Forest Research

Detailed methodology and learning from methodological innovation: 'Mapping the social benefits of woodland creation and expansion'

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The Research Agency of the Forestry Commission

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Introduction to document

This report complements the Evidence Project Final Report for 'Mapping the social benefits of woodland creation and expansion – proof of concept for setting up a longitudinal network (TWF-16)'. It provides:

1. Greater detail on the mixed method approach; and,
2. Outlines learning and recommendations for future research which takes a longitudinal approach for exploring how environmental interventions (such as tree planting) affect communities and individuals over time.

This document contributes to addressing Research Objective (RO) 3: *Develop and test a proof-of-concept for longitudinal research to study how attitudes, motivations, actions, barriers and benefits for communities local to new planting change over time. Where proof-of-concept refers to establishing through testing whether such longitudinal research is feasible, what it would contribute, and how it could be achieved.* It specifically addresses Research Question (RQ) 5: *How do we best capture the above change in attitudes, motivations, actions, barriers and benefits linked to woodland creation and expansion for diverse communities over time?* The full set of RO and RQ are available in the next section.

Ethics approval was obtained through Forest Research's ethical approval process.

Research objectives and questions

Research Objectives (ROs)

1. Identify and develop connections with forest/woodland sites and communities to study over time.
2. Explore attitudes, motivations, actions, barriers and benefits linked to new woodland creation and expansion (new planting) for diverse communities.
3. Develop and test a proof-of-concept* for longitudinal research to study how attitudes, motivations, actions, barriers and benefits for communities local to new planting change over time.

*proof-of-concept refers to establishing through testing whether such longitudinal research is feasible, what it would contribute, and how it could be achieved.

Research Questions (RQs)

RQs 1-4, as well as forming the baseline for any future longitudinal research at specified sites, will provide a 'snapshot' to ensure better understanding of how the intervention (new planting/expansion) has affected the local community at a point in time. RQ5 is key to providing a proof-of-concept for a longitudinal approach, whereby methodologies will be tested and recommendations made, should longer-term funding be made available. RQ6 can only be partially answered due to the time limited nature of this proof-of-concept study.

RQ1 What do local community members who have visited the site think about the intervention (new planting and expansion of woodland*) and how it has come about?

RQ2 What do local community members who have not visited the site (but are aware of the intervention) think about it and how it has come about?

RQ3 What impacts has the intervention had on local community members who visit/engage with the site?**

RQ4 What impacts, if any, has the intervention had on local community members who have not visited (but are aware of the intervention)?

RQ5 How do we best capture the above change in attitudes, motivations, actions, barriers and benefits linked to woodland creation and expansion for diverse communities over time?

RQ6 What lessons can we take from the above to inform such interventions to help them improve provision of benefits and to maximise access/engagement with such sites (where this is an aim) and minimise negative impacts (on site and visitor)?

*May include other interventions e.g. improved access

** Engagement in this sense means more formal or intensive engagement

Selection of study locations and sites

Two study locations were chosen – the Forest of Marston Vale[1] in Bedfordshire and The National Forest[2] covering parts of Derbyshire, Leicestershire, and Staffordshire. Both locations are on the urban periphery and in post-industrial locations with active tree planting. In both locations the site partners were interested in the research and cooperative with sharing information and access permissions.

[1] Forest of Marston Vale - Trees Make Life Better
[2] The National Forest | UK Environmental Charity

The site partners helped to identify new tree planting locations ('study sites') suitable for this research. Requirements included a large enough surrounding population to enable statistical analysis for the quantitative part of the research. Initially a sample population boundary representing those living within a 15-minute walk of the new planting boundary was chosen, as the Government's Environmental Improvement Plan (2023)[3] aims to ensure that everyone in England everyone should live within 15-minutes walk of a green or blue space. However, this proved too restrictive (see quantitative methodology section below) and so this was increased to 30-minutes walk. Sociodemographic diversity of the sample population was also an objective and Index of Multiple Deprivation (IMD) scores and constituent variables were examined as part of the site selection process, along with population age profiles and local tree cover (data from National Forest Inventory, Trees Outside of Woodland Database and National Forest Estate Sub-Compartment database). The sites were required to have had tree planting within the last 20 years, and a diversity of planting ages was aimed for. Some of the sites had on-going community engagement activities and some did not. The sites in the Forest of Marston Vale largely follow the same site design and are managed by the Forest of Marston Vale, whereas the sites within the National Forest are managed by different organisations (the National Forest Company, Woodland Trust and Forestry England) and vary in site design. Further details of the two study locations are presented in the sections below.

Forest of Marston Vale

The Forest of Marston Vale is a Community Forest covering 61 square miles of land between the large population centres of Bedford and Milton Keynes, in proximity to Junction 13 of the M1. The landscape was formerly dominated by agricultural land and clay pits from the brickworks industry. After deindustrialisation, many of these pits became landfill sites and were filled with waste, leaving the area in poor environmental condition and tree cover at just 3%. In the 1990s, the Forest of Marston Vale was established after the Government designated the land as one of twelve post-industrial areas to undergo environmental regeneration with hopes of improving the area for both local nature and people. Since then, over two-million trees have been planted in the area, with tree cover at 16.9% at the end of the 2024/25 planting season and aims to increase this to 30% by 2031. Alongside planting on private land, community woodlands have also been planted within the Forest and are under the management of the Forest of Marston Vale Trust.

[3] Environmental Improvement Plan (published under the previous government)

The Forest of Marston Vale Trust have adopted a multi-purpose forestry approach and aim for their woodlands to be a space that boosts biodiversity, improves the landscape of the area, produces a sustainable timber supply and encourages access and recreation to enhance local quality of life.

Across the woodlands, diverse species mixes, all grown and sourced in the UK, have been planted. Species have been chosen to combat risks associated with pests and diseases and climate prediction tools have also been used in tandem to heighten the climate-resilience of the woodlands. The woodlands are planned to undergo initial thinning at 25 years old, but coppicing has already taken place at some sites. Tree guards have been used within the woodlands to prevent tree mortality associated with local grey squirrel and deer populations.

Within and surrounding the Forest area, significant development has taken place in recent years, with large-scale house building and light industrial development taking place.

The woodland sites are used for a range of recreational activities such as walking, cycling and horse riding. The Forest of Marston Vale Trust also run organised activities for the community in the woodlands, such as guided walks.

Case study sites - Forest of Marston Vale

An overview of each Forest of Marston Vale site included in the project is presented below. Figure 1 and Figure 2 below respectively show the population density and IMD scores of each study site at distances of 1,250m (15-minute walk) and 2,500m (30-minute walk)[4].

[4] Both 1000m and 1250m are used to depict a 15 minute walk distance in studies. Both are indicative only and used here as direct distances (‘as the crow flies’). We chose 1250m as walking studies have suggested a range of walking paces, which vary, including depending on sex and age, and we wanted to reflect inclusion of those walking at a slower pace and those using mobility aids.

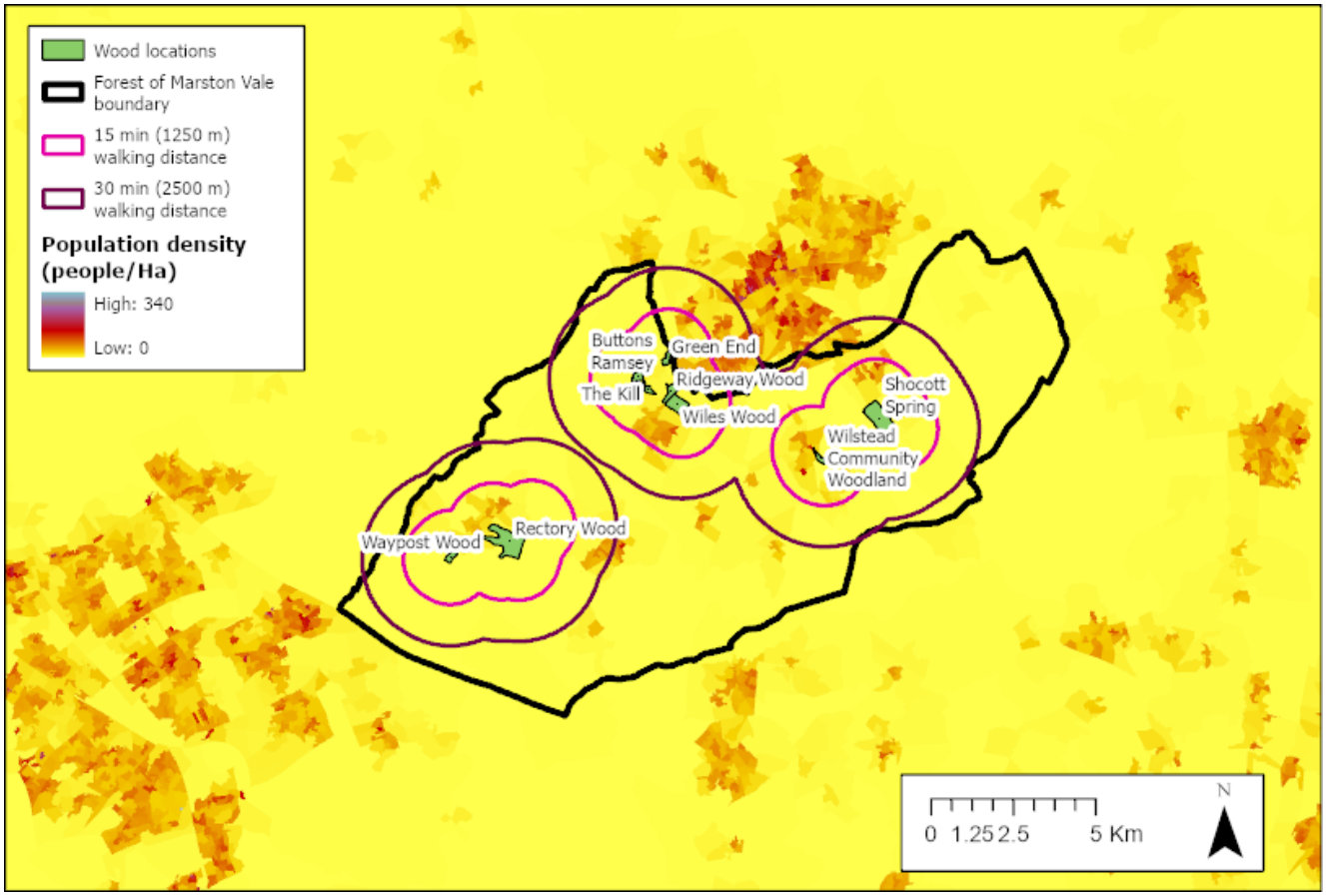

Figure 1 - A map showing the population density of the areas surrounding each of the Forest of Marston Vale sites.

