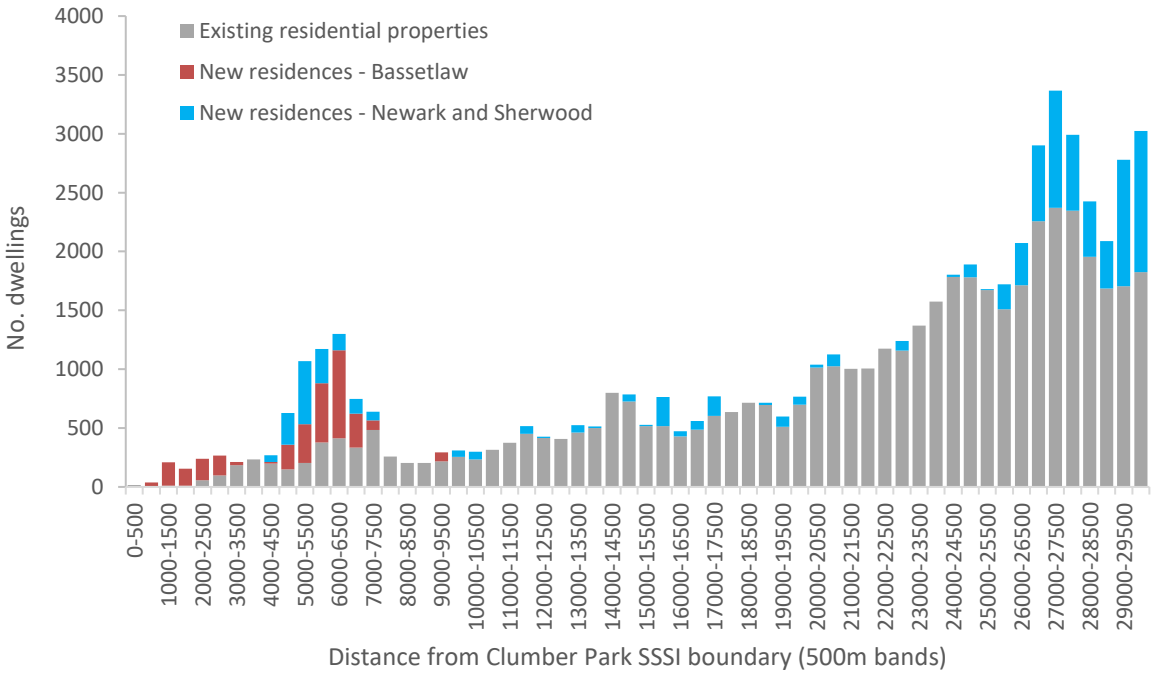
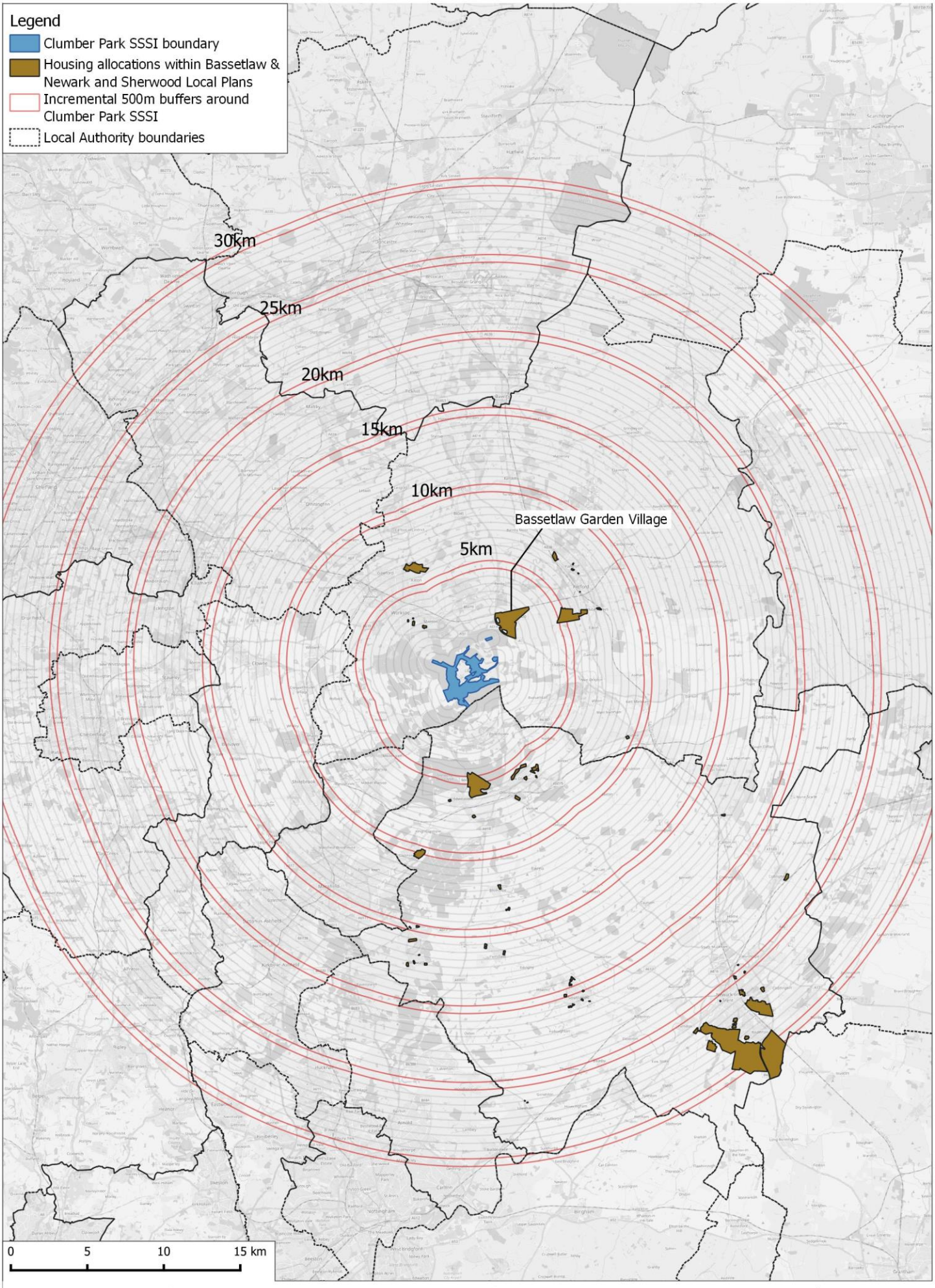


Figure 12: Levels of current and future (new) housing in proximity to the Clumber Park SSSI boundary (using 2022 national postcode data).

6.19 The majority of new housing detailed in the Bassetlaw Local Plan is located within 7.5km of the Clumber Park SSSI boundary, with a large component comprising the 500 properties within Bassetlaw Garden Village (entirely located within 3.5km of the SSSI boundary). Furthermore, 17% of the new housing identified in the Newark and Sherwood Local Plan (comprising 1,487 dwellings) is located within 7.5km of the SSSI boundary.

Map 15: Clumber Park SSSI in relation to housing allocations detailed within the Bassetlaw & Newark and Sherwood Local Plans, overlaid by incremental 500m buffer (30km extent)



Current visit rates in relation to distance

6.20 Those living close to Clumber Park will be expected to visit more frequently than those living further away. In order to understand this pattern in detail, we used the visitor survey data to calculate the number of interviewees from different distance bands (plotted around each survey point, at 500m intervals) and the number of residential properties within the same bands. Residential properties were extracted from postcode data.

6.21 We calculated the number of interviewees per dwelling for each band and survey point, which is essentially the visit rate, and then plotted this visit rate against distance from the survey point. Separate plots were produced for those arriving on foot and those arriving by car, using the data for those on a short visit directly from home only.

6.22 The lack of current local housing directly adjacent to the survey locations meant that there were few day visitor interviewees who had arrived on foot at the survey points:

- At Survey Point 1 (Lime Tree Avenue North) only a single interviewee had arrived on foot (their home postcode fell in the 2.5-3km distance band from the survey point);
- At Survey Point 2 (Hardwick Grange Weir) there were 5 interviewees who had arrived on foot. 4 of these lived within 500m of the survey point and the fifth lived in the 3-3.5km band; and,
- At Survey Point 3 (Clumber Bridge) and Survey Point 4 (Lime Tree Avenue South) there were no interviewees who had arrived on foot.

6.23 There are fewer than 10 houses within the first 500m buffer surrounding each of the survey points, and for many of the remaining closer bands the number of current houses is less than 2. Any calculation of a visit rate from such data is challenging and there is risk of the data being skewed by low sample sizes. For example, where there is just 1 dwelling within 500m, a single interviewee from that band would generate a visit rate (interviewees per dwelling) of 1 (i.e. 1/1) whereas no interviewees would give a rate of 0 (0/1). A single interview therefore has a very marked influence on visit rate and, given that the surveys covered a relatively small survey window, there is considerable uncertainty around the data.

6.24 We calculated the on foot visit rate (interviewees per dwelling) for each survey point and used 1km bands to reduce the variability between survey points. The plot is shown in Figure 13. The equation for the fitted line would

suggest that a single dwelling within 500m of one of the surveyed access points at Clumber Park would generate an increase in the number of interviewees arriving at that survey point on foot of 0.34.

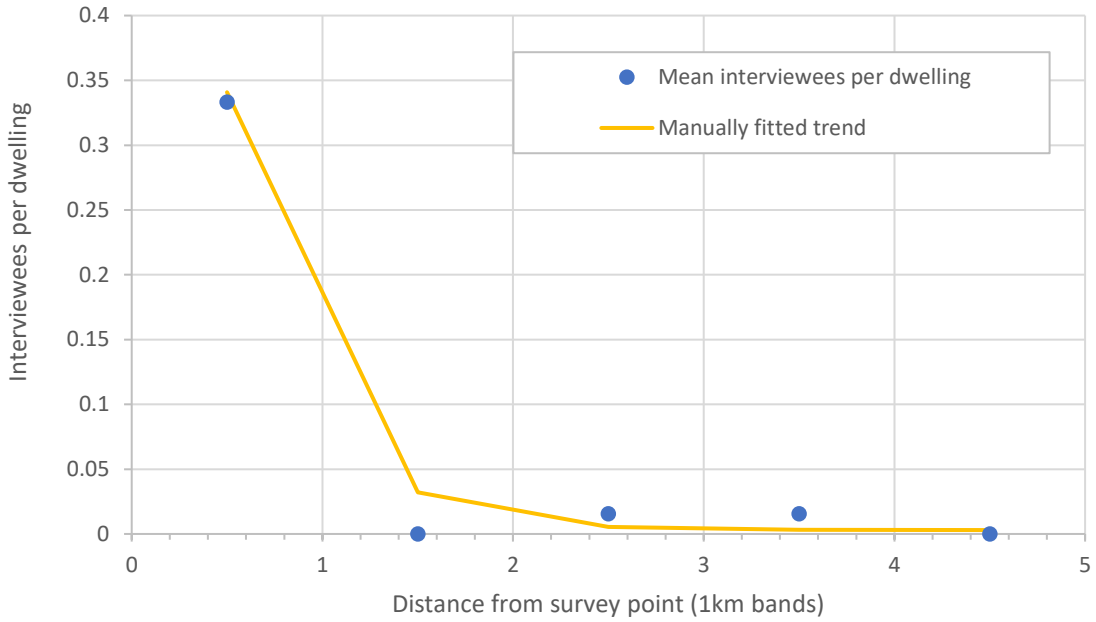


Figure 13: 'Visit rate' (interviewees per dwelling) in relation to distance from the survey point for visitors on foot only. Points show mean value for each 1km band. Trend line fitted by eye. Y=1.15e—2.45x + 0.003.

6.25 A similar plot, derived from the data for those day visitors arriving at the site by car, is shown in Figure 14. As with the on foot data, the lack of housing within the distance buffers closest to the survey point creates considerable uncertainty and a difficulty in deriving a visit rate. We again grouped the data into 1km bands and there was just 1 interviewee who had arrived by car and lived within a 3km radius of the site. There is therefore considerable uncertainty around the 0-5km distances.

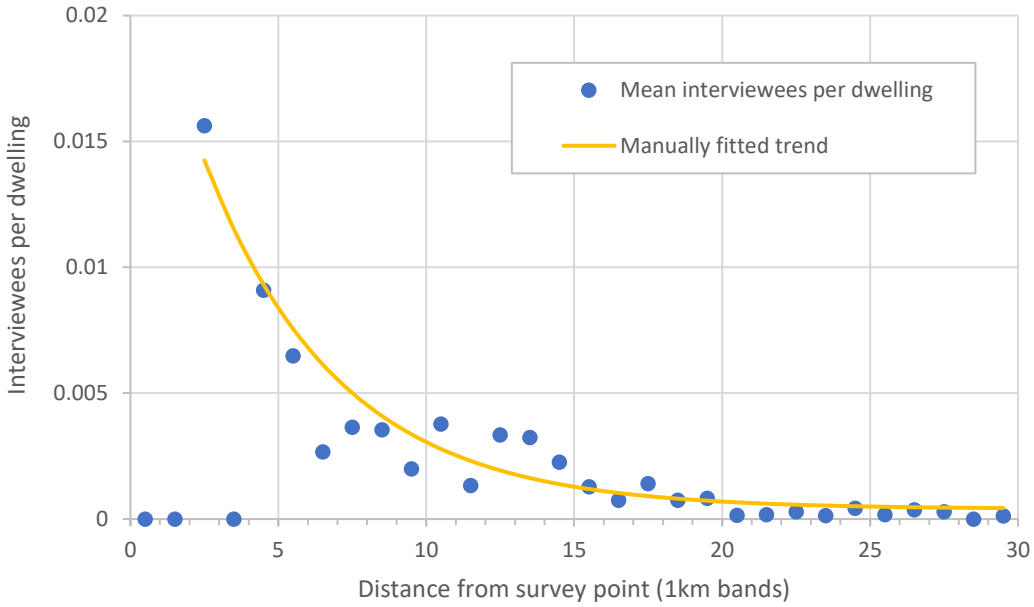


Figure 14: Visit rate' (interviewees per dwelling) in relation to distance from the survey point for visitors arriving by car. Points show mean value for each 1km band. Trend line fitted by eye and with reference to the r^2 value, using data for the distance bands above 2km. Y=0.024e—0.22x + 0.0004 for data, r^2= 0.56.

Predictions of changes in access as a result of plan-led growth

6.26 The curves plotted above were used to predict the change in access likely as a result of the potential new housing growth in both Bassetlaw and Newark and Sherwood, as described above. From the curves we can estimate a visit rate per property at a given distance for those visiting on foot and by car. The predications therefore relate to how many interviewees might be expected, were the survey repeated in the future, taking into account the cumulative levels of development. As the interviews were with a random sample of visitors, it is reasonable to assume that this level of change would be the overall change in access that might be expected.

6.27 We have assumed no mitigation in place that would deflect access, essentially envisaging residents in any new development would have similar access patterns/visit Clumber Park in the same way as existing local residents. The predictions also relate to those arriving either on foot or by car directly from home on a day visit. We have not made any predictions for those arriving by bike (who comprised too small a sample to derive any predictions for) and those on holiday. We have therefore simply assumed for

these groups the number of interviewees in the future would be the same as currently.

6.28 For foot access we did not extend the predictions beyond 10km from the site and for car visits we used buffers out to 30km. Predictions of change are summarised in Table 31 and suggest that there would be an increase in visitor use of 55% compared to the current use (i.e. at the time of survey) as a result of the increase in dwellings from the allocations in the Bassetlaw and Newark and Sherwood Local Plans. This figure of 55% can be broken down between Bassetlaw Local Plan allocations (35% increase, with 9% from the Garden Village alone) and Newark and Sherwood Plan allocations (20%). These figures are approximate but give an indication of the potential scale of change that might be reasonably expected at Clumber Park in the future, as a result of the changes in local housing proposed.

Table 31: Predictions of increased access as a result of different housing scenarios. Predictions relate to the number of people arriving on foot and by car.

Scenario	Total interviewees	Current interviewees by car from home	Current interviewees on foot from home	Other interviewees (arriving by bike or holiday makers)	% increase in car visitors	% increase foot visitors	Predicted future interviewees	Overall % increase
All Bassetlaw and Newark and Sherwood Local Plan allocations	239	173	12	54	67	131	371	55
Bassetlaw Local Plan allocations only (including Garden Village)	239	173	12	54	43	85	324	35
Newark and Sherwood Local Plan allocations only	239	173	12	54	24	45	286	20
Bassetlaw Garden Village only	239	173	12	54	11	16	260	9

Identifying a recreational zone of influence

6.29 A zone of influence identifies where future housing might be reasonably expected to result in increased recreation use and trigger a need for further assessment and mitigation. 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).

6.30 Clumber Park clearly receives visitors from a wide area and many people are travelling some distance and visiting just occasionally. The M1 motorway and nearby A-road network (including the A1, A57, and A614) facilitate ease of accessing the site and it has a regional draw. Furthermore, the relative lack of housing close to the site means that very local people make up only a small proportion of visitors.

6.31 The impact assessment data would suggest that infrequent visitors, coming from further afield and visiting to walk (around the lake) pose much less risk to the site interest than, for example, a marked increase in local dog walkers. 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.

6.32 The visitor data show that walkers, dog walkers, and cyclists account for >94% of interviewees/site users and we have focussed on these activities and only those visiting directly from home (i.e. excluding holidaymakers, etc) 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 122 postcodes in total (see Table 32).

Table 32: Summary statistics for the straight-line distances between the home postcode of all walkers, dog walkers, and cyclists 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 75th percentile.

Activity	N	Length (km)				
		Mean (+ 1SE)	Min	Median	Q3	Maximum
Walking	70	18.4 (+1.6)	0.3	14.6	24.8	69.1
Dog walking	39	17.0 (+2.1)	0.1	13.2	27.6	50.1
Cycling	13	15.9 (+3.2)	2.7	14.2	24.9	41.5
Total	**122**	**17.7 (+1.2)**	**0.1**	**14.3**	**24.7**	**69.1**

6.33 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.

6.34 Using the parameters detailed above gives a distance of 24.7km (see Map 16). 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. The 24.7km, as mapped, includes the entirety of Bassetlaw District and most of the Newark and Sherwood District Council area. It also incorporates sections of the following Local Authorities:

- Ashfield District;
- BolsoverDistrict;
- Chesterfield District:
- Doncaster Metropolitan District;
- Gedling District;
- Mansfield District;
- North East Derbyshire District;
- North Kesteven District;
- North Lincolnshire Unitary Authority;
- Rotherham Metropolitan District;
- Sheffield Metropolitan District; and,
- West Lindsey District.

6.35 To provide context, selected examples of the 75th percentile (drawn from similar surveys at other countryside sites and derived from all interviews), ranked by distance, include:

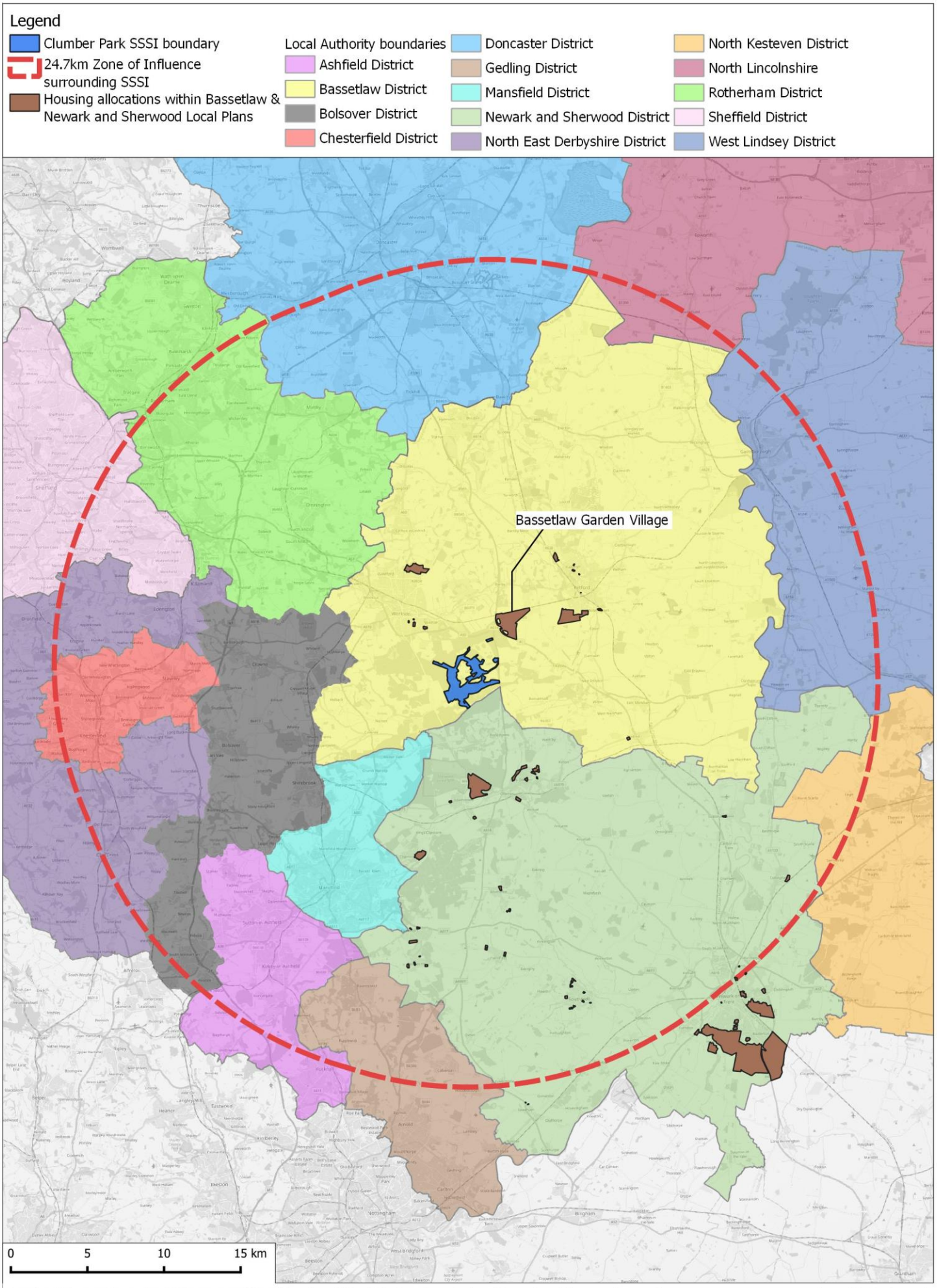
- Rodborough Common: 3.9km (Panter and Caals, 2019a);
- Epping Forest: 6.2km (Liley et al., 2018);
- South Downs (heathland sites only): 6.7km (Lake and Liley, 2014);
- East Devon Pebblebed Heaths: 8.2km (Liley et al., 2016b);
- Ashdown Forest: 9.6km (Liley et al., 2016a);
- Deben Estuary: 14.2km (Lake et al., 2014);
- Cannock Chase: 15.3km (Panter and Liley, 2019);
- Hatfield Forest: 17.8km (Saunders et al., 2019);
- Purbeck: 18.8km (Cruickshanks and Floyd, 2014);
- Braunton Burrows: 19.2km (Liley and Saunders, 2019);
- Cotswold Beechwoods: 20.5km (Panter and Caals, 2019b);
- North Norfolk Coast: 147.5km (Panter et al., 2017); and,

- Norfolk Broads: 194.7km (Panter et al., 2017).

6.36 It can be seen that the distances are typically below 20km. The examples above include a range of different types of sites with a different draw, many are AONB and a couple are National Parks. The two extreme examples – the Norfolk Coast and the Norfolk Broads are however well known tourist destinations where high proportions of visitors were holiday makers.

6.37 The application of such a wide zone in the case of Clumber Park needs careful consideration and review over time as we tentatively suggest part of the reason it is so large is the current relative lack of local housing. There are also the geographical factors (the road network) and possible covid effects to consider. The zone of influence could therefore be revisited at regular intervals, for example once every five years or perhaps in line with the Local Plan review period. This would ensure the robustness of the zone of influence in the post-pandemic period and inform the framework of any subsequent strategic mitigation.

Map 16: Clumber Park SSSI recreational Zone of Influence in relation to Local Authority boundaries and housing allocations detailed within the Bassetlaw & Newark and Sherwood Local Plans



7. Mitigation

7.1 Clumber Park SSSI is clearly vulnerable to recreation impacts which extend to a range of habitat features and species interest, including ground nesting birds (such as Woodlark and Nightjar). 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 at Clumber Park.

7.2 Our approach includes targeted mitigation for Woodlark and Nightjar, which are mobile species and can occur outside the SSSI boundary. The proposed mitigation will ensure that the populations present will be protected and maintained, ensuring that reasonable and proportionate steps have been taken in order to avoid or minimise adverse effects upon them from development in the Sherwood Forest area.

7.3 We also recognise the particular issues posed by the location of the Bassetlaw Garden Village in close proximity to Clumber Park SSSI (entirely within 3.5km of the SSSI boundary), and the potential large number of additional visits to the SSSI that the 500 dwellings incorporated within it will contribute (we estimate a 9% increase in access as a result of the Garden Village alone).

Protection afforded to SSSIs

7.4 There is strong protection through the planning system for SSSIs. For example, the National Planning Policy Framework (NPPF)[9] states that when determining planning applications, development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either alone or in-combination with other developments), should not normally be permitted. The NPPF[10] acknowledges that this may mean that strategic planning documents may need to restrict the overall scale, type, or distribution of development in the plan area in order to provide the necessary protection. Even stronger protection is afforded to European sites.

[9] Para 180
[10] Para 11

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 at Clumber. It is also relevant to highlight that it is not just European sites where the in-combination effects of recreation are being addressed strategically, for example there is a strategic approach to mitigation for Hatfield Forest SSSI.

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 recreation, 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. At many sites there is a presumption against development in close proximity to the site boundary, in recognition of the high recreation use associated with such development, other risks (such as urban effects) and the difficulties in providing mitigation. Such zones extend to 400m (Thames Basin Heaths, Cannock Chase, Dorset Heaths) and 500m (Burnham Beeches).

7.7 The schemes work to deliver a package of mitigation that is funded through developer contributions, enabling development by ensuring risks are identified and addressed up front and the costs are clearly defined. Costs vary according to the measures in place. On the Solent costs range from £337 for a single-bedroom dwelling to £880 for a 5-bedroom dwelling[11]. On the Dorset Heaths, BCP Council charge £324 per dwelling (adjusted according to occupancy) for SAMM.

7.8 Many of these interventions are widespread and commonly used and there are a range of studies that support their effectiveness (e.g. Allinson, 2018;

[11] See https://birdaware.org/solent/wp-content/uploads/sites/2/2021/10/Solent_Recreation_Mitigation_Strategy.pdf for background and cost calculations

Burger and 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.

7.9 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

7.10 Access on the site appears to currently be at a moderate level overall, but with clear hotspots surrounding Clumber Lake and in the vicinity of Lime Tree Avenue. These hotspots differ for the various 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 Lime Tree Avenue survey points, whilst cyclists comprised 20% of interviewees at Clumber Bridge.

7.11 Around 11% of interviewees were first-time visitors. 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. The majority of first-time visitors were recorded on routes surrounding Clumber Lake (at the bridge and at Hardwick Weir), whilst holidaymakers were most frequent along Lime Tree Avenue (due to the presence of the nearby caravan site). Road signage, and to a lesser extent information used to plan the visit, will be key for first time visitors.

7.12 The majority of site users arrived by car and engagement activity should therefore be focussed within car parks and other parking locations. This may nevertheless miss the small number (11%) of users accessing the site on foot however, and it may be useful to carry out infrequent/roving engagement at pedestrian access points around the periphery of the SSSI.

7.13 The circular Clumber Lake walk receives a high density of visitor footfall, whilst other parts of the site appear to receive much lower levels. It is likely that these comprise 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.