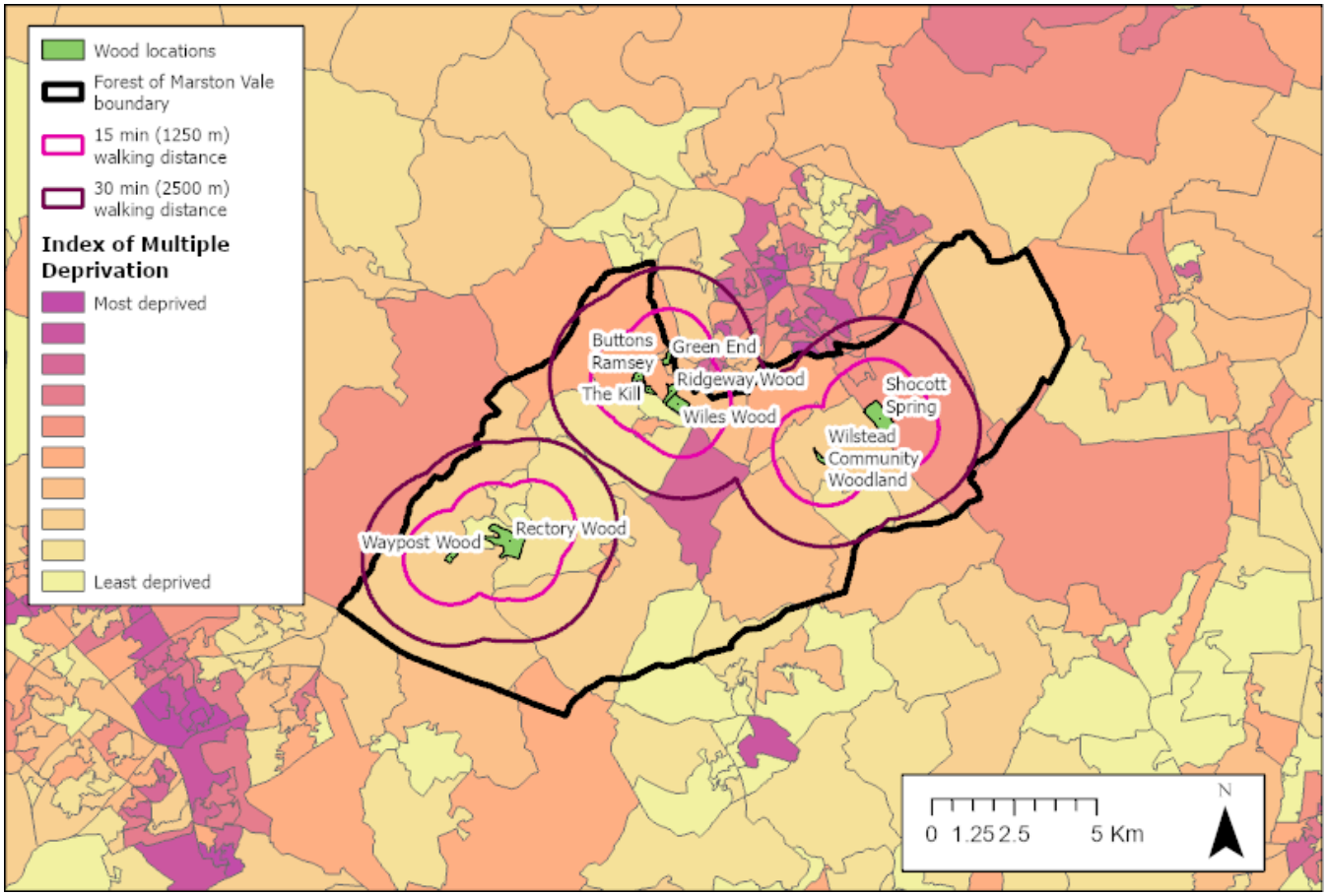

Figure 2 - A map showing the IMD scores of the areas surrounding each of the Forest of Marston Vale sites.

Rectory Wood

Rectory Wood is a community woodland located in the village of Cranfield, close to Waypost Woodland. It is one of the largest sites in the Forest, covering 70 hectares (ha) of formerly arable land. It sits adjacent to Marston Thrift, an ancient woodland and Site of Special Scientific Interest. It also neighbours the former Brogborough landfill site, which is also undergoing regeneration via tree planting.

The Forest of Marston Vale Trust planted Rectory Wood between 2004 and 2014 in five different phases. Trees were planted between 0.5m and 2m apart, to mimic natural succession and to allow for more open woodland areas, alongside areas of thicket. The planting consists of a diverse broadleaf species-mix, including Oak and Blackthorn which were chosen to benefit existing Black Hairstreak butterfly populations. The site has ash planted on it and has experienced Ash Dieback. There has also been a very small experimental plantation of elms thought to be resistant to Dutch Elm Disease on site.

Within the woodland, there are areas of open grassland and wildflower meadow, as well as four balancing ponds, created to collect surface water from nearby housing developments. The woodland also features inclines, leading to viewpoints of the surrounding Bedfordshire landscape.

The site does not have a car park, so is primarily used by the local community who walk the short distance from Cranfield to access it. Rectory Wood has surfaced pathways and grass tracks running throughout, allowing users to navigate throughout the woodland. The tracks are level and wide, enabling use by those in wheelchairs, mobility scooters, or with pushchairs.

Rectory Wood has an estimated population of 6,249 and 12,135 people living within distances of 1,250m and 2,500m, respectively.

Waypost Wood

Waypost Wood is smaller community woodland also located in Cranfield, close to Rectory Wood. The site is bordered by recent housing developments, a caravan park and agricultural fields. The site is one of the Forest of Marston Vale's newer community woodlands with the first phase of planting taking place in 2017 with 3.55 ha of land planted on. Further planting took place in 2018 on an additional 3.5 ha of land. As such, the trees on site are fairly immature. Ash was purposefully not planted at Waypost Wood, and instead, the planting comprises Hornbeam and other broadleaf species.

The site is used for walking and contains a circular track, suitable for those with different accessibility needs. There is seating at the entrance to and within the site. Waypost Wood does not have a car park.

Waypost Wood has a smaller surrounding population then the other sites, with 3,325 people living within 1,250m and 7,736 living within 2,500m. As a cluster of two sites, the communities within 1,250m of Rectory Wood and Waypost Wood generally have low levels of deprivation, increasing in some areas within the 2,500m buffer.

Gateway Woods

The Gateway Woods are a cluster of different community woodlands situated between the villages of Kempston and Wootton, near Bedford, where more than 100,000 native trees and shrubs were planted across the sites by over 3000 people. The woodlands are all accessible via surfaced and grass tracks. They also feature seating areas, including wheelchair accessible picnic tables. The sites do not have car parking, but users of the woodlands commonly park on nearby roads.

The population estimates for the Gateway Woods are reported individually in the sections below. There are areas of both low and high deprivation within both 1,250m and 2,500m of this cluster. Along with the community surrounding Wilstead Community Woodlands, the Gateway Woods communities experience the lowest surrounding tree cover of the study sites at this location.

Buttons Ramsey

Buttons Ramsey is close to the small village of Wood End and comprises 8 ha of land planted on in 2005. It is composed of a standard species mix of 25% oak and 25% ash, alongside cherry, field maple and fruit trees.

An estimated population of 3,045 and 19,253 people live within 1,250m and 2,500m of the woodlands, respectively.

The Kill

The Kill is located directly opposite Buttons Ramsey, with a road connecting the area to Bedford running between the two sites. The Kill was planted in 2007 on 6.1 ha of ex-arable farmland. Planted species comprise native broadleaves (e.g. pedunculate oak, ash, field maple) and woody shrubs (e.g. hazel, hawthorn, dogwood, wild privet). 30% of The Kill is open ground and much of the boundary is unplanted to facilitate management around the perimeter of the woodlands. Willow invasion is an issue on site. The site has a 700m track running through it connecting statutory public rights of way.

An estimated population of 6,693 and 20,840 people live within 1,250m and 2,500m of The Kill, respectively.

Green End

Green End was planted in 2016, on 9.1 ha of land. The site has five small ponds, home to a translocated Great Crested newt population. It also has an area of archaeological interest within it. Planting has not taken place in these areas of the site to protect its ecological and heritage value. There are additional unplanted areas due to the presence of a water pipe. The site is one of the least visited woodlands in the cluster. Green End is accessible via a gateway in the residential area of Gibraltar or by walking along a track running through privately owned farmland. The pathways on site are mowed grass.

An estimated population of 7,372 and 31,485 people live within 1,250m and 2,500m of The Kill, respectively.

Ridgeway Wood

Ridgeway Wood is located on the outskirts of Wootton, a village in proximity to Bedford. It was planted in 2005 on 10.5 ha of land, which is now connected to Wiles Wood. Both Ridgeway Wood and Wiles Wood neighbour farmland and warehouses. The proposed Bedford to Milton Keynes waterway route passes through this site.

An estimated population of 11,820 and 29,975 people live within 1,250m and 2,500m of Ridgeway Wood, respectively.

Wiles Wood

This site is connected to Ridgeway Wood. Wiles wood was initially planted in 2007 on 11 ha of land, as part of a Section 106 contribution. In 2013 the woodland was extended with additional planting on a further 14.8 ha of land. The planting consists of broadleaf native species, including pedunculate oak, ash, field maple and silver birch. Other planting includes woody shrubs, such as hazel, hawthorn and dogwood. The site has areas of open ground, which have been left unplanted due to archaeological interest. These areas are managed to promote the growth of wildflowers and are cut annually to collect hay.

An estimated population of 11,575 and 27,416 people live within 1,250m and 2,500m of Wiles Wood, respectively.

Shocott Spring

Shocott Spring is another of the larger sites, covering 52 ha of former arable farmland between the villages of Shortstown and Cotton End. The planting commenced on 25 ha of land in 2006. This was followed by further planting on 14 ha and 13 ha of land in 2008 and 2011, respectively. The third phase of planting had a difficult establishment, so still looks fairly immature. A total of 85,000 trees were planted at Shocott Spring, consisting largely of native broadleaved and shrub species, (e.g. oak, ash, field maple, guelder rose), but there are also conifer species (e.g. Scots pine, larch) present. The central two stands on site are a native timber production mix (e.g. oak, ash, cherry). The native woodland areas were planted in a variable matrix (0.5m to 2.5m spacing).

The site is surrounded by farmland and overlooks the Cardington Sheds, former airship hangars. The site is accessible via Cotton End, but there is informal access via Shortstown. It has a 3km surfaced trail, making it suitable for wheelchair users, mobility scooters and people with pushchairs. The site additionally has grass tracks, picnic tables, benches and information boards.

An estimated population of 4,742 and 17,477 people live within 1,250m and 2,500m of Shocott Spring, respectively.

Wilstead Community Woodland

This site is located between the villages of Wixams and Wilstead and is surrounded by farmland. Wixams is a new village developed since 2007 on former agricultural land. Wilstead Community Woodland is the most recently planted of the study sites, with planting beginning in 2019 on 3.3 ha of land. Further planting took place in 2020 on another 3 ha of land. A total of 10,250 native broadleaf trees and shrub species (including pedunculate oak, hornbeam, wild service tree and hazel) were planted here. The woodland is soon to be owned by the local Parish Council and is managed by the Forest of Marston Vale Trust. The site does not yet have surfaced pathways or seating, but installations are planned for the near future.

An estimated population of 6,826 and 11,271 people live within 1,250m and 2,500m of Wilstead Community Woodland, respectively. As a cluster, the communities around Shocott Spring and Wilstead Community Woodland have low to moderate levels of deprivation at a distance of 1,250m, with areas of high deprivation within the 2,500m spatial buffer.

National Forest

The National Forest sits in the centre of England, spanning 200 square miles of the Midlands across parts of Derbyshire, Leicestershire, and Staffordshire. It is located between the major cities of Leicester, Derby, Nottingham and Birmingham, and provides natural greenspaces on the doorstep of its four Forest towns, Burton upon Trent (famous for its brewing), Swadlincote and Coalville (formerly associated with the clay and coal mining industries) and the historic town of Ashby-de-la-Zouch.

Case study sites – National Forest

An overview of each National Forest site included in the project is presented below. Figure 3 and Figure 4 respectively show the population density and IMD of each site at distances of 1,250m (15-minute walk) and 2,500m (30-minute walk).

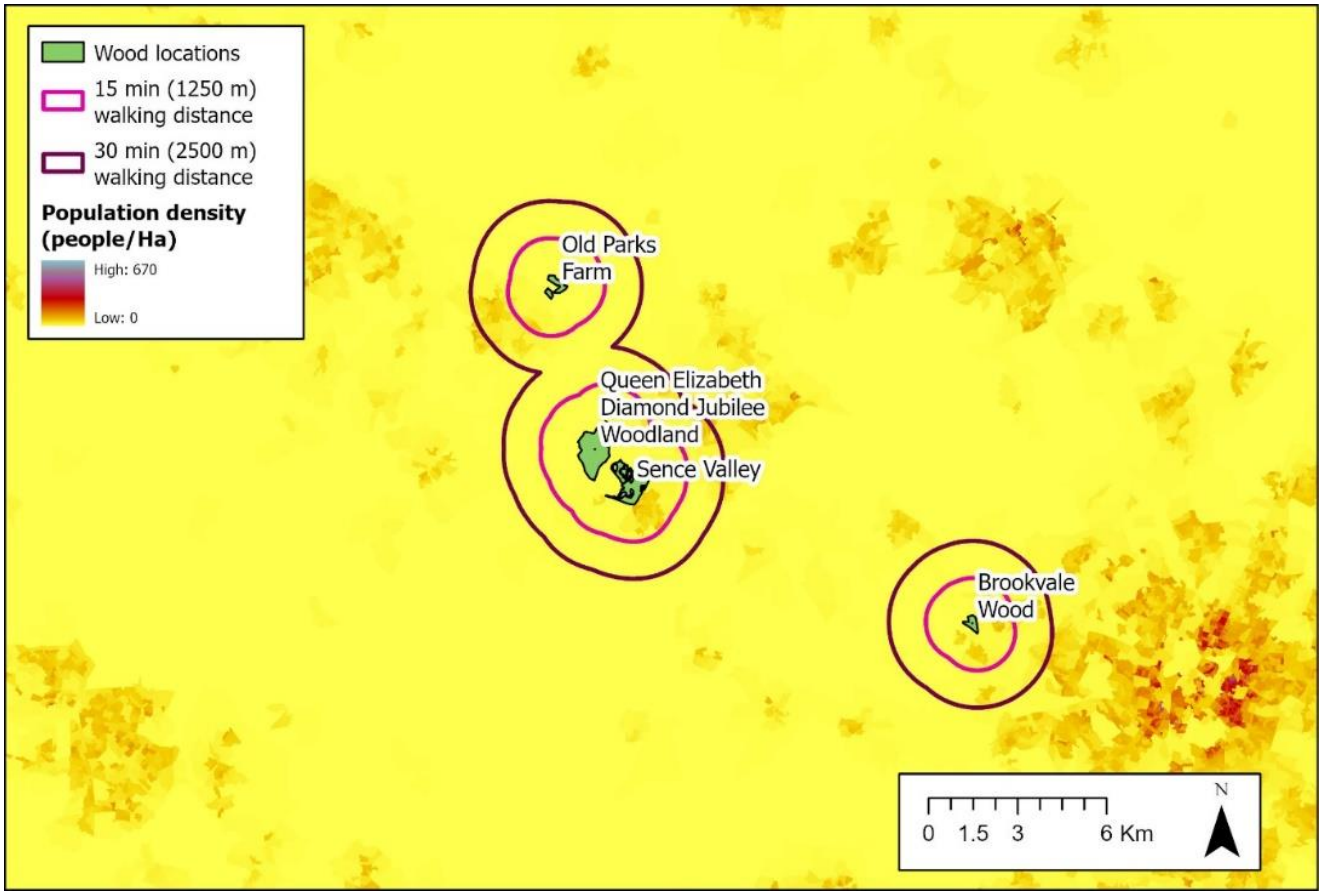

Figure 3 - A map showing the population density of the areas surrounding each of the National Forest sites.