7.14 At quieter sites (with lower levels of access) it is often best to aim for very dispersed access, with low levels spread across the entire site. However, given the higher level of visitors at Clumber Park, and the honeypot nature of the National Trust facilities, grounds, and lake, it would be better there to attempt to aggregate visitors in time and space, with access focussed upon the main paths within areas of less vulnerable/valuable habitat.

Suggested mitigation approaches for Clumber Park SSSI

7.15 The proposed levels of new housing mean a shift towards more local housing around Clumber Park and this is likely to result in a shift in access patterns, with more local type use, such as dog walking, jogging, etc. Avoiding allocations close to Clumber Park and restricting development adjacent to the site therefore provide the best approaches to protecting the site.

7.16 In line with other mitigation approaches around the country, mitigation could consist of both SAMM (Strategic Access Management and Monitoring) and SANG (Suitable Alternative Natural Greenspace)/infrastructure projects away from the SSSI. These two approaches would dovetail and complement each other.

7.17 We set out some initial suggestions of relevant mitigation approaches below, recognising that any such mitigation would need to be carefully planned (based on a clear project programme and reasonable timescales), tailored to the site, and agreed with stakeholders (in particular the National Trust), and would be dependent on the involvement and support of the latter organisation. The achievement of SAMM will potentially require significant expenditure and changes to existing on-site management and will therefore be dependent upon ongoing collaboration between the relevant Local Authority/Authorities and the National Trust. In Appendix 6 we provide a summary of key design measures and mitigation that are relevant to the Garden Village and in Appendix 7 we set out some initial ideas for SAMM measures, with indicative costs.

7.18 Furthermore, Clumber Park SSSI is located very near (approx. 4km at its closest point) to Birklands & Bilhaugh SAC/Sherwood Forest NNR (itself subject to an allied Recreation Impact Assessment (Saunders et al., 2022)). Given this proximity, and the similarity in many of the SAMM measures identified as having potential application at each of the two sites, it would be sensible to deliver a single mitigation package for both. Such a holistic

approach would result in financial savings due to economies of scale, promote synergy in the measures adopted at each site, and potentially assist in mitigating any deflection of visitors between them.

SAMM (Strategic Access Management and Monitoring)

7.19 SAMM would comprise measures within the SSSI to address recreation impacts and make them more resilient to increased recreation. SAMM could comprise:

- Management of paths to limit desire lines and focus use on particular paths that are appropriately managed;
- Fencing of key areas of ecological importance;
- Increased staff presence and wardening resource;
- Additional resources for signage and interpretation relating to visitor behaviour and sensitive features (such as 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;
- Measures to address contamination (particularly dog fouling);
- Parking and travel related measures to influence the distribution of visitors; and,
- Monitoring.

7.20 Damage caused to veteran tree roots and surrounding vegetation via excessive trampling and path widening/desire lines is particularly evident. Paths can be assessed in detail and managed through surfacing, edging or closing off (e.g. through the use of brash and dead hedging). Any interventions need to take into account the relevant features of the site, the ground conditions and level of use. Examples can be found in SAMM measures proposed for Epping Forest SAC[12]. A dynamic path management system may be relevant, based on regular monitoring of path condition so that interventions can be targeted based on the monitoring data. Such an approach has been used by the National Trust at Hatfield Forest with paths classified as red, amber or green and these shown clearly on maps and interpretation around the site. The 'red' paths are closed to visitors, allowing them to recover.

7.21 Such approaches would not only protect sensitive features from current footfall, and prevent path widening, but also provide a buffer for any

[12] Land Use Consultants - Epping Forest SAC Mitigation Report (pages 27-30)

increase in footfall arising from larger future visitor numbers. Fencing may be of particular value along key walking or cycling routes within the site, or at known bottlenecks (e.g. Clumber Bridge).

7.22 Fencing could also be used to protect specific sensitive areas from recreation impacts. Such areas could comprise (for example) higher value areas within the SSSI boundary, buffers surrounding veteran trees suffering the effects of soil compaction, or important localities on site for breeding Woodlark or Nightjar.

7.23 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.

7.24 Monitoring data can help direct the ranger effort within the site and ensure their work is directly linked to 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.

7.25 The increased ranger/warden presence 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.

7.26 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. It should be noted that as well as costs associated with installation, there are on-going costs in respect to ongoing management and waste collection.

7.27 Measures relating to parking and travel could help influence the distribution of visitors around the site. Measures can include restricting parking in certain areas, redistributing parking spaces, or moving parking to less sensitive

areas and there could be scope for linking to bus routes. The continued installation/renewal of low-level timber posts, by the National Trust, along Lime Tree Avenue and other key routes is already contributing to this process.

7.28 Any additional interventions around travel infrastructure and parking are however likely to require detailed design and costing and may warrant initial scoping studies and further research. Long-term changes to parking are already a key aspiration for the National Trust at Clumber Park, including the potential creation of new central and peripheral car parks.

7.29 Long-term visitor 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. Visitor monitoring is important to pick up such changes and ensure mitigation is targeted appropriately and understand the effect of pandemic and other social factors that might be influencing visitor use.

7.30 Monitoring data has been mentioned in different contexts and is important to underpin the mitigation. Monitoring should include path condition, habitat, birds and visitors as well as recording interventions and management. Such monitoring will allow the impact of any enacted mitigation programme to be assessed in relation to the site's important/sensitive wildlife features. It is recommended that targeted bird and habitat surveys, are carried out on at least a five-yearly basis.

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

7.31 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 SSSI. 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.

7.32 These SANG/infrastructure projects dovetail with SAMM in that they provide additional space for recreation and realistic alternatives to Clumber Park SSSI. 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 SSSI entirely. Over time the emphasis for recreation use would shift to the sites enhanced for recreation – such as SANG – rather than the protected site.

7.33 The visitor survey results indicated that a SANG would be popular, with 70% of interviewees suggesting that they would use such a site. For dog walkers, this was 61%. A new alternative site with a café, good walking routes, and areas of open water would be popular (based on responses to the questionnaire) and such features could be incorporated within the new site's detailed design.

7.34 Frequent visitors (i.e. those that visited Clumber Park at least once a week) comprised 41% of dog walkers, and approximately 30% of both walkers and cyclists, with frequent dog walkers and walkers comprising 11% and 16% of all interviewees, respectively. However, >50% of interviewees (across activity types) visited Clumber Park less frequently, with 11% undertaking their first visit on the day of the interview. This indicates that although supporting a coterie of frequent visitors (and of dog walkers in particular), Clumber Park is also used by a sizeable number of visitors on an infrequent basis. Any SANG provision is likely to best deflect frequent visitors who use the site for convenience and its proximity to home/ease of access. For those making a specific and concerted effort to visit Clumber Park (perhaps travelling some distance), a SANG is perhaps harder to envisage as likely to deflect use.

7.35 Frequent use of the circular route surrounding Clumber Lake was identified during the visitor survey, and the provision of a looped route within any new SANG is therefore likely to be welcomed by site users. Any route/s on site would need to be between 5.5km and 6.5km in length to mirror the typical (median) route length of walkers and dog walkers, or 9km to accommodate that of cyclists, at Clumber Park currently. These route lengths are unusually

large and, alongside the visit frequency data detailed above, indicate that any SANG will need to be extensive and provide a regional draw, with a new country park potentially most suited to the role.

7.36 Visitors often selected the National Trust site/SSSI because it was close to home, but the scenery was a close second and it is therefore important to provide alternatives which meet these criteria – given the wide draw, it should be possible to provide an intermediate site which is closer. Frequent day visitors to Clumber Park travelled a median straight-line distance of 6km to 11.5km from their home address, whilst the median straight-line distance travelled by visitors accessing Clumber Park by motorised transport was approximately 18km.

7.37 A new SANG would therefore be most likely to attract frequent visitors from existing urban/residential areas if located within 11.5km of them, and within 18km of Clumber Park. The location of such a site to the north of Clumber Park, in closer proximity to the allocations detailed in the Bassetlaw Local Plan (including the Garden Village), would also be more likely to draw a proportion of new visitors resulting from the allocations away from the SSSI.

Context and limitations

7.38 The visitor survey results provide a snapshot of visitor use at a time that restrictions relating to Covid were being relaxed but when the pandemic would still have been affecting people's decisions regarding travel and where to go.

7.39 It is widely recognised that the pandemic has had a marked effect on how people use local greenspaces (Burnett et al., 2021; Natural England and Kantar Public, 2021; Randler et al., 2020). Outdoor space – during the pandemic – has become the safe place and default location for many for exercise and for socialising, and there is a continued and growing importance of urban green spaces in particular as spaces to connect with nature and each other (Natural England and Kantar Public, 2021).

7.40 Looking to the future it is not clear how patterns of use will further change following the pandemic and climate change is also likely to be a driver of change in recreational use (Coombes and Jones, 2010; McEvoy et al., 2008). Long term monitoring will therefore be important to pick up emerging trends and the drivers behind those trends.

8. Conclusion and next steps

Conclusion

Increases in use

8.1 In the absence of mitigation that would deflect access, and assuming residents in any new development will mirror current local resident behaviour, we predict that there would be an increase in visitor use of Clumber Park SSSI of 55% compared to the current level, as a result of the increase in dwellings from the allocations detailed in the Bassetlaw and Newark and Sherwood Local Plans.

8.2 This increase can be broken down between Bassetlaw Local Plan allocations (35% increase, with 9% from the Garden Village alone) and Newark and Sherwood Plan allocations (20%). These figures are approximate but give an indication of the potential scale of change that might be reasonably expected at Clumber Park in the future, as a result of the changes in local housing proposed.

8.3 The proposed levels of new housing in proximity to Clumber Park SSSI will cause a shift towards more local housing around the site, and this is likely to result in a shift in access patterns, with more local type use, such as dog walking, jogging, etc. Avoiding allocations close to Clumber Park and restricting development adjacent to the site therefore provide the best approaches to protecting the site.

Recreation zone of influence

8.4 A recreation zone of influence of 24.7km radius has been calculated for Clumber Park SSSI. Within this zone there will however be a differential effect relating to distance, such that new development closer to the SSSI (e.g. Bassetlaw Garden Village) will likely result in proportionally greater impact.

8.5 The application of such a wide zone of influence requires careful consideration and review over time. It should therefore be revisited at regular intervals, for example once every five years or perhaps in line with the Local Plan review period.

Mitigation

8.6 Mitigation could consist of both SAMM and SANG/infrastructure projects away from the SSSI. These two approaches would dovetail and complement each other.

8.7 SAMM would comprise measures within the SSSI to address recreation impacts and make them more resilient to increased recreation. These could comprise:

- Management of paths to limit desire lines and focus use on particular paths that are appropriately managed;
- Fencing of key areas of ecological importance;
- Increased staff presence and wardening resource;
- Additional resources for signage and interpretation relating to visitor behaviour and sensitive features (such as 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;
- Measures to address contamination (particularly dog fouling);
- Parking and travel related measures to influence the distribution of visitors; and,
- Monitoring.

8.8 Please refer to Paragraphs 7.20 to 7.30 for more detailed information on these suggested prescriptions.

8.9 The visitor survey results indicated that a SANG would be popular, although it would be more suitable for mitigating impacts from locals, rather than those who have travelled from further afield specifically to visit Clumber Park. A new SANG would therefore be most likely to attract frequent visitors from existing urban/residential areas if located within 11.5km of them, and within 18km of Clumber Park. The location of such a site to the north of Clumber Park, in closer proximity to the allocations detailed in the Bassetlaw Local Plan, would also be more likely to draw a proportion of new visitors resulting from the allocations away from the SSSI.

8.10 Detailed SANG design should potentially include provision of the following features, based upon visitor survey responses/routes:

- A café;
- Good walking routes;
- Areas of open water;

- Scenic views; and,
- A looped route of between 5.5km and 6.5km in length to mirror the typical (median) route length of walkers and dog walkers, or 9km to accommodate that of cyclists.

8.11 Please refer to Paragraphs 7.31 to 7.37 for more detailed information.

8.12 Clumber Park SSSI is located very near (approx. 4km at its closest point) to Birklands & Bilhaugh SAC/Sherwood Forest. Given this proximity, and the similarity in many of the SAMM measures identified as having potential application at each of the two sites, it would therefore be sensible to deliver a single mitigation package for both. Such a holistic approach would result in financial savings due to economies of scale, promote synergy in the measures adopted at each site, and potentially assist in mitigating any deflection of visitors between them.

Next steps

8.13 Any next steps will be dependent upon buy in from neighbouring local authorities and relevant site managers/organisations. They could however include additional analyses of the impacts of specific housing allocations within all of the districts outlined within Map 16.

8.14 In order for the suggested SAMM/SANG mitigation detailed within this report to be carried forward strategically however, it is recommended that a Recreational Disturbance Avoidance Mitigation Strategy (RAMS) is developed. This will require input from all the local authorities detailed in Paragraph 6.34 and Map 16, in addition to Natural England, the National Trust, RSPB, and Nottinghamshire County Council.