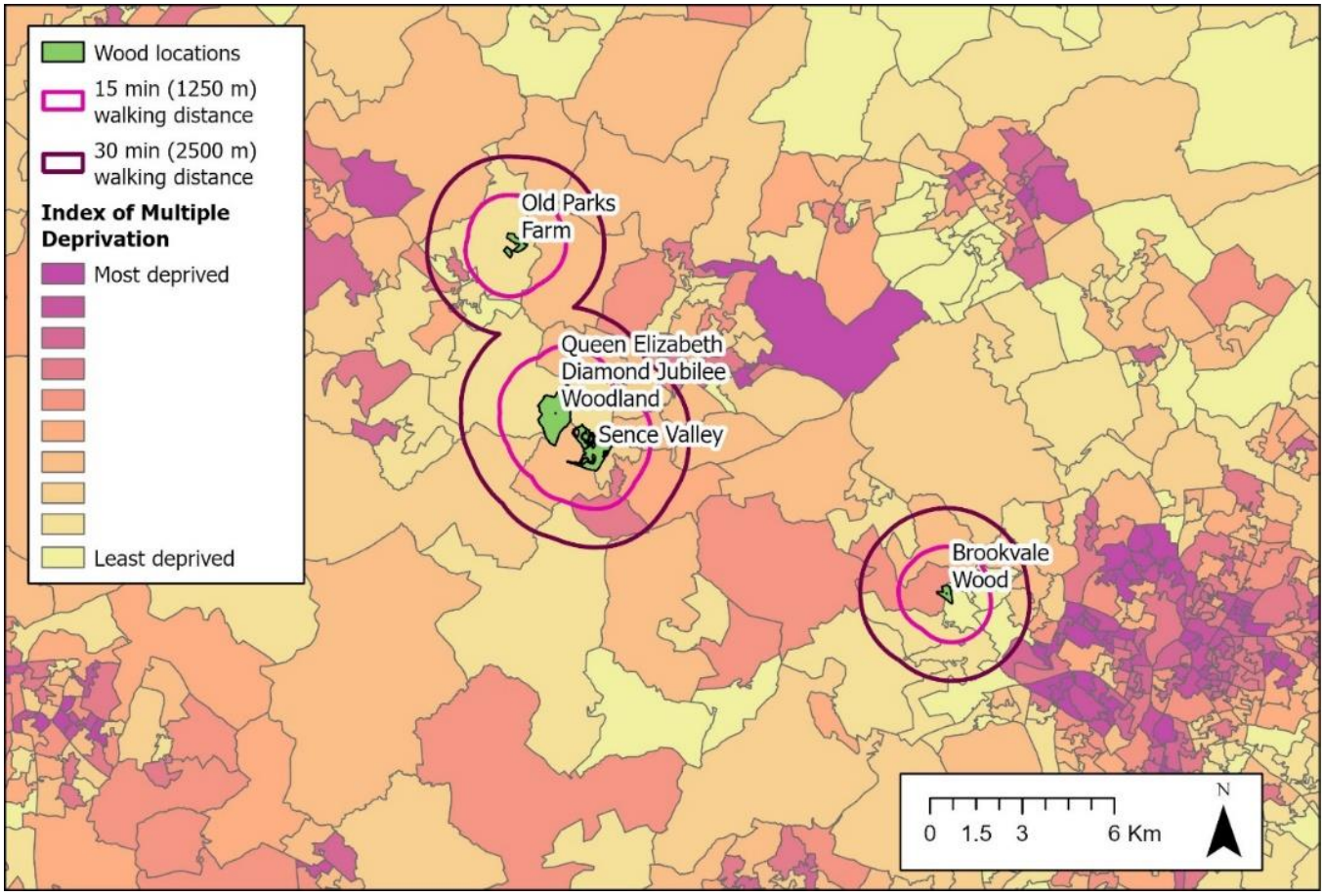

Figure 4 - A map showing the IMD scores of the areas surrounding each of the National Forest sites.

Sence Valley Forest Park

Sence Valley Forest Park in northwest Leicestershire spans 109.9 hectares and is managed by Forestry England. Located between Ibstock and Heather, this undulating landscape has experienced significant transformation as part of the National Forest's regenerative initiative. Much of the woodland here was first established at the turn of the millennium, predominantly featuring Corsican pine *(Pinus nigra)*. As part of the Forestry Commission Centenary celebrations in 2019, 48 hectares of arable land on the northern edge of Sence Valley were purchased, representing the newest planting on site. Much of this area is characterised by sweeping views of the open valley, punctuated by still-young trees protected by low fences. The young trees, planted in 2019, include a mix of conifers and broadleaves, with 24 species planted in single-species groups to highlight their distinct shapes, colours, and forms. Across the site, broadleaf stands include oak *(Quercus spp.)*, ash *(Fraxinus excelsior)*, poplar *(Populus alba)*, cherry *(Prunus avium)*, field maple *(Acer campestre)*, willow *(Salix*

spp.), birch *(Betula spp.)*, and alder *(Alnus glutinosa)*. Coniferous trees include Douglas fir *(Pseudotsuga menziesii)*, Japanese red cedar *(Cryptomeria japonica)*, Leyland cypress *(Cupressus × leylandii)*, Scots pine *(Pinus sylvestris)*, Western hemlock *(Tsuga heterophylla)*, and Western red cedar *(Thuja plicata)*. An avenue of cherry trees was also planted along a public footpath parallel to the River Sence in honour of the centenary.

Forestry England's management vision for Sence Valley is centred around economy, nature, and community – demonstrating a commitment to maximising biodiversity; human access and wellbeing; as well as operating as a commercial woodland. Much of the valuable Corsican pine is now under threat from Dothistroma needle blight *(Dothistroma septosporum)*, a disease that causes needles to turn red and drop, eventually killing the trees. The species diversity and single-block groups are a management strategy which can mitigate the risks associated with climate change and increased prevalence of diseases. Surrounding these blocks of woodland, the site features wide, well-maintained paths which are suitable for wheelchair users and pushchairs. Visitors can also use two car parks (pay to use), with the lower car park in the centre of the site designed for wheelchair users. Facilities such as toilets, picnic areas, information boards, and a forest school nursery are also present, and on select days refreshments are available from a mobile cafe.

The River Sence meanders through the site, feeding several ponds. In the eastern edge of the new planting, a naturally wet area features two seasonal ponds that provide additional wetland habitats. A popular Parkrun takes place every Saturday, with routes often traversing the muddier trails along the bottom of the valley. It is also one of the locations for Forestry England's 'Feel Good in the Forest' green social prescribing programme of activities.

Sence Valley has an estimated population of 9,140 and 19,430 people living within distances of 1,250m and 2,500m, respectively.

Queen Elizabeth Diamond Jubilee Woods

Planted in 2012 to commemorate Queen Elizabeth II's Diamond Jubilee, this 50.5-hectare site, known locally as Jubilee Woods, is managed by the Woodland Trust and situated near Normanton le Heath in northwest Leicestershire. The woodland primarily consists of a diverse mix of native broadleaf species, planted in intimate groups. While much of the site is newly planted, there are small areas of ancient semi-natural woodland present, as well as older hedgerows, with some featuring large, mature ash trees. Approximately 10% of the area is open ground, with wetland

habitats and a large lake home to a variety of species. A bird hide sits on the edge of the lake for wildlife observation.

Visitors have access to a free car park, and other facilities include benches, way markers, information plaques, and an unmanned open-air information hut. The terrain is mostly flat with some gentle undulations, offering some scenic viewpoints in more open areas. The site features a network of narrow, sheltered trails but also offers well-maintained, wider, wheelchair-accessible paths throughout.

Queen Elizabeth Diamond Jubilee Woods has an estimated population of 2,307 and 13,644 people living within 1,250m and 2,500m, respectively. Communities surrounding both Sence Valley and Queen Elizabeth Diamond Jubilee Wood experience varied levels of deprivation, ranging from low to high.

Old Parks Farm

Located on the outskirts of Ashby de la Zouch, Old Parks Farm was first planted in 1999. This former agricultural site, 14.5 hectares in size, was expanded in 2015 to include an additional 24 hectares, forming what's now known as Eastern Old Parks. This extension now surrounds the original site on all but the western side.

Owned and managed by the National Forest Company, this site is regarded as the "missing piece" of a woodland jigsaw connecting existing woodland habitats in the northern National Forest. While the southern boundary of the site is quite industrial, with a national distribution centre, the busy A511, and a retail estate, the woodland provides a tranquil retreat.

The site retains an open parkland feel, with grazed land and small groves of trees. A diverse range of broadleaf and conifer species has been planted, and some represent large blocks of woodland with relatively little open space. Much of the new planting is housed in tall, gated compounds accessible to the public. Some of these areas are used for scientific research. Despite being a fully accessible site, there is a private, secluded feel, partly due to the limited nearby housing and infrastructure. There are no paved paths, car parks, or additional facilities. A few waymarked routes feature on site, with additional avenues and cut-throughs to vary walks. On areas of higher ground, views stretch across Measham and Staunton Harold.

Old Parks Farm has an estimated population of 2,724 people living within a distance of 1,250m from the woodland and 12,812 people at a distance of 2,500m. Deprivation levels are low to moderate at a distance of 1,250m of the woodland, with higher levels at a distance of 2,500m.

Brookvale Wood

Brookvale Wood in Groby is a 14.9-hectare site managed by the National Forest Company and located near Ratby, close to Leicester. Tree planting began in 2013 and continues annually through the National Forest's paid Plant-a-Tree events, where volunteers can actively contribute to reforestation efforts.

The landscape features gentle undulations with open grassland and young trees scattered across the site. Some trees are enclosed in low-fenced compounds, which visitors can enter. The openness of the site allows for sweeping views of the surrounding fields.

Brookvale Wood borders the ancient Martinshaw Wood, owned by the Woodland Trust, and visitors often use the parking facilities at Martinshaw Wood, as Brookvale lacks its own car park. The site's southwestern boundary is bordered by the M1 motorway, adding to its secluded feel despite its proximity to infrastructure.

Brookvale Wood has an estimated population of 8,485 and 17,613 people at 1,250m and 2,500m, respectively. The area surrounding Brookvale Wood features areas of low to moderate deprivation at both 1,250m and 2,500m distances.

Methodological statement

Quantitative

Introduction

The quantitative part of this research project ran over two waves from January 2023 to March 2025. Both waves were delivered through a survey questionnaire; Wave 1 from February to March 2024 and Wave 2 from November to December 2024. The project team continued to develop and refine the methods (design of the questionnaire, the mode of delivery, the approach to sampling and the analysis strategy) over a 22-month period from January 2023 to October 2024.

Capturing the target population

As reported under 'Selection of study locations and sites' section of this report, the project team worked through a process to select the newly planted woodland study sites in the National Forest and the Forest of Marston Vale. The challenge for the quantitative methodology was to ensure that all respondents lived within a 30-minute walk / 2,500m of one of the woodlands. Initially a 15-minute walk buffer distance was attempted (1,250m) but proved too restrictive (in terms of achieving sufficient

completions). Maps were created to highlight these distances and establish the sampling area around each of the woodland sites. The Wave 1 questionnaire also included a question for respondents to self-report how long it would take them to walk (or wheel) to the site and these responses were mapped.

Designing the questionnaire

The two questionnaires (Wave 1 appendix 2 and Wave 2 appendix 3) were designed to capture the range of attitudes, motivations, actions, barriers and benefits linked to new woodland creation and expansion (new planting) for diverse local communities as they grow and change (Objective 2). To this end, both questionnaires went through multiple layers of consultation and review with Defra policy colleagues, the land management teams at The National Forest and Forest of Marston Vale, external academic and research colleagues working on similar themed studies at other institutions, and internal research colleagues not involved in the NCF project. The draft questionnaires were also shared with statistician colleagues for review. Early iterations of the online scripted questionnaires were tested by colleagues and associates before they went live.

The final questionnaire for Wave 1 included 36 mainly closed-ended questions across seven sections:

1. Awareness of the woodland and visits to the woodland;
2. Woodland engagement other than visiting;
3. Life satisfaction and personal health;
4. Connection to nature;
5. Benefits and disbenefits of the woodlands, including what is valued;
6. Pro-environmental behaviours; and,
7. Socio-demographics.

The questionnaire was designed to enable analysis of differences between visitors and non-visitors, as well as differences across sites. It included question routing for those who visited the woodland and those who did not.

Participant information was provided and informed consent was obtained by the interviewer prior to data collection.

Analysis protocol

Alongside design of the questionnaire itself, the team developed an analysis protocol for providing guidance and direction to the project statisticians. Specifically, this outlined variables to be analysed under each Research Question. Two waves allowed for piloting (that is, Wave 1 also fulfilled the role of a 'pilot').

Wave 1: Testing modes of delivery

The first part of Wave 1 utilised CATI (Computer assisted telephone interviewing). The decision to use this approach was taken following consultation with potential contractors (market research companies) as to what would be the best mode to achieve the required sample size (1500) for such a geographically-targeted study.

A decision was taken to test a second mode, face-to-face interviewing, using one woodland site (Sence Valley in The National Forest). This was undertaken at the woodland (to target visitors) and in the local area (to capture non-visitors). The trade-off was to be smaller numbers of respondents. It was deemed important to trial these two methods to enable learning about mode delivery for this type of innovative, quantitative, geographically targeted, 'hyper-local' study (RO3, RQ5).

Wave 1: Lessons from the analysis

Analysis suggested there was a mode effect but, importantly, demonstrated the value of using face to face interviewing to ensure geographically-accurate sample targeting. Mapping of postcodes from the CATI questionnaire study revealed a number of respondents beyond the 2500m distance. This was despite a sample selection approach which used phone records to ascertain postcode of registered owner (GDPR requirements were adhered to). There was added complication from having clusters of nearby woodlands when it came to clarity for interviewers and interviewees regarding which specific site was being discussed. This resulted in more carefully worded questions at the introduction to the Wave 2 questionnaire and recognition that this was more easily managed through face-to-face interviews. More details are included below.

The socio-demographic data of the respondent sample from the face-to-face survey at Sence Valley was somewhat different to the CATI sample, in that the older age groups and retired category were a much greater proportion of the whole. Also, there were more female than male respondents, and the percentage of White respondents was much higher than for the CATI survey. This likely reflects the approaches to recruitment used for the CATI survey, which was more reliant on existing panel members (often recruited through social media) and mobile phone users.

Wave 2: Building on Wave 1

This section explains how the methods were developed and improved over the two waves. Overall learning from testing the methodology is addressed in the section below 'Learning from methodological innovation and testing'.

The questionnaire for Wave 2 was slightly shortened with the removal of some questions. Analysis of Wave 1 indicated that questions about the site before and after the new planting and engagement with pro-environmental behaviours did not produce high quality data (e.g. data analysis and feedback from interviewers suggested some respondent confusion) or analysis was not deemed to contribute enough to answering the RQs, so these were removed. Seven additional statements about the named woodlands were added, based on findings from the qualitative interviews. The interim qualitative analysis identified that it could be productive to include agreement statements which referred to:

- potential protective qualities conferred by new planting regarding 'over-development' of the local area;
- whether the new woodland has improved the quality of the local environment and local landscapes;
- whether it has increased local house prices;
- whether it is good because it is important to plant more trees; if it is good for wildlife; and,
- if respondents feel a sense of personal responsibility for the woodland.

It was also identified that some of these statements could also be relevant to non-visitors and so these were added to the questions for those respondents. The qualitative interim findings were also used to refine the wording of some of the existing statements. As mentioned above, the Wave 2 questionnaire included a more clearly worded process, plus use of maps and photos of the sites, to ensure correct identification of the named woodland site before respondents began answering questions. The routing was based on a decision tree flowchart which considered whether people were happy to participate, their home postcode, whether they lived in a sample area for one or more woodland study sites, whether they knew of the site/s, whether they had visited the site/s and if they visited more than one site, then which they visited most frequently.

Another important development for Wave 2, following learning from Wave 1, was use of respondent postcodes for screening purposes. All postcodes within 2500m of the woodland sites were identified prior to the delivery of the questionnaire and

shared with the successful contractor. These were then pre-loaded onto tablets for use by interviewers. Potential interviewees were asked for their full residential postcode to ensure that they lived within the 2500m boundary as part of the screening process.

The final main development from Wave 1 to Wave 2 concerned the mode of delivery. The decision was made that the limitations and problems associated with CATI (respondent home address too frequently outside of specified geographical boundary and sample skews regarding age, gender and ethnicity – see above for details) outweighed those of the face-to-face mode (mainly lower response rate for same budget). Therefore, in Wave 2 only face-to-face surveying was utilised.

Statistical analysis

Analysis followed a protocol designed around the first four research questions (see above). The data was disaggregated by key socio-economic variables to test for differences between respondents.

All analysis was done in R software, version 4.4.2. Unless otherwise stated, 5% was the significance level considered in all reporting.

Confidence intervals for proportions were calculated using a logit transformation and represented in bar plots.

Chi-squared tests were run to assess statistically significant differences between response proportions. Wilcoxon rank test were used for scores comparisons.

Statistical models were run to assess impacts of factors more widely. For ordinal responses (e.g. Likert data), ordinal logistic regression models (clm() function, Christensen, 2019) or multinomial logistic regressions for categorical responses were run (multinom() function, Venables and Ripley, 2002), with likelihood ratio chi-squared tests to determine significance.

To carry out statistical analysis for some of the questions it was necessary to re-code responses. Details are described below.

Analysis of differences between visitors and non-visitors required creation of a scale representing frequency of visit to the woodland where the non-visitors were added with a frequency of zero.

In relation to the question asking visitors about their reasons for visiting and so that responses could be analysed for differences between respondents, reasons with less than 9% of responses were collapsed so the main categories included in further analysis were: “For physical health and exercise”; “to take a break, get fresh air”;

"for mental health & well-being" and "other". The "other" categories were 'For time alone', 'To be with family and / or friends', 'To connect to nature'. A multinomial logistic model was fitted with the reason for visiting the woodland as the response and socio-demographics and visit frequency as explanatory variables.

There were four questions asking respondents to self-report feelings of well-being about their life, using a scale from 0 to 10 (where 0=not at all; 10=completely). Due to the limited data in the lower scoring categories, a dummy variable was created to distinguish respondents with high scores from those with lower scores. Respondents who scored higher than 7 were assigned the category 'High level'. A logistic model was fitted for each of the four questions with the corresponding dummy variables as the responses respectively and socio-demographic variables and frequency of visits as explanatory variables.

In the final part of the analysis, responses to 17 statements about the social and cultural values of young woodland and newly planted trees in the local area were considered. Responses were recorded using a five-point Likert scale. To be able to consider whether frequency of visit (including non-visitors) affected respondents' values relating to newly planted trees, a set of dummy variables was defined for each statement in which 1 corresponded to "Agree" or "Strongly agree", and 0 otherwise. These dummy variables were then the response variables in a set of logistic regressions accounting for key variables.

These 17 statement responses were compared to an earlier national (England wide) study which ran the same statements (plus two additional statements not applicable to new planting or young woodlands) using a 0-100 scale. To make the results comparable the 0-100 scale responses were transformed to correspond with the five point scale used in this study, as follows:

[0,20) = 'Strongly disagree', [20,40)= 'Disagree', [40,60) = 'Neither agree or disagree', [60,80)= 'Agree', [80,100]='Strongly agree'.

To determine whether the differences between our survey (asking in relation to local new woodlands) and the all-England survey (asking about local trees and woodlands in general) were statistically significant, a Chi square test was run. However, comparisons across the two datasets must be considered carefully given the different aims, sample sizes and data gathering modes.