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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	☐
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:

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

Further details:

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 accomodation 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?	○	○	○
Did you use any social media when planning your visit today?	○	○	○
Did you use a smartphone app when planning your visit today?	○	○	○
Did you use any maps (online or paper) when planning your visit today?	○	○	○
Did you use any leaflets when planning your visit today?	○	○	○
Did you follow any recommendations from friends or family your visit today?	○	○	○

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 neeed 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	
Survey location code	
Map Reference Number	
Sex of respondent	
Total number in interviewed group	
Total males in group	
Total females in group	
Total minors (under 18) in group	
Total 18 - 45 year olds in group	
Total 45 - 65 year olds in group	
Total 65+ year olds in group	
Total number of dogs	
Number of dogs seen off lead in group	

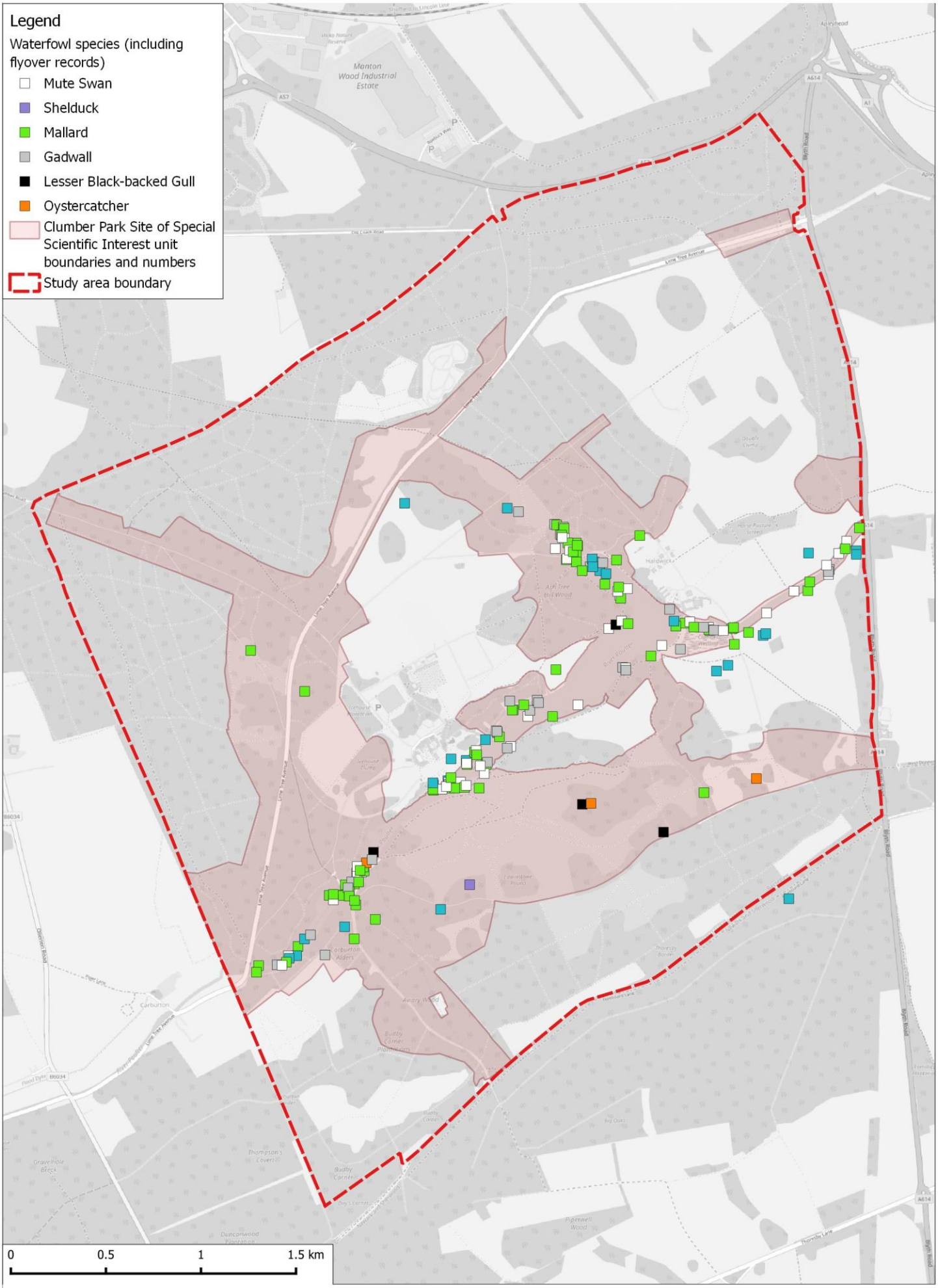
Q31 **Surveyor comments**. *Note anything that may be relevant to the survey, including any changes to the survey entry that are necessary, eg typos / mistakes / changes to answers / additional information.*

Appendix 2 (confidential): Breeding bird survey maps – notable species only

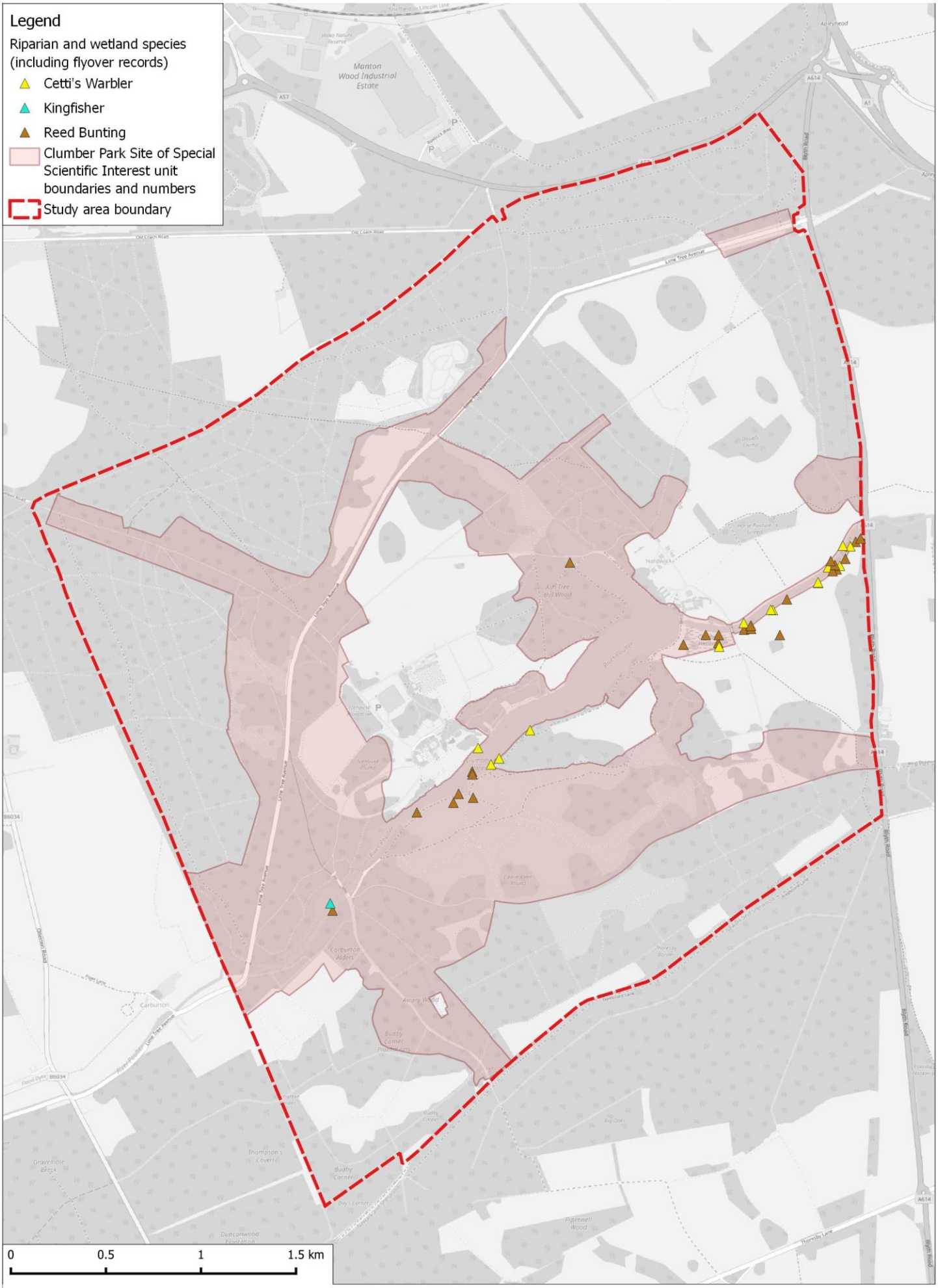
The following maps provide the notable species dataset resulting from the breeding bird surveys (excluding Nightjar and Woodlark records presented in the main body of the report) carried out at Clumber Park between March and June 2021. Due to the sensitive nature of, and risks of disturbance posed to, several of the rarer species detailed within the maps (e.g. Turtle Dove) this appendix should be treated confidentially and not made available for public view.

The data presented consists of all the records made during the surveys, including flyover individuals and single observations of certain species, rather than mapped territories.

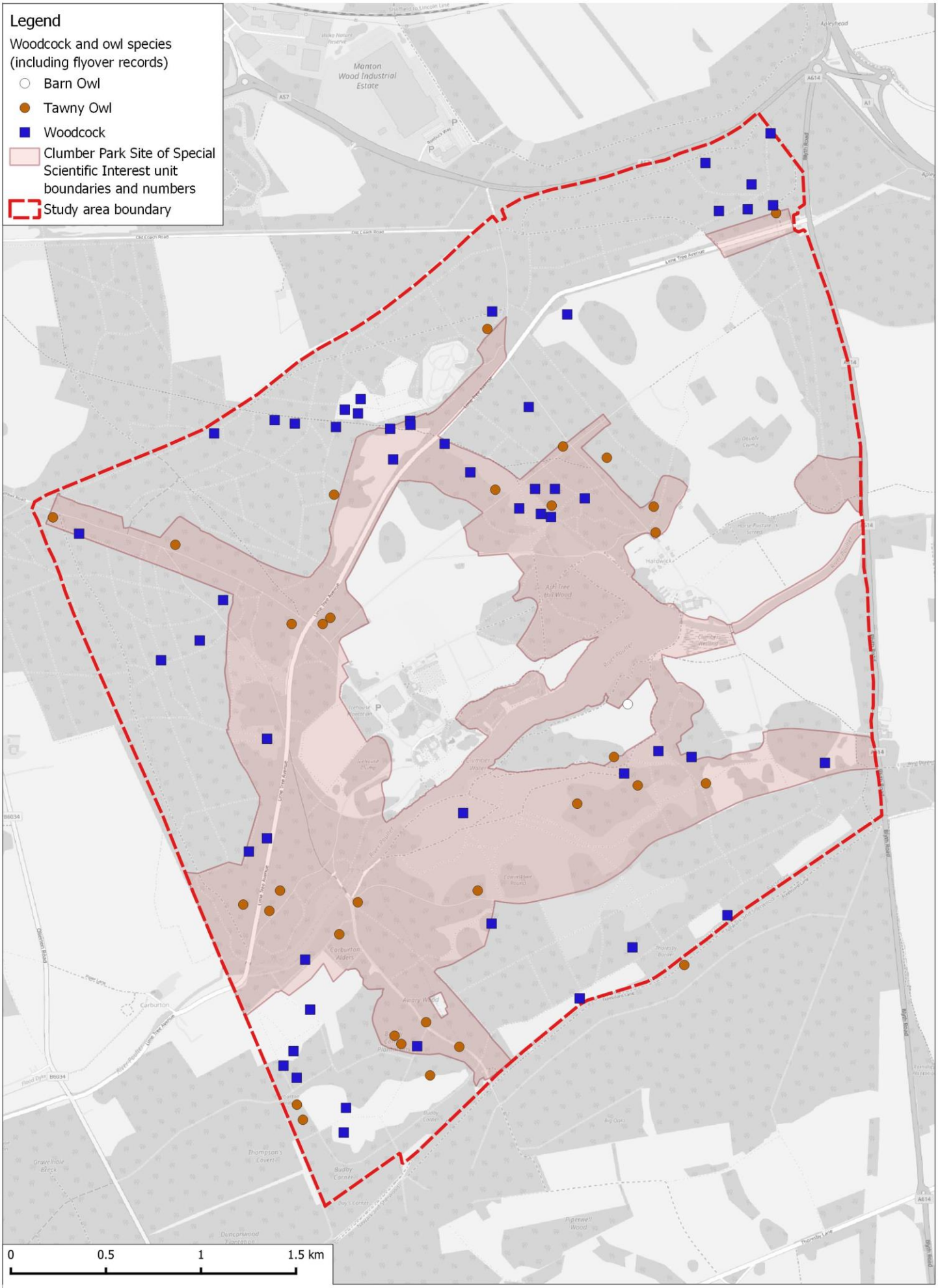
Map A2.1: Distribution of notable waterfowl species within the Clumber Park study area



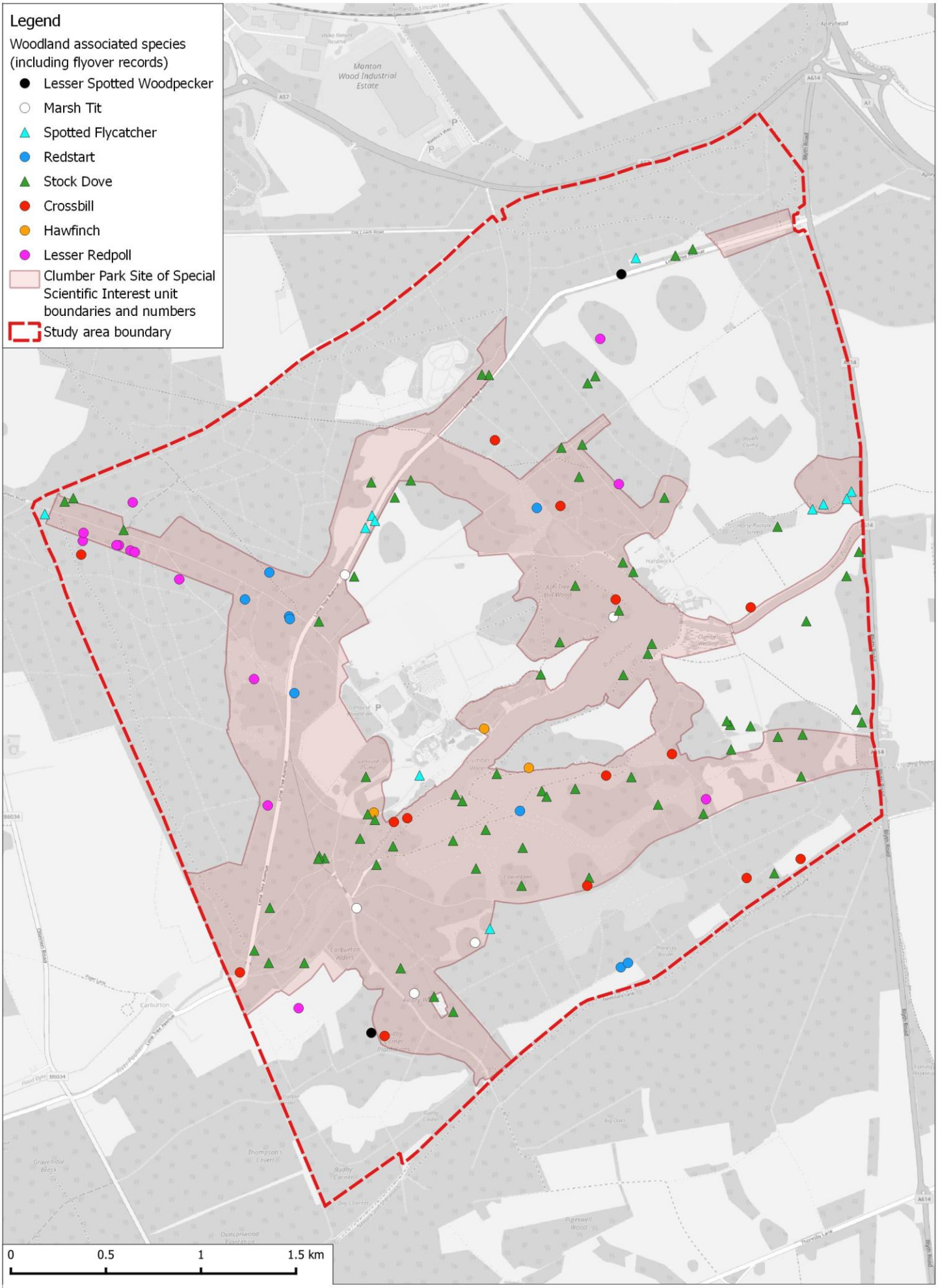
Map A2.2: Distribution of notable riparian and wetland species within the Clumber Park study area