The full development of the scale and the results from that national study are available in O'Brien et al (2024).

Qualitative

Qualitative inquiry is well-suited to scoping a poorly understood subject area, such as local community benefits relating to new planting (see introduction to the main report and appendix 10). Individual longitudinal research allows a focus on processes as well as on outcomes (Thomson, 2007). Accepting that life experience influences how people think about and experience nature and greenspaces (how our social environment, socialisation, and intersectional identities shape our preferences and practices regarding nature) and that relational person-environment experience is also important (see Palmer *et al.*, 2023), a qualitative longitudinal (QlL) approach allows us to better understand these life experiences alongside current and past experience of local tree planting sites. Read more about how qualitative longitudinal research can help us understand people's relationship to nature in Karlsdóttir (2025).

For the qualitative longitudinal (QlL) research element of the project, an intensive research design was used, drawing on relatively new retrospective and prospective research methods, brought together in an innovative way through three waves of data collection from October 2023 to September 2024. The combination of retrospective life history interviews and prospective interviews focusing on aspirations for the future (alongside walking interviews), provided an opportunity to extend the scope of the project by taking a long-term view of time and change within the constraints of a short-term project. Due to the lack of individual longitudinal research studies which consider people's relationships to their local natural environment, QlL as an approach was also tested as part of the proof-of-concept (RO3, RQ5).

Sampling and recruitment

A purposive sampling approach was used, and participants were recruited at the study sites through researchers approaching site users and asking them to participate in the research project. This approach was taken to engage people who recreate in the study sites, as they are more likely to have opinions about the tree planting and insights into how the planting has affected them personally compared to people who do not recreate on the site. As with all qualitative approaches to data collection, this approach does not seek to generalise to a population, but to generate deep understanding through an inductive approach around the how and why. This placed a relatively heavy commitment on participants to participate for 4-6 hours in total over a period of 12 months. A roughly even split of participants between the two study locations was achieved, and where possible, a range of ages and genders (partly enabled through recruitment at different times of the day and days of the

week). However, for practical reasons, recruitment was mainly based on participants' willingness to engage and commit. An extensive visitor survey conducted at one of the sites (Woodland Trust internal document) and conversations with site staff at other sites, indicated that a majority of visitors are 55 or over and this fits our experience of recruitment. A pre-research question sheet was developed alongside an informed prior consent form (using SmartSurvey). This provided prospective participants with an opportunity to register their interest, demonstrate qualifying criteria (i.e. that they had visited the site more than once), and provided additional demographic data to support the selection process. To support participant retention, an incentive of a £60 voucher was offered, if the participant took part in all their scheduled interviews. The researchers also offered introductory phone calls with the participants to introduce themselves and to clarify the aims of the research and expectations of and on the participants, although few participants opted for this.

Initially, 17 participants were recruited. More than required, due to usually low retention rates of QIL research participants (Saldaña, 2003). However, higher-than-expected retention rates were achieved (only 2 drop-outs), and therefore the decision was made to carry forward a selection of 10 participants into the third wave, based on available researcher resource to allow in-depth analysis of the remaining cases (participants not selected were provided with the full incentive voucher). Selection of these participants was based on their engagement with the data collection, the quality of the data collected and to maximise diversity of participants. See Figure 5 for the full participant recruitment and retention process.

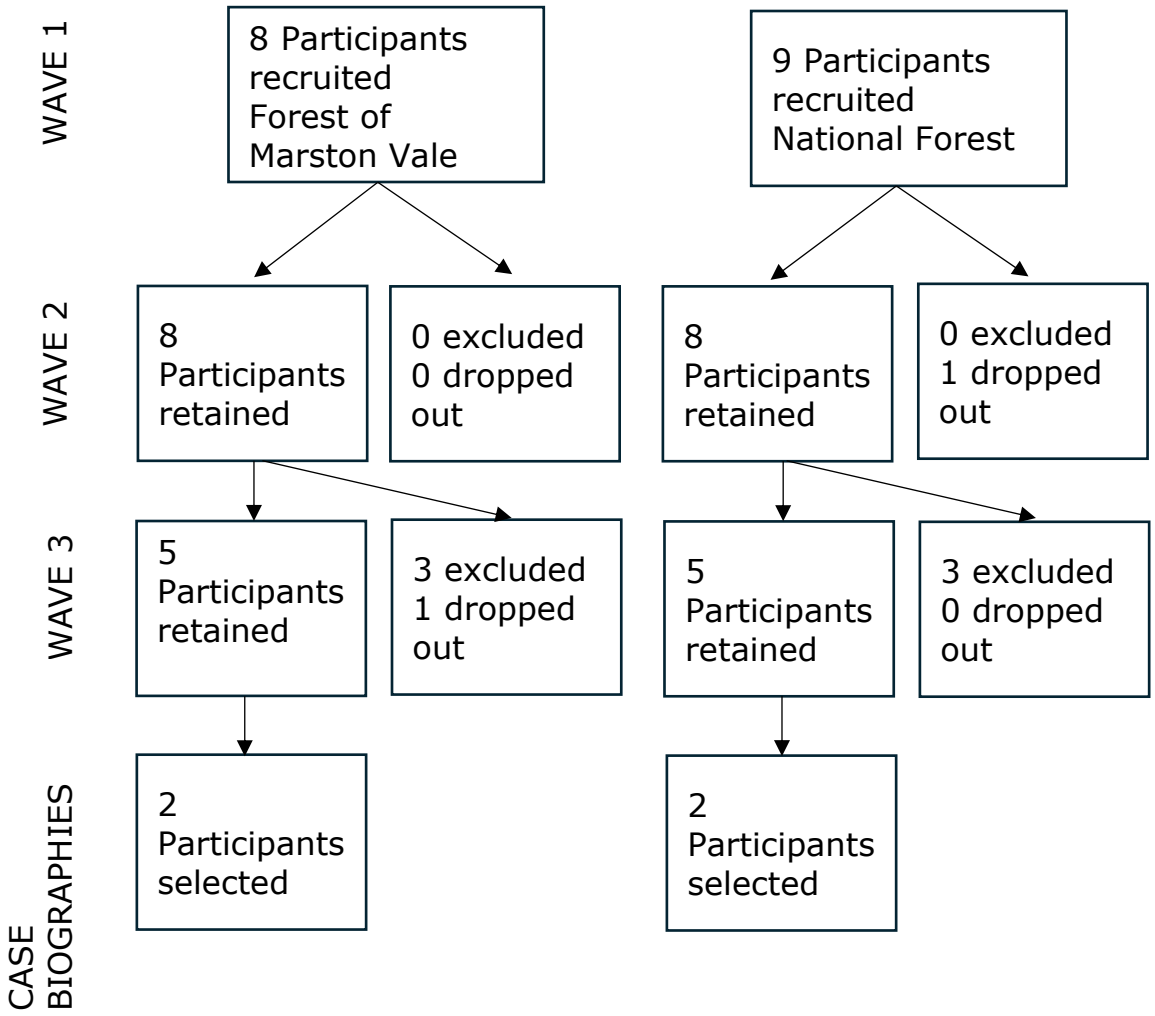

Figure 5. Participant recruitment and retention process

Interview methods

Three interview methods were used, one for each wave (see Figure 6). Firstly, a life history approach with personal timelines was used in the first interviews (Wave 1; October-November 2023). Participants were asked to draw a timeline of their life and any events relevant to their relationship with nature. These timelines were referred to in the interviews to assist exploration of the individuals' life history and personal values and beliefs, as well as how they value nature more broadly. Timelines can be used to investigate what people themselves consider to be key events in their lives and can help the researcher understand impactful 'critical moments'. These can be traditionally significant events such as marriage, but can also be events like meeting a new friend for a first time (Ravn, 2019). The timelines thereby help the researcher to focus on what is important to the interviewee or encourage the interviewer to be

more responsive to the meanings and associations of the participant (Bagnoli, 2009). A semi-structured interview guide was developed for the first interview (appendix 4), structured around the timeline, where this was provided in advance (most of the participants provided in advance).

For the second interviews (Wave 2) (May 2024), data collection focused on anticipations, expectations and visions for the future. The wave 2 interviews also followed a semi-structured interview guide (appendix 5). This included questions about how participants think the site will change, how this might affect how they use it and feel about it, and any anticipated changes to their sense of place. Future management of the site was also discussed to elicit perceptions of different management approaches. Where available, site management plans and any documents relating to the future of the sites were utilised in development of the interview guide and referenced in the interviews. Where these plans were not available, reference was made to discussions with site managers about how the woodlands are likely to be managed in the future. Initially this was envisioned to be the third/last interview, to fit more naturally with the chronology of the discussion focus. However, due to changes in Forest Research's lone working guidance, the walking interviews were postponed and the prospective-focussed interviews were conducted first.

Walking interviews were used in the final interview (Wave 3) (August-September 2024). Walking interviews have been shown to produce unique emplaced data, which draws out understanding about the interviewees' relationship with a particular place, unable to be accessed through other methods, such as traditional static interviews (e.g. Evans and Jones, 2011; Thomas, Riley and Smith, 2018). Interviewers met participants at a study site of their choice and walked with them along a familiar route as selected by them (the option to use mobility vehicles and bicycles was available). The interviews included geospatial element; tracking the route on a digital map, so mapped spatial attributes such as planting plans and topography could be used within the analysis. Photos were also taken and spatially located, where participants pointed out or focused on specific features along the route. These elements utilised a software called Gaia GPS (www.gaiagps.com). Along the walk, the participants discussed tree planting in general, tree planting on the site, their experiences of the site in general and the site's attributes. The interviewer also referred back to discussions about management of the site. The interview guide for the walking interviews was less structured than previous waves and tailored to each participant based on the site attributes and on findings from previous interviews

(appendix 6). This also allowed more freedom for the interview to reflect on the route and the walk experience.