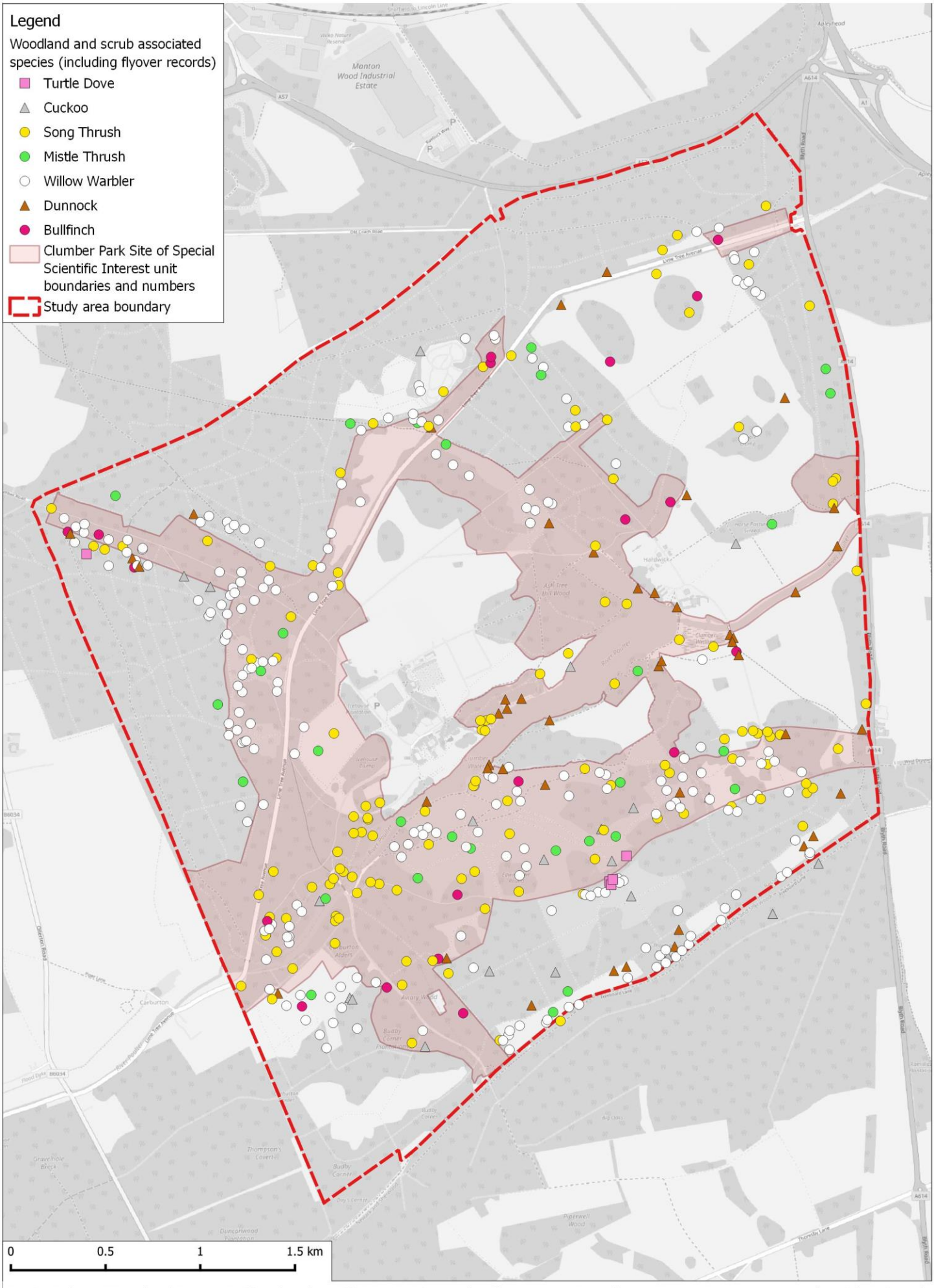
Map A2.3: Distribution of owls and Woodcock within the Clumber Park study area



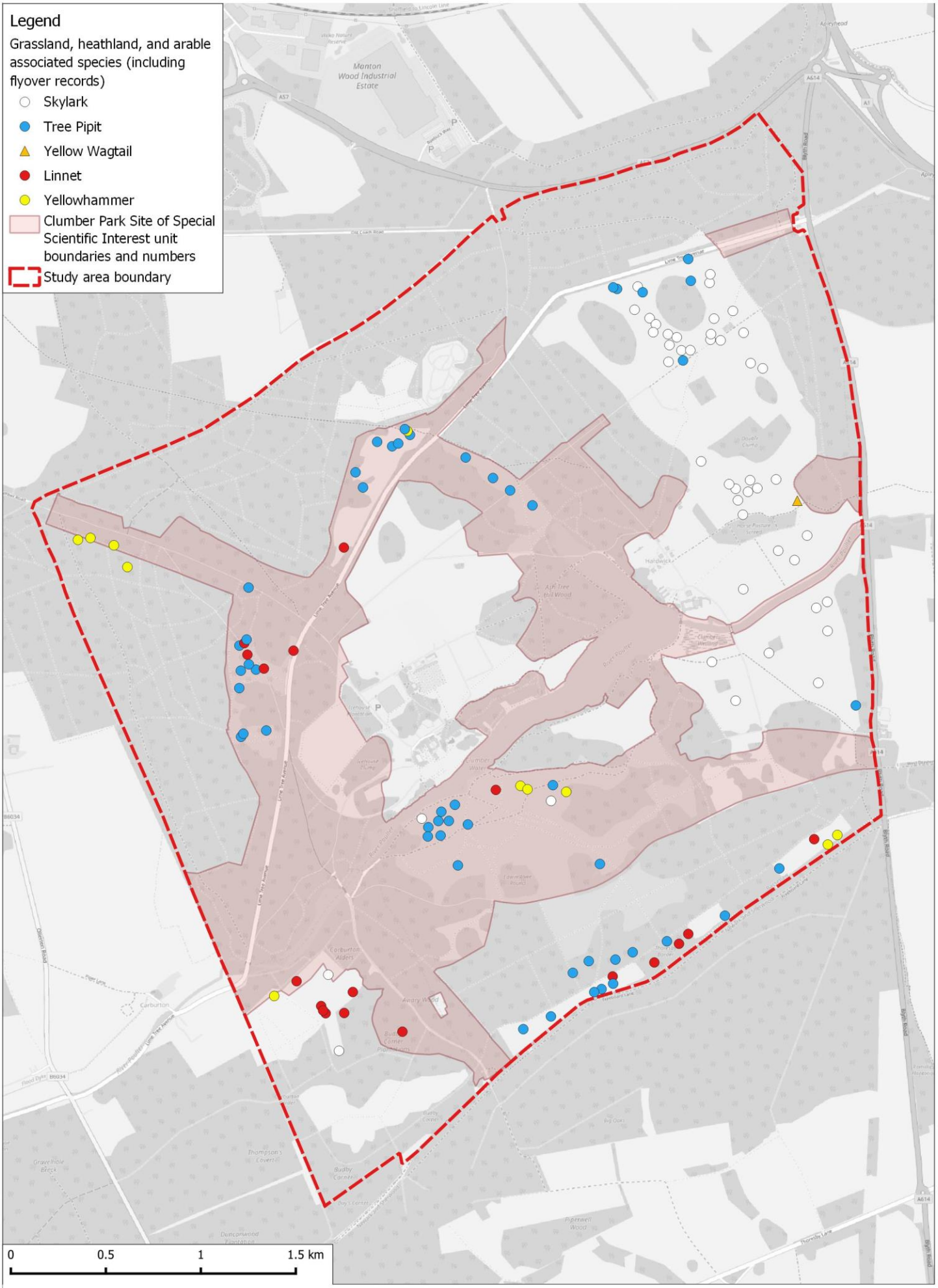
Map A2.4: Distribution of notable woodland associated species within the Clumber Park study area



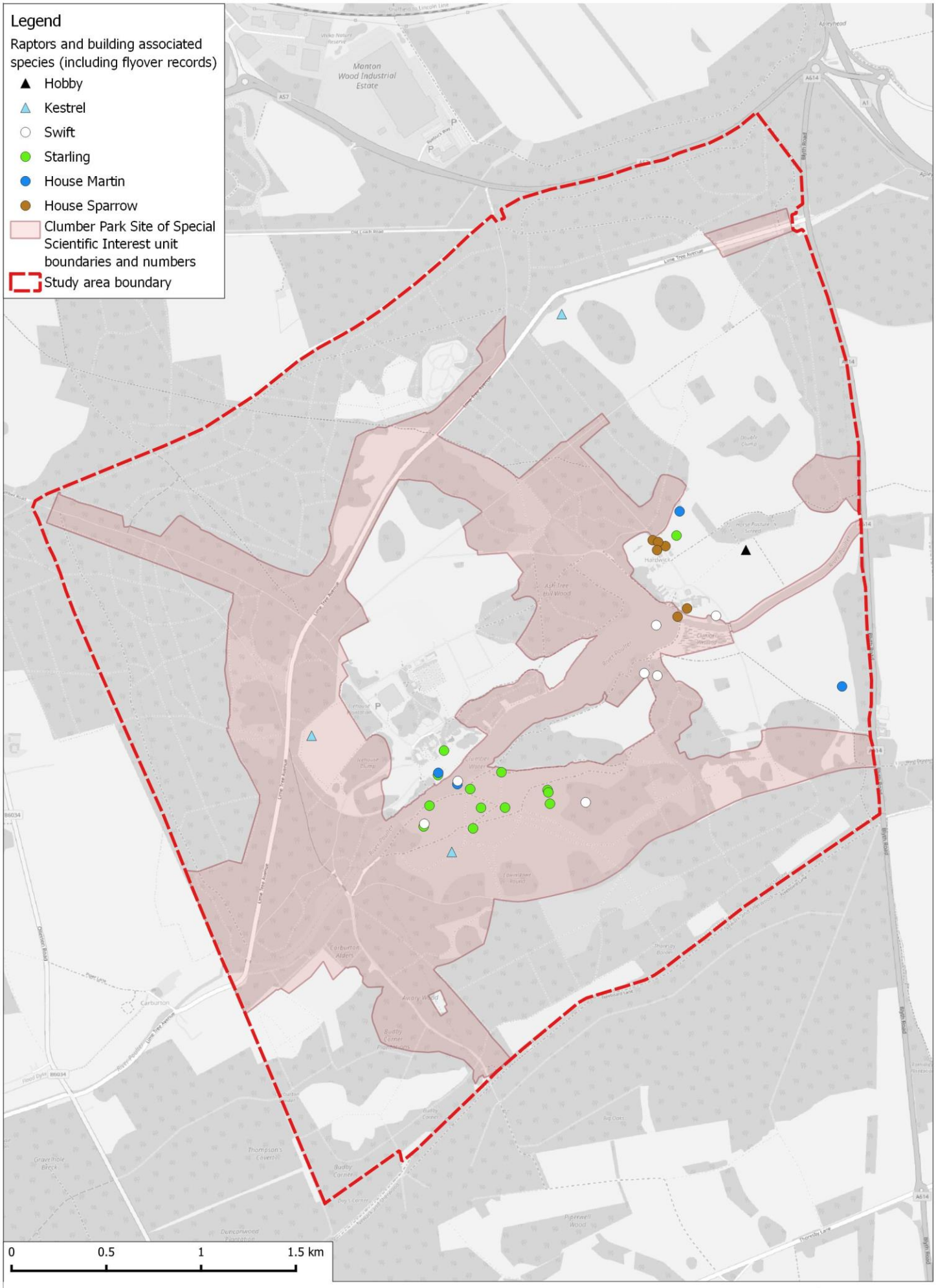
Map A2.5: Distribution of notable woodland and scrub associated species within the Clumber Park study area



Map A2.6: Distribution of notable grassland, heathland, and arable associated species within the Clumber Park study area



Map A2.7: Distribution of notable raptors and building associated species within the Clumber Park study area



Appendix 3: 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 7 in the main body of the report.

Table A3.1: Habitat survey target notes.

Waypoint	Habitat	Notes
11	under limes	Bluebells, Sorrel, Dandelions, Rough Meadow-grass, Germander Speedwell, Chickweed, Self-heal, Creeping Bent
13	Woodland	Brackeny area with Lime, Sycamore coppice and young oak and birch on slope below and Rowan and more mature Oak and patches of Bluebell and occ. Wavy Hair-grass
16	Woodland	secondary oak and birch with occasional Yew, Hawthorn, Bramble, Honeysuckle, Gorse and veteran oaks - fenced for grazing
18	Wood pasture	Heather, Sheep's Fescue, Common Bent, Sheep's Sorrel
21	Plantation nr N gate	Beech plantation with Scots Pine, Turkey Oak, young Silver Birch with a Bramble/Bracken ground flora, and litter. Understory of saplings, Honeysuckle, Broad-leaved Buckler Fern
22	Verge near N gate	Fescue/Bentgrass sward with very occasional Heather and Broom, Mouse-ear Hawkweed, Sheep's Sorrel, Heath Bedstraw, becoming more mesotrophic by the road with Ribwort Plantain, Cock's-foot, Yarrow, Bird's-foot-trefoil, Knapweed etc. South of the road: Bluebells, Field Woodrush, Common Sorrel, Lady's Bedstraw, Cowslips, Common Dog-violet, Pignut, Sweet Vernal-grass etc.
28	Secondary wood + veterans along avenue	Secondary birch wood then mature beech and oak including veterans

Waypoint	Habitat	Notes
32	Heathy wood pasture	Heathy acid grassland wood pasture with open birch wood, oaks, Broom, Heather, bent grasses, Common Mouse-ear, Sheep's Fescue, *Cladonia furcata*, Sheep's Fescue, Field Woodrush. Criss-crossed paths, with open-grown oak and birch, some mature, multi-stemmed birch
36	Heathland	Heathy patches south of Clumber Lane
40	Woodland	Birch, oak, Beech including occasional big veterans. Hawthorn on margins. Bramble, Bracken, Honeysuckle ground flora
46	Woodland	Mature Beech and Oak surround centra area of younger birch and Beech with bracken, Bramble, Bluebell patches. Fenced off area of acid grassland with scrapes, with heather, Sheep's Fescue Heath Bedstraw, Wavy Hair-grass and a red-surfaced path - no indication of impacts
51	Woodland	High Beech and birch with some fine old Beech standards, much fallen wood. Bracken/bramble ground flora with Broad-leaved Buckler fern, understorey of young Beech
52	Woodland	Birch, Larches, Beech over Bracken/Bramble leading down to fencing grassy area with Scots Pine and Birch
67	Woodland	Wood has mature Oak and Beech to E, plantation with conifers to elsewhere also secondary birch
73	Woodland	Mature oak, Beech, Sweet Chestnut, some Yew, and some huge stumps. Bracken, Bramble and young trees in understorey.
82	Acid grassland	Acid grassland with scattered trees and clumps of plantation - Beech, oak, Hawthorn, Silver Birch, some open-grown oaks. Grassland comprises Sheep's Fescue, Common Bent, Sweet Vernal-grass, occasional Mat Grass, Heath Bedstraw, Sheep's Fescue, pleurocarpous mosses, Heath. Paths are mainly livestock paths. Vehicle tracks remain vegetated.
88	Wood pasture + woodland	Substantial area of wood pasture with large patches of heather within an acid grassland matrix. Veteran trees include Sweet Chestnut, Oak etc. and there are patches of thicker woodland and plantation .

Waypoint	Habitat	Notes
89	Acid grassland	Open glades of acid grassland between beech plantations and areas of secondary regenerating birch, cattle grazed
90	Woodland	Secondary woodland with Rhododendron surrounds oaks and Sweet Chestnut veterans
101	Marginal vegetation	Marginal vegetation includes Gipsywort, Meadowsweet, Pond Sedge, with Bird Cherry, Willows, Silver Birch, Alder, Raspberry
108	Woodland	Mature Beech and Sycamore with occasional Yew and Bird Cherry, Rhododendron and young Beech in understorey
111	Woodland	Sawmill wood, pines, Beech, Birch with Bracken/Bramble ground flora, some bigger Oak, Sweet Chestnut, Beech. Little evidence of recreational impacts
115	Woodland	The Knobs - mature Sweet Chestnut, Oak, Beeches, understory of Holly, Bird Cheery, Yew, young Beech, ground flora with patches of Bluebells, Brambles, Creeping Softgrass, Broad-leaved Buckler Fern

Table A3.2: Recreational impacts recorded during walkover survey within Clumber Park SSSI.

Waypoint	Impact severity	Impact type	Notes
001	Moderate	Damage	Scuffing and compaction around veteran oak despite fallen wood barrier.
			Dens and trampling near surfaced path
002	Moderate	Damage	Muddy "desire line" down to lake, also loss of marginal vegetation at lake edge
003	Moderate	Damage	Localised loss of ground flora on approach to grotto
004	Moderate	Contamination	Grassy, eutrophied edges to track with Nettle, Dandelion, Cleavers, Jack-by-the-hedge
005	Moderate	Damage	Verge trampled with loss of vegetation and diversity (but is improved grassland)
006	Light	Damage	Occasional dens and associated trampling (reducing litter and causing compaction) where shade from Beech has reduced undergrowth, increasing accessibility

Waypoint	Impact severity	Impact type	Notes
007	Moderate	Damage	"Desire line" to open brackeny clearing - very grassy edges. Main surfaced track has disturbed, grassy border with Willowherb, Nettles, Dandelion, Cleavers, Perennial Ryegrass, Cock's-foot, Creeping Buttercup
008	Light	Damage	"Desire line" up to veteran oak and fallen trunk, but not sufficient to remove leaf litter
009	Light	Damage	2020 graffiti on Beech trunk near to Lime Avenue layby
010	Light	Damage	"Desire line", dens, swings near Lime Avenue layby heading towards stream, with occasional rubbish nearby. Path goes on down to lake where there are beer cans
011	Light	Fire	Remains of campfire on path
012	Severe	Damage	Verge heavily impacted by cars parking under limes where PRoW enters park along a hard surfaced track. 3m wide track under limes - compacted, no vegetation
			Narrow surface track route "21" with mesotrophic grassy edges (Cow Parsley, docks, Nettles) and "desire lines" into bracken area with bike tracks
013	Light	Damage	Singletrack bike/footpath above valley (no grassy margins)
014	Moderate	Damage	Bike track leads off into woods down slope and along bottom through bluebells and over badger sett - links with multiple small routes
015	Light	Fire	Campfire on path under Sycamore, Bluebells
016	Light	Damage	Lightly used path beyond locked gate with stepless stile - suggestion of old stone chip route, but vegetated
017	Moderate	Damage	Car park at entrance to compartment, some loss of vegetation but not as extensive as at Carburton. Track under Lime avenue mainly vegetated here under younger Limes, with Dandelion, Broad-leaved Plantain, Daisy, Creeping Buttercup
			Heavy verge parking at track into woods
018			Heavily used entrance path spreads out in wood pasture, which is criss-crossed with paths but these are vegetated, without a eutrophied green verge

Waypoint	Impact severity	Impact type	Notes
019	Light	Damage	Dens under Yew where understorey is absent
020	Light	Contamination	Red-surfaced path has grassy verges
021	Light	Damage	1-2m path, not too compacted, some exposed roots, retains litter at edge and verge not grassy
023	Light	Damage	Relatively herb-rich sward lightly trampled
024	Severe	Damage	Verge parking between trees has resulted in the loss of vegetation plus soil compaction for about 100m
025	Severe	Damage	Second area of verge parking after entrance - about 50m
026	Severe	Damage	3rd area of verge parking after entrance plus 2-3m wide path with no vegetation
027	Moderate	Damage	Localised trampling at entrance to caravan park
028	Moderate	Damage	2m wide compacted path beneath Lime avenue (both sides. Bare, but no exposed roots. Edge of sward somewhat impacted by trampling
029	Moderate	Damage	Bike/footpath through secondary woodland with occ. Veterans runs parallel to caravan park with branches back towards road
030	Moderate	Damage	Very worn with dens and swings at pedestrian gate in Caravan Park
031	Moderate	Damage	Attempts to build bike jumps within grazing unit, plus dens along path
			Surfaced red path, edges trampled 0.5-1m with Daisy, Perennial Ryegrass, Common Cat's-ear, Buckshorn's Plantain,
032	Light	Damage	Lightly trampled path, bare only on slopes
033	Light	Damage	Patchy damage under Limes before dragon's teeth start (40m x 2m) bare but grassy in centre
034	Severe	Damage	Narrow lightly trampled path under wayleave
035	None		Untrampled verge, more species rich with Cowslips

Waypoint	Impact severity	Impact type	Notes
036	Moderate	Damage	Wide, red-surfaced path (PRoW), spreading at junctions and around wet areas, grassy margin with Broad-leaved Plantain, Cock's-foot, some Nettle patches, Wood Avens, Jack-by-the-hedge
037	Light	Damage	Occasional desire line through woods back to Clumber Lane, with occasional rubbish.
038	Light	Contamination	Rubbish left where a car has pulled onto verge off Clumber Lane
039	Moderate	Damage	Massive beech - roots worn, low-level compaction
040	Light	Damage	Occasional desire lines into woods south of Clumber lane - retain litter but have slight grassy edges
041	Moderate	Damage	Localised root exposure where PRoW crosses Clumber Lane
042	Moderate	Damage	Trampling where path leaves Clumber Lane to north
043	Light	Damage	Trampled short cut from Avenue to NT kiosk
044	Light	Damage	Little used path beyond barrier
045	Light	Damage	Bare bath into woods from road, clear grassy edges. Widened by bikes where wet
046	Light	Damage	Re-surfaced path through open acid grassland with verges of Cock's foot, White Clover, Broad-leaved plantain, trampled but still vegetated areas with Perennial Ryegrass, Broad-leaved dock (too eutrophic for annual species of interest)
			Trampled path along edge of open area
047	Moderate	Damage	Desire line across the corner of acid grassland area – bare, with degraded vegetation as above
048	Moderate	Damage	Exposed roots of (now felled) pine, path increases to about 3m wide
049	Severe	Damage	Heavily degraded where cars park opposite gates into wood pasture livestock unit
050	Moderate	Damage	Compaction and loss of vegetation where cars park at track into woods
051	Light	Damage	Red surfaced path 1 -5 m wide with 50cm verge of Wood Avens with Jack-by-the-hedge and some nettle patches
			Desire lines going into the woods under mature trees

Waypoint	Impact severity	Impact type	Notes
052	Light	Damage	Footpath into woods with barrier - 2m wide but only central 30cm bare. Verges grassy. Foes through open grassy area
053	Light	Damage	Narrow trampled path around fenced area
054	Light	Damage	Network of paths with grassy edges and bare centres, used by bikes
055	Moderate	Damage	Heavy trampling around veteran oak at water's edge - exposed roots, flowers (suggest ashes?),
056	Moderate	Damage	Marginal vegetation absent, trampled down to water (localised)
			Exposed roots and compaction around yews, short cut for bikes
057	Moderate	Damage	Exposed rates round big oaks at water's edges, loss of marginal vegetation
			Exposed roots on steep path
058	Moderate	Damage	1m wide bike path with no leaf litter through woods, lots of exposed roots, several paths down to the water, joins wider tracks with muddy hollows
059	Light	Damage	Bare single track with grassy margins, used by bikes
060	Light	Damage	Previously surfaced, 1m wide with eutrophic grassy verges with Nettle, Cleavers. Dock, Wood Avens
061	Light	Damage	Similar path branching off, bare, with modified verges
062	Light	Damage	Wide ride used by horses, bikes
063	Moderate	Damage	2m wide path into wood with 1m wide eutrophied sward of Nettle, Cleavers, Wood Avens, and desire lines leading back to gate
064	Moderate	Damage	Pleasure gardens, obviously highly impacted by historic and current management for recreation. However, many veterans are protected from trampling by Rhododendron
			Compaction /loss of improved grassland where path widens, compaction around some mature trees where there is no ornamental understorey

Waypoint	Impact severity	Impact type	Notes
065	Light	Damage	Lake hard to access here, marginal vegetation is absent through trampling in a few places where the path approaches the shore, but very localised (part of the shore has a hard margin nearer the buildings)
066	Moderate	Damage	Widened track (4m), bare, with degraded grassy margins, heavily used by bikes, even where bikes are signposted down different path
			Dens near path with associated desire lines
067	Moderate	Damage	Frequent desire lines into woodland e.g. to veterans
068	Moderate	Damage	Path divides around veteran oak and widens to up to 5m as it enters wood near lake
069	Moderate	Damage	Small access points to lake are bare, with gaps in marginal vegetation, regular bare patches around logs under sycamores on mini-headland
070	Severe	Damage	Bare of vegetation on bend where people access lake
071	Moderate	Damage	Width of path stretches between the trees
072	Light	Damage	Small bike paths head off into woods
			Wreath suggests ashes?
073	Moderate	Damage	Occasional dens and associated compaction under clumps of Beech or Yew, with no ground layer
074	Moderate	Damage	Compacted layby at hut near gatehouse, with heavily used path into woods
075	Severe	Damage	50m of very impacted verge on both sites of road where dragons teeth/rope fence stops (would have been heathy)
			Severely impacted verge with complete loss of heathy vegetation
076	Moderate	Damage	Path through heathy open area, 2m wide 40% bare, with Annual Meadow-grass and Broad-leaved Plantain
077	Light	Damage	Trampled path parallel to road, dens, also used by livestock
078	Light	Damage	Lightly trampled path, retains short vegetation through area of heathy acid grassland