The interviews took between 40 and 90 minutes. A follow-up email was sent after each wave and a formal debrief email was circulated after Wave 3 (appendix 11).

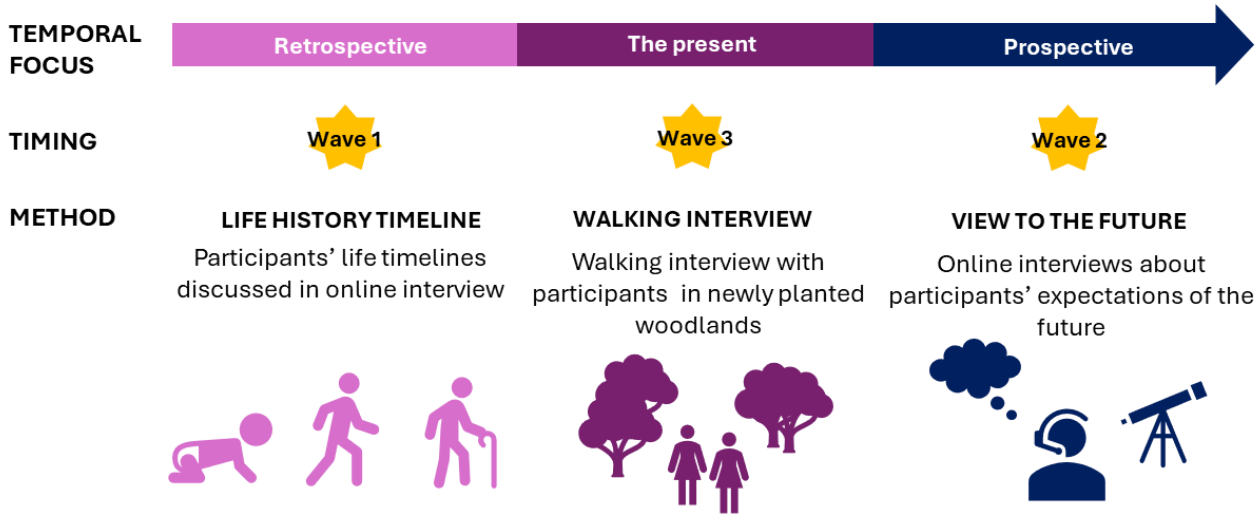

Figure 6. Temporal focus of the interviews and the methods used

Analysis

Interviews were audio recorded, and recordings were transcribed using intelligent verbatim transcription and uploaded to the qualitative analysis software NVivo v.14. Transcripts for the walking interviews were timestamped to allow for spatial location of quotes. A pen portrait was written after the first interview with each participant. These are short documents which summarise the participant's characteristics, key findings, topics for further investigation in the future, and notes on the participant's engagement with the research. These can act as an aide-mémoire or overview to support future interviews with the participant and help keep key points 'in the back of the analysts mind' during the other interviews and the analysis.

Analysis drew on a case biography approach (Thomson, 2007; Butler *et al.*, 2014; Shirani *et al.*, 2015) focusing on exploratory cases whilst weaving accounts together "to provide further illumination of sentiments expressed. As such, we seek to emphasise the detail and complexity in individual accounts whilst demonstrating awareness of how they are situated within the wider data set" (cf Thomson 2009) (Shirani *et al.*, 2015). In essence, exploratory case studies "interrogate how and why events and actions took place as they did" (Thomson, 2007). The following analytical approach was used to analyse the data and develop the cases.

A cross-sectional 'codebook' thematic analysis (Braun and Clarke 2020) was first conducted to explore themes across the sample. Transcripts were coded in NVivo v.14. at each wave following a deductive-dominant coding framework based on the research questions and on a thematic framework developed for an external research project on the topic of investigating social impacts of environmental changes (Karlsdóttir et al., in review). Topics identified inductively by the researchers were incorporated iteratively into the coding framework after mutual agreement between researchers. The framework (or codebook) can be seen in appendix 7.

Three researchers were involved in the analysis – two undertaking the majority of the analysis and a third supporting in the development and review of the codebook and interpretation. An inter-coder reliability analysis (Kappa Measure of Agreement) of the Wave 1 coding was run and confirmed moderate (adequate) coding agreement with the Kappa coefficient found to be .53 (Altman, 1999). During subsequent rounds of coding for waves two and three, the two main analysts checked each other's coding and discussed any differences with the third analyst.

A case-based analysis was then conducted of the individual participants, which also considered how their accounts evolved over time. The researchers drew on the pen portraits for this and undertook an adapted trajectory analysis (see also Saldaña, 2003 for information on 'through lines'). This is an approach whereby framework matrices are developed to summarise the data for each case/theme/wave. The following tables were produced: case-based table of themes by wave (see table 1) and non-temporal table of theme by case (see table 2).

Table 1 - Template for case-based table of theme by wave (one table per case)

	Wave 1	Wave 2	Wave 3
Theme 1			
Theme 2			

Table 2 - Template for non-temporal table of theme by case

	Participant A	Participant B	Participant C	Participant D
Theme 1				
Theme 2				

The cases (participants) for the case biographies were chosen in a research team meeting to represent both interesting, novel insights (with regard to the research objectives), as well as views and experiences which represented the wider sample. We decided to report on these cases using key themes from the data to focus the analysis on the most relevant findings for policy and practice audiences. These themes were identified at a team workshop based on the analysis and thorough team deliberation to ensure they represented the findings from both case study areas and across the participants. Six key themes were identified which were incorporated into the reporting:

1. Experiencing change and sensing variety in new woodlands
2. Stewardship of new planting
3. New woodlands enable learning
4. Protection from development
5. Sense of safety and protection
6. Finding hope and resilience in new woodland.

A methods diary was used throughout the analysis process to record all decisions made and the reasons for those decisions.

Learning from methodological innovation and testing

Quantitative

The sections above details how Wave 1 of the quantitative part of the project provided learning which was integrated into the design and delivery of Wave 2. Some of those lessons have broader application for future research. We outline additional learning below.

Focusing on individual new woodland sites and their effects on the surrounding community, rather than the community or treescape as a whole, proved challenging as new planting sites are rarely discrete. Tree planting sites are often adjacent to or incorporated into more established woodlands or arranged in clusters. This makes it challenging to direct survey questions specifically enough to enable focus solely on the new planting and to disaggregate the responses from the influence of surrounding treescapes. Therefore, one suggestion is that future research could take a whole-community treescape approach in a particular area/for a particular community. This

would be easier to design and deliver. It is also more holistic to consider the influence of the local treescape and how it changes over time, alongside the changing community.

Clear communication involving detailed descriptions of entrances, locations and alternative local names is necessary, alongside reference to maps, and sometimes photographs, to aid interviewees' correct identification of the study site. This is much easier to achieve in face-to-face mode than using CATI and the former was found to be more reliable in this respect.

The duration of the funding for this project meant that there was slightly less than one year between data collection for Waves 1 and 2 and datasets were not compared to assess change over time. For a longitudinal study seeking to capture change in how people relate to their local natural environment over time, this timescale is not optimal for quantitative approaches. Even in new woodland, pace of change is relatively slow. The recommendation is that waves be spaced further apart and include more iterations over a longer period of time.

Qualitative

As this is a proof-of-concept study, the benefits of and considerations regarding use of a QlL approach for exploring how attitudes, motivations, actions, barriers and benefits from new tree planting change over time for local people will be discussed here. QlL research is a particularly valuable tool to address RO3 (Develop and test a proof-of-concept for longitudinal research to study how attitudes, motivations, actions, barriers and benefits for communities local to new planting change over time) for four reasons:

1. Ability to collect in-depth data on individuals, with opportunities to integrate creative methods.
2. The temporal element allows consideration of the past and the future and an ability to track change over time, as well as consider cumulative affect.
3. The iterative nature of QlL research allows for productive lines of inquiry to be explored as they emerge, context to be considered, and approaches refined and improved (including through researcher reflexivity - Rose, 1997).

QlL collects in-depth data on individuals

The use of QlL methods in this study allowed for the creation of rich case biographies which spoke to the multiple dimensions of how and why people experience local tree planting, including attitudes and perceptions, personal values, contextual nature-

based values, sense of place and connection to nature, and a range of mental and physical wellbeing impacts. These could be linked these back to people's life histories and experiences, and descriptions of how different cognitive elements were linked together were also sometimes provided.

The use of creative research methods proved to be valuable. For example, Lindsay's timeline helped understand how she had fostered a deep, interconnected relationship to nature throughout her life. This was important context for understanding the significance of planted trees providing her with feelings of hope and positivity for the future. Anne and Richard's professions and how these were sustained by woodlands was important context for understanding their urgent sense of stewardship for locally planted trees. The walking interviews contextualised the data from previous interviews and prompted further elaboration. For example, general accounts about the benefits of observing the growth of new woodlands were embellished with examples of a variety and diversity of sensory experiences, making a clear, important link between the two topics.