Waypoint	Impact severity	Impact type	Notes
079	Light	Damage	Lightly trampled path, mostly vegetation, although margins differ from surrounding vegetation with Perennial Ryegrass
080	Light	Damage	Lightly trampled path along SSSI boundary, dog poo bag, den
081	Severe	Damage	Heavily trampled under avenue by gate into heathy woodpasture
082	Light	Damage	Red surfaced path fenced out from acid grassland, eutrophied verges
083	Light	Damage	Locked kissing gate, slightly trampled path with occasional bare patches
084	Light	Damage	A little trampling around kissing gate
085	Light	Damage	Unvegetated path with compressed litter, margins unaffected
086	None		Heathery patches, occasional paths, little change to cover or composition of vegetation
087	Light	Damage	Red chip surfaced path fenced out of grazing unit, lightly trampled path runs parallel within SSSI
088	Light	Damage	Extensive area of heathy/grassy wood pasture with numerous grass paths/tracks that are only bare at occasional points e.g. slopes. Woodland areas appear not to be accessed by visitors (although there are livestock paths into the woods).
089	Light	Damage	Lightly used tracks through open glades of acid grassland
090	Light	Damage	Desire line to geocache under chestnut veteran
			Red-chip surfaced path is grass-lined.
091	Light	Damage	Red-chip surfaced path now bluebell lined, with occasional desire lines
092	Severe	Damage	Severe compaction around based of huge maiden oak nr entrance
093	Light	Damage	Bike path leads out into adjacent forestry
094	Light	Damage	Slight path along bluebell/bracken dominated wayleave
095	None		Little used access point
096	Severe	Damage	Veteran with compaction around base

Waypoint	Impact severity	Impact type	Notes
097	Moderate	Damage	Path into woods from bridge - 2m wide, compacted, grassy edges
098	Moderate	Damage	Compaction under yews and erosion to bank
099	Severe	Damage	Total loss of erosion at bridge and desire lines to road
100	Severe	Damage	Bank very eroded as far as weir
101	Moderate	Damage	Compaction around oak, numerous little paths through wet woods on lakeshore, but marginal vegetation present
102	Moderate	Damage	Regular desire lines to lake through woodland belt - bare, with bike tracks
103	Moderate	Damage	Open, eroded areas with modified sward of rosettes species, Annual Meadow-grass, Perennial Ryegrass etc.
104	Light	Damage	5m wide tramped path running parallel with red-surface path with clearly different vegetation to the surround grassland (Annual Meadow-grass, Daisy, Broad-leaved Plantain etc. this vegetation extends around each bench, with some bare ground
105	None		More lightly trampled track supports appropriate acid grassland species such as Parsely Piert, Sheep's Sorrel, Common Cat's-ear, Mouse-ear Hawkweed etc. where surrounding sward is more densely vegetated with Mat Grass, Sheep's Fescue
106	Severe	Damage	Heavily trampled and compacted around oak and fallen boughs
107	Light	Damage	Frequent paths to shore (outside of SSSI)
108	Moderate	Damage	Bare areas under Beeches in woods, no bankside or marginal vegetation. Single track paths with leaf litter leading into woods
109	Light	Damage	Dog access points to water occasional
110	Moderate	Damage	Eroded bank, no vegetation at bench
111	Moderate	Damage	Red-chip surfaced track has usual grassy verges, dens and associated trampling under mature Sycamores, frequent desire lines down to shore
112	Moderate	Damage	Dens, much used by bikes, path braided where puddles are avoided

Waypoint	Impact severity	Impact type	Notes
113	Moderate	Damage	Crossroads of paths on edge of wood pasture, trampled paths 1m wide
114	Moderate	Damage	Quagmire near stile created by livestock and expanded by people walking around it
115	Light	Damage	Compacted bridleway used by bikes. Grassy border but only in places, dog faeces at entrance
116	Light	Damage	Narrow bike path crosses Knob. Also, faint desire line running parallel with road, little used but some tissues, litter etc near road

Appendix 4: Full responses to Qs 28 and 29

The following table provides the full, combined, list of responses to Qs 28 and 29 (concerning changes to site access, management, and general feedback). They are provided in alphabetical order, as transcribed by the surveyor, with no attempt made to clarify language, grammar, etc.

Comments
A fountain would be nice. We come here because we enjoy it
A great place, visited as a child and enjoying getting reacquainted
A lot better since they closed the bridge to traffic
A play area for younger children
All entrances to be open
All good
All good
All good. Nicely discrete
All wonderful; well-managed
Alternative car parking away from main car park - only small
Always enjoy it
Always enjoy it even when it rains. Nice to let dog off lead without problems. Paper maps in shop would help - we tend to get lost easily: a book of Clumber walks
Always happy to visit, been coming for 60 years
Be nice to be open later, to be able to have an after work walk and coffee
Beautiful area
Beautiful place
Beautiful place, we love it here
Beautiful sunny day
Been coming for 40 years, still enjoy visiting
Better cafe
Better horse access
Better now parking is restricted to certain areas. Cyclists can be a pain on footpaths
Better parking: main car park is too small, and grassed overflow car park is no good. Better play area for kids. Cafe too expensive. Charge entrance per car
Better signage - not clear where to pay for parking on verge
Better signage of paths. No 'you are here' motif on signs. More toilets.
Better signs from the main road
Better wheelchair access. Open access from north
Better with no traffic

Comments
Better, clearer, signs and separate cycle paths
Bikes a nuisance when walking
Bridge being open is handy
Brilliant place
Cafe should stay open later
Cafe used to be nicer with better choice of food, used to be free for caravan site users
Campsite should make more of what is on its doorstep
car parking - open gates up again as it's too far to walk to some areas. Those closed during the pandemic haven't reopen
Cars driving too fast
Central park reopened
Changed pricing - now too expensive, so didn't renew membership
Clamp down on people parking on verges to avoid paying
Clean and tidy, no dog mess
Clearer horse parking, better signs
Concerned about bikes being stolen in this area
Create small car parks around the site. Dislikes National Trust insistence that cars park in main car park from where it is a long way to get to preferred walking sites
Cycle racks
Cycle free day each week
Cyclists better controlled - not ignoring the no cycling signs. Better explanation of the wildlife
Cyclists disrespect other users, ride too fast, and ignore the rules. Control speed of traffic on Lime Tree Avenue, via speed bumps and traffic cameras
Cyclists need to be more polite to other users
Cyclists off pedestrian paths, and another coffee van part way round
Dog poo is a problem, and coffee cup litter
Dogs allowed in toilets
Don't stop parking along the road verges
Downloadable maps, and signposted walks with distance
Early access car park
Enjoy visiting and remembering how it used to be
Enjoyed it! Lime Tree Avenue is a very fast road, with drivers paying little attention to cyclists and walkers
Enjoying it
Entrance charged by person - too expensive for families
Entry fees should be less for disabled people and/or local people
Fast cars in evening are a problem, bigger bins at strategic points, queues to get in taking too long

Comments
Fed up with people
Feels like visitors are all in the same areas, means you can't have casual picnics in other places
Fill in the puddles on the roadside - looks messy
Friendly staff
Gates to open earlier than 9am or give code to members. Access roads open again. More bins. Better control of cyclists
Getting from home to Clumber the roads are busy and people drive dangerously
Glad it was open
Good as is
Good footpaths, well maintained, not too crowded
Good horse gates
Happy
Happy as is
Happy as is
Happy as is
Happy as is
Happy as is
Happy as is
Happy as is
Happy to be here
I like the place
if you know where you're going it's easy
Improvement removing lakeside parking - less cars is good
Interested in history about the park and a fire that burnt it down. Mobile cafe was useful. Wildlife and birds are beautiful. Clean and tidy
Interviewee felt strongly that existing greenspaces and Country Parks should be better maintained and accessible before creating new areas
It could be cheaper, and reopen the main entrance from Worksop
It feels more tightly controlled in a detrimental way - not as relaxed
It is a very pretty place
It wants opening up more. They've closed lots down due to Covid and it's limited access now. There used to be wardens to control the area and now they rely too much on volunteers and are totally money orientated. They try to concentrate people around main facilities and there are 4000 acres but you're limited to about 40. The respondent does bird surveys but requires access that is no longer available to him
It's always lovely at Clumber Park
It's wonderful as it is
Jewel in Worksop's crown
Keep doing what they are doing

Comments
Keep it as it is. Keep Isolating village. Keep vehicles off site permanently to help wildlife
Large queues at café - need more staff
Less fencing and gates that restrict access. Now rubbish for horse riding and cycling
Less wasps!
Like it here; come often
Like it how it is
Like that Lime Tree Avenue is being managed for traffic
Like the dog cafe
Like the naturalness of the site - unspoilt. Less is better. Many people come early for quietness
Like the trees
Likely to cancel membership of National Trust over "woke" agenda
Likes Clumber Park very much
Likes new signage
Lime Tree Avenue needs resurfacing
Longhorn cattle in every part of the park, which makes it hard to feel safe. Would like it if cattle were in fewer areas
Lots of goose mess in fields
Lots of places to go
Love coming here
Love it
Love it
Love it
Love it - been coming 50 years
Love it - never close it down!
Love it all times of year
Love it here, but lots of inconsiderate cyclists
Love it, but cyclists on bikes where they shouldn't be
Love the peace
Loved it
Lovely
Lovely as it is
Lovely place
Lovely place
Lovely place
Lovely place to visit
Lovely whatever the weather
Loves it for bike riding

Comments
Loves it, been coming a long time
Lower prices - charge per car, not per person
Main entrance can cause traffic to back up and normal traffic can't get through
Make it easier to pay for parking on verges with app or phone payment
Make it more obvious where to park
Managed well
Maps showing "you are here"
Mobile phone reception. Further reduce car access
More benches and dog bins
More bins
More car park options
More child-friendly facilities. Separated cycle routes
More dog bins
More dog bins
More dog bins. Cheaper to get in, pay per car
More dog waste bins
More dog waste bins
More dog waste bins
More dog waste bins
More entrances open, as in the past
More extensive parking (not confined to car parks and then herded around honeypots). Currently booking is a pain - want spontaneity. Don't want restrictions on car parking on Lime Tree Avenue. Too many cyclists on footpaths. No enforcement of no-cycling areas. Should charge cyclists as well as cars. Charging per car better than charging per person.
More litter bins
More protection of habitats. More reeds on lake. Don't like the cattle
More than happy
Need to sort out parking on Lime Tree Avenue. Too much litter (especially coffee cups) and not enough bins
Needs a good clean, especially the seats around the lake
Needs better qualified people for managing volunteers to help run the site. Set up a user group, then invite people to discuss with management how the site is managed
Nice place to visit
Nice to see bridge restored
No parking on Lime Tree Avenue - permanently. Enforcement of no parking areas. Charge per car, rather than per person. More volunteers perhaps improving habitats and communicating why
No parking on Lime Tree Avenue, with free or discounted access for local people

Comments
Not enough car access - causes queues on Lime Tree Avenue: dangerous (have seen near misses as a result of cars overtaking)
Not good for disabled - both paths and in toilets
Not keen on cattle
Noticed change in parking access
Old road signs still show access from south side - need removing
One dog per person
One of our favourite spots
Open car park earlier
Open car parks before 9am. From 7am would be nice
Open entrance from Worksop direction
Open main entrance again. car park and cafe shut too early. Improve the children's playground
Open main entry point at Truman's Lodge. Better management of numbers when it's very busy
Open main gates. Better management for anglers
Open more gates, remove barriers, and allow car access to all the roads. Remove all of the fences - open access, letting people walk where they want to walk. Disabled parking access to cricket pitch for matches
Open roads
Open the main entrance gate
Open the roads for vehicle access again
Open the Truman's Lodge gate, and extend opening times
Open the walled kitchen garden cafe and greenhouse
Open Truman's Lodge gate
Open Truman's Lodge gate, stop cars parking on verges
Parking is too limited. Feel funnelled by fencing. Roads need maintenance
Parking needs improvement - annoying that you can't park on the road, especially when prebooking. Don't want to park in busy areas
Path via the watermill is closed, would like it opened
Pay for parking on Lime Tree Avenue or make it no parking
Perfect
Perfect
Perfect
Perfect as it is
Perfect weather
Pleasant
Pleasantly surprised, really nice place
Pleased that they have closed bridge and roads to traffic

Comments
Popup cafe and tables spoil view. Open up old village hall instead to avoid this and avoid congestion. Park and ride system better. Closing things off will be a nightmare in summer when busy
Prefer entrances closed and less traffic
Prefer less access since lockdown as live here
Prefer timed car park payment, too pricey for a short visit
Preferred when vehicle access was less restricted
Really like it
Really like it
Really nice day out
Rebuild bridge over the Ford and reopen Truman's Lodge gate
Remove puddles
Reopen main road as it adds so much time and is off putting when thinking where to go
Reopen roads from Sheffield direction, bus from Worksop
Reopen the cafe at the walled garden
Reopen Worksop entrance
Return Lime Tree Avenue to National Trust, as people parking there harms the verges and Lime trees and the trust loses money
Road signs on main road show access points where gates are closed. Signs need taking down
Roads have been closed - hoping they open soon so that walkers can enter the park without paying. Cars used to pay per car but now per person, which is expensive. We don't mind paying because they need the money
Road is in bad state
Seems good
Shame that people can't park on Lime Tree Avenue to allow exploration off path. Bad to cram everyone in same area around facilities to spend money.
Shame that the road is closed, would be good to have them open
Signage for bikes could be improved. Later toilet opening
South side open again
Staff great. car park good. Shop good
Stop chopping trees down
Sunshine is good
The place has changed a lot since living here
There used to be boat trips on the lake and grandchildren would enjoy it and absorb more nature that way
Think it’s great
To be able to park in different areas - cattle stopped lady parking where she wanted today
Toilets in evening
Too expensive to park but will be joining

Comments
Too many cyclists. Dedicated cycle tracks. More clearing of Rhododendron to improve vista
Too much fencing, which concentrates people into fewer spots. Fewer cattle in fewer areas
Top gate is too near Lime Tree Avenue and queues on to road
Trees pruned
Unfair that some people don't pay to park
Used to be better 20 years ago
Very enjoyable, will come more often
Very pleasant
Very pleased with what National Trust are doing
Very welcoming on the gate
We love it. Come several times a year
Well maintained
Well organised site
Well signposted
Would be good to have some separation of cyclists and pedestrians/dog walkers at busy times (summer weekends especially)
Would be useful to drive into park over the bridge - entrance is closed and prices have gone up a lot - impact for families on low income. Would prefer better access over better facilities. Doesn't need too much modernising - will lose its charm
Would like another bridge!!
Would like entrance reopened, as too far
Would like main entrance reopened
Would like main gate to open earlier
Would like more play facilities for children
Would like to have access by car before 9am
Would like to hire scooter for elderly in advance

Appendix 5: Increases in housing

The table below details the estimated percentage change in dwelling number resulting from the relevant combined residential allocations detailed in the Bassetlaw and Newark and Sherwood Local Plans.

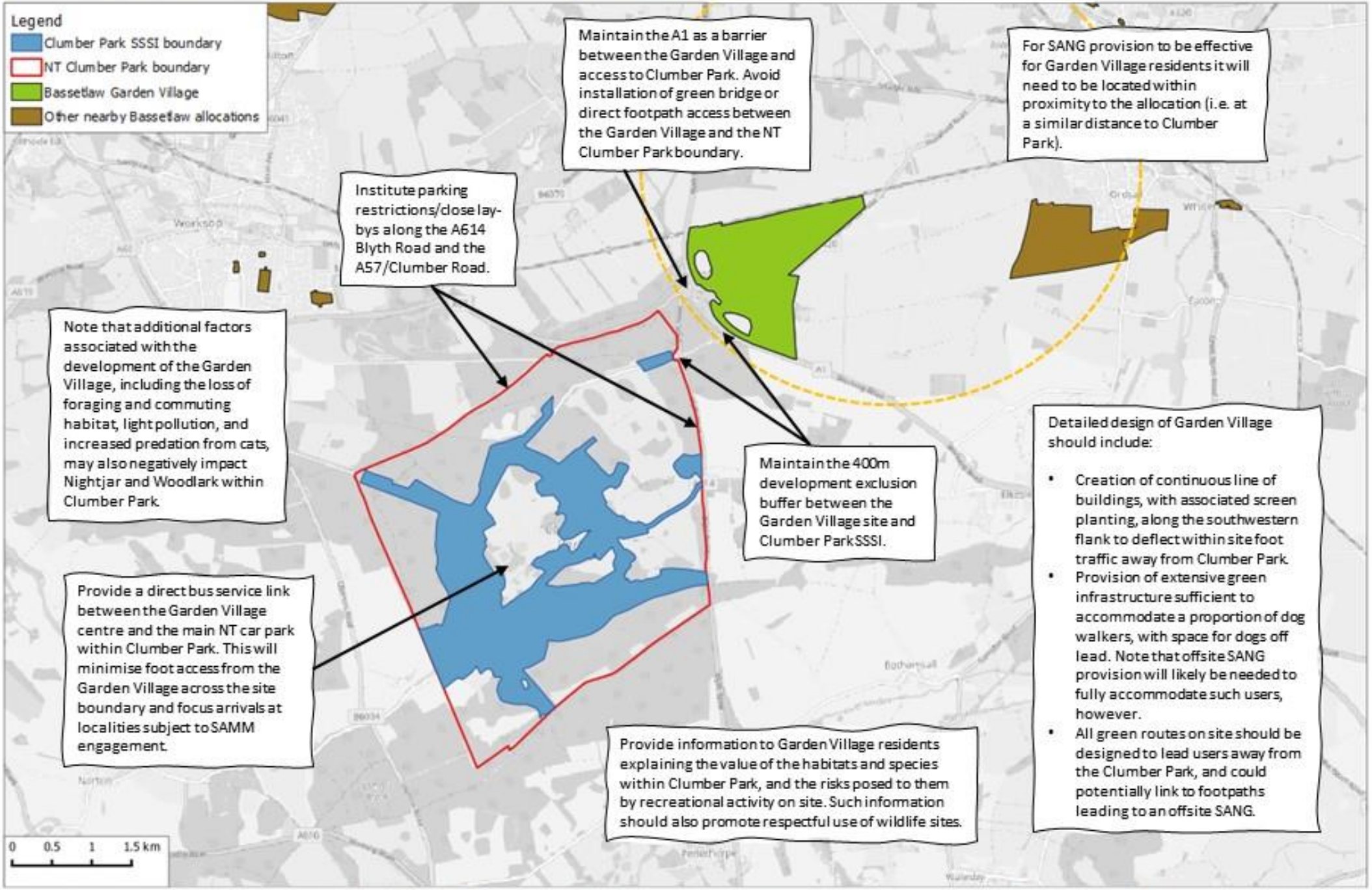
Distance from SSSI boundary (m)	No. existing households	No. proposed new households	% increase
0 to 500	15	0	0
500 to 1000	6	33	550.0
1000 to 1500	10	200	2,000.0
1500 to 2000	11	143	1,300.0
2000 to 2500	58	180	310.3
2500 to 3000	97	170	175.3
3000 to 3500	185	27	14.6
3500 to 4000	233	0	0.0
4000 to 4500	199	71	35.7
4500 to 5000	148	481	325.0
5000 to 5500	203	866	426.6
5500 to 6000	379	793	209.2
6000 to 6500	413	886	214.5
6500 to 7000	335	413	123.3
7000 to 7500	483	155	32.1
7500 to 8000	258	0	0.0
8000 to 8500	203	0	0.0
8500 to 9000	203	0	0.0
9000 to 9500	218	75	34.4
9500 to 10000	255	54	21.2
10000 to 10500	233	66	28.3
10500 to 11000	316	0	0.0
11000 to 11500	374	0	0.0
11500 to 12000	450	66	14.7
12000 to 12500	417	9	2.2
12500 to 13000	408	0	0.0
13000 to 13500	461	63	13.7
13500 to 14000	501	12	2.4
14000 to 14500	798	0	0.0
14500 to 15000	727	60	8.3
15000 to 15500	516	12	2.3
15500 to 16000	517	248	48.0
16000 to 16500	429	45	10.5
16500 to 17000	487	72	14.8
17000 to 17500	603	165	27.4
17500 to 18000	636	0	0.0

Distance from SSSI boundary (m)	No. existing households	No. proposed new households	% increase
18000 to 18500	714	0	0.0
18500 to 19000	696	19	2.7
19000 to 19500	512	86	16.8
19500 to 20000	698	69	9.9
20000 to 20500	1013	25	2.5
20500 to 21000	1026	99	9.6
21000 to 21500	1003	0	0.0
21500 to 22000	1005	0	0.0
22000 to 22500	1175	0	0.0
22500 to 23000	1159	80	6.9
23000 to 23500	1369	0	0.0
23500 to 24000	1573	0	0.0
24000 to 24500	1784	19	1.1
24500 to 25000	1781	110	6.2
25000 to 25500	1671	10	0.6
25500 to 26000	1510	211	14.0
26000 to 26500	1712	359	21.0
26500 to 27000	2258	644	28.5
27000 to 27500	2372	995	41.9
27500 to 28000	2346	646	27.5
28000 to 28500	1954	471	24.1
28500 to 29000	1686	402	23.8
29000 to 29500	1704	1075	63.1
29500 to 30000	1824	1199	65.7

Appendix 6: Potential mitigation options for Bassetlaw Garden Village

The Garden Village is estimated to result in a potential 9% increase in access to Clumber Park. Given the direct proximity of the two locations a range of specific design and mitigation measures should be considered, with suggestions provided in Map A6.1.

Map A6.1: Location of suggested mitigation specific to Bassetlaw Garden Village



Appendix 7: SAMM mitigation suggestions and indicative costs

The table below sets out some suggestions of SAMM mitigation measures and costs that could form the basis of a mitigation strategy. These are suggestions only and a detailed package of measures would need to be established through close working with the National Trust (who own and manage the site). Costs are indicative (and approximate) only, based upon our experience and mitigation approaches at other sites, and individual measures would need ground truthing and further work to specify locations and details. For measures that would need to be established on an annual basis we have set out the relevant length of timing, extending to a maximum of 75 years. This timescale may need revision and assumes mitigation might be expected in-perpetuity (80 years) and that there may be some delay in the mitigation being implemented, with not all measures coming forward at once. The pale blue shading highlights those measures which should be implemented first and have priority in the short term.

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Staff	Delivery Officer		£41,450	10	£414,500	Estimated at £27,000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs.	Delivery Officer, working alongside Ranger but with more of a delivery focus, freeing Ranger post for more face-face time/on site engagement.	Post could focus on particular transport issues, links, and ensure measures timed appropriately.
Staff	1 Ranger		£39,400	75	£2,955,000	Costs per ranger would be: £24,000 annual salary, plus 35% (to cover NI, superannuation, etc.) and in addition vehicle costs and other support costs (£7000 per annum).	Ranger post, focus on face-to-face contact and on-site presence.	Ranger could target access points relating to Garden Village.

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Paths and path infrastructure	Path maintenance, improvements etc.		£25,000	75	£1,875,000	2m wide path with self-binding gravel surface and wooden edging likely to be around £45-50 per m; general path repairs and maintenance could be around £8-10 per m. Budget therefore flexible and available to pay for path improvements/repair as necessary and informed by monitoring.	Works to reduce desire lines, increase resilience of path network and protect trees.	
Fencing	Annual budget to provide fencing as required		£5,000	75	£375,000	Estimated cost to provide for range of fencing options (rope and stakes, hurdles etc) as appropriate to restrict access or keep people to paths/away from sensitive trees. Could extend to dead hedging.	Fencing to contain access and restrict visitors where need to close off desire lines etc.	
Signs & Interpretation	Audit of current provision	£1,500			£1,500	Undertaken by delivery officer, small budget to cover costs of report production.	Initial work to review current provision, identify gaps and key locations for new provision.	Could review messaging relevant to changes in local use and frequent visitors.
Signs & Interpretation	Graphic design for new interpretation and signs	£8,000			£8,000	£8,000 for design of new interpretation and messaging relating to highlighting nature conservation importance, risks of fire etc.	Following initial audit.	

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Signs & Interpretation	New interpretation boards	£16,000	£1,600	20	£48,000	£2,000 per board for production of timber frame and graphic panel, delivery, and installation. Estimate of 8 boards. Annual cost based on replacement every 10 years.	New interpretation will provide on-site information for all visitors.	Sited relevant to access from Garden Village.
Signs & Interpretation	New Signs, waymarking etc.	£28,000	£2,800	20	£84,000	Cost based on 25 posts at £300 per post to cover production, delivery, and installation. Treated softwood marker posts, 1.6m high with slanting top and coloured band or marking incorporated. Additional £500 for waymarking discs or signs made of glass reinforced plastic for longevity. Annual cost based on replacement every 10 years.	Way-marking will help focus use in particular areas.	

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Education & awareness raising	Awareness raising strategy	£12,000			£12,000	Estimate of consultancy costs to cover production of shared comms strategy, to include messaging, communication approaches (e.g. use of social media) and hosting of online content etc. Linked to design of interpretation (for which separate budget).	Aim of education and awareness work is to raise profile of conservation and the conservation importance of the site and ultimately lead to more engagement from public and responsible access. Need to influence behaviour so approach needs to be carefully thought out.	Garden village residents will potentially mean an increase in more local, frequent users at the site, and these may warrant particular engagement approaches
Education & awareness raising	Social media and web-based content	£2,000	£200	20	£6,000	Costs to cover design and annual fee for updates, hosting etc.	Web-based material and social media content informed by strategy.	See above. Could target local groups and residents.
Addressing contamination	Dog bins	£2,400	£3,440	20	£71,200	£600 per bin initial cost, for timber fronted dual waste bin; £400 per bin per year to empty. 8 bins, locations to be determined (see parking review). Replacement every 10 years.	Additional bins to minimise impacts of fouling and also encourage responsible dog walking.	Entrance points used by Garden Village.

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Parking & Travel	Review of parking and travel infrastructure	£15,000			£15,000	One-off cost for consultancy support/advice, to consider parking charges, reducing parking capacity at selected locations, increasing capacity at selected locations, closing selected parking locations and where to target dog bins and other infrastructure. Also, sustainable transport issues including bus routes, car charging points, bike racks.	Will inform potential for long term strategic approach to management of parking and travel options and inform other infrastructure provision.	Could include particular focus on transport links to/from Garden Village.
Parking & Travel	Parking improvements/ modifications	£100,000			£100,000	Potential for costs to be used in conjunction with revenue collected for parking charges; £100,000 would be the equivalent of 1 new car park with around 25 spaces. Costs anticipated to be spread more widely for more minor changes across more parking locations.	Changes to car parks to draw visitors to particular locations and redistribute access. Based on findings in the review.	

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Monitoring	Monitoring strategy	£8,000			£8,000	Strategy to set out visitor survey and monitoring approaches, establishing clear protocols and links to management, ensuring cost effective mitigation delivery targeted as necessary.	Monitoring important to inform and underpin mitigation. Important that functions as early warning to pick up issues and feedback to inform implementation.	Monitoring strategy should consider implications of increased local housing and therefore changes in access that are likely.
Monitoring	Visitor interviews		£2,000	75	£150,000	Estimated cost for face-face interviews with visitors at stratified sample of locations. Surveys repeated at regular intervals (not necessarily annually) and in pulses as relevant to inform plan review etc.	Face-face interviews would give home postcodes, routes walked, awareness and motivations for visiting. Will inform mitigation work and potential sites for SANGs/Infrastructure Projects.	
Monitoring	Visitor numbers and activities		£2,000	20	£40,000	Monitoring involving repeated transects/car park counts and other counts. Could be done by consultant, or rangers, or volunteers or automated counters. Detail informed by monitoring strategy. Needs to accurately find a way to record the numbers of bikes and visitor flows.	Regular monitoring to identify the spatial use of different areas and monitor change.	

Type of measure	Measure	Capital/ one-off Cost	Annual Cost	No. years to budget for annual cost	Total Cost	Notes on how cost calculated	Justification	Specific considerations for Garden Village
Monitoring	Path condition		£2,000	75	£150,000	Estimated cost for annual path monitoring - simple and basic system set up in monitoring strategy to allow annual monitoring.	Will inform where interventions required and messaging to visitors.	
Monitoring	Ecological (birds and habitat)		£1,500	75	£112,500	Annual sum available for targeted monitoring. Bird and habitat monitoring potentially repeated at 5-year intervals in systematic way as per mitigation strategy (i.e. if 5 year intervals then £7,500 available every 5 years).	Informs trends of birds and habitat issues. Supplements existing monitoring including site condition monitoring.	