The researchers also found that they were able to build a good rapport with the participants through repeated interactions over time. However, in Wave 3, some of the respondents expressed hesitation around bringing the researcher along on their usual walks, which are usually an opportunity for quiet, relaxation and reflection. Despite this initial hesitation, the researchers felt that the participants were particularly keen to share thoughts and experiences during these interviews, and the respondents later commented that they found it enjoyable to reflect on their walks and experiences of the woodlands with the interviewer. Some participants even described how their involvement in the interviews has given them the opportunity to reflect on their relationship with woodlands more deeply and in ways they have not done before. It was clear that the established rapport improved the participants' confidence sharing their walks and stories with the interviewers, particularly given that topics of discussion were often personal in nature and occasionally sensitive. The ability to build a rapport with participants is a key feature of QIL research, and establishment of trust over time can lead participants to share things they would otherwise not feel comfortable about sharing (Dwyer and Patrick, 2021; see also Karlsdóttir, 2025).

As part of the life history interviews, one participant shared that she had experienced child sexual and psychological abuse by her stepfather. Other participants shared details about their health, such as cancer diagnoses and chronic physical health conditions. As it is more likely that sensitive information will emerge through interviewing where a rapport is developed between interviewer and interviewee, we

suggest that QlL studies prepare for the eventuality of dealing with sensitive information and ensure support for researchers who will navigate this. Specific suggestions include: thoroughly exploring this possibility through the ethical review process and returning to the review and in-house expertise as needed; ensuring that interviewees are aware that it is acceptable for them to not answer questions and that they can withdraw from the research at any time (as per informed consent); regular debriefs between project members, including creation of and signposting to safe spaces for such discussions and procedures for dealing with safeguarding issues; well-trained interviewers, who can sensitively navigate such issues as they arise; post-interview communications with interviewees including signposting to support, if appropriate; adequate checks to ensure that interviewees are content with the inclusion of such information in reporting and the level of anonymity. In this case, both the participant and the researcher found this to be, overall, a rewarding experience, and the participant later provided feedback when reviewing how her data was reported in another research output: "I was so touched to read your email and feel honoured that you have chosen my story. Although the name [pseudonym] you have chosen is OK, I wouldn't have minded if you had used my real name. I have read the report, and you have captured the essence of change and the diversity of nature. Thank you. […] Take care. I am glad our paths have crossed; you have brought essential nourishment to my life."

The interviewers also felt that they had had meaningful engagements with the participants. One interviewer felt that the following quote resonated with his experiences: "Even the researcher is affected by longitudinal enterprises through personal and professional outcomes, since his or her own journey toward the destination is both processual and developmental" (Saldaña, 2003, p.14).

QlL research provides a temporal view

The temporal focus of QlL research was important in studying how people experience change in their local natural environmental. We were able to reflect on how people's pasts affected their perceptions of the tree planting, and how they had experienced the changes in their woodlands up until the point of the interviews. Participants also described their personal expectations for the future, such as hopes that they would continue to access the woodlands with reduced mobility as they age, or that their children can continue to benefit from the woodlands. They also discussed their aspirations for the woodlands themselves, with hopes for more biodiversity or further expansion of the woodlands. The added cognitive benefits of being able to observe changes over time was a key finding, and this can be attributed to the temporal focus of the methodology.

The interviewers noted that some participants struggled to think about the future. Previous research on conceptualising future selves has focused on how this impacts short-term vs. long-term decision-making. This research shows that some people struggle to think about their future selves, partly because they conceptualise their future selves as a different person to their current selves, and partly due to a 'failure of imagination' (Hershfield & Bartels, 2018). The presentation of details from management plans for the sites helped prompt interviewee responses and we suggest such aides in describing what the future might look like are helpful for prospective research. Some participants of older age also indicated difficulty thinking to the future due to uncertainty in their life circumstances. For example, participants often spoke about the likelihood of their health deteriorating as they age but were reluctant to dwell on this too much due to the uncertain, and perhaps uncomfortable, nature of the topic.

As the data collection window provided (by funding limitations) was too short to observe much change or changes as they happen, the research methods were used innovatively (see above regarding use of retrospective and prospective approaches). However, one change over the time frame of the study may have been captured: Anne appears quite sentimental about the loss of landscape views in the second interview but appears more at peace with this in the third interview. Arguably, this could be due to the context or her mood on the day or that the second interview prompted further thought. However, it could also be an example of the potential for QIL to capture the ways in which people grow to accept changes to their landscapes as they become increasingly familiar and as the value of the growing trees replaces what was previously valued.

QIL research is iterative

As QIL research is iterative, the interviewers were able to review data collected from one interview and ask specific questions of interest in subsequent interviews. This ability to pursue productive lines of enquiry, explore related context and refine and improve approaches is a key benefit of QIL research (Saldaña, 2003; Karlsdóttir, 2025). For example, the researchers created personalised interview guides for the Wave 2 interviews based on the participants' responses in the first interview wave.

Returning to the same question or subject can elucidate elaborations, ambiguities and contradictions, which arguably better represent how people think about things. This might also reflect the effect of the research process – prompting deeper reflection on topics and subsequent changes to how thoughts on these subjects are expressed (Eastwood et al., 2023). For example, Joe did not mention fencing of

planted trees in the first two interviews but discussed these repeatedly in the third interview – challenging some of his previously outlined perspectives about 'naturalness' of the site. Similarly, while Richard expressed strong feelings related to the importance of tree planting to protect natural areas from built development in the first two interviews, he explained in the third interview how he felt conflicted about tree planting and competing demands for food production from agricultural land. Another participant, Isabel, mentioned in the first interview that she felt safer in open woodlands compared to mature woodlands, but with the opportunity to reflect on this, she reported in a subsequent interview that she felt equally safe in both woodland types. The interviewers also reflected on their own roles and impacts on respondents. They felt that as the participants got to know them and moved through the interview process, they could sometimes pre-empt what information the interviewers wanted from them. They could also recognise patterns and repetitions in their own narratives, starting to co-construct their own stories with the interviewers. As such, the interviewers practiced reflexivity and considered their positionality (see Rose, 1997) throughout the project. Please see reflexive research statement below.

As a concluding remark, we want to reflect on how QlL research is experienced by the participants. When compared to quantitative approaches such as surveys, QlL research leaves scope for the participants to elaborate on their responses, reflect on a part of their life which they might or might not previously have considered in-depth or consciously, make contributions to research which they might consider meaningful, and develop a rapport with the researcher. While there might be more complex ethical considerations with QlL research, when done well, we believe that it is less extractive and more reciprocal than other forms of quantitative and qualitative social research.

Reflexive research statement

Contemplating and recording a research team's positionality, their potential biases and the ways in which their experiences and perspective may influence the collection and analysis of data is integral to transparent qualitative inquiry. Here we reflect on how our own positionalities may have shaped the outcomes reported in this research.

The research team are a collective of social scientists working for an environmental-based public sector organisation. We therefore have a shared group interest in improving the state of the natural environment and have high awareness of the benefits of human connection with woodlands. While we feel that a strong rapport

was established with participants, enabling them to share both positive and negative experiences of the new planting, we acknowledge that such knowledge and interests are likely to have influenced our research approach, including the questions we asked, the ways in which we analysed the data, and our interpretations of what participants shared with us. There is also an awareness among the research team that working for a forest-based government organisation may have impacted what participants thought was appropriate (or not) to share with us based on their own perspectives of woodland creation and expansion and their own desired outcomes.

The research team also comprised varying levels of qualitative and longitudinal research experience which influenced the way we approached this study. Two members of the research team are in the early stages of their research career, one is early to mid-career and they were led by an experienced social researcher. Both the mid/early career and experienced researchers are passionate about the benefits of qualitative inquiry, especially qualitative longitudinal inquiry. Such diversity in experience is perceived by the team to have a net positive impact. Being able to draw on the expertise of an experienced qualitative researcher helped to establish a supportive research environment, centred not only around producing high-quality research, but also around professional development and confidence-building in using qualitative (longitudinal) methods. The early career researchers in the team also took an active role and were able to offer critical perspectives on established practices. Members of the team also participated in professional development through methods training during the project, enabling further insights from other experts to be shared.

The team of 5 included 3 White females and 2 White males, all under 45 years of age. Therefore, not representative of the age or ethnic makeup of England.

We, as a team, felt privileged to have had the opportunity to hear about participants' relationships with their local woodlands. Through multiple interactions we were able to listen to how the woodlands, in many cases, have had profound positive impacts on participants health and wellbeing, helping them to deal with the challenges they have faced in their life. These discussions were often intimate and covered sensitive and personal topics for which we are greatly appreciative to participants for sharing with us. We recognise the importance of attention to both participant and researcher wellbeing throughout such processes. Please see above section on learning from the qualitative approach, which outlines this in more detail.

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Appendices

Appendix 1 Copy of qualitative participant information and consent form text

Appendix 2 Survey questionnaire Wave 1

Appendix 3 Survey questionnaire Wave 2

Appendix 4 Qualitative interview guide Wave 1

Appendix 5 Qualitative interview guide Wave 2

Appendix 6 Qualitative interview guide Wave 3

Appendix 7 Qualitative analysis code book

Appendix 8 Results from quantitative research Wave 1 (pilot)

Appendix 9 Results from quantitative research Wave 2

Appendix 10 Case biography report for qualitative research

Appendix 11 Debrief letter text for qualitative research participants

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